

# Is Wind Energy Right for your Township?

Watertown Township  
September 13, 2017

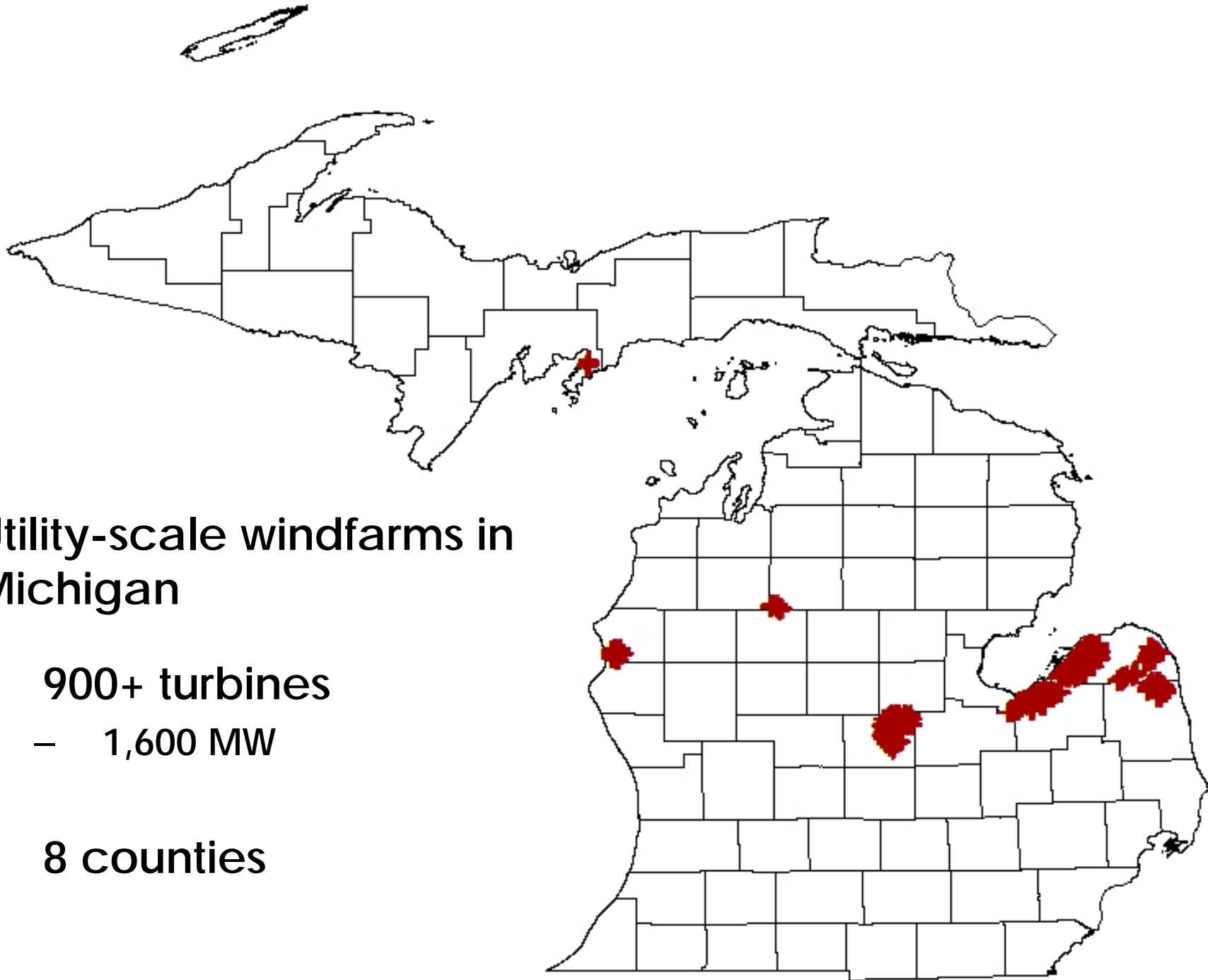
Sarah Mills, PhD

# Why am I here?

- Grant from C.S. Mott Foundation
- Taking lessons-learned from Michigan windfarms to ensure future wind development respects local community values
- To provide data-based account of opinions
  - Not relying on newspaper accounts
  - Give voice to the quiet folks

# What I'll cover

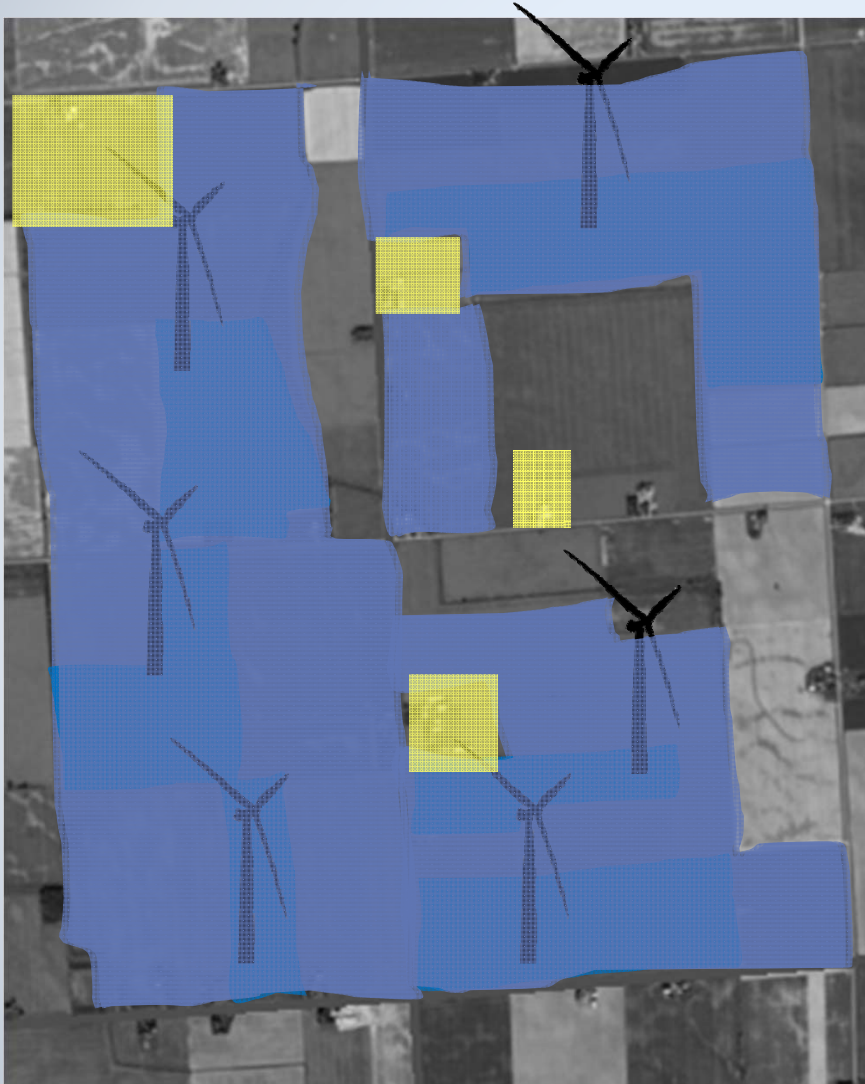
- Overview of wind development
- Surveys of landowners
  - Individual impacts
  - Community impacts
- What should you consider?
- A slide on solar



