

Zoning for Wind Energy: Trespass Zoning or Property Rights Zoning?

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Riga Township a State Model:

Examples of Zoning Guidelines for On-Shore Wind

The Environmental Law Institute report on State Enabling Legislation for Commercial-Scale Wind Power (see below) provides examples Model Wind Ordinances provided by ten different states. In 2009, the Bureau of Energy Systems (now Michigan Energy Office), published the Sample Zoning for Wind Energy Systems. Since that time, a number of organizations and communities have embarked on their own wind projects and have developed zoning ordinances. The MEO recommends that communities review the examples of wind policies at the local government level in Michigan.

The U.S. Department of Energy's [Wind Powering America](#) initiative provides examples of local wind zoning ordinances from a number of communities in the state, as well as information on best practices. The site also provides a link to the U.S. Department of Energy publication, [Wind Energy Ordinances](#).

Please Note: the MEDC – Michigan Energy Office does not endorse nor offer these ordinances as a Best Practices. These ordinances are provided only as examples of Zoning Ordinances currently in use in the state and do not constitute a complete list. The MEDC Michigan Energy Office does highlight the Gratiot County Wind Energy Ordinance as notable because it was unanimously adopted as Michigan's first county-wide wind energy zoning ordinance.

[City of Holland, Zoning Amendment](#)

[Centerville Township Zoning Ordinance for Commercial Wind Energy Systems](#)

[Emmet County Zoning Ordinance](#)

Environmental Law Institute Report, [State Enabling Legislation for the Commercial-Scale Wind Power Siting and the Local Government Role, 2011](#)

[Gratiot County Wind Energy Ordinance](#)

Great Lakes Wind Collaborative, 2011, *Best Practices for Sustainable Wind Energy Development in the Great Lakes Region*, June 2011

[Oliver Township Land Use Plan](#)

[Otsego County Ordinance No. 18.5 for Wind Turbine Generators and Anemometers](#)

[Riga Township Ordinance No. 32, Amendment to the 1974 Zoning Ordinance of Riga Township](#)

[Shiawassee County Wind Ordinances](#)



My talk and recommendations tonight are based upon the Riga Township wind ordinance. It can be found at the website above.



Key point:

The wind industry and their advocates like to make these zoning deliberations a discussion about how noble, green and beneficial wind energy development is.



Key point cont'd:

But the ONLY issue before us is how to safely place 50,60 or 70 story tall noisy structures into a rural/residential environment. Whether these structures produce “green” electricity, extract oil or coal, or turn sow’s ears into silk purses is absolutely irrelevant.

**This is about separating conflicting uses of land and protecting H,S&W.
Nothing more, nothing less.**

Second:

As a zoning official, I fully understand the pressure of being asked to say “Yes” or “No” to a wind development.

It is a thankless task that no one anticipates when volunteering to serve one’s neighbors on a zoning or planning board.

And it is compounded by developers often leasing ground in townships that currently do not permit their use as proposed. This creates tremendous pressure on officials.



Good news:

I believe that reasonable wind energy zoning regulations driven by the principles of consent and compensation can place the burden of deciding whether a given community hosts utility scale wind development upon the wind developer rather than the zoning authority.

This is as it should be.

Benefits



Wind benefits 1

People often ask “Why don’t you mentions the benefits of wind development?”

There *are* benefits.

Wind development is highly profitable for developers like DTE, NextEra, APEX, Invenergy, etc.

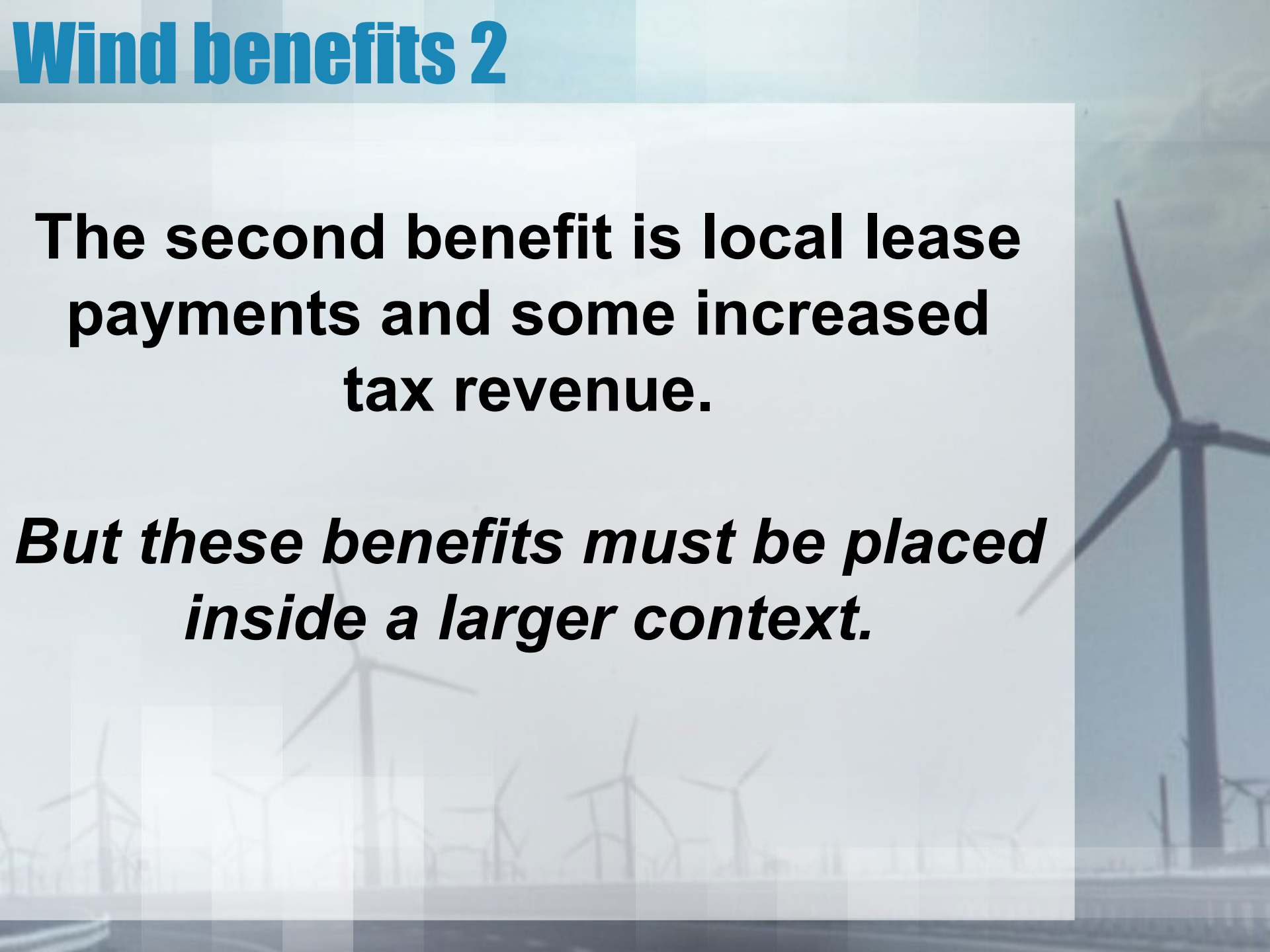
They are the leading beneficiaries of any wind development.



Wind benefits 2

The second benefit is local lease payments and some increased tax revenue.

But these benefits must be placed inside a larger context.



\$\$\$ vs. Land Use

Wind developers often speak of promises of great financial benefit to landowners and township or county coffers as an inducement for permissive wind energy zoning.

(They do this even though tax revenue is an erroneous zoning criteria.)



Remember:

Not only are revenue factors irrelevant to zoning, all the financial promises made to your community in the form of new taxes and landholder lease payments are recovered from Michigan ratepayers, employers and from the US Treasury.

There is no free lunch.

In other words:



Save the family farm?

There are ~56,000 farms in MI.

My best guess is that around 500 farmers have a wind turbine and get the big “turbine host” check.

That means less than 1% of Michigan farms receive substantial wind \$\$\$.
The other 99% of farms pay for the 1%’s benefit through higher utility bills. This harms energy intensive dairy operations in particular.



The background image shows a vast landscape filled with numerous wind turbines, likely a wind farm. The sky is filled with soft, white clouds. A semi-transparent grid of squares is overlaid on the entire image, with varying shades of blue and white, creating a textured, digital effect.

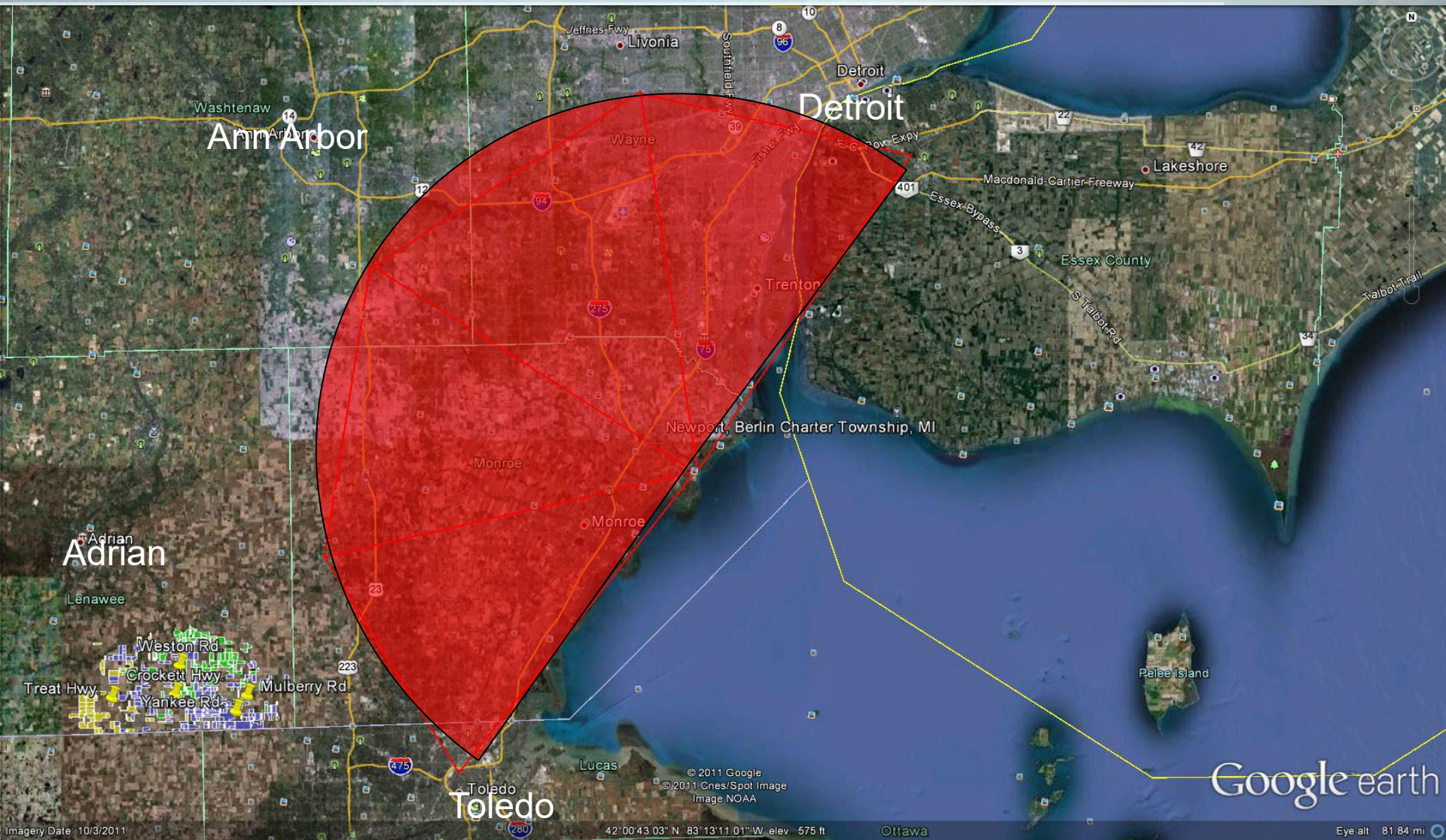
Land Use Implications

Wind is land use intensive:



