

Understanding the Pros and Cons of Wind Energy

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Casnovia Township
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Who am I?

- PhD in land use planning
 - Farmland preservation
- Grant from C.S. Mott Foundation, taking lessons-learned from Michigan windfarms
 - Ensure future wind development respects local community values
- To provide data-based account of perceptions from MI communities with wind
 - Voice to the quiet folks
 - Neutral broker

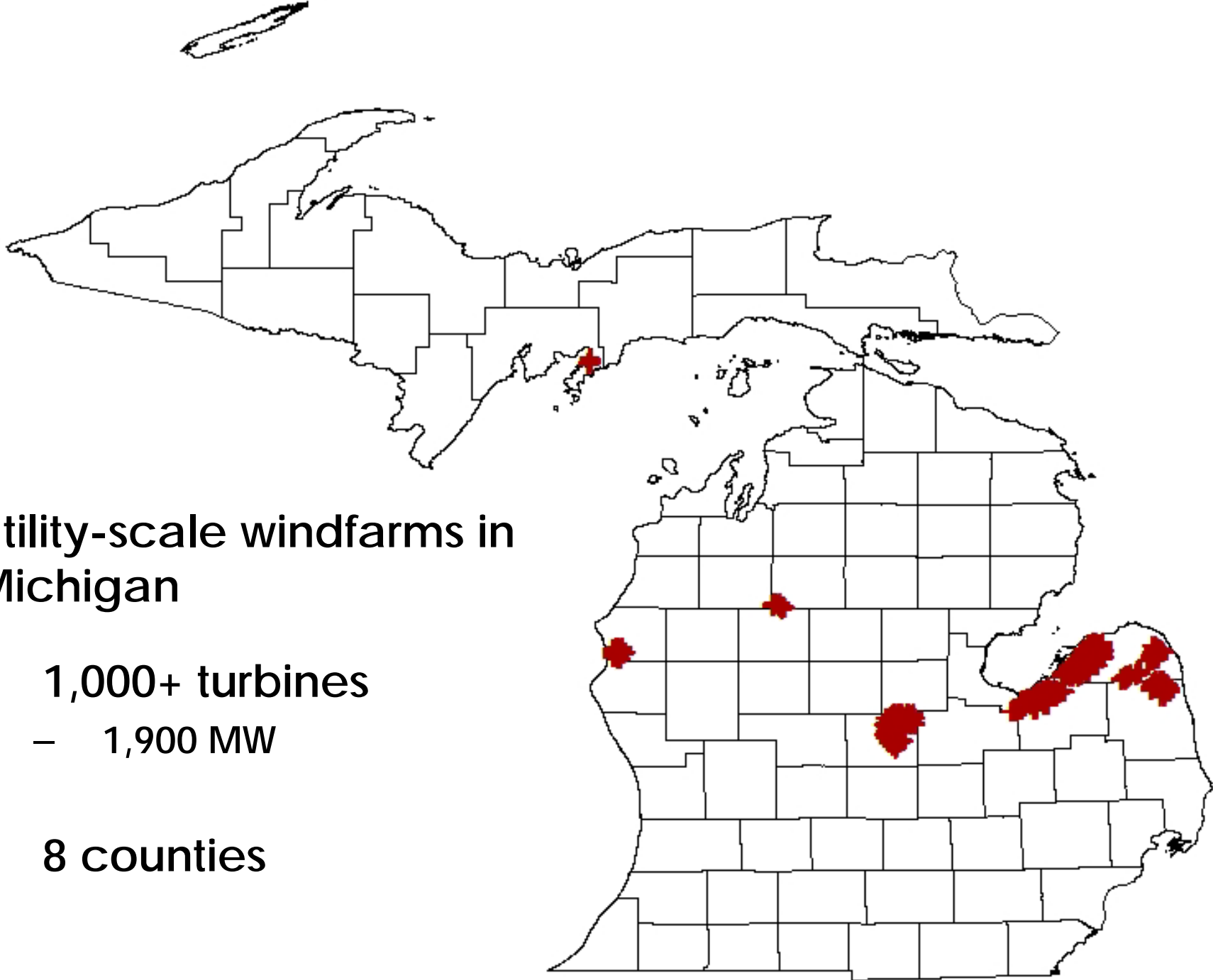
What I'll cover

- My surveys of landowners
- Common Concerns
- Touted Benefits
- Summary
- Q&A

What data is based on

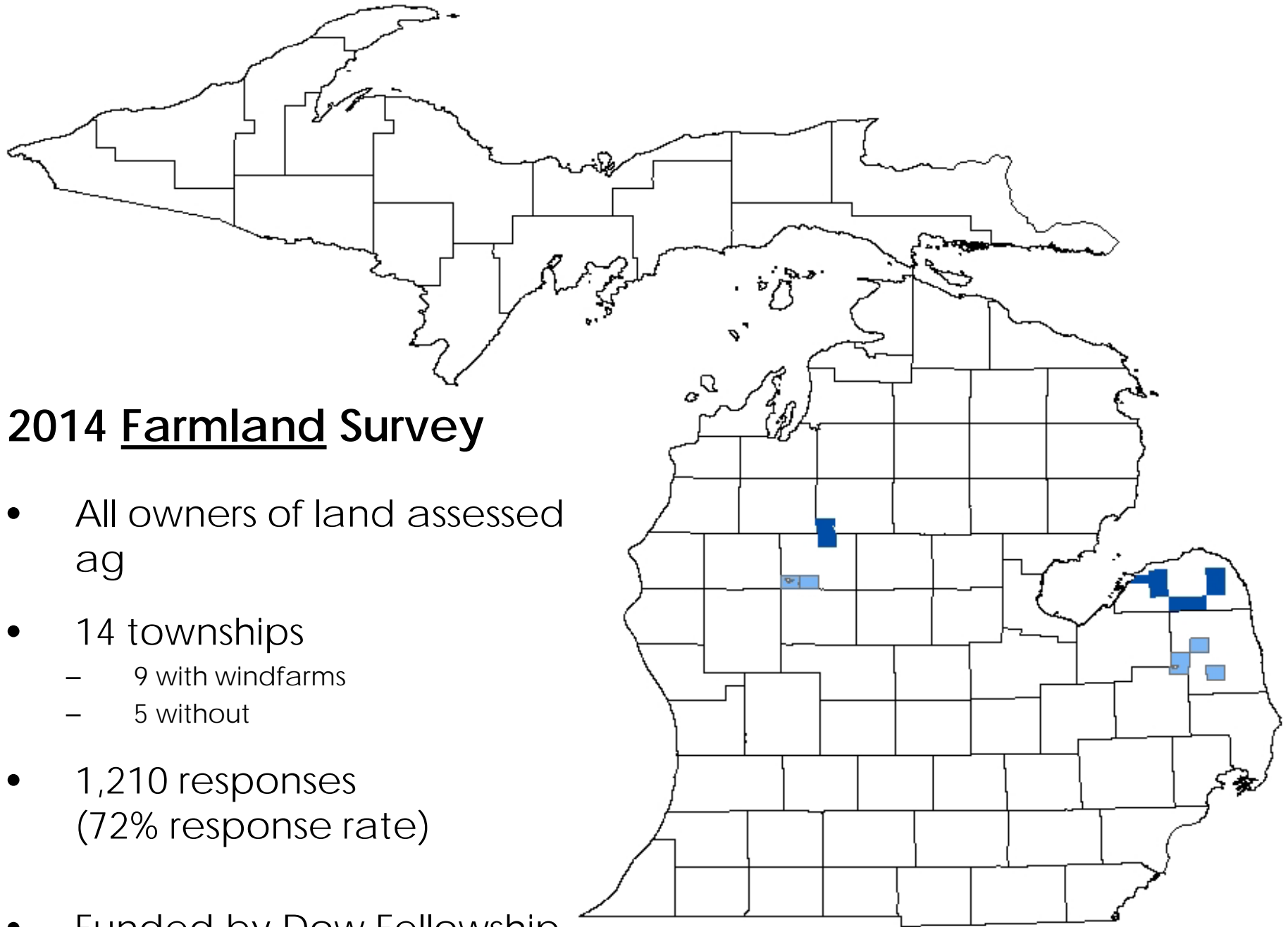
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Explaining the survey of landowners



