

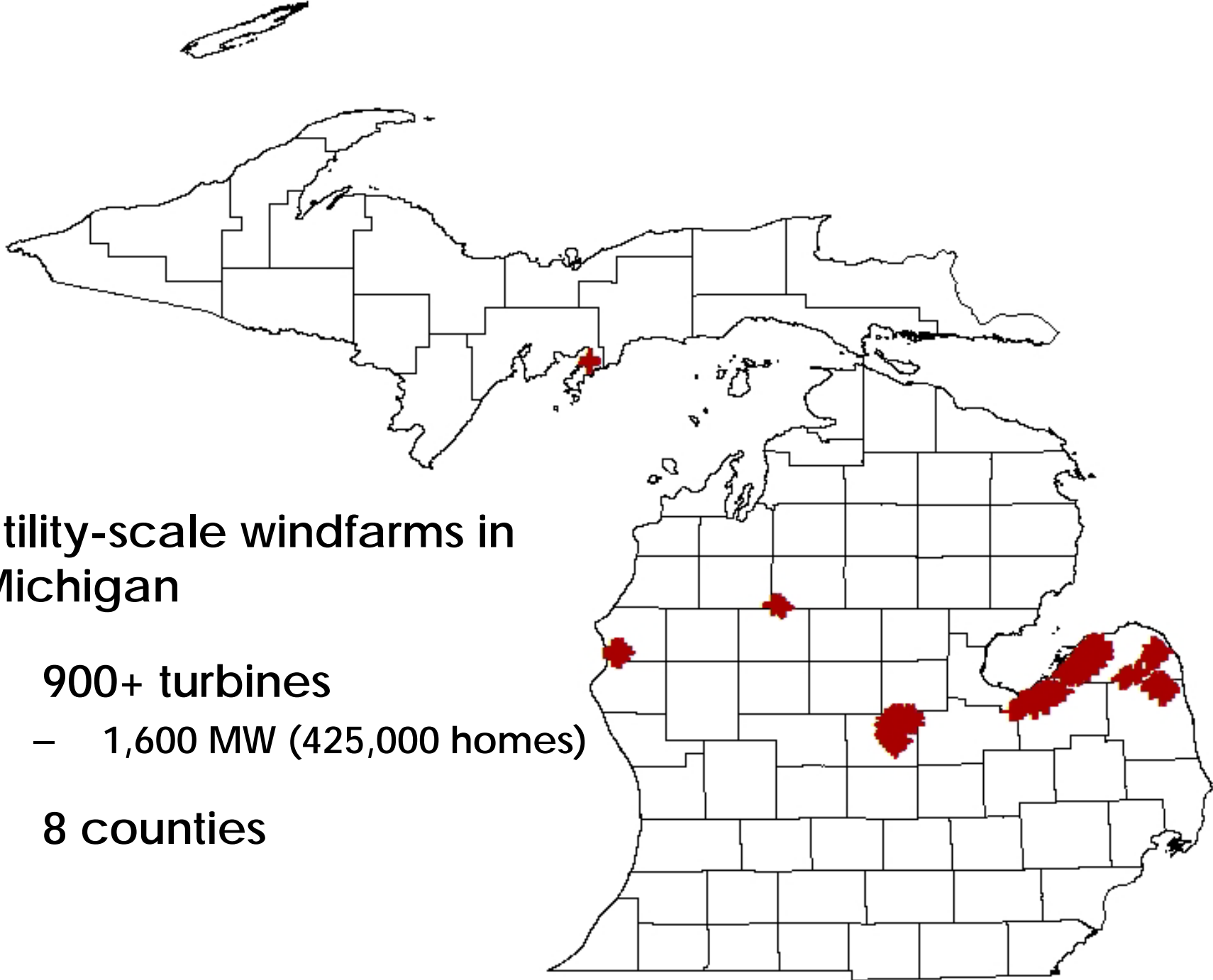
# Perceived Impacts of Michigan's Windfarms (and thoughts on solar, too)

Goodland Township  
August 3, 2017

Sarah Mills, PhD

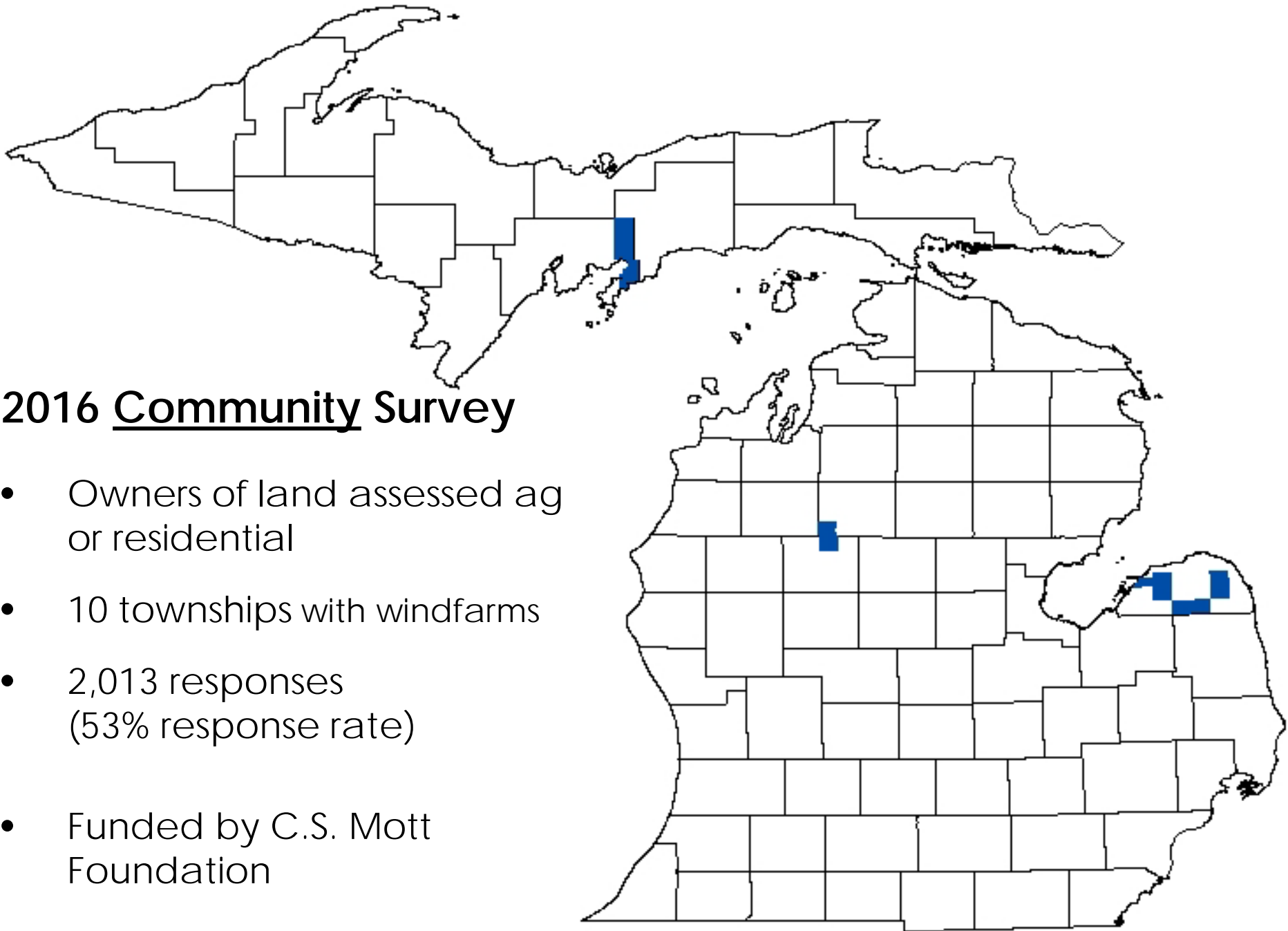
# What I'll cover

- Utility-scale wind
  - Who was surveyed?
  - Individual impacts
  - Community impacts
  - What should you consider?
- Small-scale wind
- Utility-scale solar