- Fermi II Reactor- ~1100 Mw

1100 MW from wind at 3.6 MW/sq mile w/30%CF

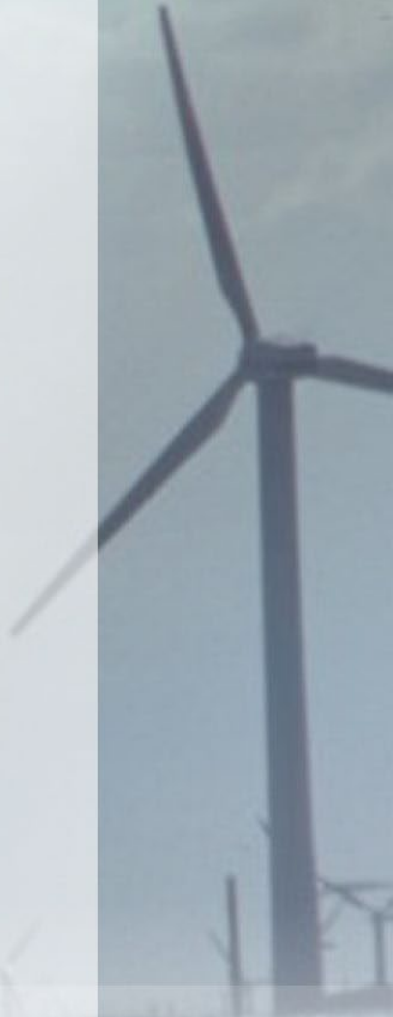


2 Vestas V-100 turbines per square mile Note: larger turbines would reduce the turbine count but larger turbines are spaced farther apart so the net impact would likely be similar.

....and a couple of these for July, August, etc.



Or, 36 Square miles of this...



...could be equaled by one of these:



TM2500 Mobile Gas Turbine Generator

- Output: 21.8 MW @ 50 Hz; 22.8 MW @ 60 Hz (ISO)
- Dual Frequency – 50/60 Hz quick conversion (no reduction gear)
- Heat Rate: 9800 Btu/kW-hr @ 50 Hz; 9500 Btu/kW-hr @ 60 Hz (ISO)
- Voltage: 11.0kV (50Hz); 13.8 kV (60Hz)
- Liquid or natural gas fuel capability
- Brush Air-cooled 2-pole generator with brushless excitation
- Multiple units started/controlled through a single desktop PC
- Low emissions with demineralized water injection 25 ppm (gas); 42 ppm (liquid)
- Woodward Micronet® control system
- Inlet air heating/cooling provisions
- Electro-hydraulic starting system
- Single unit footprint ~110' x 70'
- Sound level at 3 ft. 90 dBA

A background image of a wind farm with several wind turbines visible against a cloudy sky. The image is slightly faded to allow the text to be the primary focus.

Understanding the Zoning Enabling Act and Wind Energy Zoning

Regulating wind installations:

There are many impacts associated with placing utility scale wind turbines in proximity to human habitation.

The most common are height, physical setbacks and noise limits.

Others may include aviation impacts, RF interference or environmental impacts like birds and bats.

I will mainly focus on height, setbacks, and noise.



MSUE cautions:

BEWARE OF THESE ZONING EXCUSES

"Sad but true, far too many hearings on rezoning cases resemble a horse trading affair being carried out in a comic soap opera fashion. Some of the more ridiculous excuses offered for granting rezoning follow such lines as:

- What is proposed is better than what is there.*
- You can't keep a man from using his land.*
- This will bring in more revenue.*
- The owner of the land can get more money for the land if its rezoned to commercial.*
- There are more vehicles on the street than when he built there or bought the property.*
- I promised the people if I were elected I would keep taxes down.*
- I am sure he would build something good.*
- They are too big an outfit; we can't deny the rezoning.*

- We have to bring commerce and industry in today, not worry about a plan of tomorrow.*
- I promised the people if I were elected I would bring commerce and industry into our city, and this will be a start.*
- We approved the commercial rezoning for the other fellow; how can we deny this one?*
- We don't have any right to say where commercial or industrial developments should go.*
- He invested a lot of money in this land and these proposals thinking the rezoning would be granted. How can we deny it?*
- There is commercial zoning on the other corner. How can we deny it on this corner?*
- Like his attorney said, it's probably 'unconstitutional', and we don't know for sure.*
- We don't want to have to go to court; after all it really doesn't look so bad."*

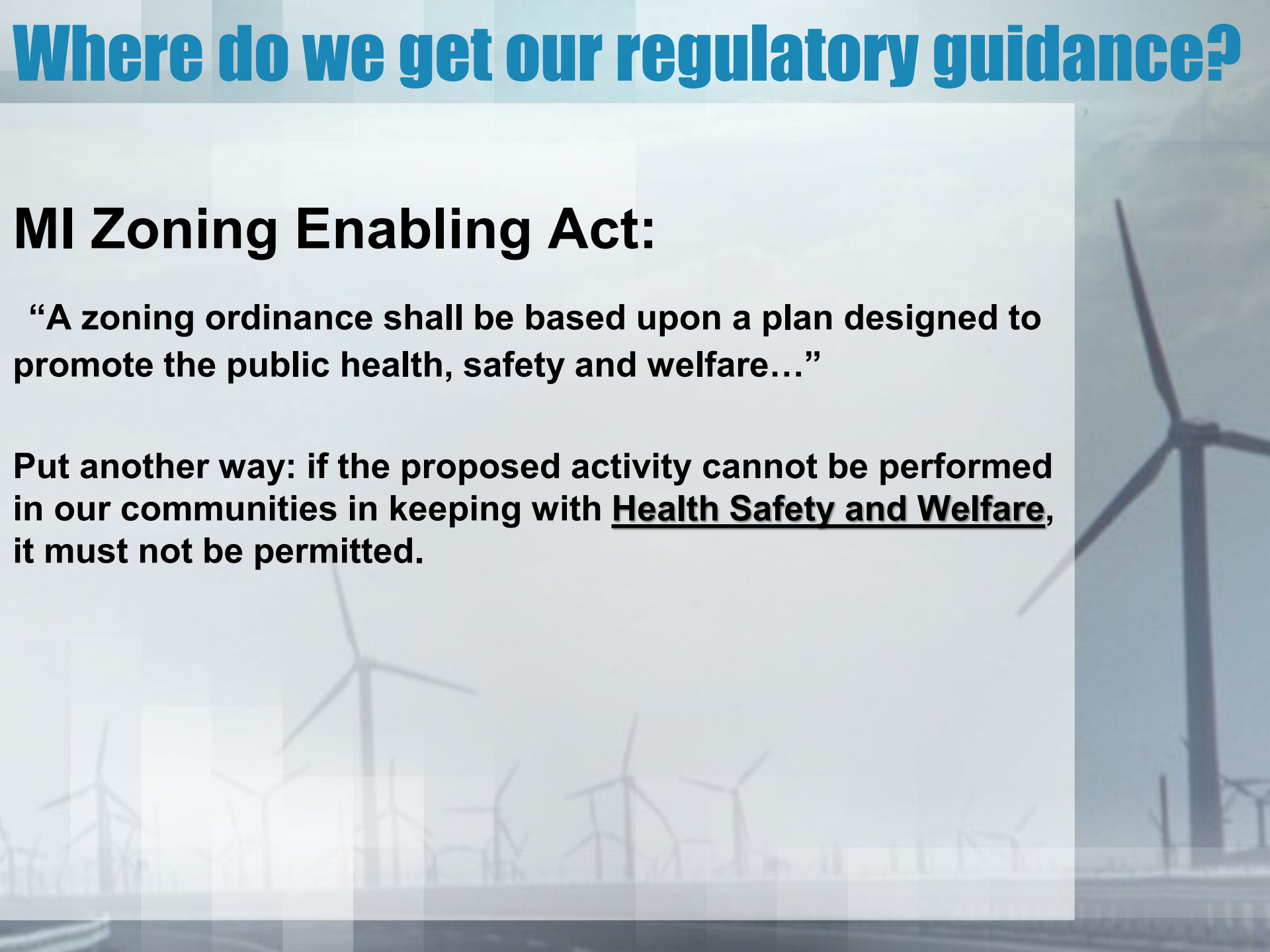
Adapted from Northern Kentucky Area Planning Commission Newsletter, December, 1967.

Where do we get our regulatory guidance?

MI Zoning Enabling Act:

“A zoning ordinance shall be based upon a plan designed to promote the public health, safety and welfare...”

Put another way: if the proposed activity cannot be performed in our communities in keeping with Health Safety and Welfare, it must not be permitted.



Or:

Put another way: if the proposed activity cannot be performed in our communities in keeping with Health Safety and Welfare, it must not be permitted.

REMEMBER: A developer's *primary commitment is to bottom line and their "recommendations" are designed to maximize ROI*

But a planning official's single commitment must be to H, S and W

Limits to zoning:

- Zoning regulations must have a rational relationship to protecting H, S and W.
- They must not be arbitrary or capricious.
- If a zoning regulation meets those criteria it is almost unassailable in court