## Utility-scale windfarms in Michigan

- 900+ turbines
  - 1,600 MW
- 8 counties

# Wind Development 101

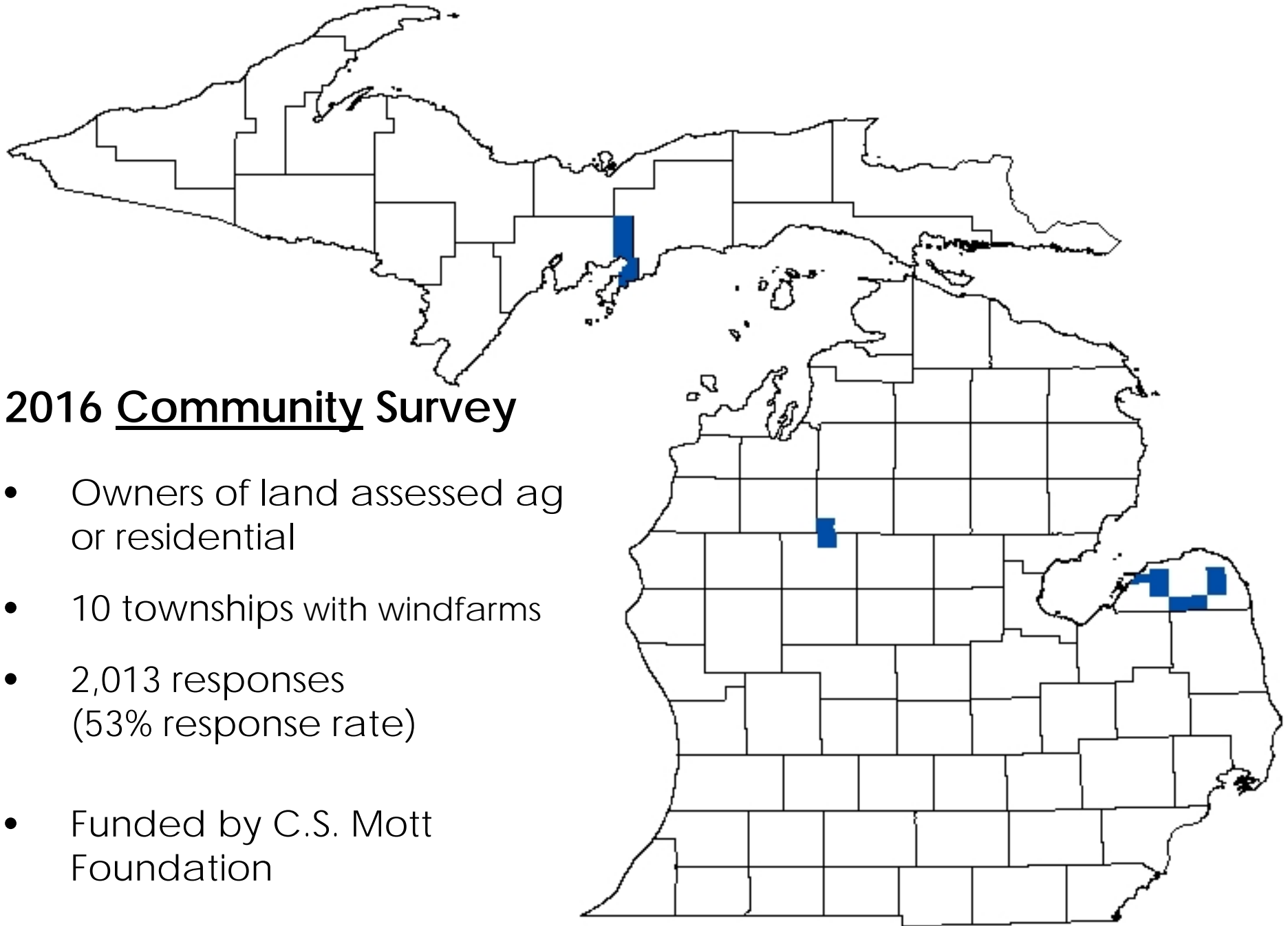


- Zoning constraints
- Landowner payments
  - Disturbance
  - Royalty
  - Participation/friendly neighbor
- Personal Property Tax
  - ~\$20M per year statewide
  - Turbine value + easement
    - TV= 50% of ~\$2.1M/turbine
      - x 100% in year 1
      - x 30% in year 10+

# Survey Data

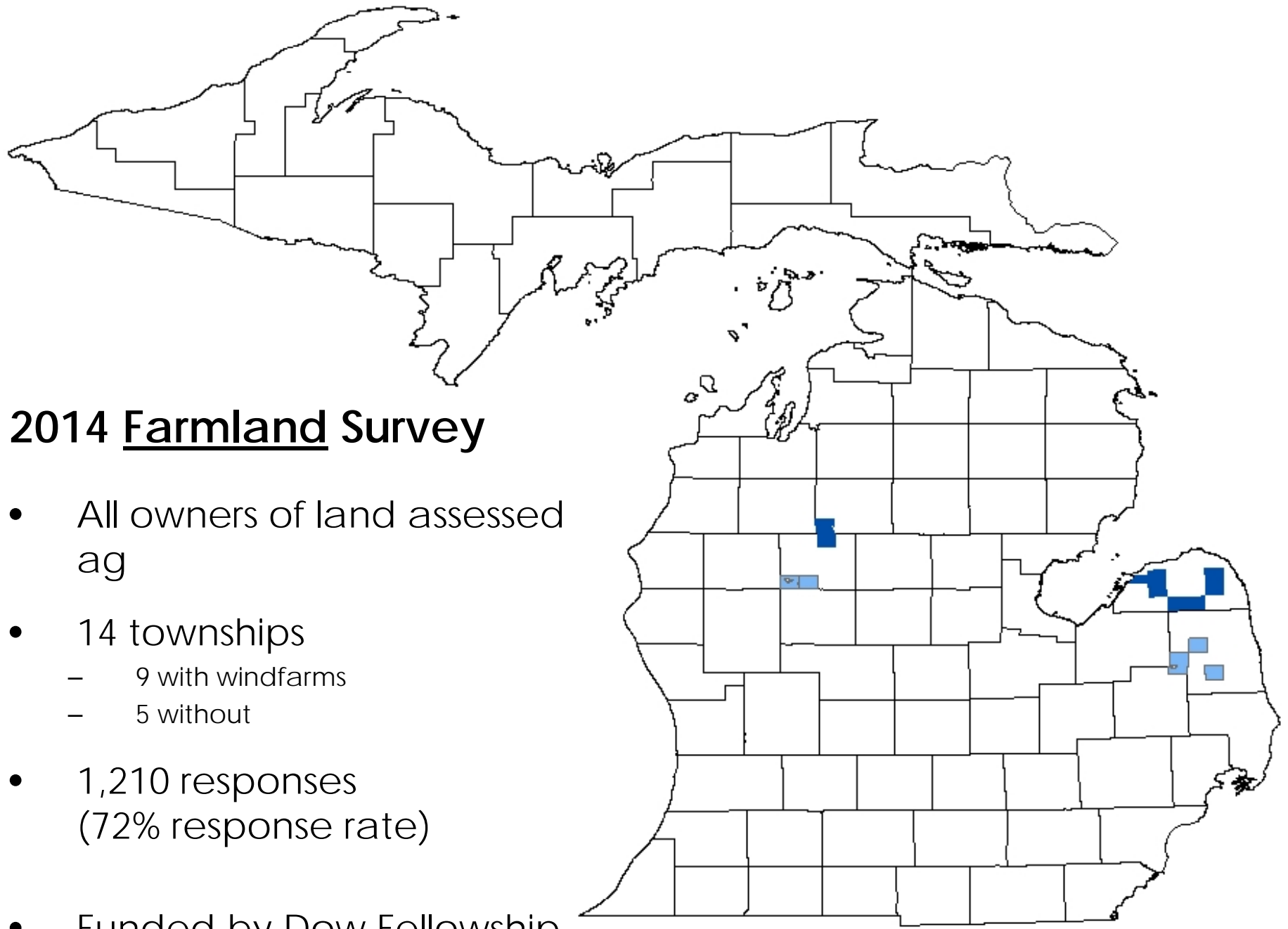
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When, who, and where  
& what did I find?



## 2016 Community Survey

- Owners of land assessed ag or residential
- 10 townships with windfarms
- 2,013 responses (53% response rate)
- Funded by C.S. Mott Foundation



## 2014 Farmland Survey

- All owners of land assessed ag
- 14 townships
  - 9 with windfarms
  - 5 without
- 1,210 responses  
(72% response rate)
- Funded by Dow Fellowship



# Overall drivers of attitudes

- Type of land owned
  - secondary vs. primary residence
  - farmland / rental property *only*
- Being within earshot of turbines
- Direct compensation
  - Some better than none
  - \$1,000 per year as key threshold
- Attitudes about process, wind developer