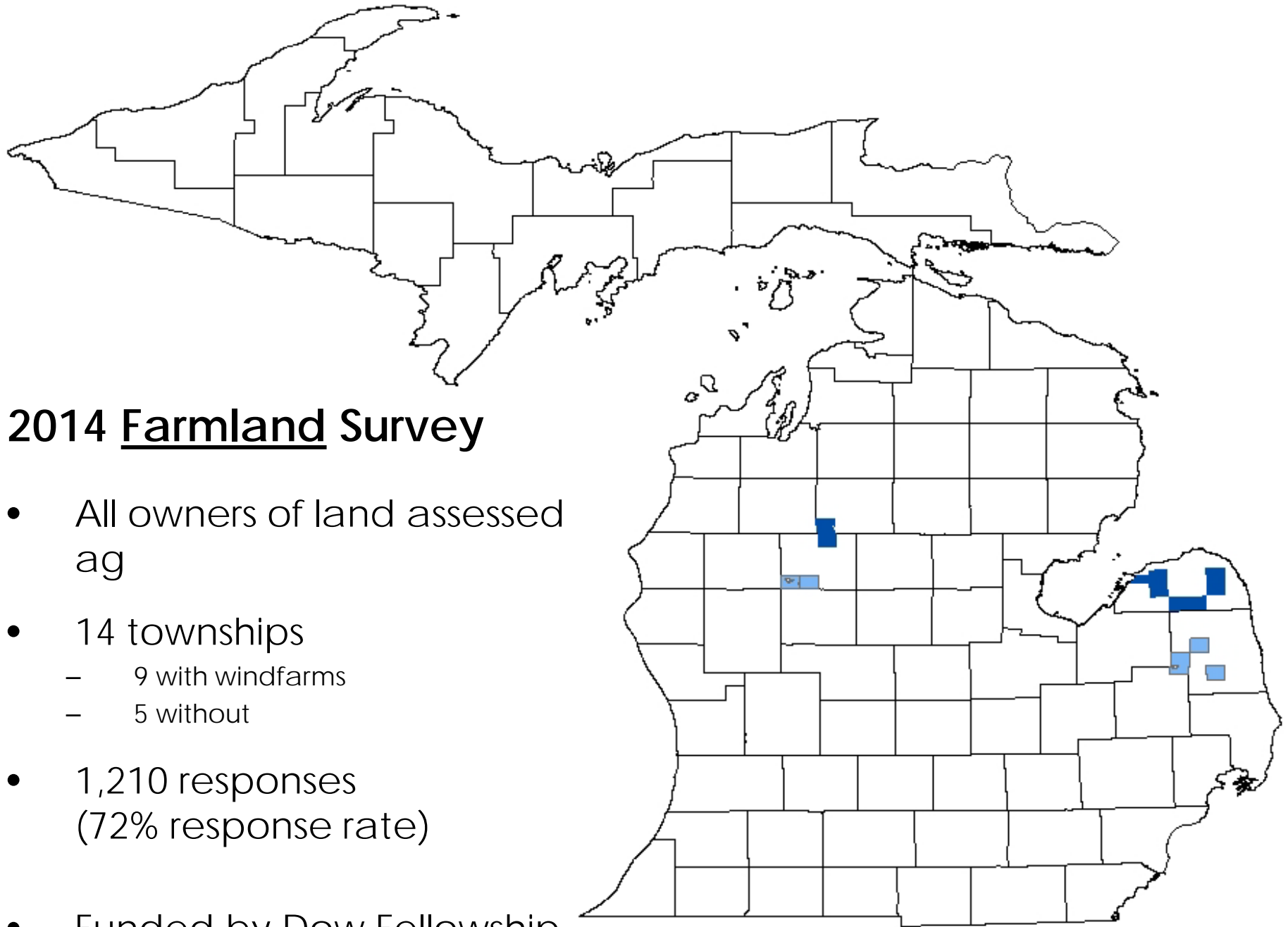
## Utility-scale windfarms in Michigan

- 900+ turbines
  - 1,600 MW (425,000 homes)
- 8 counties



## 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

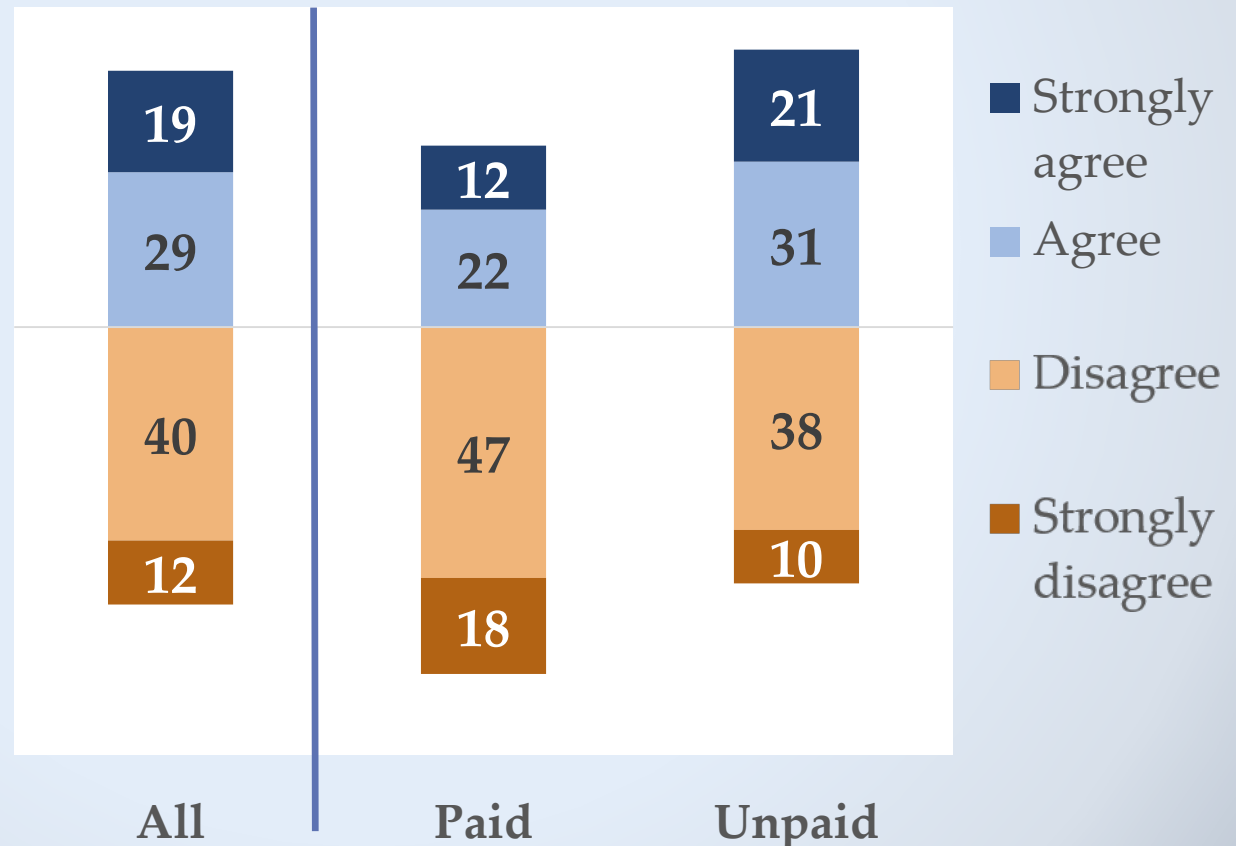
# Individual-level Impacts

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# Individual-level Impacts

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

Turbines create noise pollution