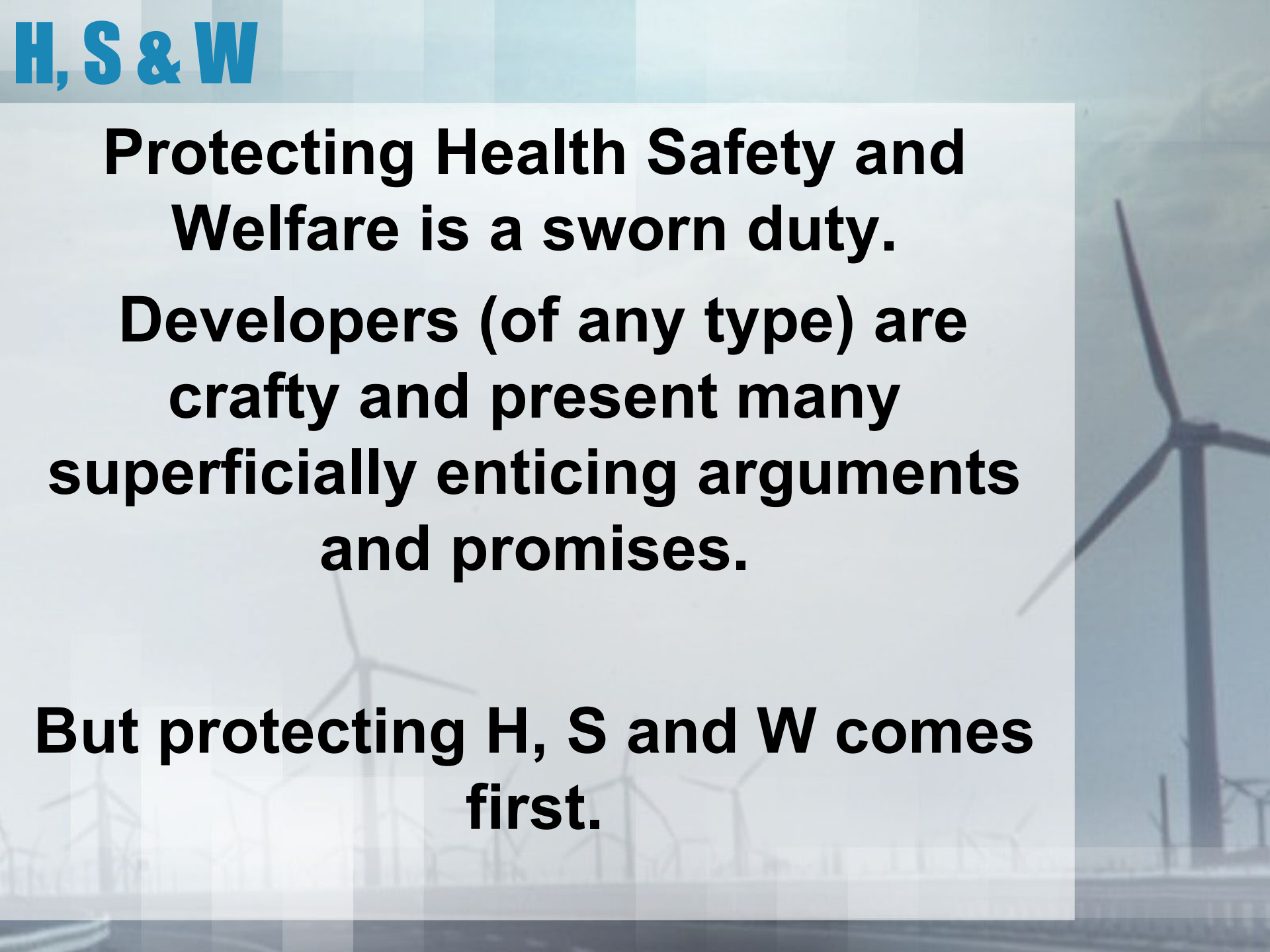
Remember: Reasonable zoning is legally strong!

H, S & W

Protecting Health Safety and Welfare is a sworn duty.

Developers (of any type) are crafty and present many superficially enticing arguments and promises.

But protecting H, S and W comes first.



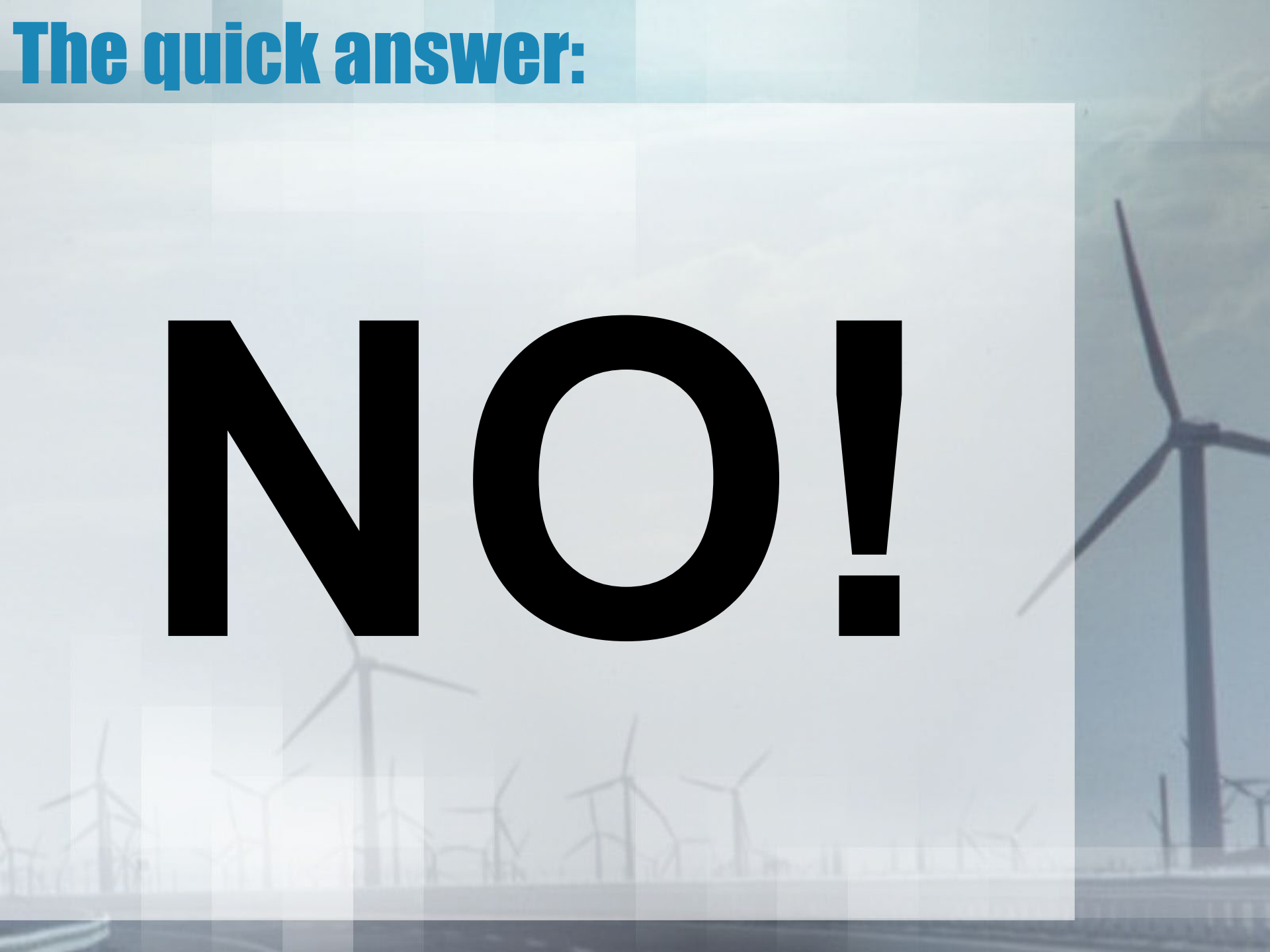
H, S & W Questions

- Are (any) developer's profits more important than H, S and W?
- Are promised increases in tax revenue more important than H, S &W?
- Are claims of “private property rights” more important than H,S &W?
- Are claims of green jobs or emissions reductions more important than H, S & W?



The quick answer:

NO!



Remember:

**It is the Health Safety AND Welfare
not Health Safety OR Welfare
that zoning commissioners are duty
bound to protect.**

**Too often *Health* and *Safety* are
diminished in exchange for
developers' promises of jobs or tax
revenue *Welfare*.**

But those promises are not contracts.

Regulating Height



The MI experience:

Michigan has over 2,600MW of wind turbines installed

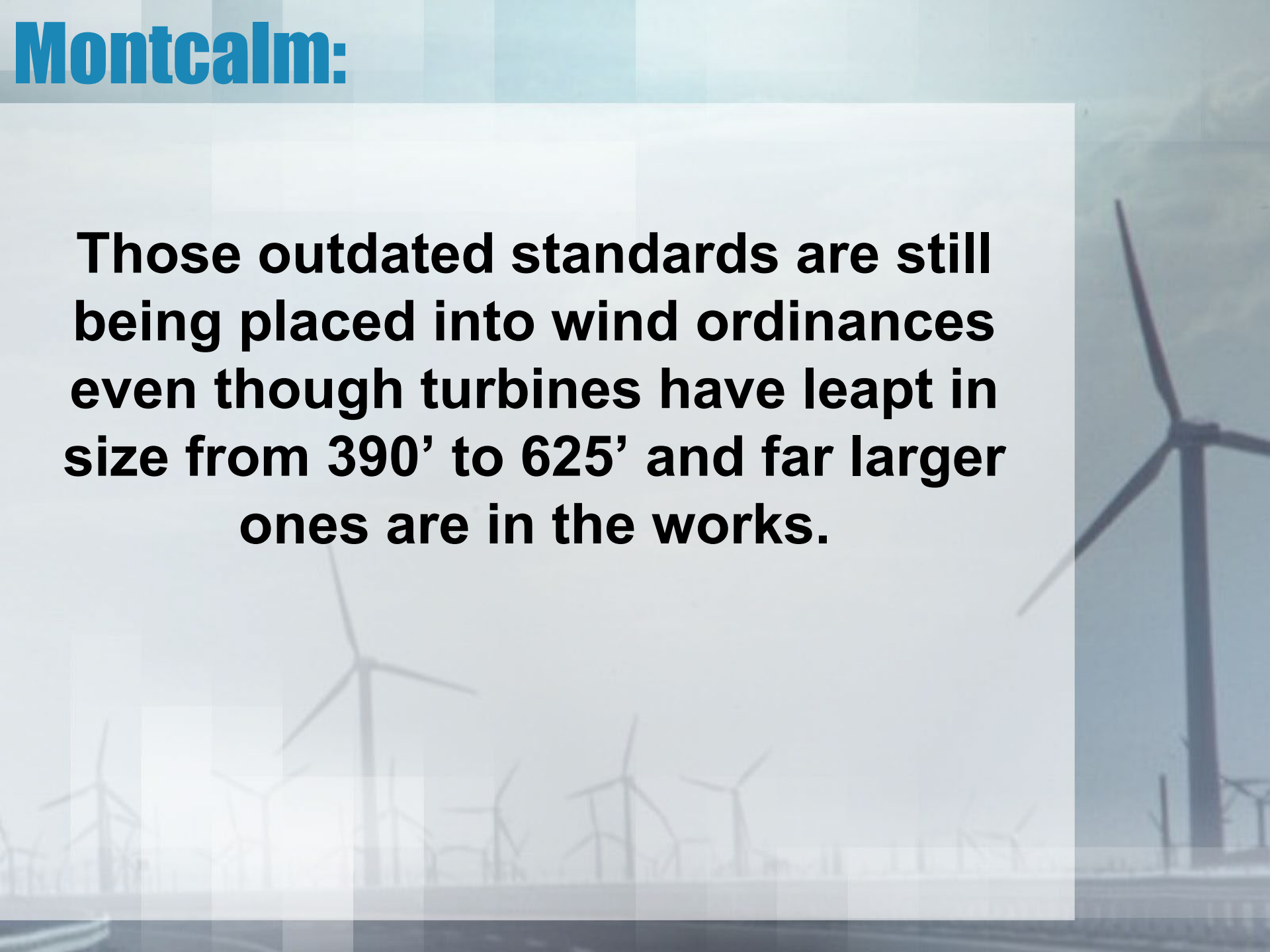
In 2008, the State recommended 1,000' setbacks from homes and 55dBa noise limits. Although it was not a binding recommendation it became an informal standard often proposed by wind developers.

BTW: turbines were only 390' tall then.



Montcalm:

Those outdated standards are still being placed into wind ordinances even though turbines have leapt in size from 390' to 625' and far larger ones are in the works.