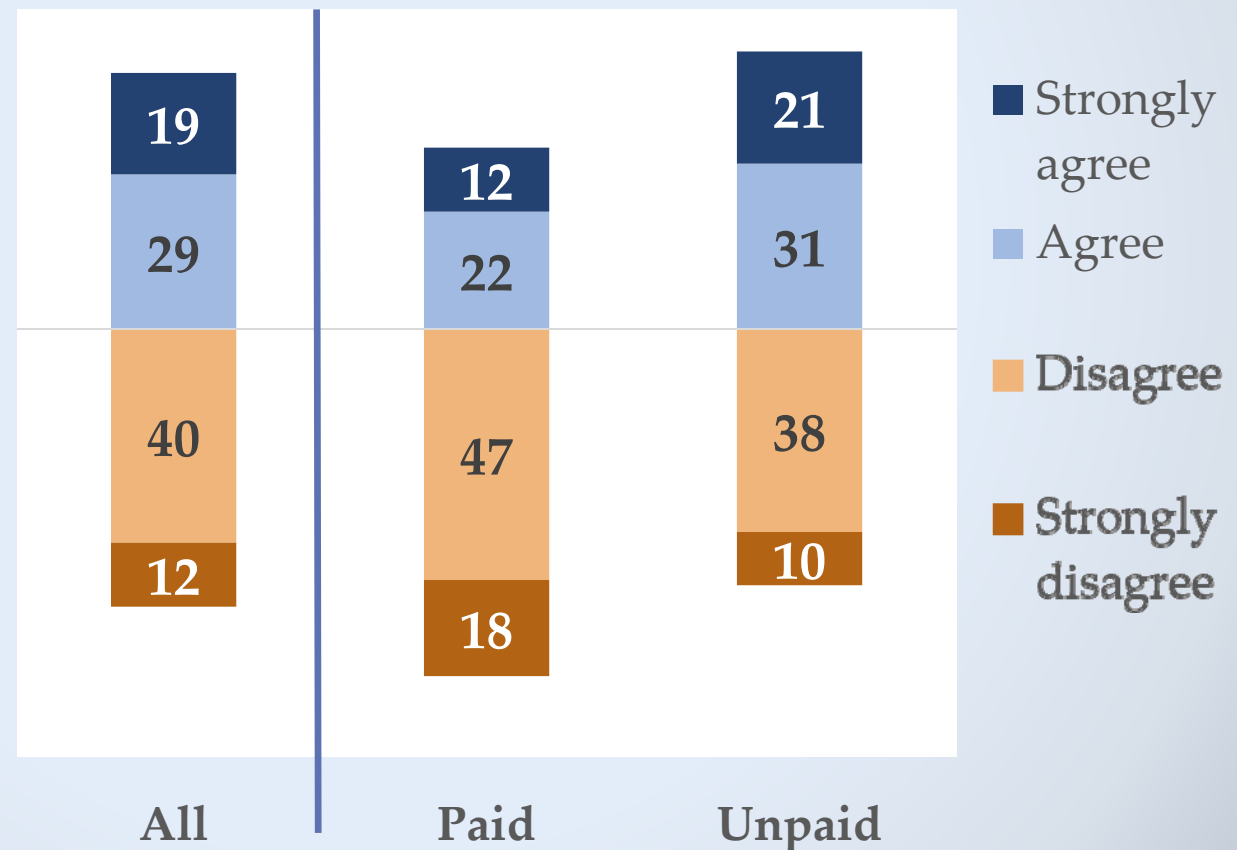
# Individual-level Impacts

- Noise
- Visual
- Health
- Property value
- Farm income
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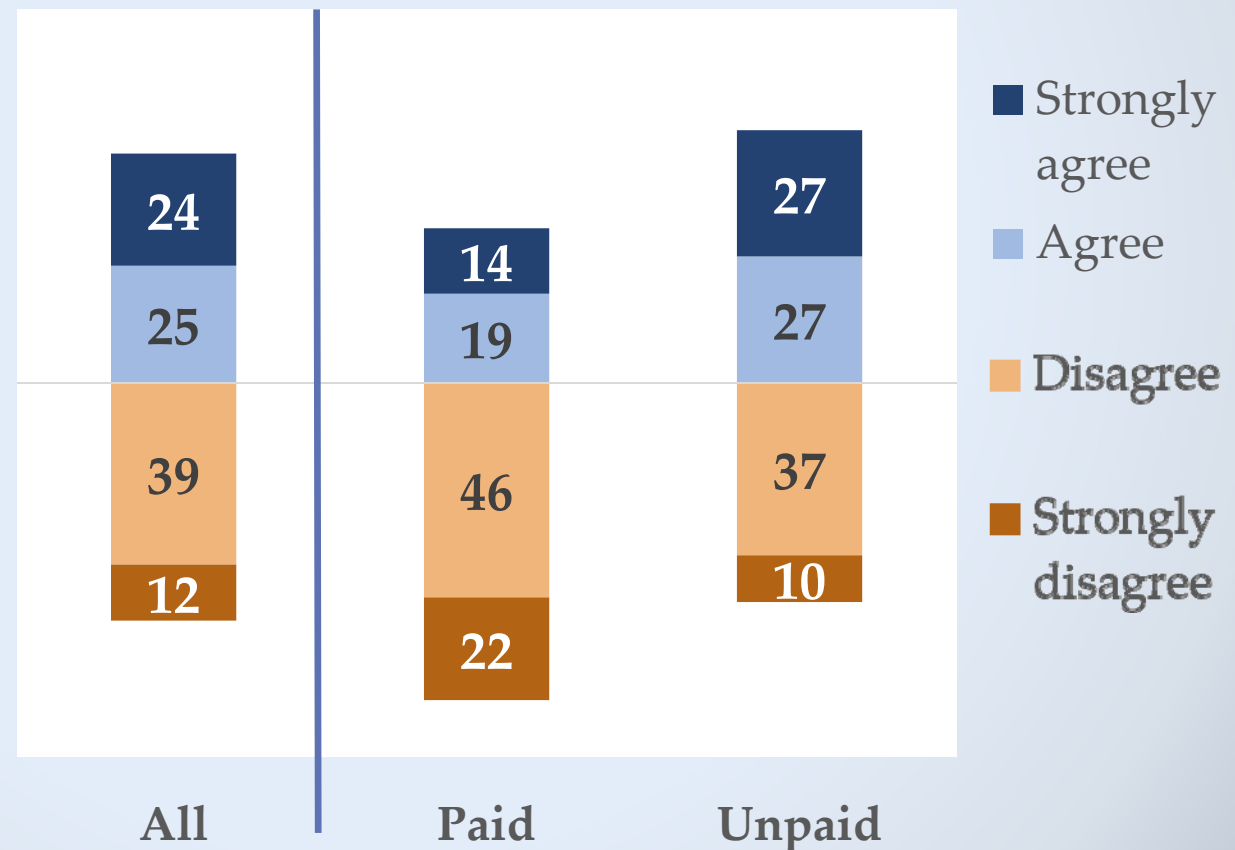
Turbines create noise pollution



# Individual-level Impacts

- Noise
- **Visual**
- Health
- Property value
- Farm income
- Farm succession

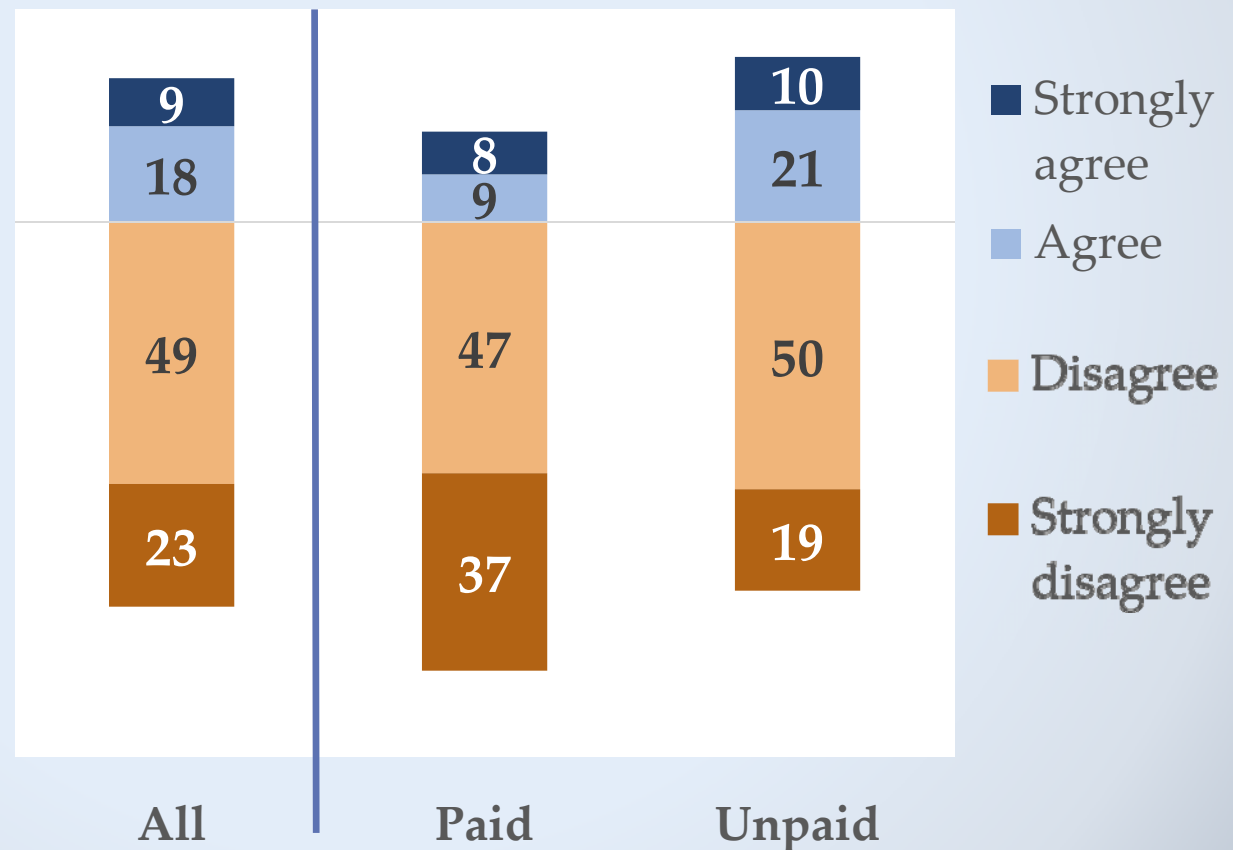
Turbines create visual/aesthetic problems