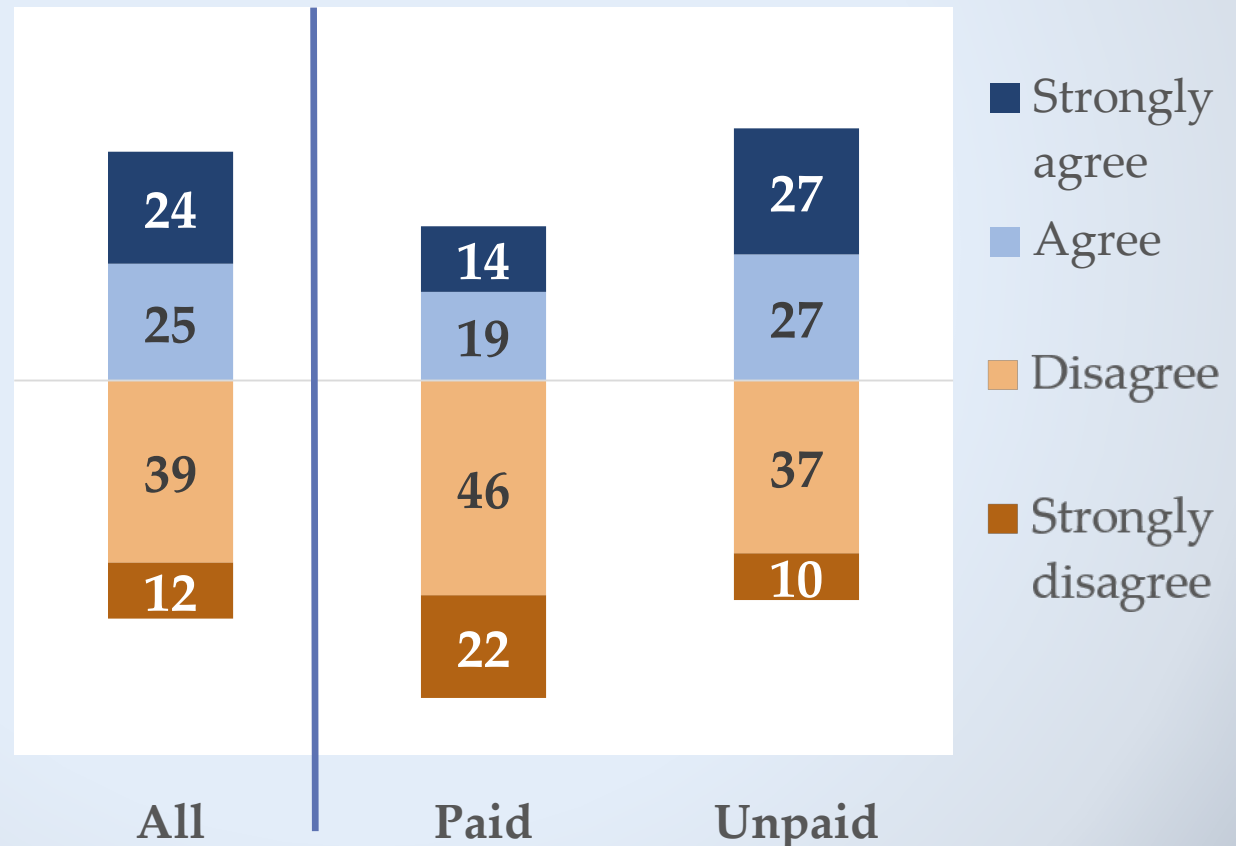




# Individual-level Impacts

## Turbines create visual/aesthetic problems

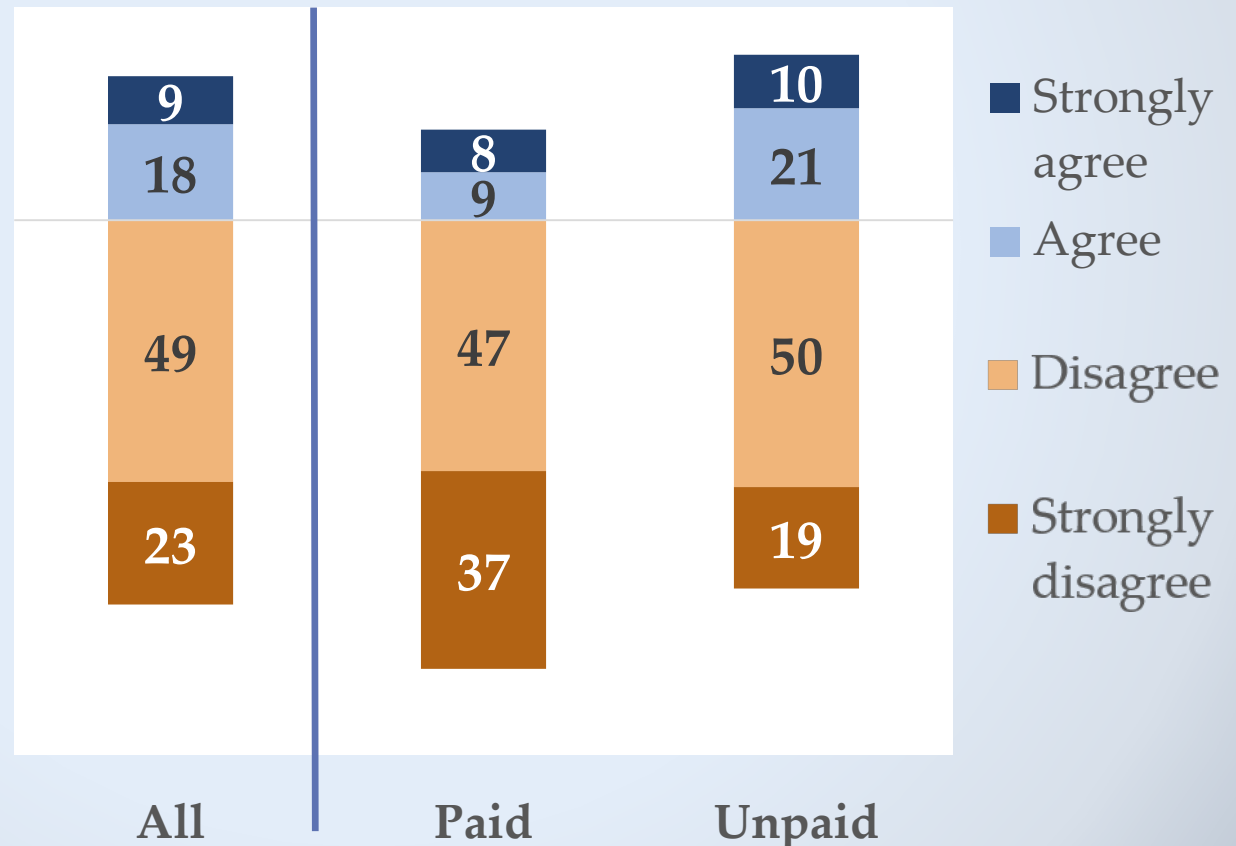
- Noise
- **Visual**
- Health
- Property value
- Farm income
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# Individual-level Impacts

## Turbines cause human health problems

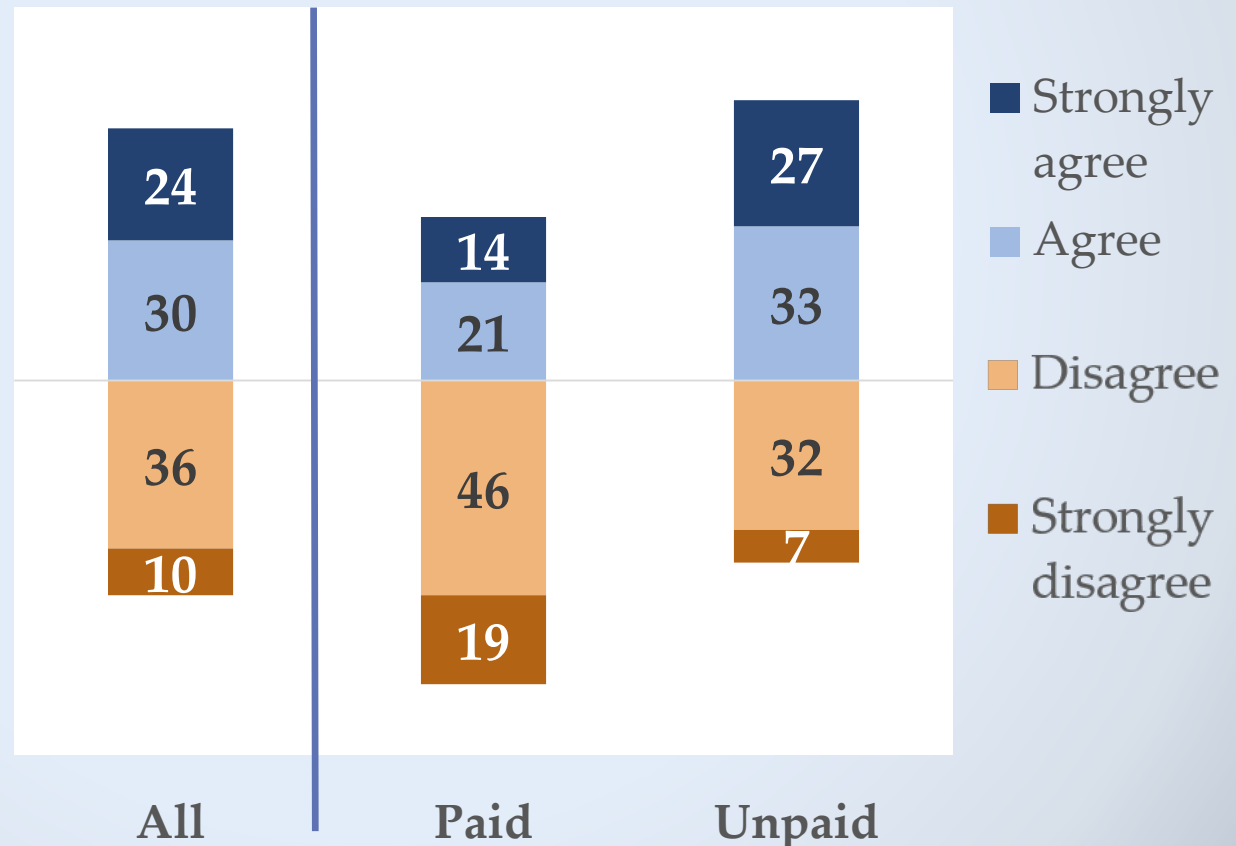
- Noise
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# Individual-level Impacts