Largest onshore turbines:

Clash of the titans -- top 5 biggest onshore turbines

Nameplate capacities of more than 5MW; rotor blades pushing beyond the 80-metre mark; towers exceeding 160 metres for tip heights of 250 metres-plus. A new generation of giant onshore turbines is rapidly coming to market, with five of the world's top OEMs leading the charge.

by Shaun Campbell



Special feature... GE's 5.3MW Cypress prototype in the Netherlands has segmented blades

**The latest turbines have a tip height of
250m or 820'.**

Typical industry recommendations:

- 1. Formerly, 500' height limit. New trend: no limit**
- 2. 45-55dBa at homes. 45dBa more common with Exelon or DTE. NextEra and APEX recommend higher limits**
- 3. 1,320' setbacks to homes-now shrinking back to 1,000'**
- 4. 30 hours shadow flicker**
- 5. 1.1 setback to property lines and roads**



Height Limits

- **In general communities are free to regulate the height of structures simply on the basis of appearance.**
- **Many zoning ordinances restrict homes to only 2 or 3 stories even though 4 or 5 story homes can be built safely.**
- **Wind turbines are no different than any other lawful use. You may restrict their size for the sake of appearance.**



A Trap:

Too often township or county officials fall into a false debate, namely, unless you can **prove** turbine noise or flicker **harms health**, there is **no basis** for limiting size or increasing setbacks. But **there is no such legal requirement.**

We can regulate size for aesthetic reasons, just as we do with maximum home heights and setbacks, maximum sign sizes, buffers and berms between conflicting uses, etc.



We regulate billboards on appearance:



“The purpose of regulating signs in the county is to provide for a visually pleasant environment and minimize potentially unsafe conditions while also offering opportunities for public and private information and advertising.” SCZO

And turbines have visual impacts too:

“Certainly there are some pristine places in Michigan where you don’t want to impact the viewshed.... You take a situation like Leelanau County or the Old Mission peninsula here in our region. Certainly there are areas where it just-while it would be perfect economic sense and perfect placement for utility turbines- we probably don’t want [them] as a region there.”

- Steve Rawlings, Regional Manager, DTE

DTE Echo Wind Plant
Huron County



And turbines have visual impacts too:

Curiously, wealthy regions in Michigan like Leland and Centreville Townships in the Leelanau Peninsula have adopted very stringent wind ordinances without fanfare or protest despite a demographic that claims to heavily support renewable energy.

DTE Echo Wind Plant
Huron County



Prior DTE CEO concedes visual impacts:

Bridge: You've said it's getting more difficult to add wind generation in Michigan due to permitting issues. Why is that?

Anderson: You get visual impacts in communities where we've had wind activity. Unlike the Great Plains, which have 10,000-acre farms without many vacationers, land use in Michigan is more mixed. Wind is good for the farmers, perhaps, but maybe someone else living nearby says "enough." We plan to continue to build over the next five years, but it's certainly getting harder, and Michigan is one of the hardest states in the country for building wind.



So how tall is too tall?



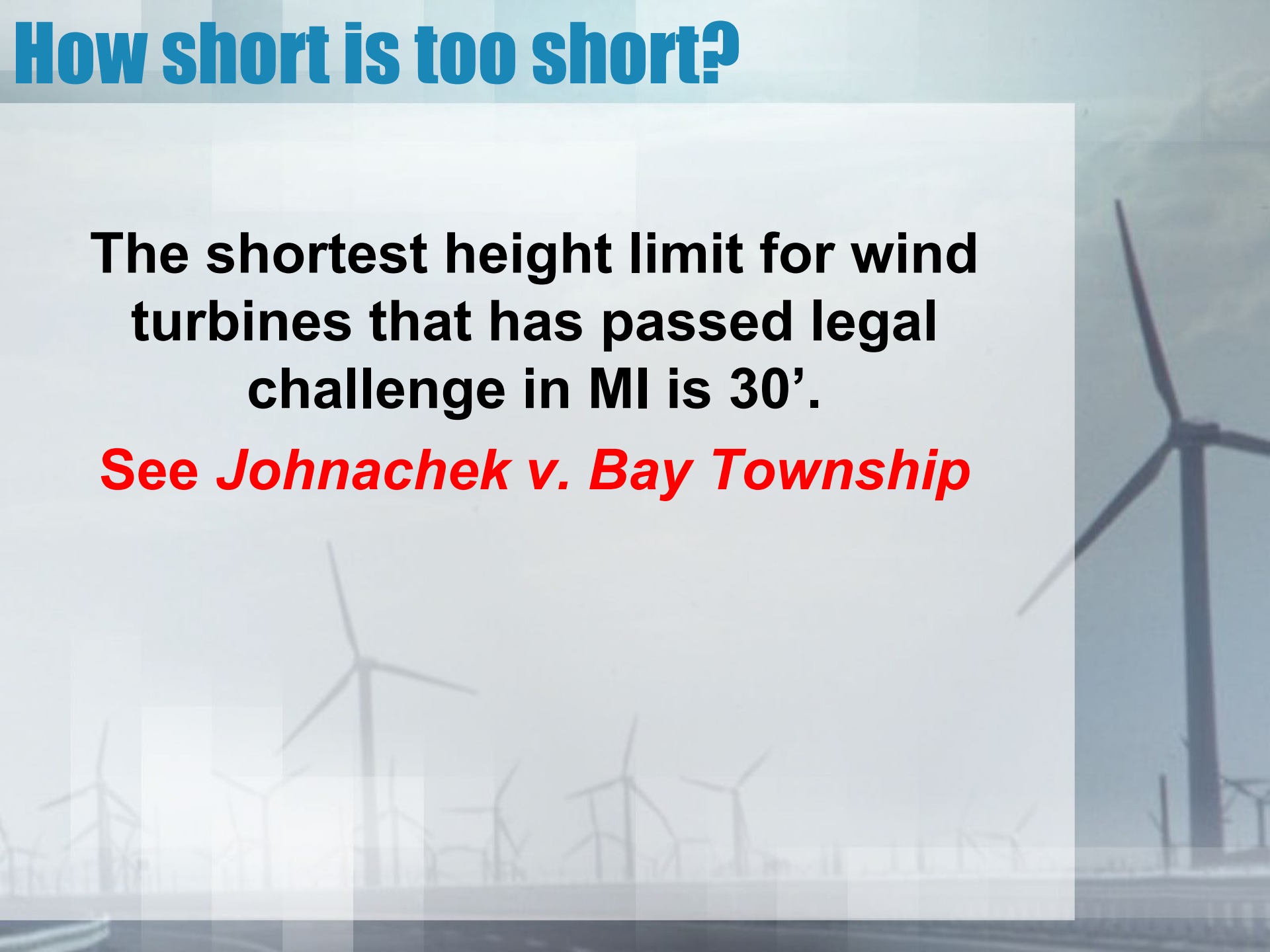
Just like any other land use, it's up to you.



How short is too short?

The shortest height limit for wind turbines that has passed legal challenge in MI is 30'.

See Johnachek v. Bay Township



Setbacks



Worldwide setbacks & “industry standard”:

Table I. Safety distances of wind turbines from human structures as practiced in different regions of the world.¹⁷

Authority/source	Safety distance [m] (ft)
France	1609 (5280)
Germany	1609 (5280)
Rural Manitoba, Canada (1981)	(6500)
US National Research Council	762 (2500)
IL, USA	457 (1500)
Riverside County, CA, USA	3218 (10560)
MI, USA	304 (1000)

Source: Analysis of throw distances of detached objects from horizontal-axis wind turbines, Sarlak and Sorenson, *Wind Energy* 2016



Minimum Setbacks-who to trust?

- **From Vestas “Health & Safety Instruction”:**

“If a runaway operation should occur, the plant must be evacuated immediately by running upwind, and access to the surrounding area in a radius of at least **500 metres** must be restricted”-
1640’

- **Nordex:**

“In case of a fire in the nacelle or on the rotor, parts may fall off the wind turbine. In case of a fire, nobody is permitted within a radius of 500 m from the turbine.”-**1640’**



Nordex Thunderstorm Update:

Nordex instructs employees to remain 1km (3,280') from turbines and inside vehicle during storm event and to remain there for one hour.

Safety manual

Revision 01 / 2018-08-17



- Leave the wind farm.
- Wait in a vehicle at a safe distance from the WT – approx. 1 km – until the thunderstorm has passed.
- Wait one hour after the thunderstorm has passed before entering the WT.

9.3 Fire



DANGER

Life-threatening injuries due to falling turbine parts

In case of a fire in the tower, in the nacelle or on the rotor, parts may fall off the WT.

Keep a safety distance of 500 m around the WT.

Do not enter the WT.



DANGER

Risk of death when using the service lift in case of fire

Do not use the service lift in the event of a fire in the WT.



NOTE

The WT is equipped with fire extinguishers for fighting incipient fires.

At least one fire extinguisher is located in the tower base near the door and another in the nacelle near the Topbox.

This makes it possible to extinguish burning solids and liquids, as well as fires in electrical systems of up to 1000 V.

These fire extinguishers are not suitable for extinguishing a fire on the high-voltage elements, see chapter 9.3.2 "Fire in the nacelle".

9.3.1 Fire in the WT

- Remove any persons from the danger area.
- The burning object must be disconnected from the grid, if possible.

- Call the Nordex emergency phone number and describe the situation.

In real life? ~1500' Debris Field



Sense of scale:



Safety manuals:

- **My earlier slide quoted safety and operations manuals from Nordex and Vestas.**
- **Wind developers now claim that the basic safety information in those manuals is proprietary and they will not release them to planning commissioners.**
- **We feel that responsible wind ordinances should require the submission of those documents in un-redacted form.**



Ice Throw Jan 23rd, 2018:

Skylight damaged when ice flies off wind turbine at Mount Wachusett Community College

MOST POPULAR

- 1 Sewage backup creates bad smell at public housing complex in Worcester
Jan 23 at 8:58 PM
- 2 Judge reverses decision blasting Worcester police promotions
Jan 24 at 5:45 AM
- 3 Skylight damaged when ice flies off wind turbine at Mount Wachusett Community College
Jan 24 at 9:28 AM
- 4 Icy conditions prompt 2-hour delay for Worcester schools on Wednesday
Jan 24 at 9:21 AM

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▲ HIDE CAPTION

One of the two wind turbines at Mount Wachusett Community College in Gardner, with the school's new science complex in the foreground. [T&G File Photo/Rick Cinclair]

Wind Energy paper on throw events:

Wind Energy

WIND ENERGY

Wind Energ. 2016; **19**:151–166

Published online 19 February 2015 in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/we.1828

RESEARCH ARTICLE

Analysis of throw distances of detached objects from horizontal-axis wind turbines

Hamid Sarlak and Jens N. Sørensen

Section of Fluid Mechanics, Department of Wind Energy, Technical University of Denmark, DK-2800 Lyngby, Denmark



***Wind Energy* paper on throw events:**

“It is found that, while at tip speeds of about 70 m/s (normal operating conditions), pieces of blade (with weights in the range of approximately 7-16 ton) would be thrown out less than 700m [2,300’] for the entire range of wind turbines, and turbines operating at the extreme tip speed of 150 m/s may be subject to blade throw of up to 2 km [1.2 miles] from the turbine. For the ice throw cases, maximum distances of approximately 100 [328’] and 600 m [2,000’] are obtained for standstill and normal operating conditions of the wind turbine, respectively, with the ice pieces weighting from 0.4 to 6.5 kg. **The simulations can be useful for revision of wind turbine setback standards**, especially when combined with risk assessment studies”

This peer reviewed paper published in an wind industry journal demonstrates that ice throw and component liberation are real risks inside a range of distance from 328’ for a standing-still turbine up to 1.2 miles for blade throw during an overspeed event.

Developer's wishes:

**Despite published safety data like that in the earlier slides,
wind developers routinely demand turbine setback distance ranging from 1,000 to 1,400' from neighboring homes (not property lines), leased or unleased, for turbines in the 400-500' class.**



Here's the rub: Trespass Zoning

By demanding that the setbacks distances for wind turbines be measured from home on adjacent properties rather than from the property line (which is typical of virtually all other land use regulations) the wind developer is in essence asking the regulatory body to grant them an easement or trespass privileges on unleased property.