# Individual-level Impacts

- Noise
- Visual
- **Health**
- Property value
- Farm income
- Farm succession

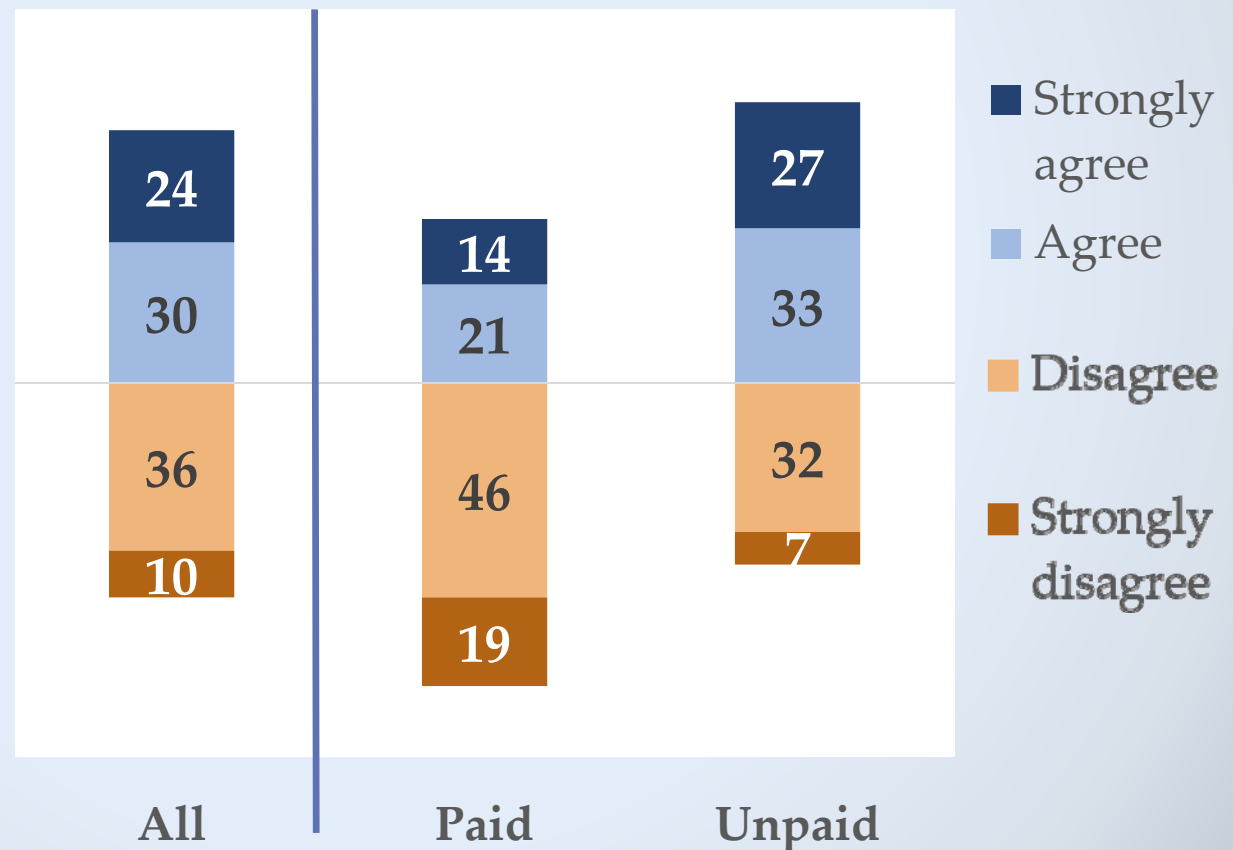
Turbines cause human health problems



# Individual-level Impacts

- Noise
- Visual
- Health
- **Property value**
- Farm income
- Farm succession

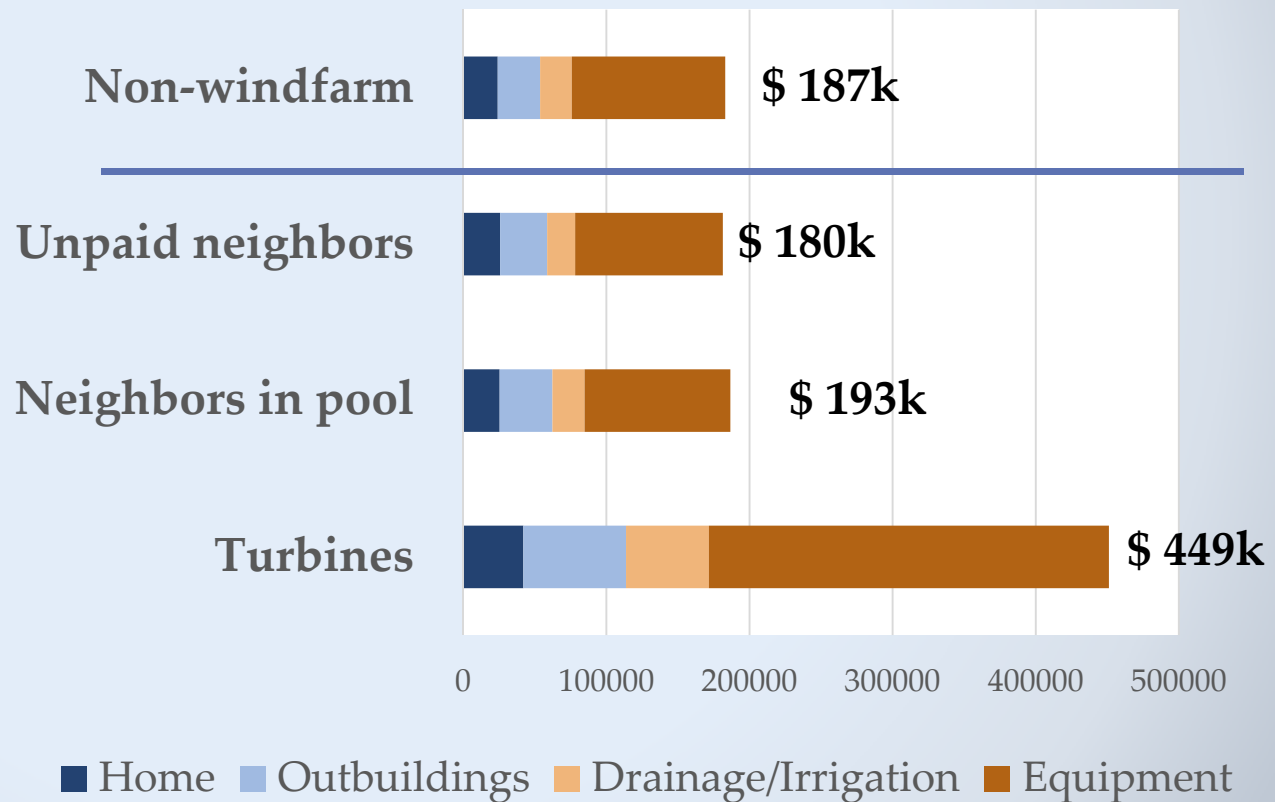
Turbines decrease nearby property values



# Individual-level Impacts

Investments over 5 years: 2009-2013

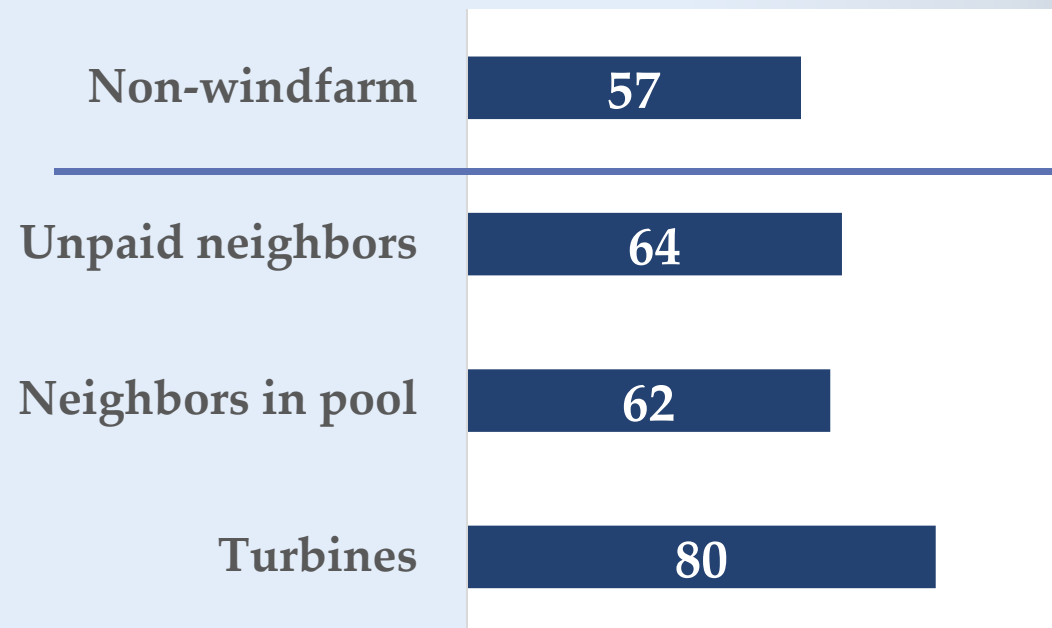
- Noise
- Visual
- Health
- Property value
- **Farm income**
- Farm succession



# Individual-level Impacts

- Noise
- Visual
- Health
- Property value
- Farm income
- Farm succession

% that have farm succession plan





# Individual-level Impacts Take-aways

- Views on noise, visual impact, property values roughly 50/50  
Financial stake = rosier view  
OR  
no financial stake = more soured view  
**BUT STILL SPLIT OPINIONS**
- Most don't see health impacts, but some do
- Having turbine on property is linked to additional on-farm investment, succession planning

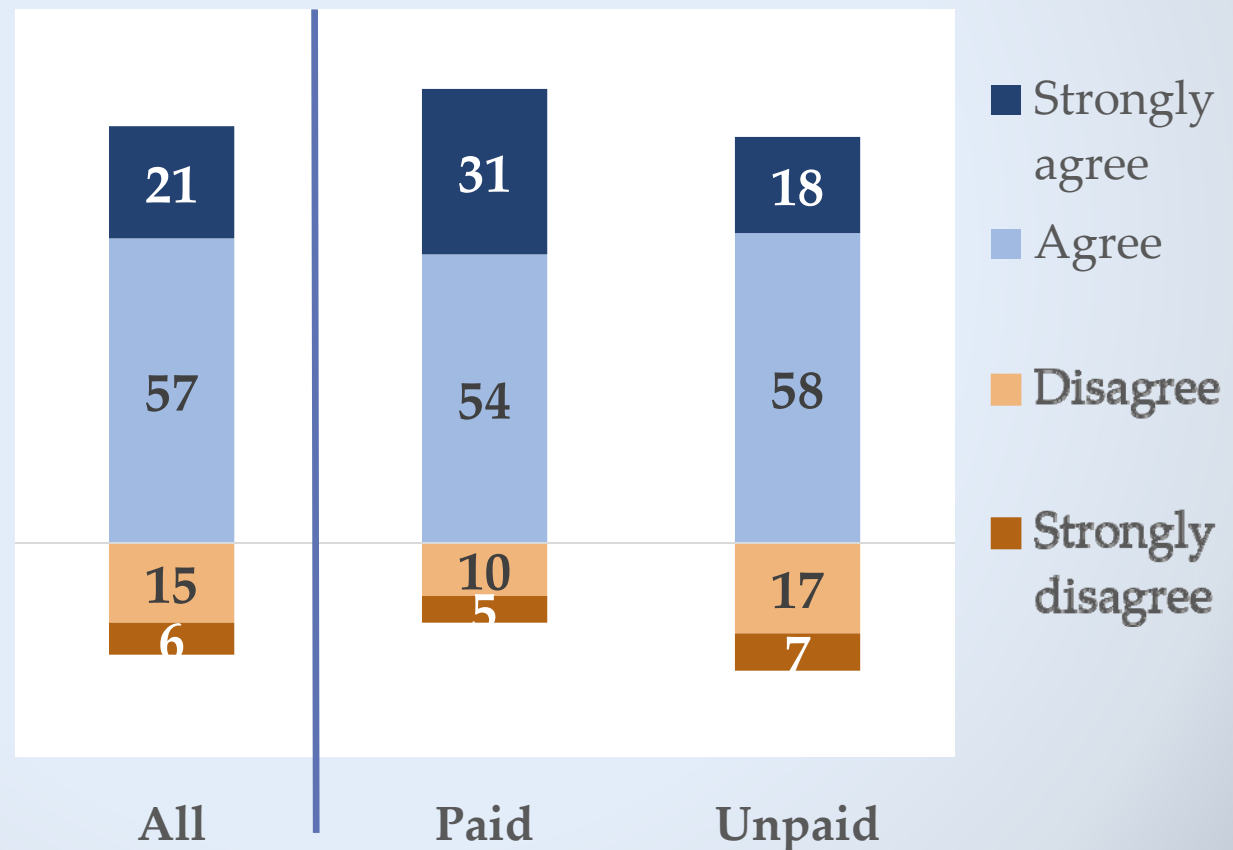
# Community-level Impacts

- Job creation
- Roads
- Township services
- County services
- Schools
- Relationships with neighbors