- Noise
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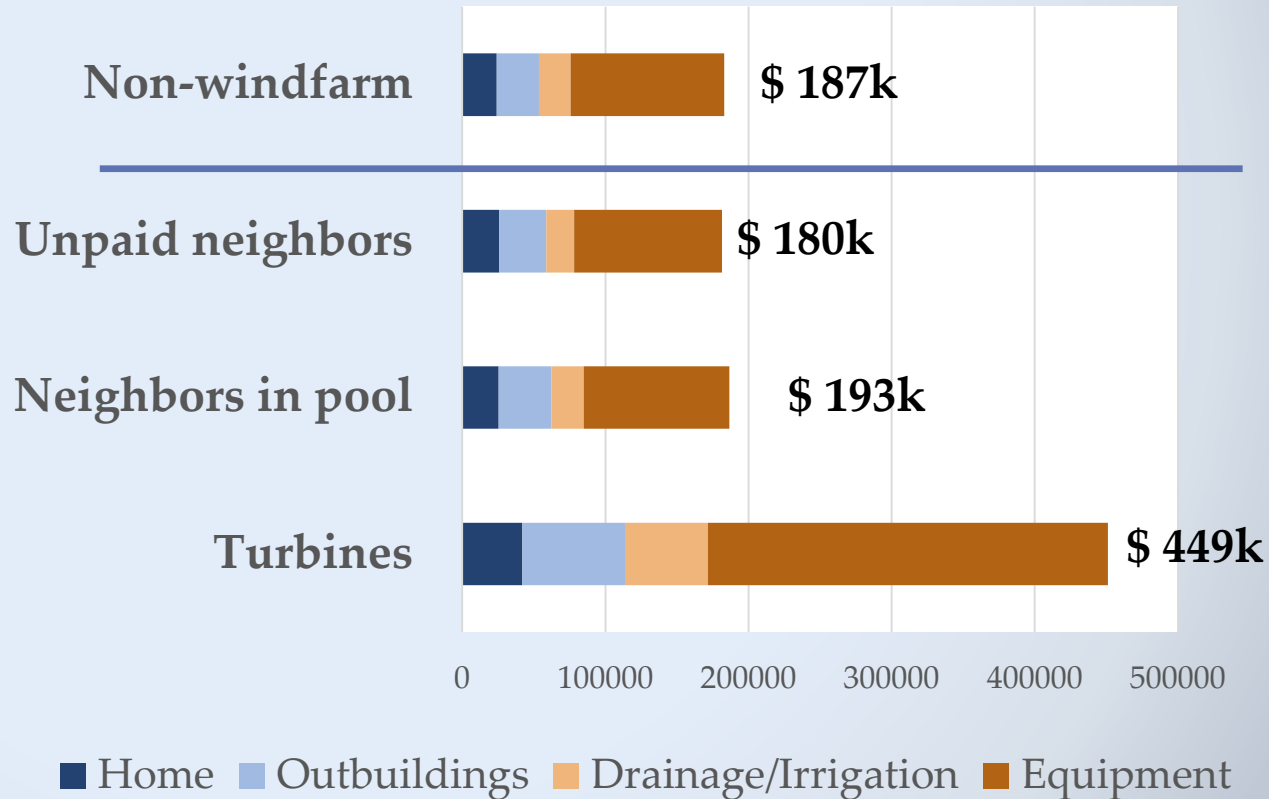
Turbines decrease nearby property values



# Individual-level Impacts

Investments over 5 years: 2009-2013

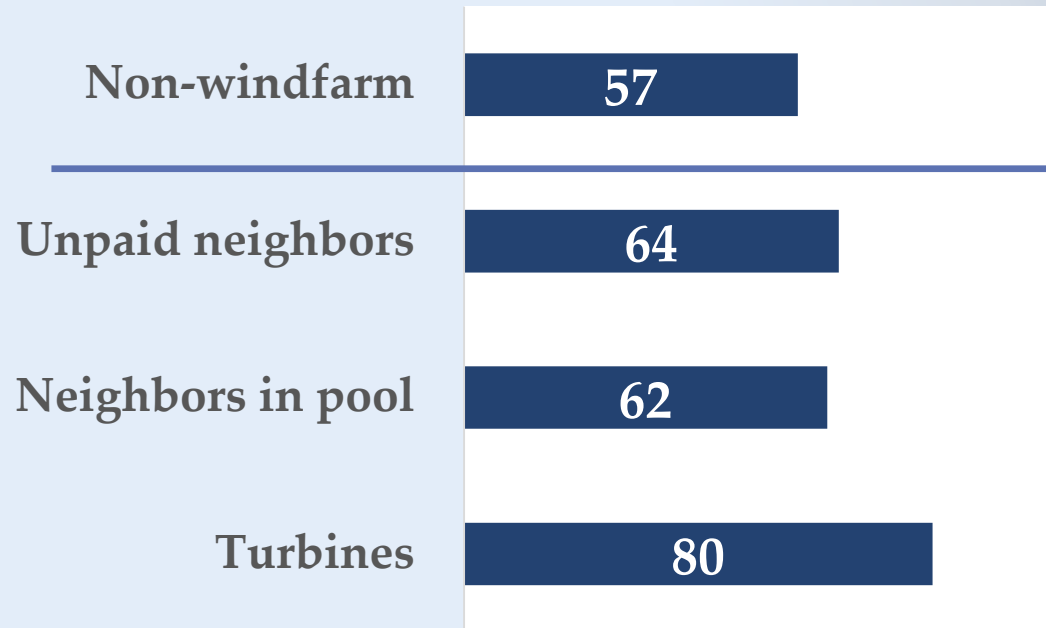
- Noise
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# Individual-level Impacts

- 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
- Having turbine on property results in additional on-farm investment, succession planning