We call this **Trespass Zoning.***

<https://limaohio.com/opinion/columns/167093/william-j-seitz-and-kevon-martis-trespass-zoning-is-wind-energys-secret-subsidy>

Wind lobby disputes “easement”:

Wind developers object to the phrase easement in the zoning context.

But their own leases make it clear:

5.2 Effects Easement. Owner grants to Operator a non-exclusive easement for audio, visual, view, light, flicker, noise, shadow, vibration, air turbulence, wake, electromagnetic, electrical and radio frequency interference, and any other effects attributable to the Wind Farm or activity located on the Owner's Property or on adjacent properties over and across the Owner's Property ("Effects Easement").

Wind lobby disputes “easement”:

Apparently, in the mind of a wind developer, it is only an easement when they **purchase the rights** to do these things to your home.

But when they can talk the zoning board into **donating the right** to do these things to your home it is not an easement.

5.2 Effects Easement. Owner grants to Operator a non-exclusive easement for audio, visual, view, light, flicker, noise, shadow, vibration, air turbulence, wake, electromagnetic, electrical and radio frequency interference, and any other effects attributable to the Wind Farm or activity located on the Owner's Property or on adjacent properties over and across the Owner's Property ("Effects Easement").

Trespass Zoning:

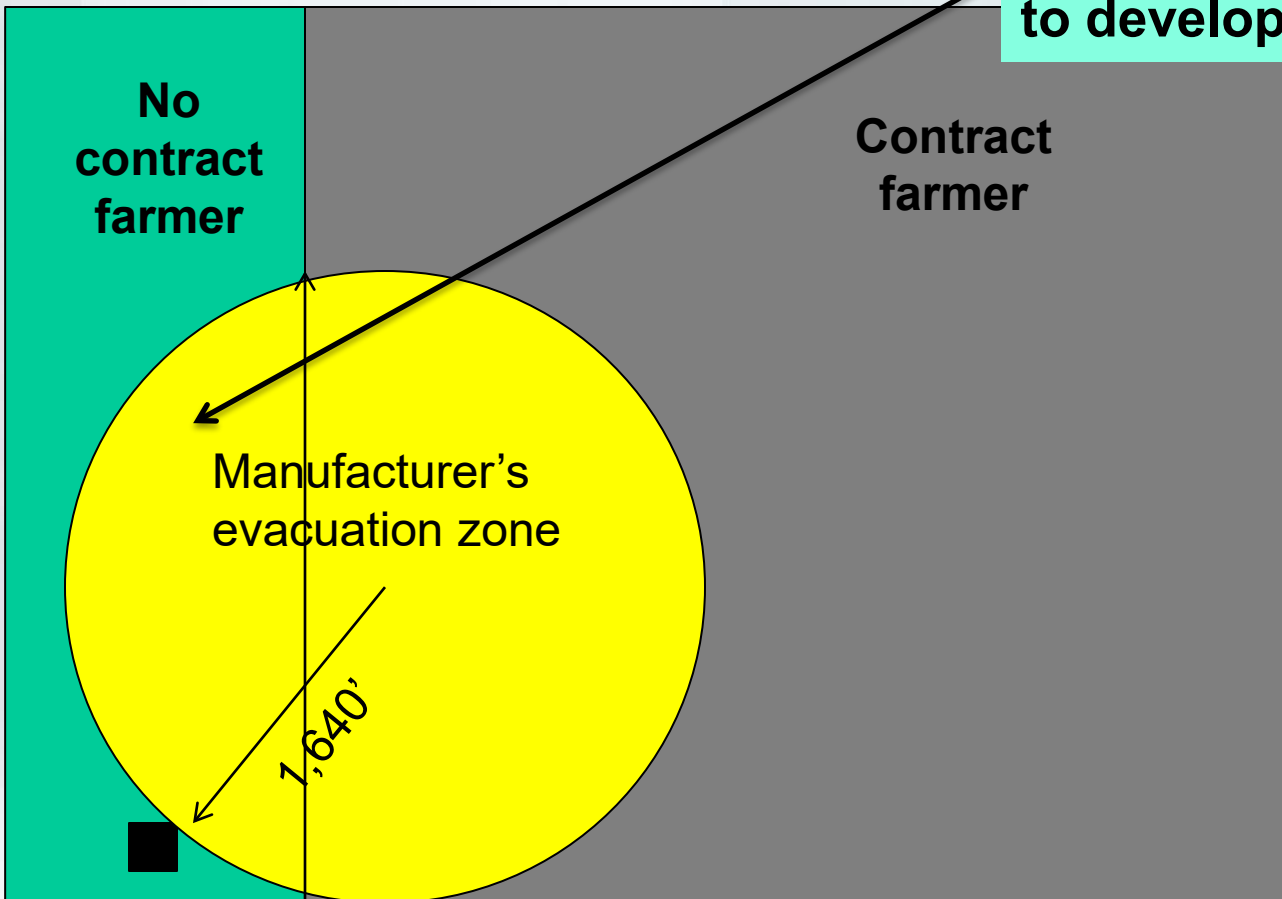
(Not to scale)



Setback to structure:

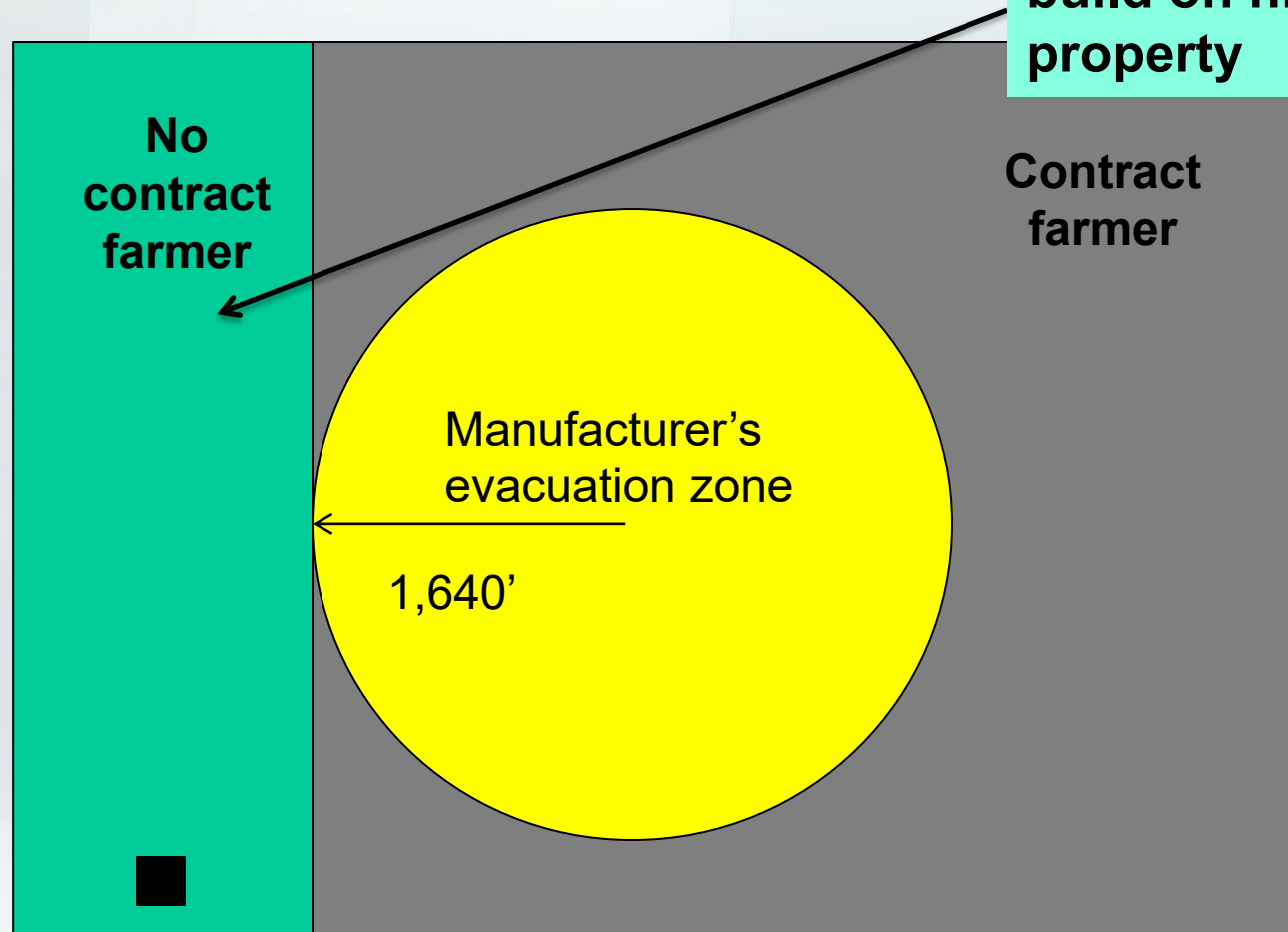
(Not to scale)

Green “no contract”
farmer gives future
development rights
to developer for free



Setback to property line:

(Not to scale)



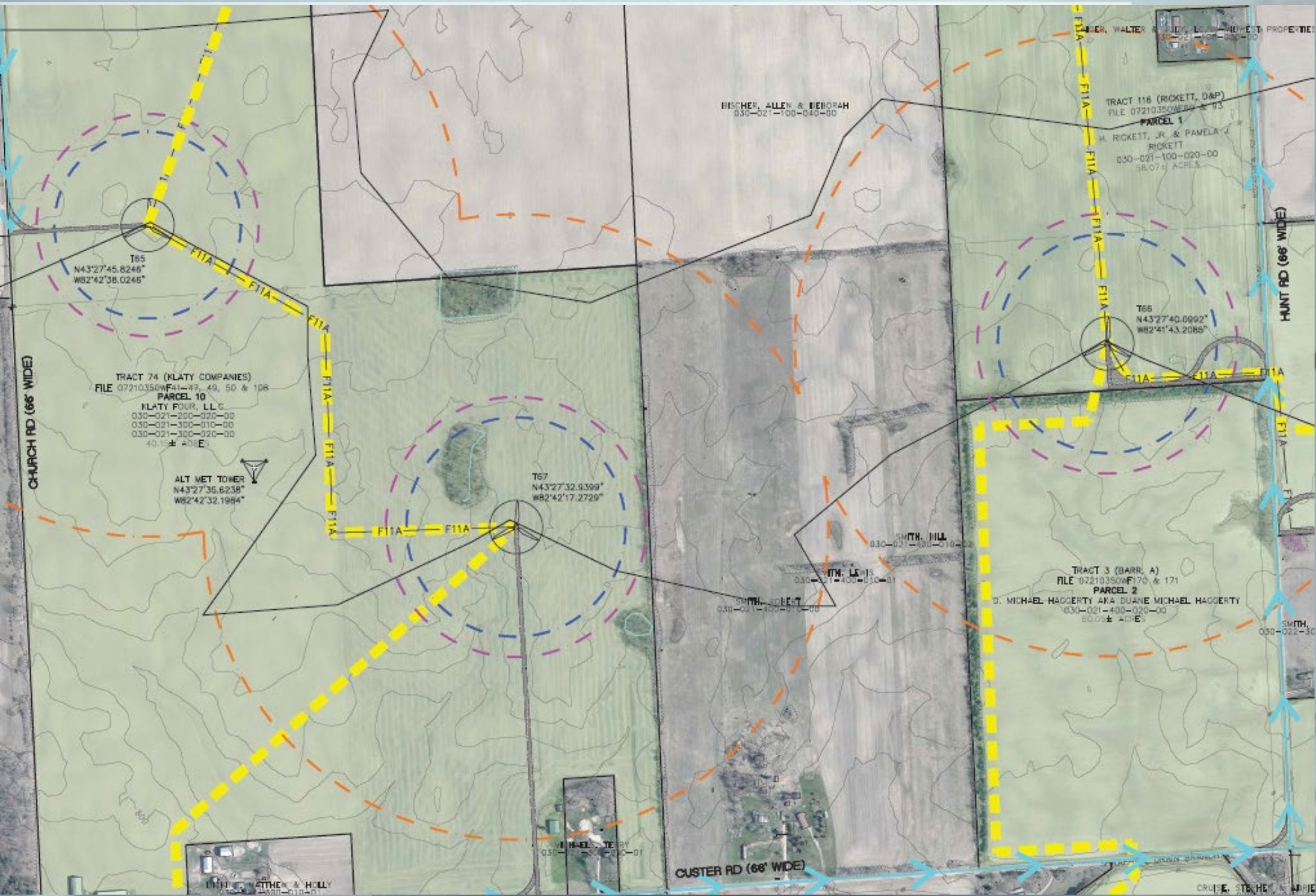
Green "no contract" farmer can safely build on his whole property