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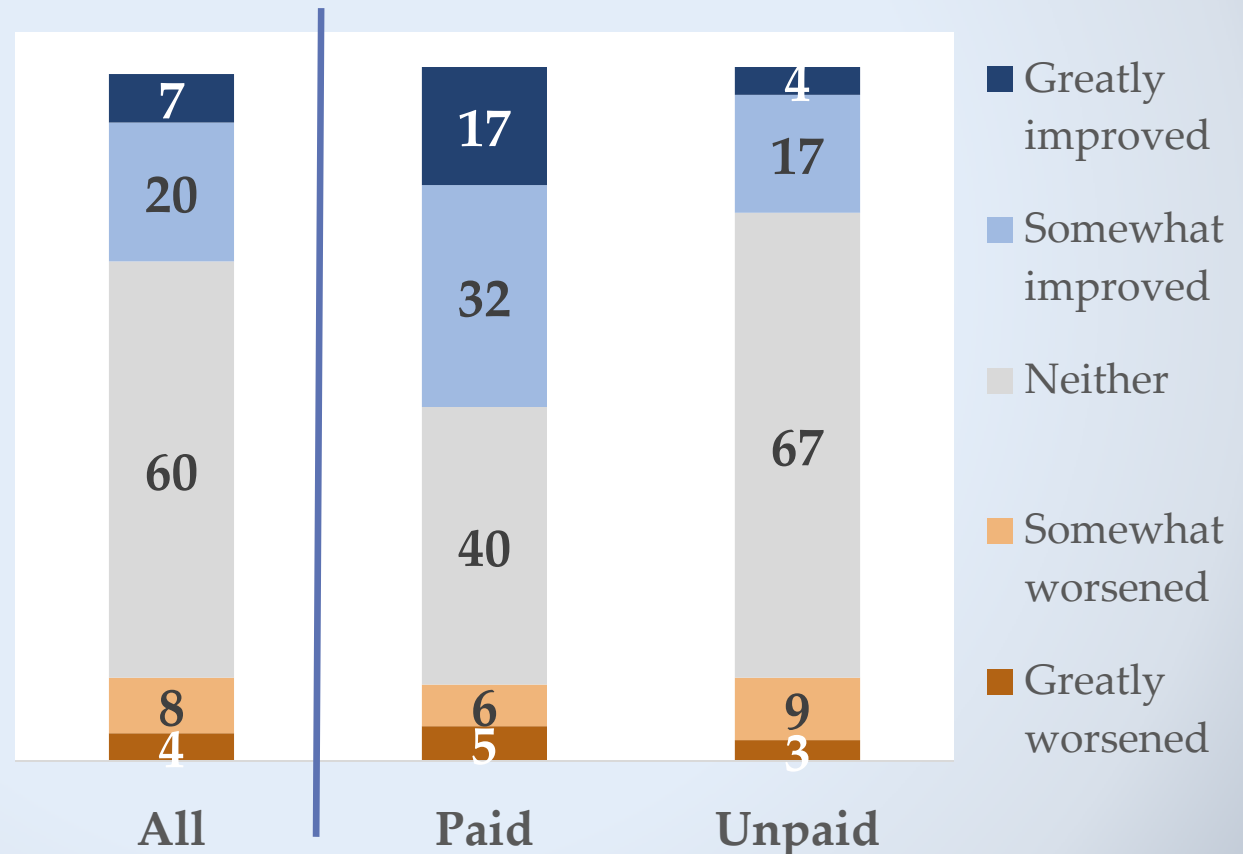
Turbines create jobs



# Community-level Impacts

- Job creation
- **Roads**
- Township services
- County services
- Schools
- Relationships with neighbors

Turbines' effect on local roads

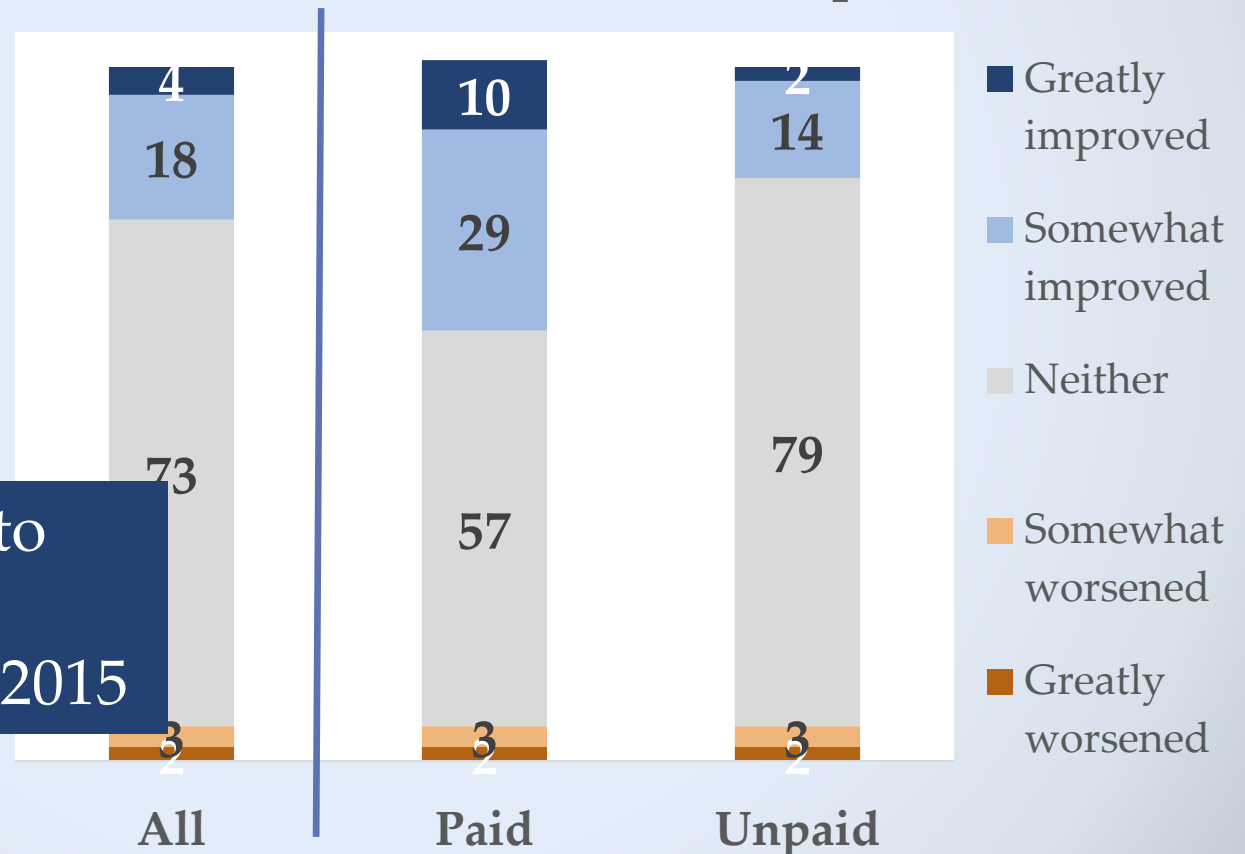


# Community-level Impacts

Turbines' effect on township services

- Job creation
- Roads
- Township services
- County services

**\$2.630 Million to townships in Huron County in 2015**

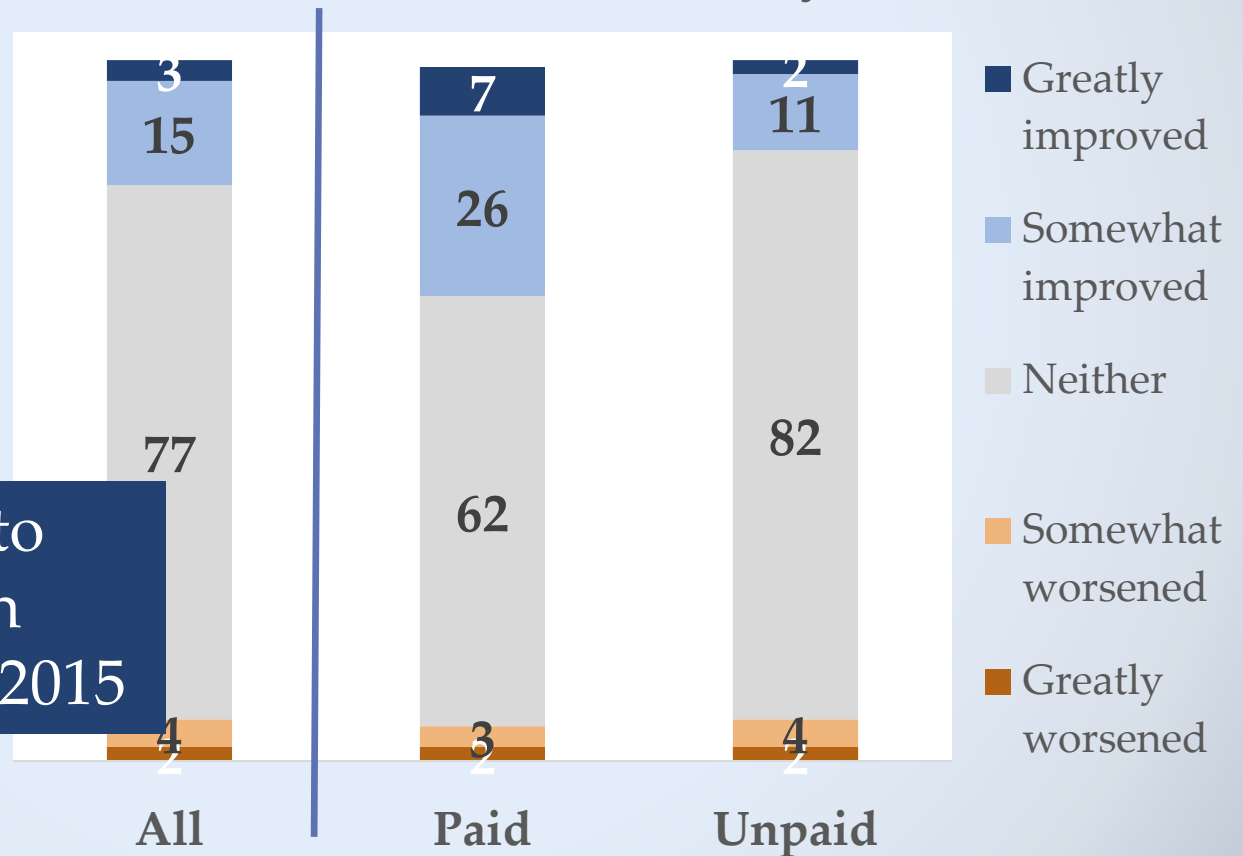


# Community-level Impacts

Turbines' effect on county services

- Job creation
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- **County services**