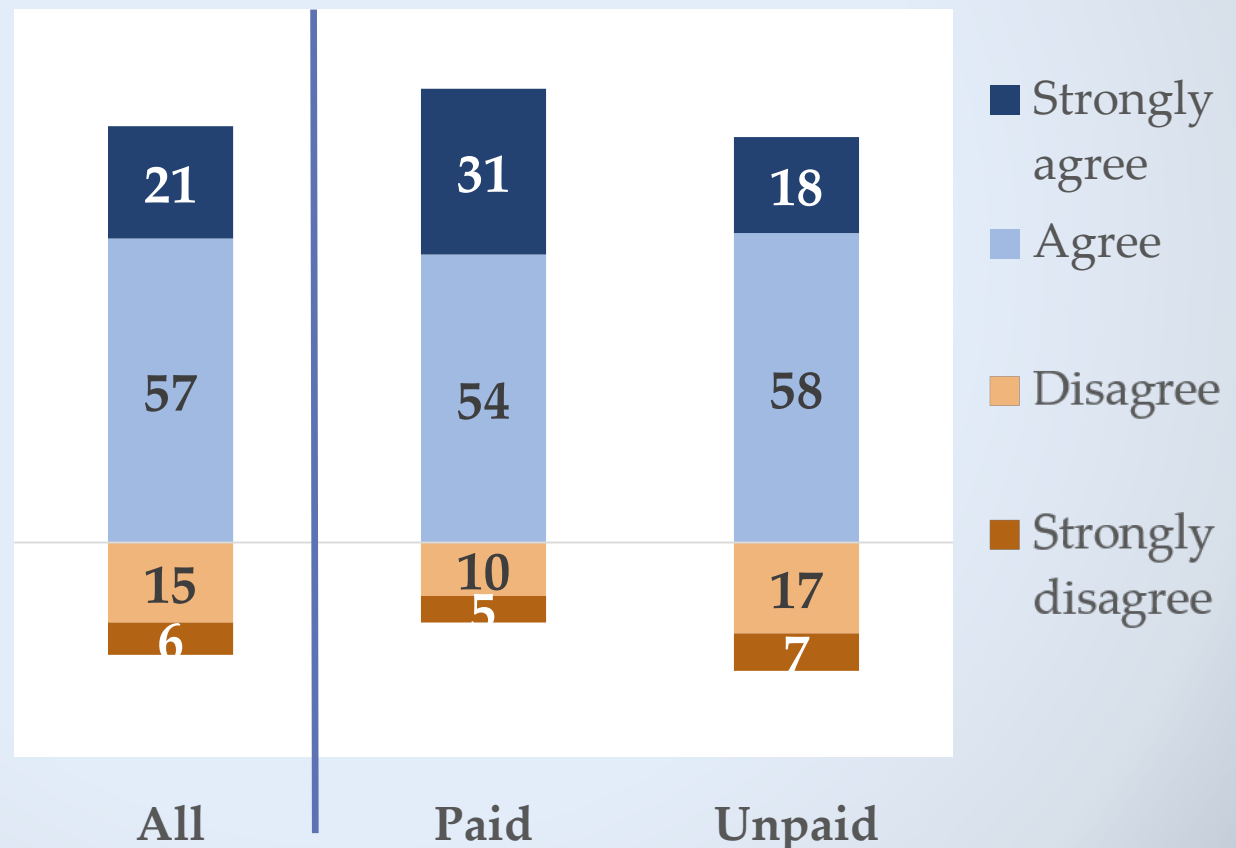
# Community-level Impacts

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# Community-level Impacts

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

## Turbines create jobs

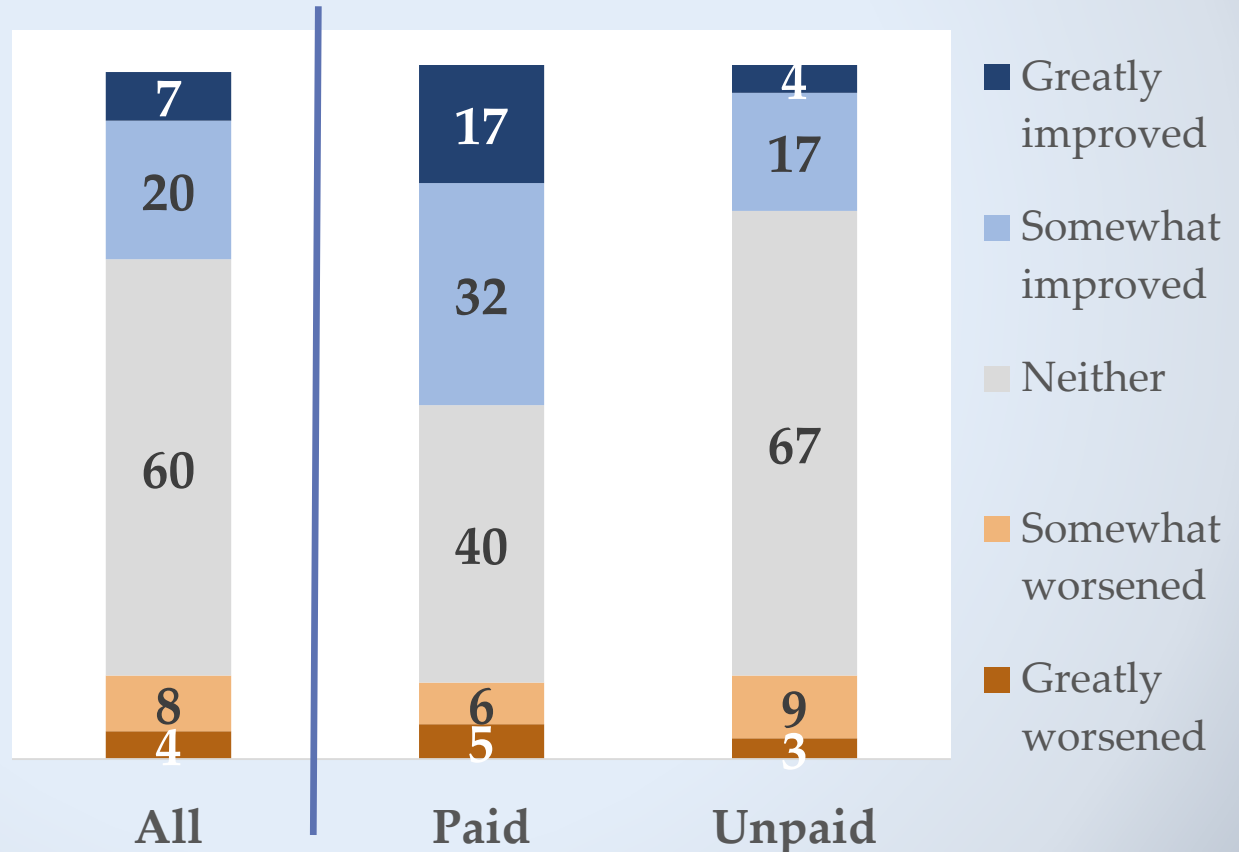




# Community-level Impacts

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

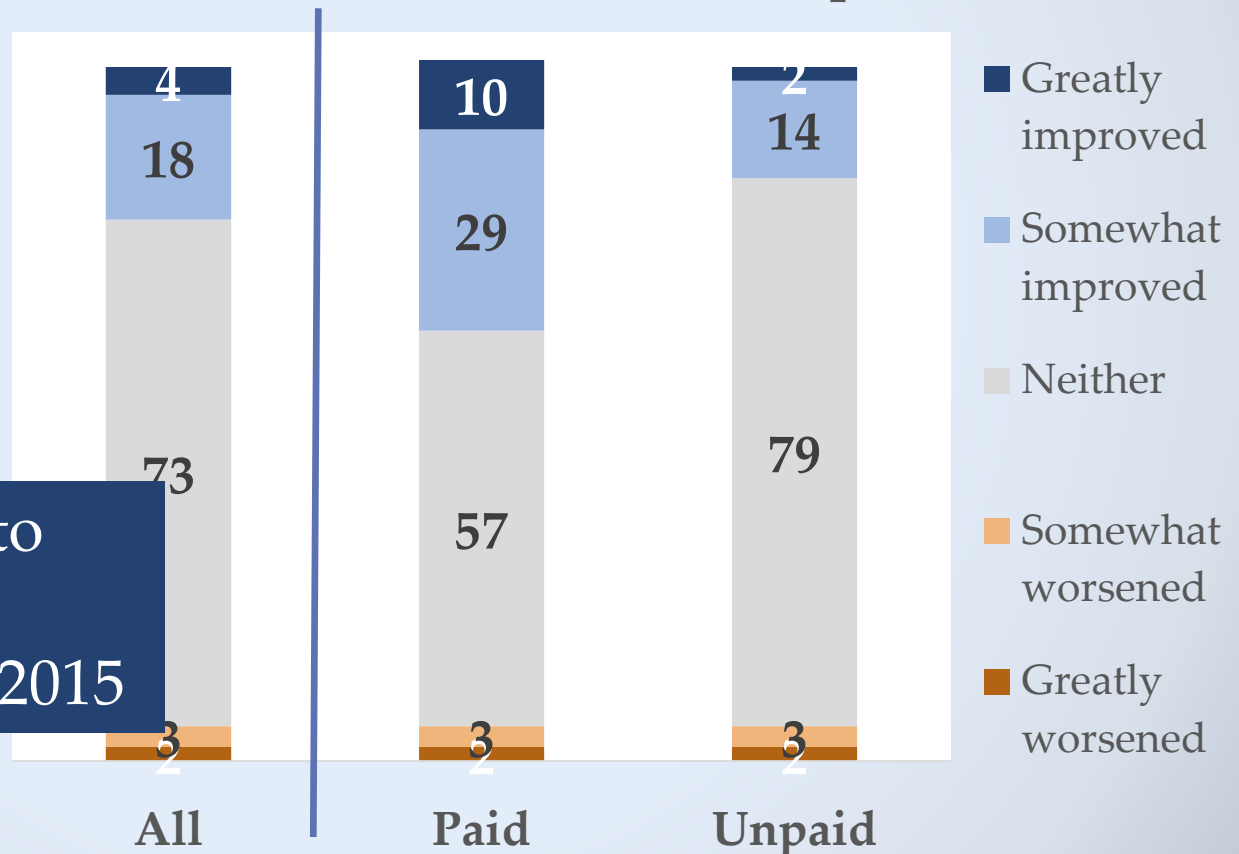
Turbines' effect on local roads