Contract farmer

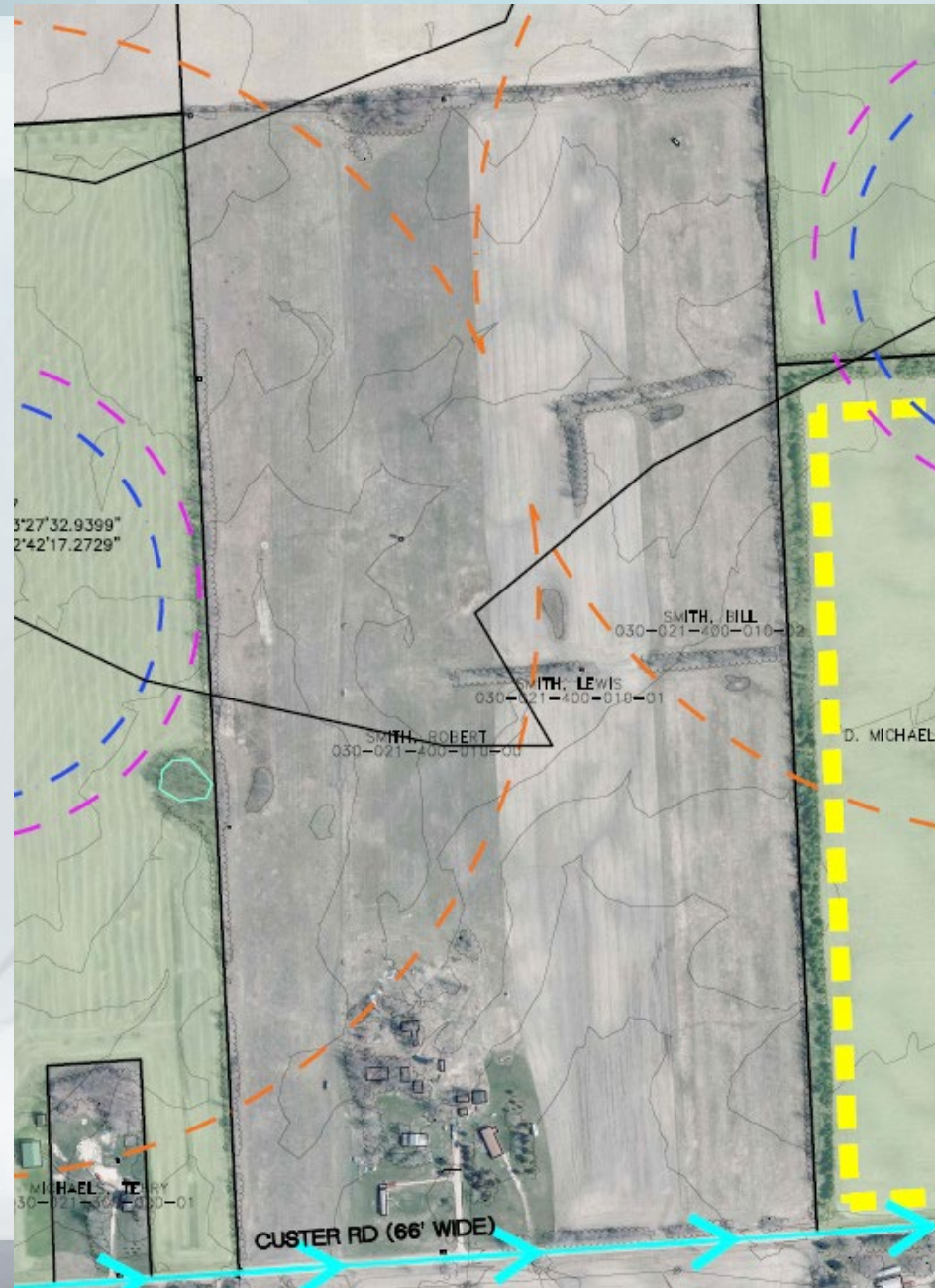
Manufacturer's evacuation zone

1,640'

Green is leased, gray is not:



Nearly 50% of unleased land impacted:



Oliver Wendell Holmes/Prop. Rights

**"The right to swing my fist ends
where the other man's nose
begins."**



Kevon Martis Corollary

“If my development project requires me to repeatedly punch you in the nose, I should first get your consent and then compensate you for your broken nose.”



Trespass Zoning:

The expressed goal of zoning regulations is to **separate conflicting land uses** from each other.

By establishing setbacks (and noise limits) from neighboring *homes* rather than *property lines*, the conflicting use is actually **granted legal access** to the neighboring property without consent or compensation.

This is fundamentally unjust.

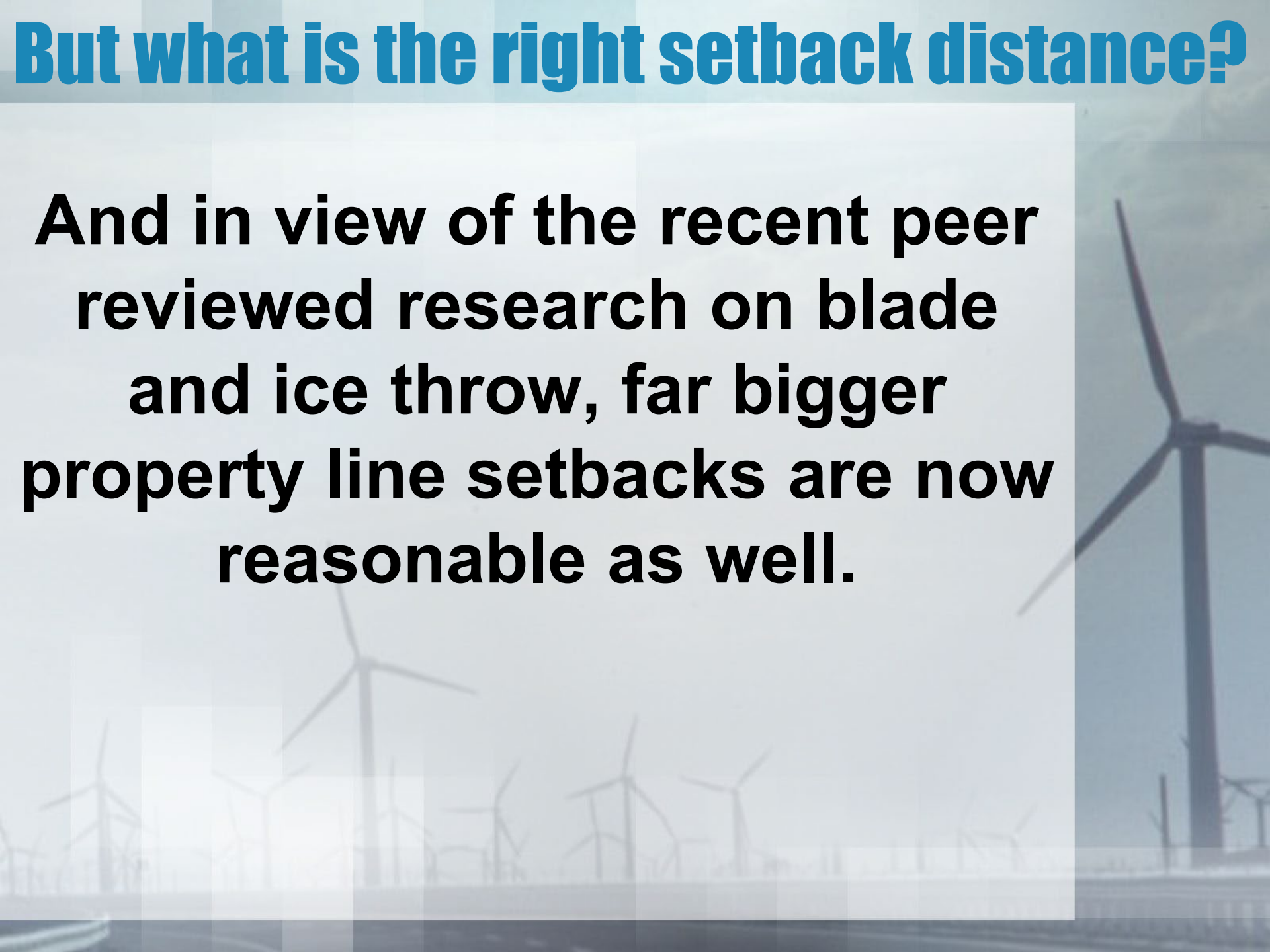
But what is the right setback distance?

If you are regulating setbacks to protect families and private property from fire or rotor failure, 1,640' or a multiple of turbine height equal to 1,640' as measured to **property lines would be reasonable minimum for 500' class turbines.**