**\$2.749 Million to county gov't in Huron County in 2015**

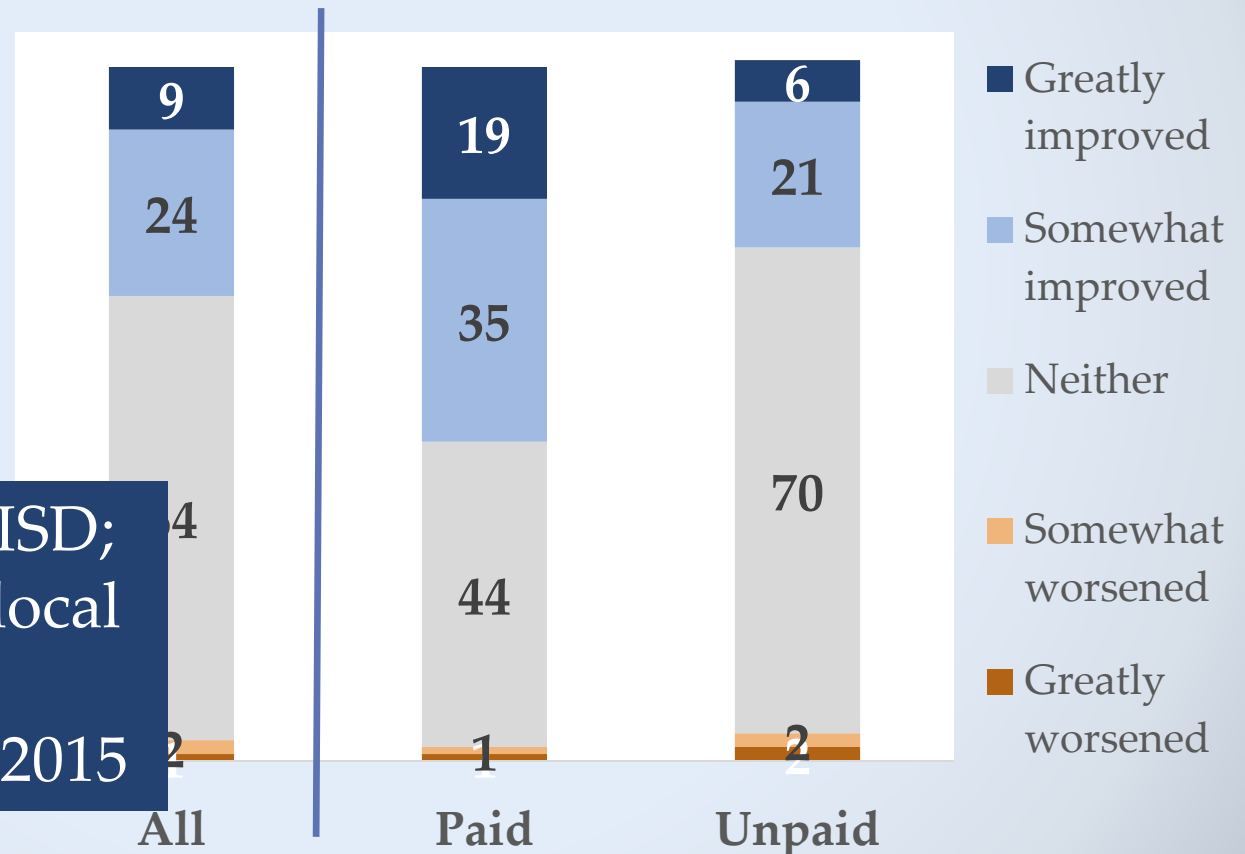


# Community-level Impacts

- Job creation
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**\$2.083 Million to ISD;  
\$2.074 Million to local  
schools in  
Huron County in 2015**

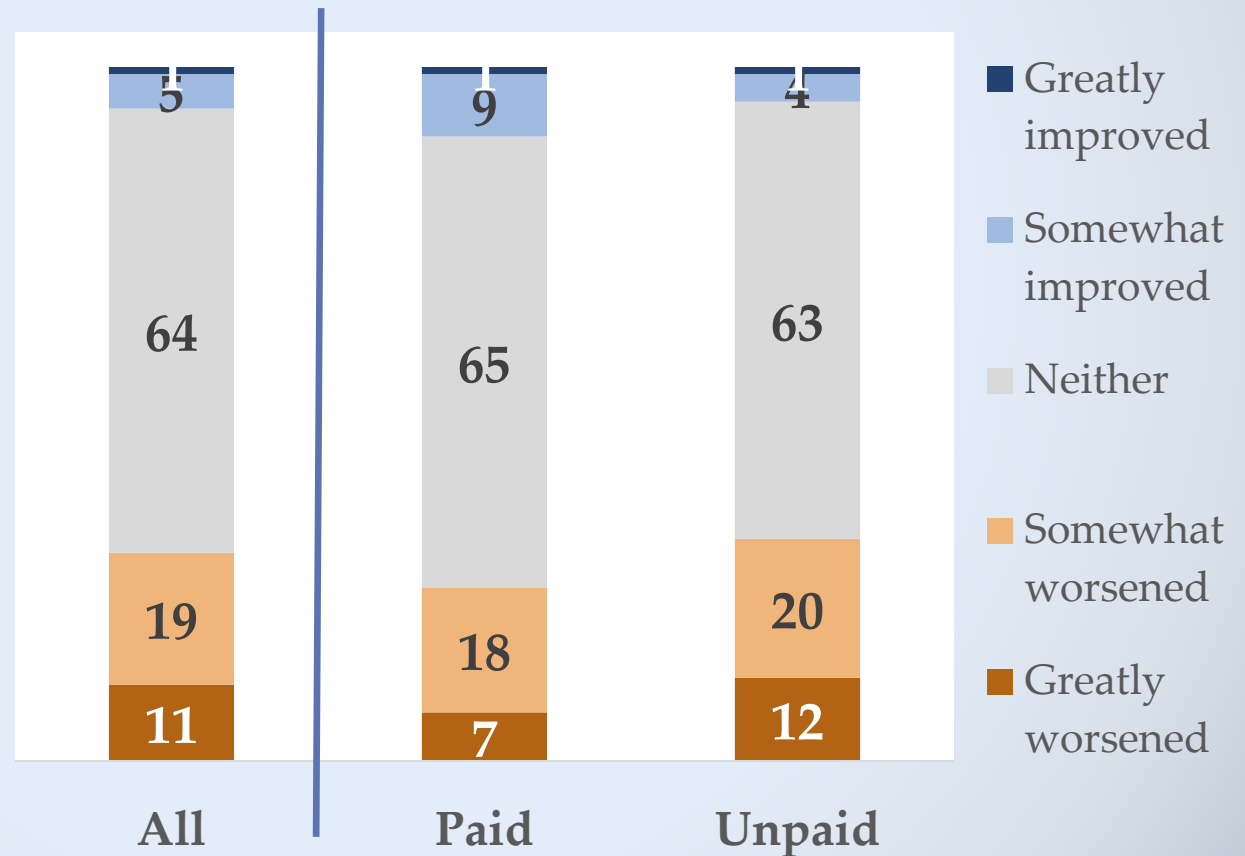
Turbines' effect on local schools



# Community-level Impacts

Turbines' effect on relationships with neighbors

- Job creation
- Roads
- Township services
- County services
- Schools
- Relationships with neighbors





# Community-level Impacts Take-aways

- Most see job creation (with caveat about types of jobs)
- Majority haven't seen changes to community services or schools
  - Increasing cost of services, declining revenues over time may limit visible impacts
- Majority don't think it's divided the community
  - Even in some pretty contentious projects