# Community-level Impacts

## Turbines' effect on township services

- Job creation
- Roads
- Township services
- County services



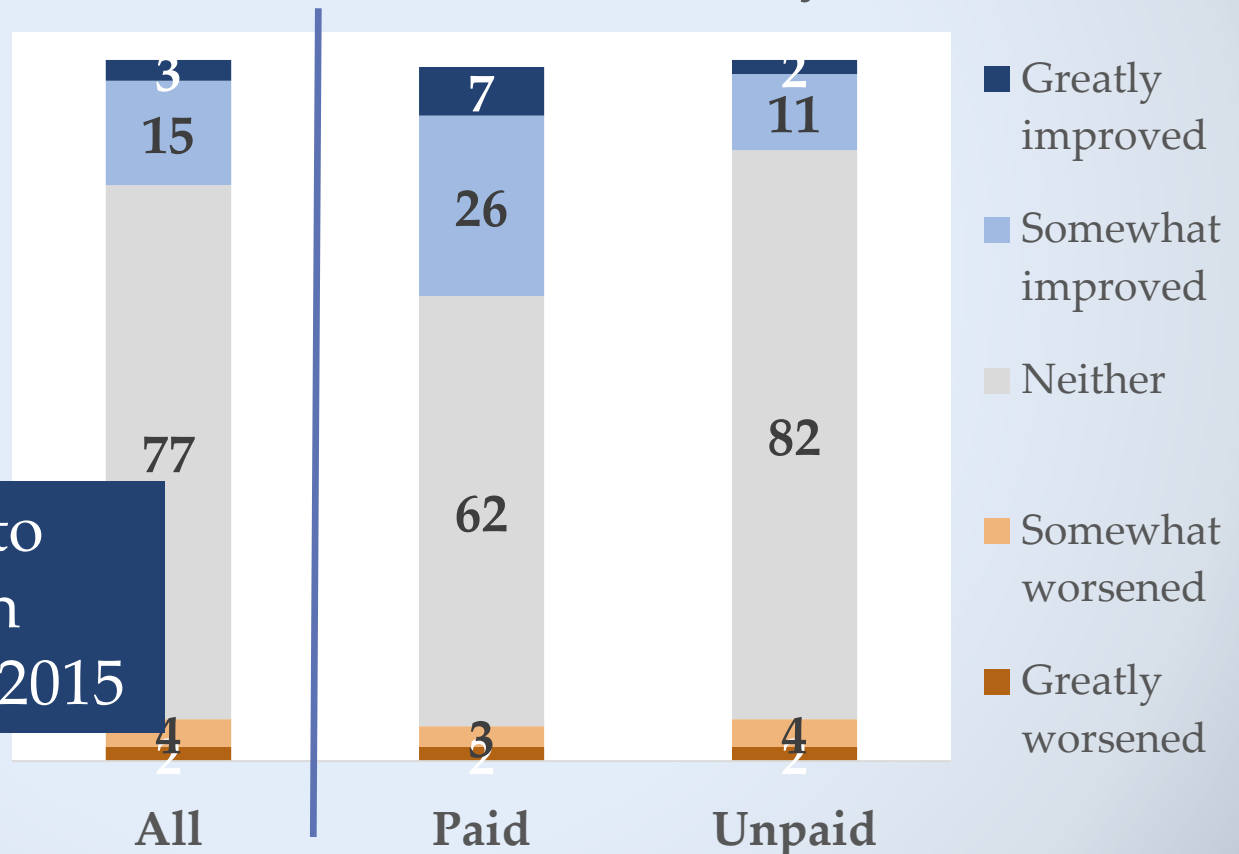
**\$2.630 Million to townships in Huron County in 2015**

# Community-level Impacts

Turbines' effect on county services

- Job creation
- Roads
- Township services
- **County services**

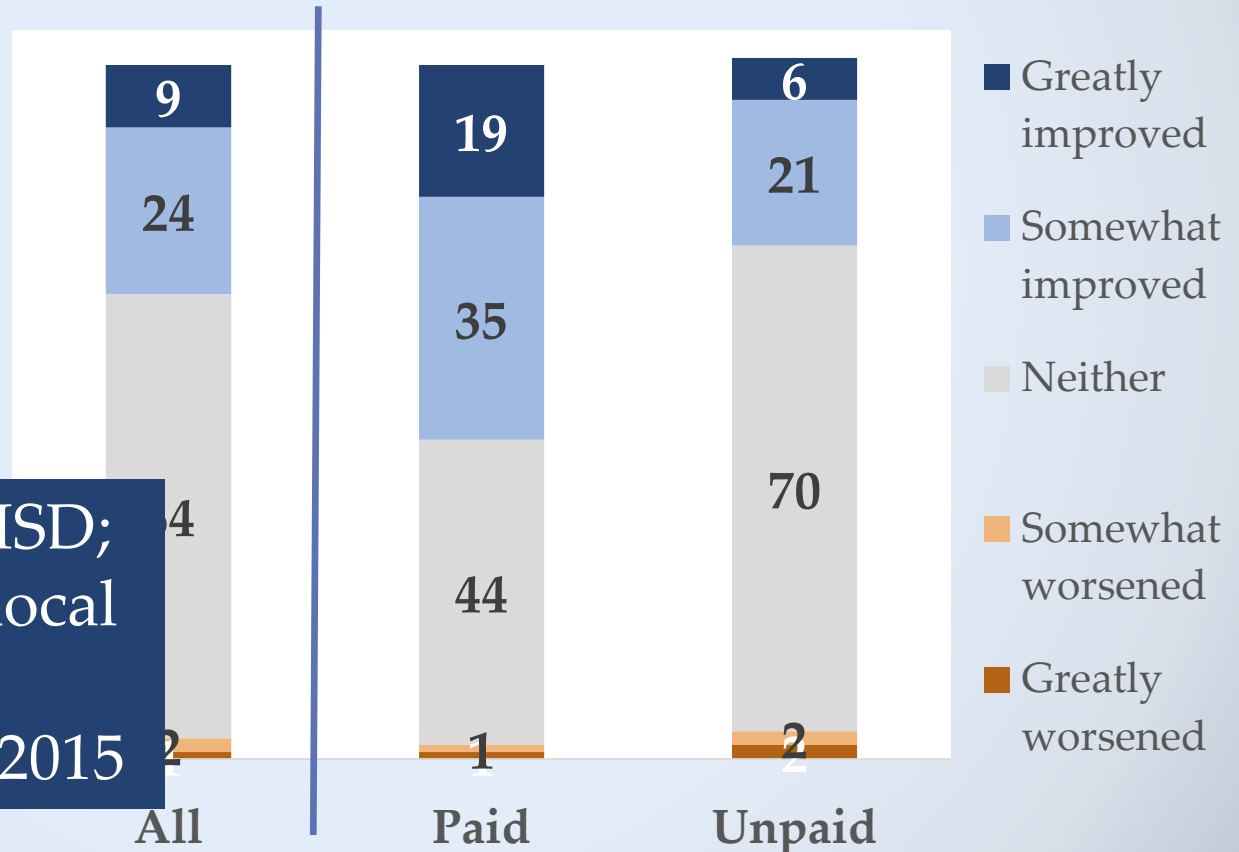
**\$2.749 Million to county gov't in Huron County in 2015**