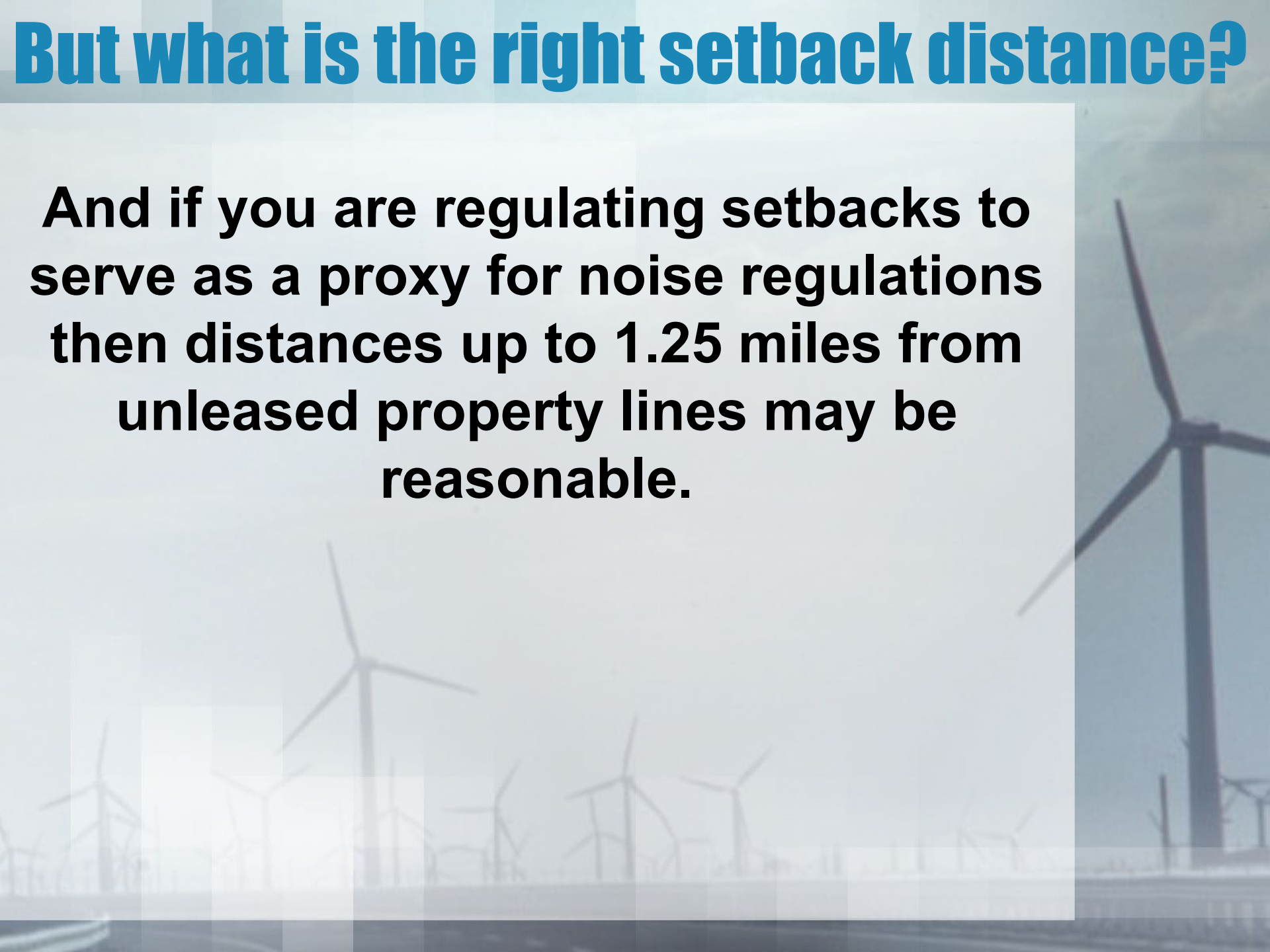
But what is the right setback distance?

And in view of the recent peer reviewed research on blade and ice throw, far bigger property line setbacks are now reasonable as well.



But what is the right setback distance?

And if you are regulating setbacks to serve as a proxy for noise regulations then distances up to 1.25 miles from unleased property lines may be reasonable.



Riga's solution:

As a compromise, Riga Township chose 4x height to non-participants' property line, 1/4 mile to participants residence, with these larger setbacks reducible with a waiver.*

*http://gallery.mailchimp.com/be5a7d58cda36e183b67eed5d/files/Wind_Generation_Ordinance___Clean___7_8_11_1_.pdf

My recommendation cont'd:

Important that setback to non-participant to be at property line or the ordinance is *essentially awarding an uncompensated nuisance/safety easement to developer at non-participants' expense.*

Equitable wind energy zoning should not forcibly donate unleased property to the neighboring landowner's tenant.

The waiver is the key:

The two stage setback with a waiver is what empowers your residents to be able to negotiate on their own behalf with the wind developer.

It requires them to negotiate with all residents bearing the direct impact of wind development instead of just a few large-and often absentee-landowners.



The waiver is strong:

By setting large setbacks to unleased property lines but small ones to leaseholder's homes and permitting a waiver, you are in a stronger position in the unlikely event of a legal challenge.

Likewise, a multiple-of-turbine-height setback rather than a fixed setback distance is easy to defend in court and it automatically updates setback distances as turbine heights increase.



Regulating Noise



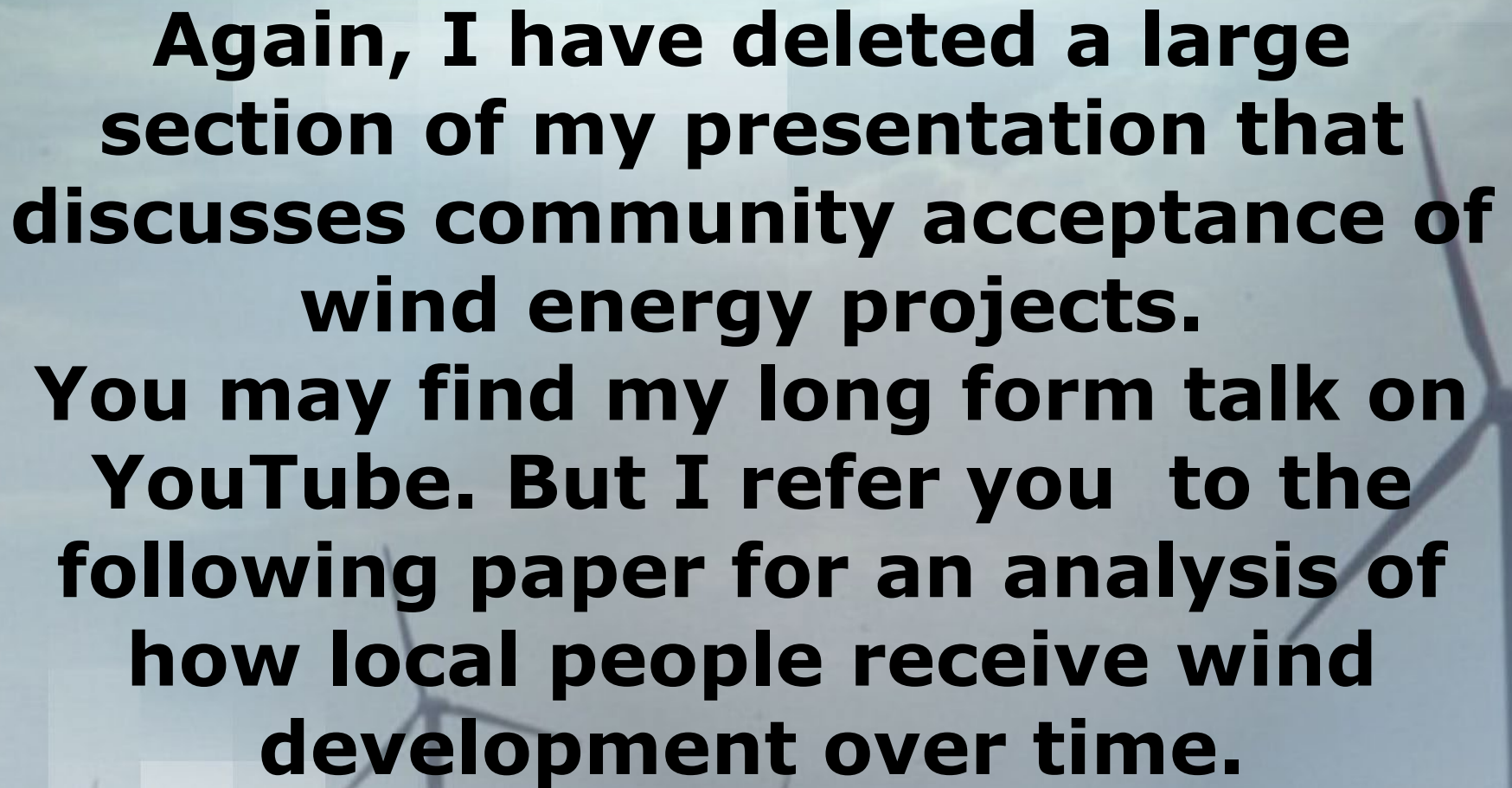
Noise:

As Rob Rand has indicated, there are abundant high level sources including US EPA, ANSI and the WHO who all indicate that the correct noise limit for wind turbine noise is under 40 decibels.

In the interest of time, I have deleted my noise section.

Community Acceptance





Again, I have deleted a large section of my presentation that discusses community acceptance of wind energy projects. You may find my long form talk on YouTube. But I refer you to the following paper for an analysis of how local people receive wind development over time.



January 2018

National Survey of Attitudes of Wind Power Project Neighbors: Summary of Results

“In 2015, the U.S. Department of Energy funded Lawrence Berkeley National Laboratory (LBNL) to lead a **4-year project** collecting data from a broad-based and representative sample of individuals living near U.S. wind power projects. The aim was to **broaden the understanding of how U.S. communities are reacting to the deployment of wind turbines, and to provide insights to those communities considering wind projects.**”

https://emp.lbl.gov/sites/default/files/paw_summary_results_for_web_page_v6.pdf

Decommissioning/Enforcement



Decommissioning:

Decommissioning is a financial guarantee to take care of the removal of inoperable turbines.

I recommend language that requires bond to be posted in an amount equal to the cost of decommissioning as determined by a third party engineer as selected by the municipality and paid for by the developer.

It should include a reassessment every 3 years.

Stronger yet is a cash escrow rather than a bond.



Enforcement \$\$ escrow:

One thing turbine host communities have discovered is that enforcing wind turbine ordinances is expensive when the regulated entity-the developer-has financial resources that outstrip township or even county coffers.

I recommend an enforcement escrow account. We have adopted such regulations in the Deerfield Township Solar ordinance and I recommend it to all communities facing this kind of development.

Summary



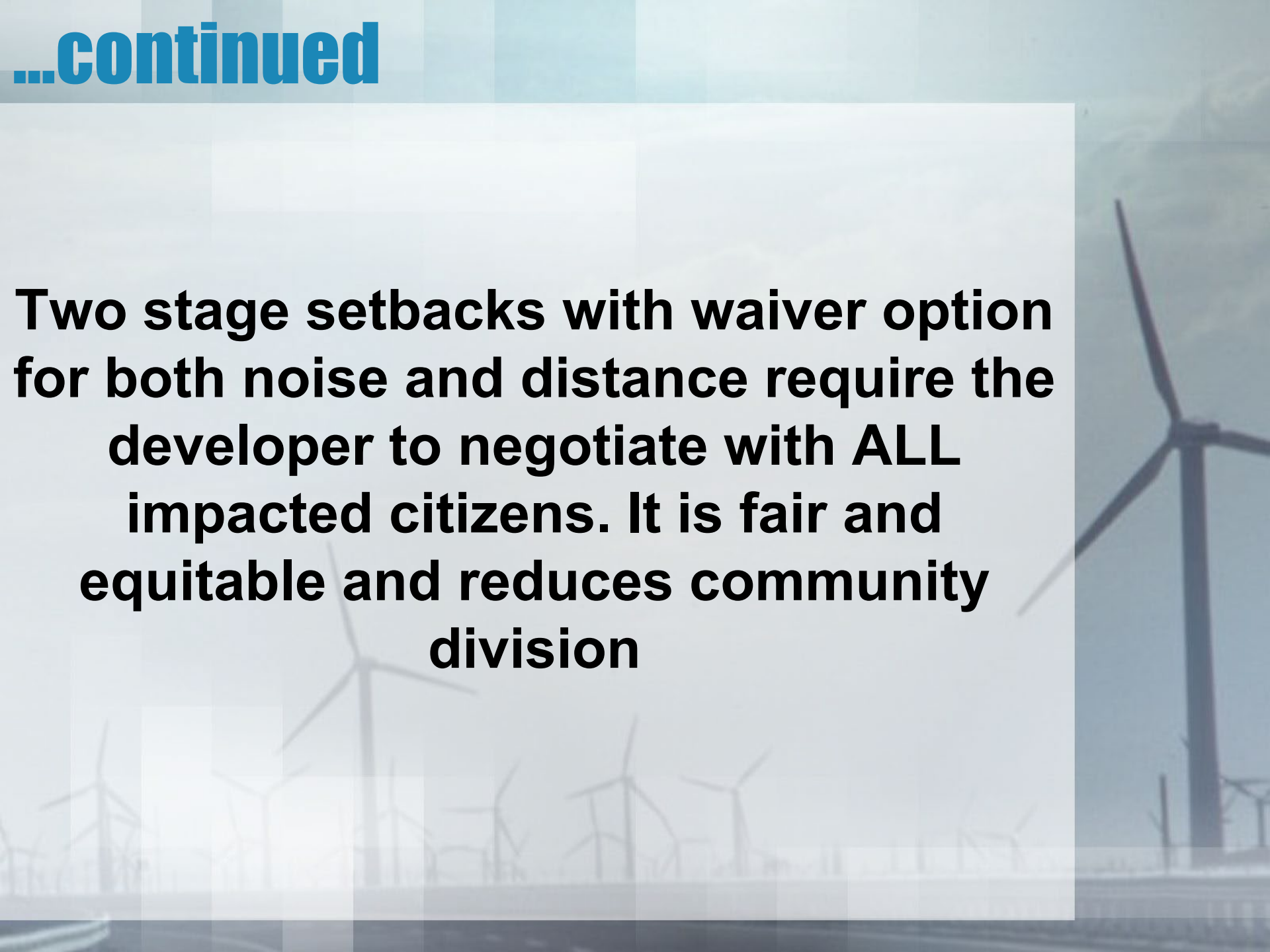
Wrapping up:

- Most land use changes are pretty benign-minimum lot sizes, sign ordinances, etc.
- Due to their size, wind turbines impacts are disproportionately large
- Riga felt that the change of land use policy was so massive and the impacts so profound that they should not occur without *consent* of all impacted parties



...continued

Two stage setbacks with waiver option for both noise and distance require the developer to negotiate with ALL impacted citizens. It is fair and equitable and reduces community division



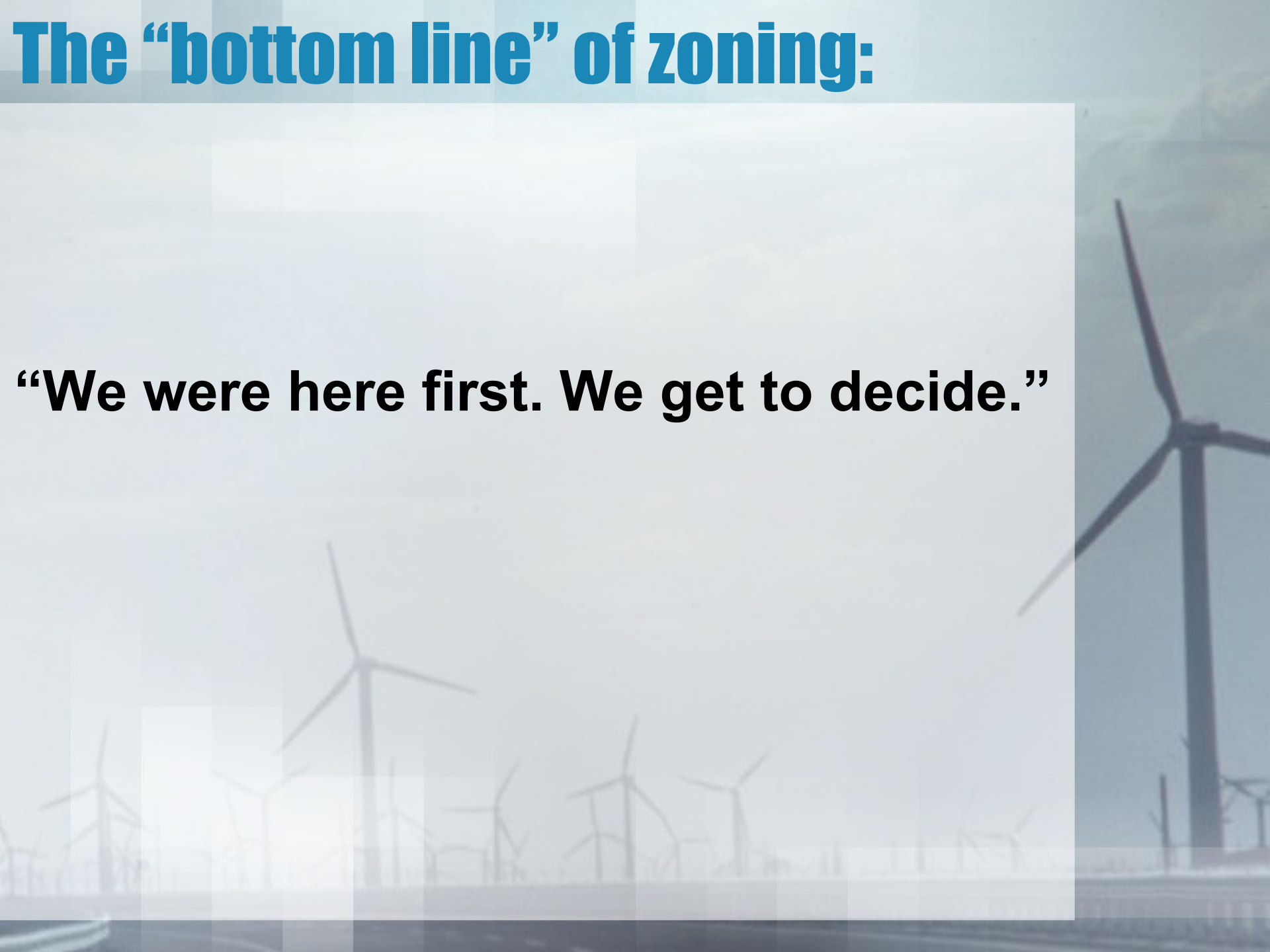
Ever heard this?

No one has ever come before a planning commission and said “The light coming through my windows is too steady, could you make it flicker? The night time noise level is too quiet, could you raise it to 55dBa from 25dBa? My property values are too stable, could you build some 50 story industrial machines next door to put that value at risk?”



The “bottom line” of zoning:

“We were here first. We get to decide.”



Only two type of wind ordinance:

- **Wind developers ask communities to adopt zoning language that essentially awards free safety and nuisance easements across non-participating properties**
- **Reasonable wind zoning demands that those easements be negotiated individually and privately between the developer and the impacted landowners rather than forced upon them by zoning regulation**



Who decides?

- The wind developer prefers to place the difficult decision of “do we let wind in or not?” in the hands of the **zoning authority alone**.
- By creating two stage zoning and setting those limits at the property line the decision as to whether the project proceeds or not is now in the hands of the **private property owners** and the developer.



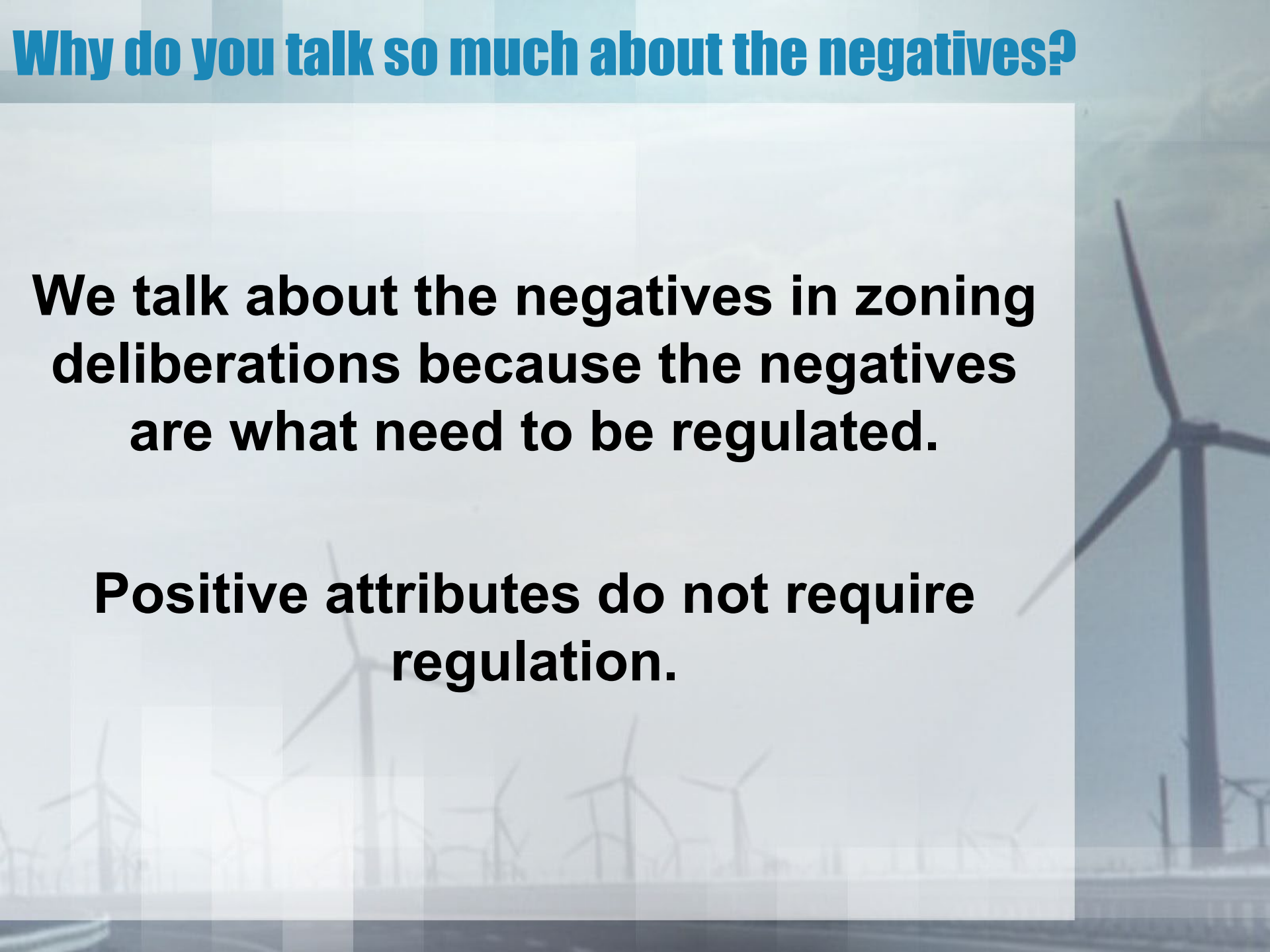
A background image of a wind farm with several wind turbines visible against a cloudy sky. The text is centered over the image.

Frequently Asked Questions

Why do you talk so much about the negatives?

We talk about the negatives in zoning deliberations because the negatives are what need to be regulated.

Positive attributes do not require regulation.



Are developers a reliable source?

Too often I see townships treating developers and their associates as their (only) authoritative sources for writing wind turbine regulations.

Remember: developers and their experts' primary job is to get their project constructed under favorable regulations that protect their long term interests, not your residents' interests.

This means no matter where the science leads, they **cannot agree** with it if it makes their project economically unviable.

Local officials have sworn an oath to protect their citizens' health, safety and welfare.

Developers are under no such oath.

Keep that in mind when they are testifying before you.



Clinton County Experience

The former Forest Hill energy wind farm that was proposed in Clinton County is a stark example of local opposition to wind development.

Just like solar, it may be prudent for Clinton County to adopt strong wind regulations that preserve the status quo for the townships under County zoning. If those townships wish to host wind development, they can develop township level zoning to do so.



Riga Township Ordinance:

**My talk is based upon the Riga
Township wind ordinance
which is available here:**

www.rigatownship.com



Q's? Email me at kevon@kevonmartis.com

Setback from house shown in feet from structure