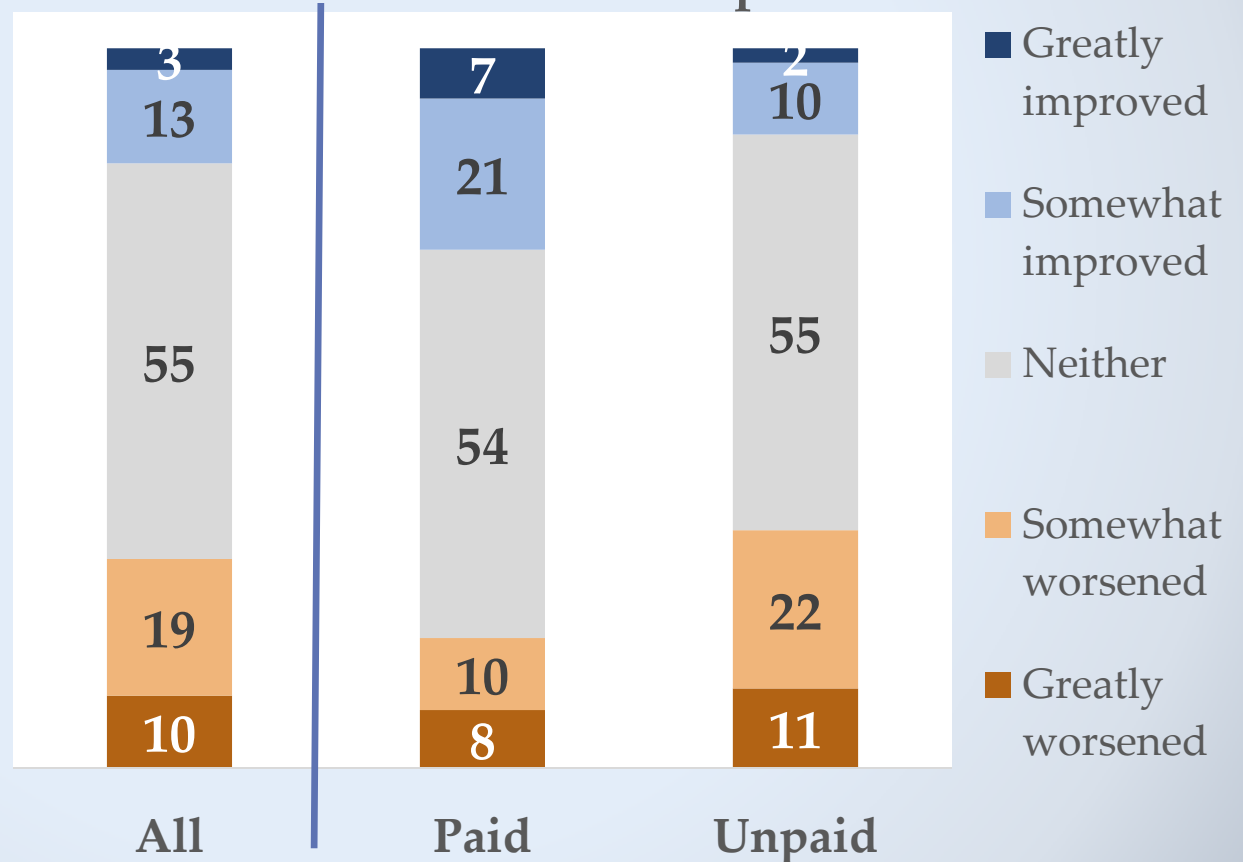
# Would they welcome more wind development?

- Quality of life
- Willingness to accept new turbines

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Turbines' effect on overall quality of life in township

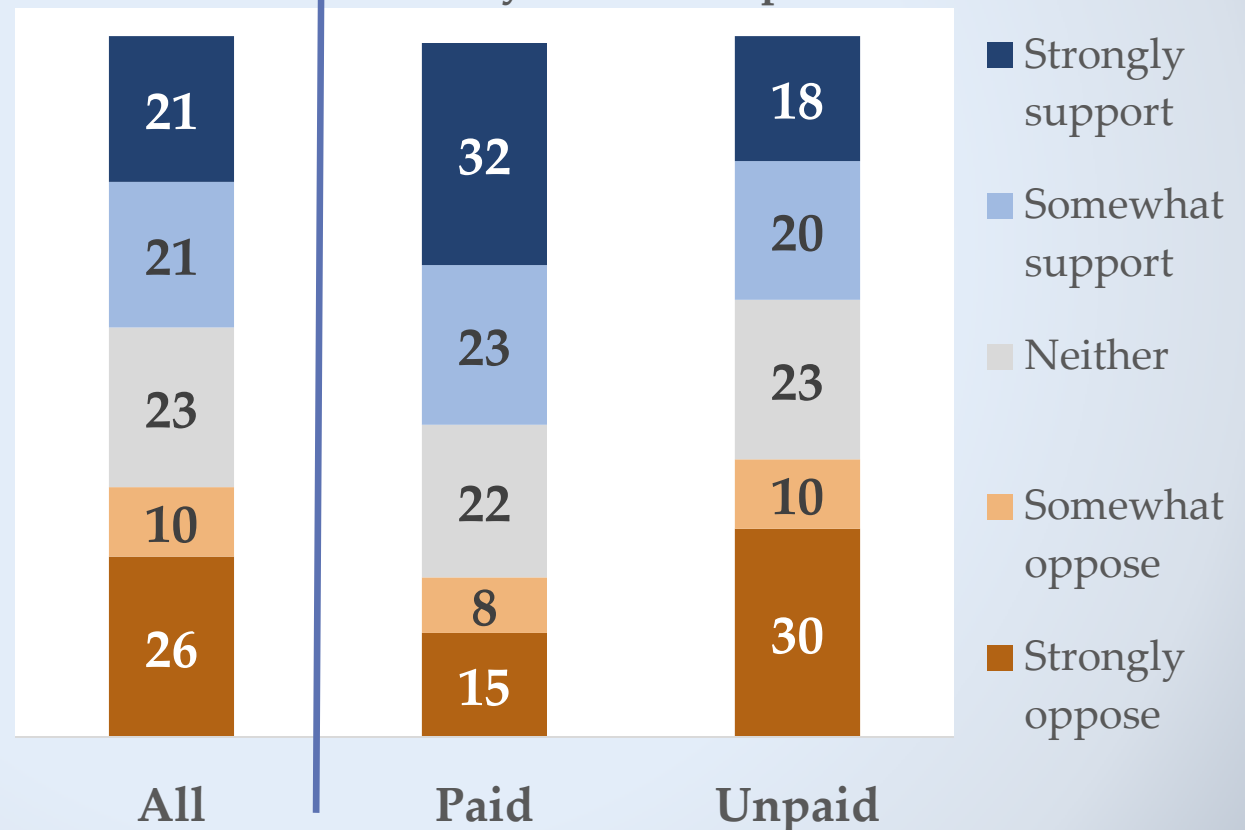
- Quality of life
- Willingness to accept new turbines



# Would they welcome more wind development?

Willingness to host additional turbines in your township

- Quality of life
- Willingness to accept new turbines



# What should you consider?

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How to reap the benefits without the heartburn

# How does this fit with your long-term plan?

- If goal is for substantial residential development or growth of tourism, wind may not be right
  - These landowners less likely to directly benefit
  - Some may be deterred from building
- If goal is to sustain agriculture, wind can fit
  - Farm diversification & succession
  - Adds to property tax base
  - Siting on property lines takes little land out of production
  - Compatible with PA 116

# Your zoning should then match

- Minimize or maximize opportunities for turbines, or strike a balance?
  - Setbacks, noise, other requirements
  - In which zoning districts?
- Collaborating with neighboring townships
  - Gratiot County (and self-zoned townships) as a model

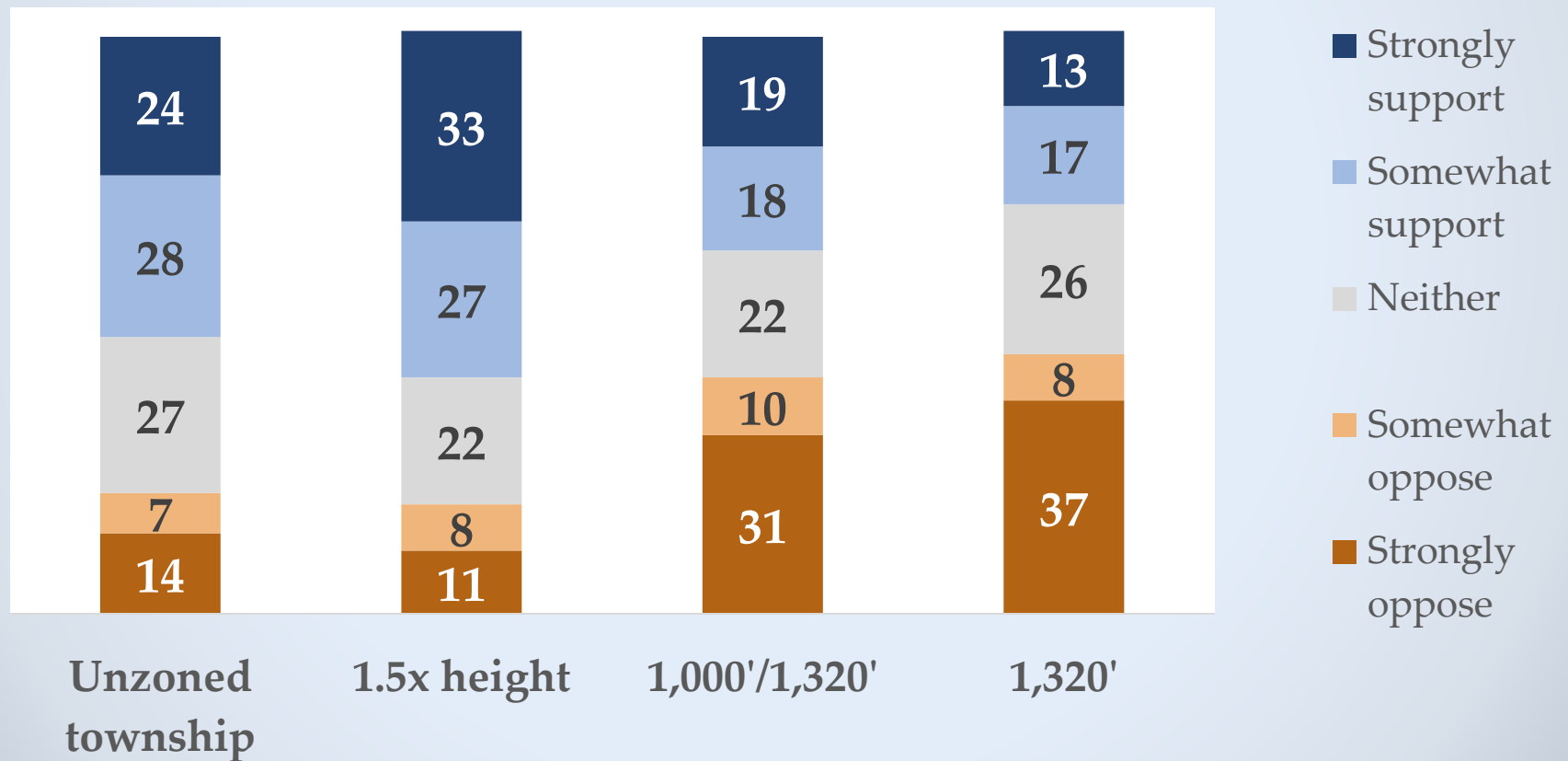
# Example zoning ordinances

- My website ([closup.umich.edu/wind](http://closup.umich.edu/wind))
  - Just the communities which have existing windfarms in Michigan
- MSU Extension
  - Sample Zoning for Wind Energy Systems (2017)
  - Michigan Land Use Guidelines for Siting Wind Energy Systems (2007)
- Dept. of Energy database
  - Look for similar types of communities
  - Includes places both with/without wind
  - <https://windexchange.energy.gov/policies-incentives>
- Shiawassee County Planning
  - Comparison charts on height, noise, setback
  - <https://www.shiawassee.net/Departments/Community-Development/Wind-Energy-Conversion-Systems>