# Community-level Impacts

## Turbines' effect on local schools

- Job creation
- Roads
- Township services
- County services

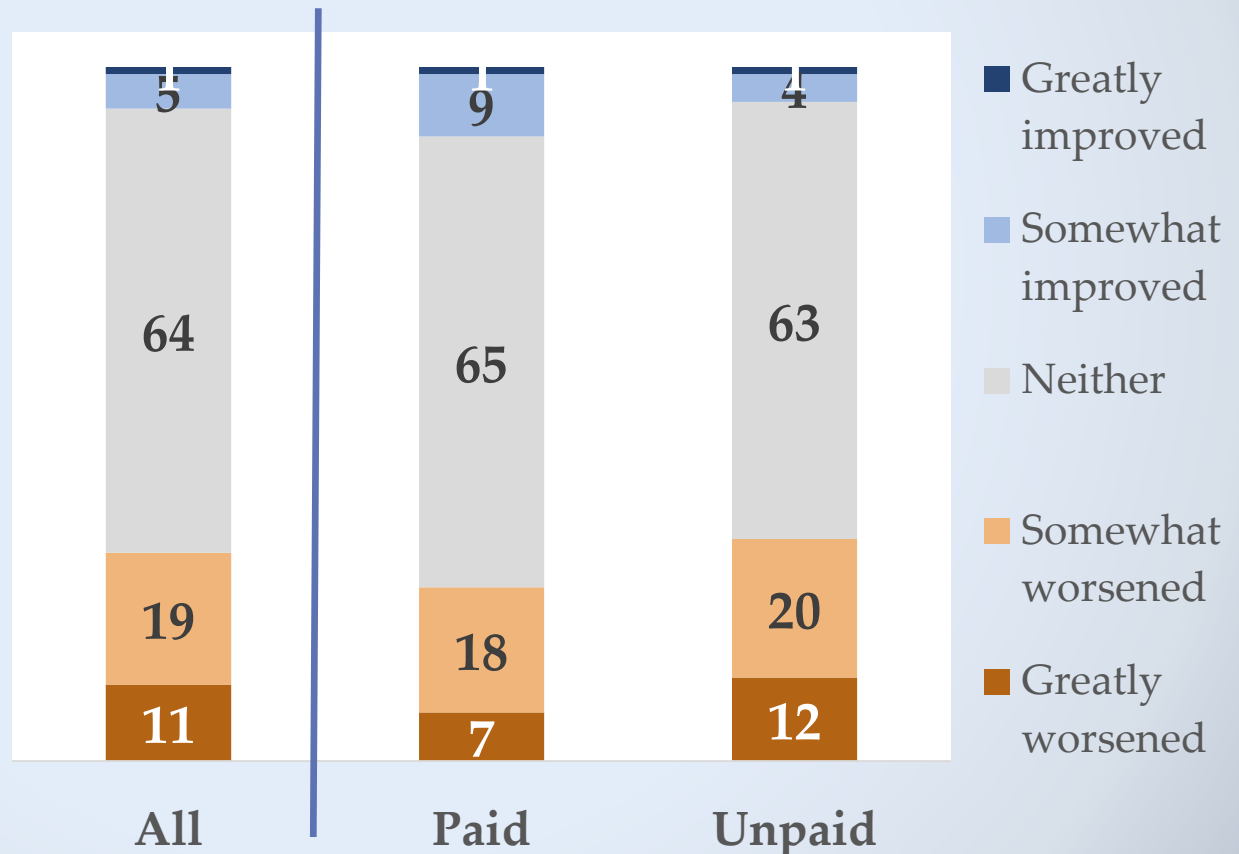


**\$2.083 Million to ISD;  
\$2.074 Million to local  
schools in  
Huron County in 2015**

# 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

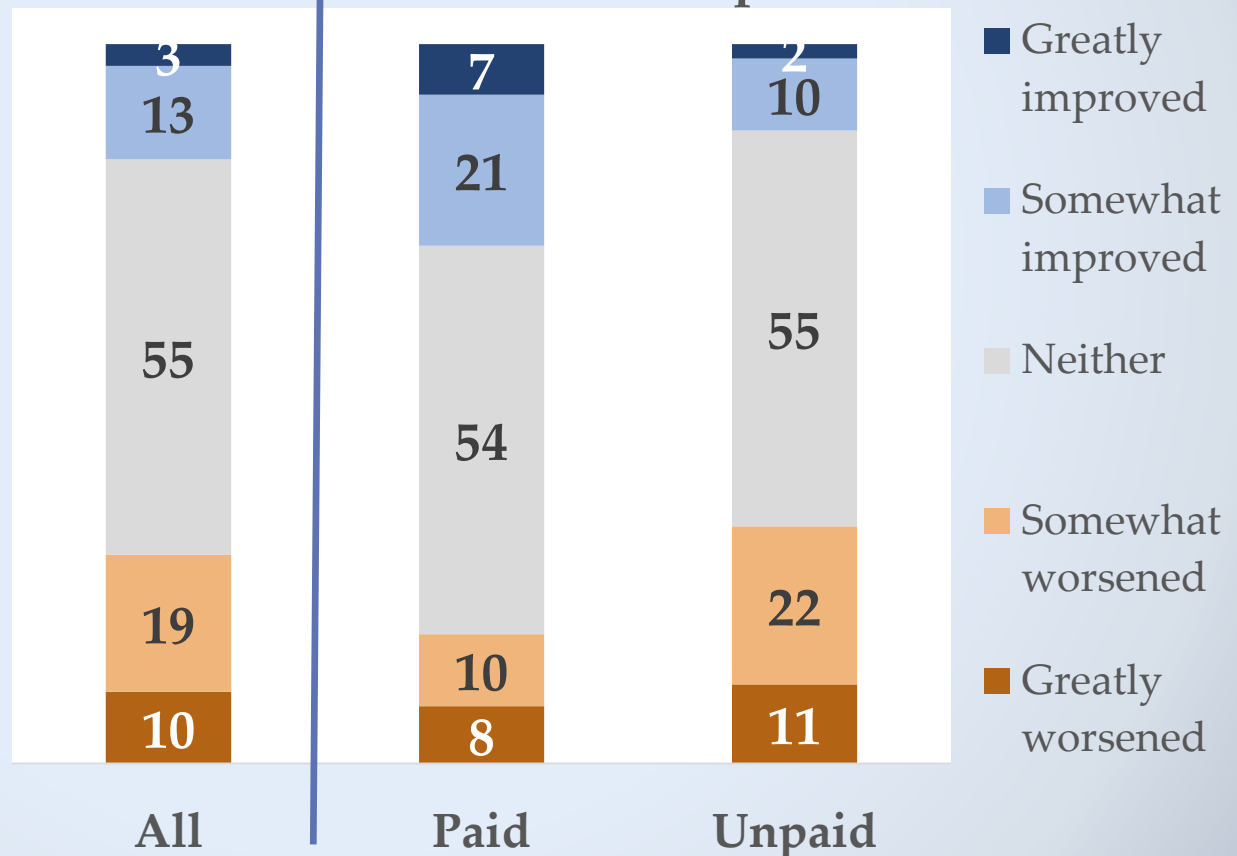
- Most see job creation (with caveat about types of jobs)
- Majority haven't seen changes to community services, schools, or relationships with neighbors
  - Tax uncertainty
  - Increasing cost of services may limit visible impacts

Would they welcome wind  
development again?  
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# Would they welcome wind development again?

Turbines' effect on overall quality of life in township

- Quality of life
- Willingness to accept new turbines

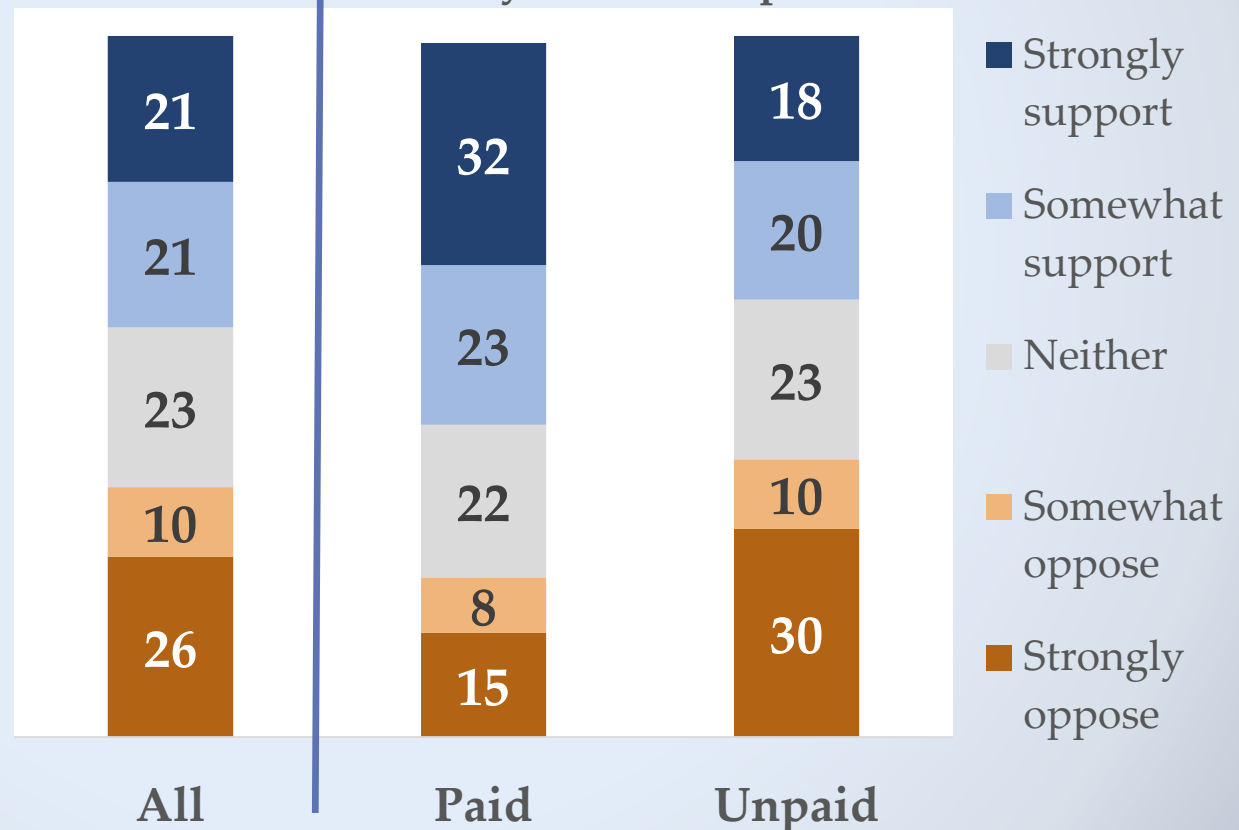




# Would they welcome wind development again?

Willingness to host additional turbines  
in your township

- Quality of life
- Willingness to accept new turbines



# What should you consider?

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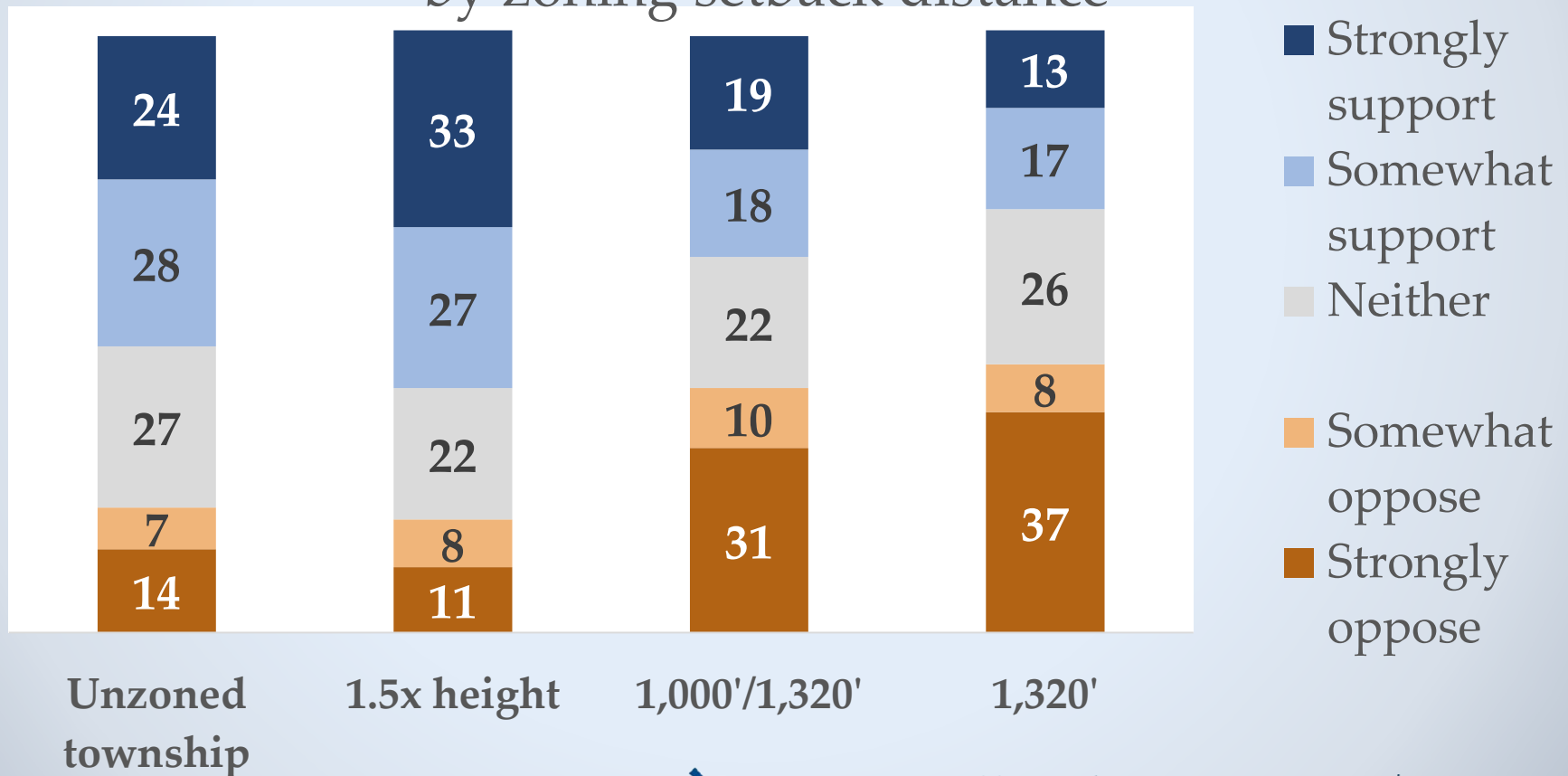
How to reap the benefits without the heartburn

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

- If goal is for substantial residential development or growth of tourism, wind may not be right
- If goal is to sustain agriculture, wind can fit

# There's no zoning silver-bullet

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

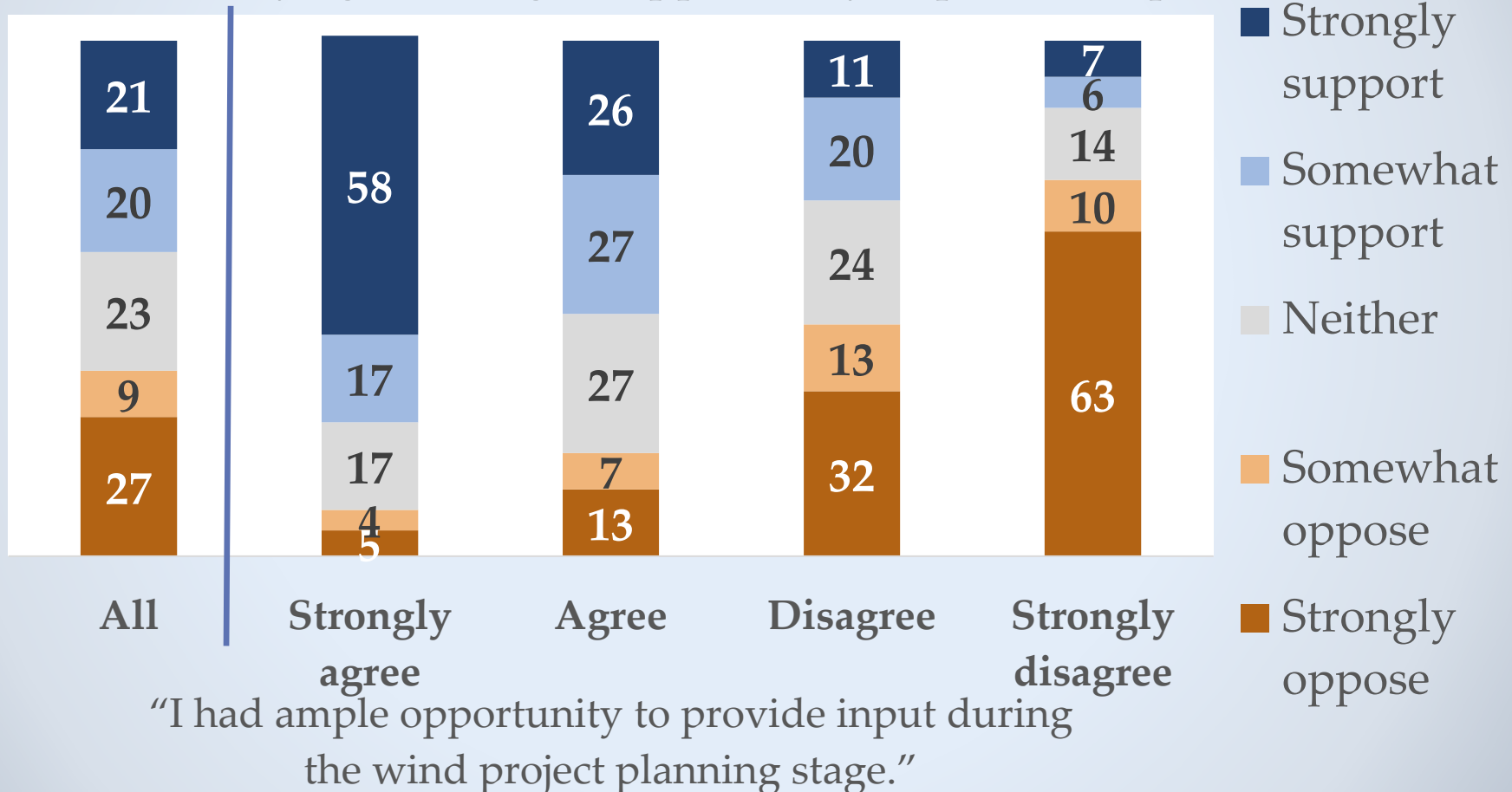


# My recommendations

- Distinguishing between participating and non-participating landowners
- Think about decommissioning

# The importance of process

Support/oppose additional turbines in township,  
by agree/disagree opportunity to provide input



# Smaller-scale wind turbines

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# Thoughts on public acceptance

- Shorter
  - Fewer neighbors impacted
  - No FAA red light required (under 200')
- Less intrusive construction
  - Foundation work, crane construction not usually needed
- Not the same financial impact





# Regulating small-scale turbines

- Much less stringent requirements for site plan review
- By-right as accessory use may be appropriate

# Solar energy

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# 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



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

# 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)