# The ideal zoning ordinance?

Support/oppose additional turbines in township,  
by zoning setback distance

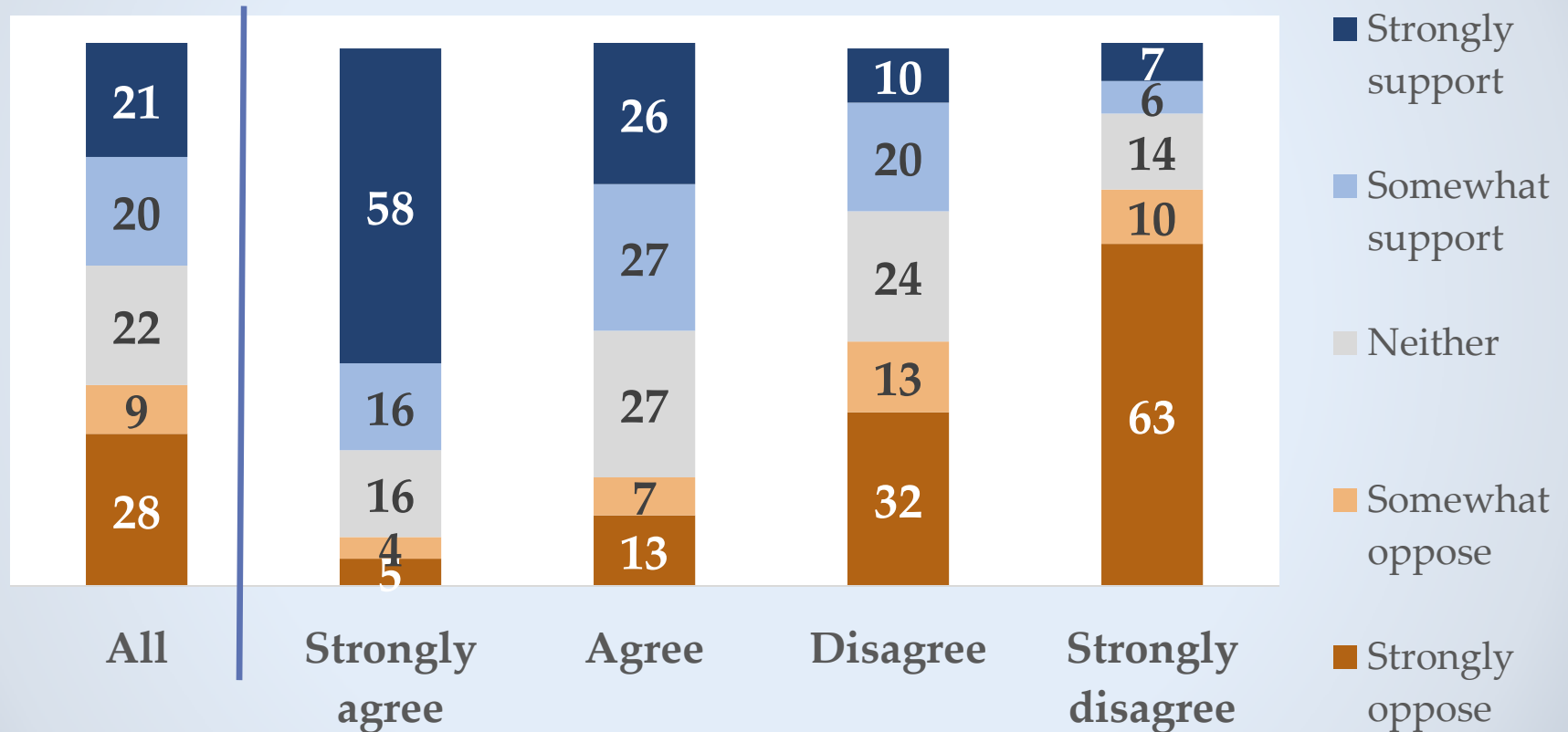


# What my research suggests on zoning

- Participating vs. non-participating landowners
- Noise, flicker analysis
- Decommission plan/financial assurance
- Have an open & transparent process

# The importance of process

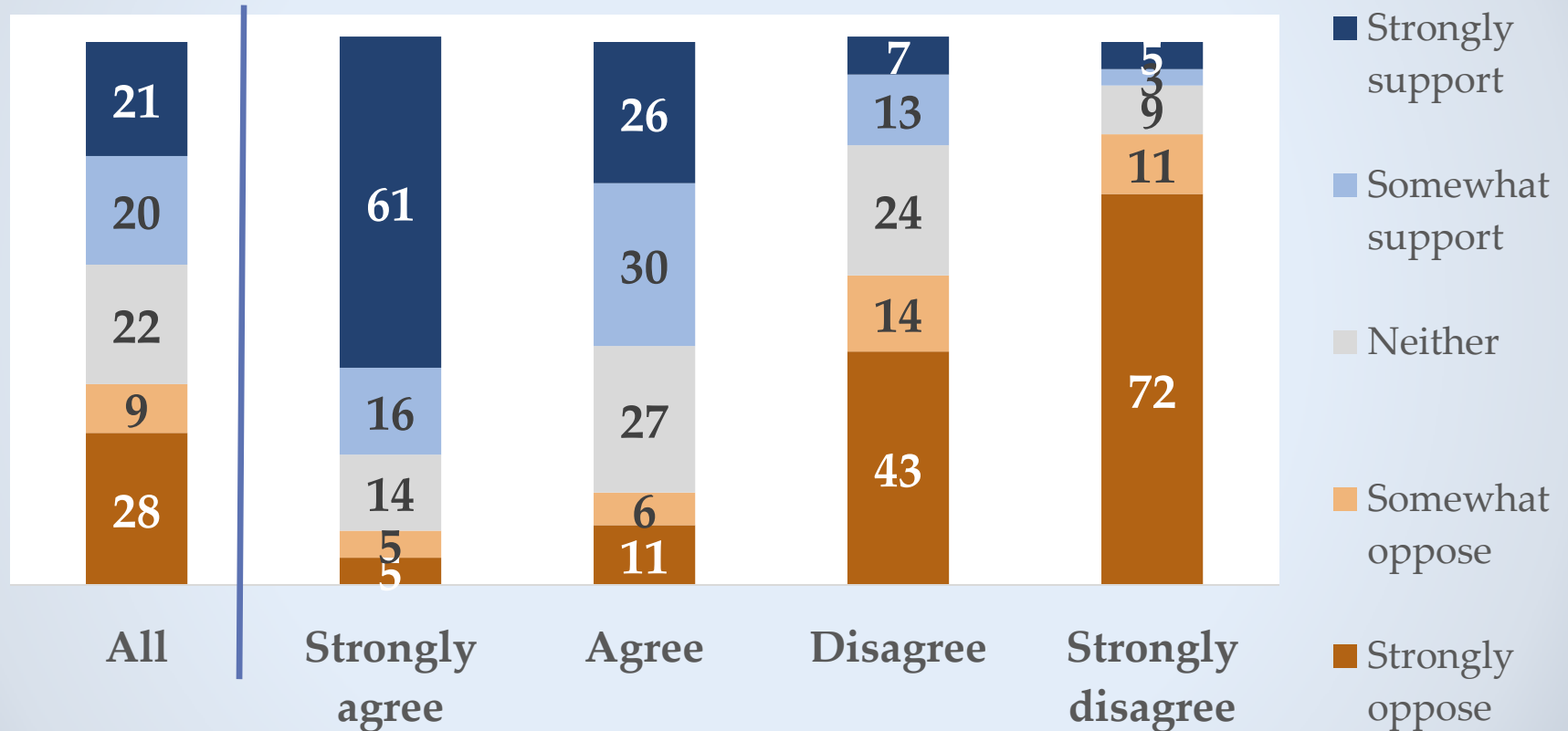
Support/oppose additional turbines in township,  
by agree/disagree opportunity to participate in planning



“I had ample opportunity to provide input during the wind project planning stage.”

# The importance of transparency

Support/oppose additional turbines in township,  
by agree/disagree wind developer acted transparently



“The wind project developer acted openly and transparently throughout the planning process.”

# Don't be afraid to ask questions

- About who benefits, business model
- Amount of tax revenue
- The impacts (noise, flicker) on specific homes
- Typical siting schemes
- Decommissioning
  
- About the motivations of outsiders

# Solar energy

...

# Thoughts on public acceptance

- Overall, 89% support
  - Compared to 83% for wind
- Visual impacts much more limited (drive-by)
  - But support structure isn't pretty
  - Screening possible
- Isn't compatible with farmland preservation
  - Good for marginal, polluted land



Source: [https://www.youtube.com/watch?v=E6p7hp\\_cbwU](https://www.youtube.com/watch?v=E6p7hp_cbwU)



Gerald R. Ford  
School of Public Policy



# The CLOSUP Wind Project

**Sarah Mills, Project Manager**

**Phone:** (734) 615-5315

**Email:** [sbmills@umich.edu](mailto:sbmills@umich.edu)

**Web:** [www.closup.umich.edu/wind](http://www.closup.umich.edu/wind)



# Survey vs. May 2 Huron County Referendum

Willingness to host additional turbines  
in your township

- 5 twps.
  - Bingham
  - Bloomfield
  - McKinley
  - Sheridan
  - Sigel