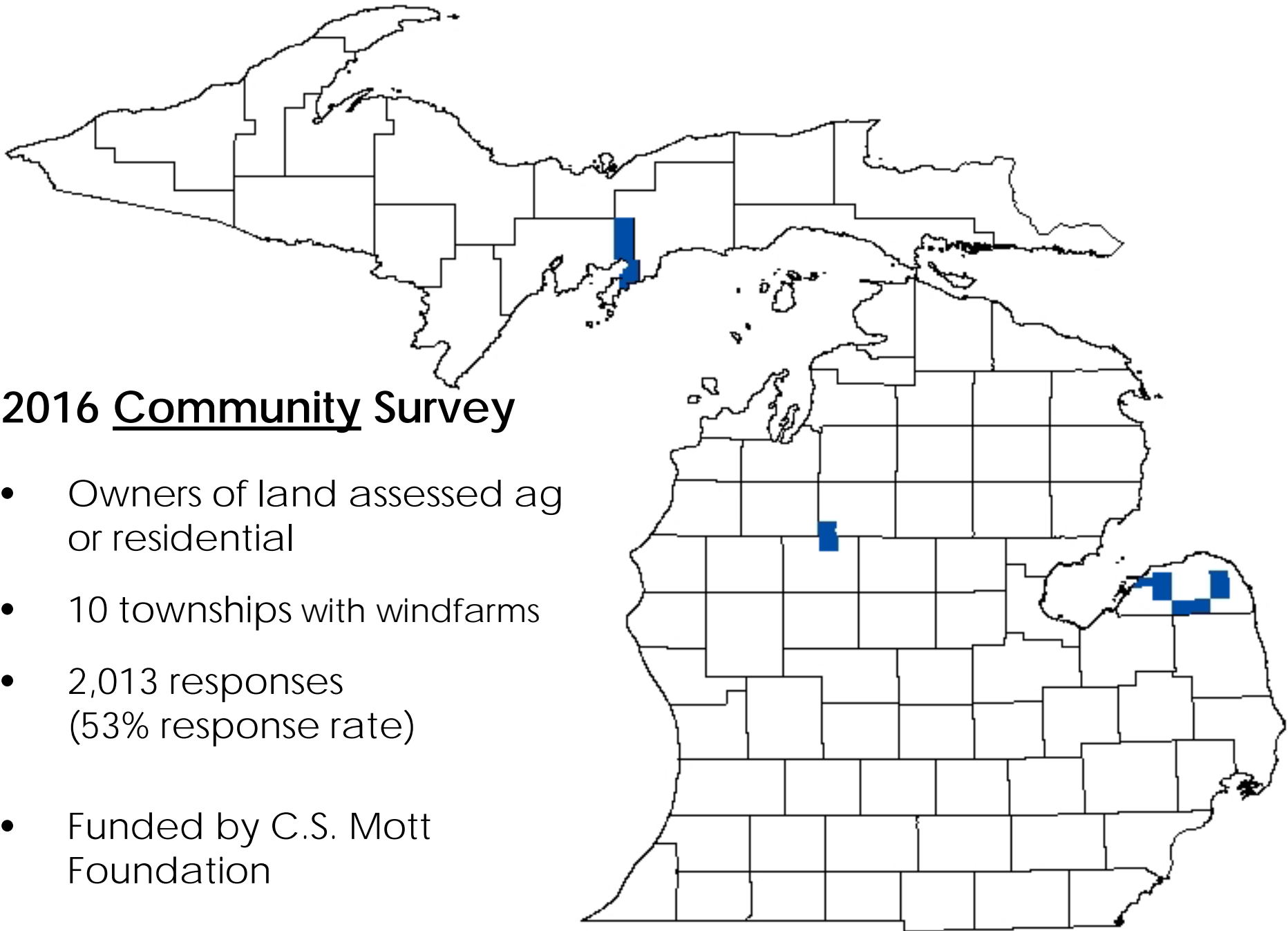
Utility-scale windfarms in Michigan

- 1,000+ turbines
 - 1,900 MW
- 8 counties



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



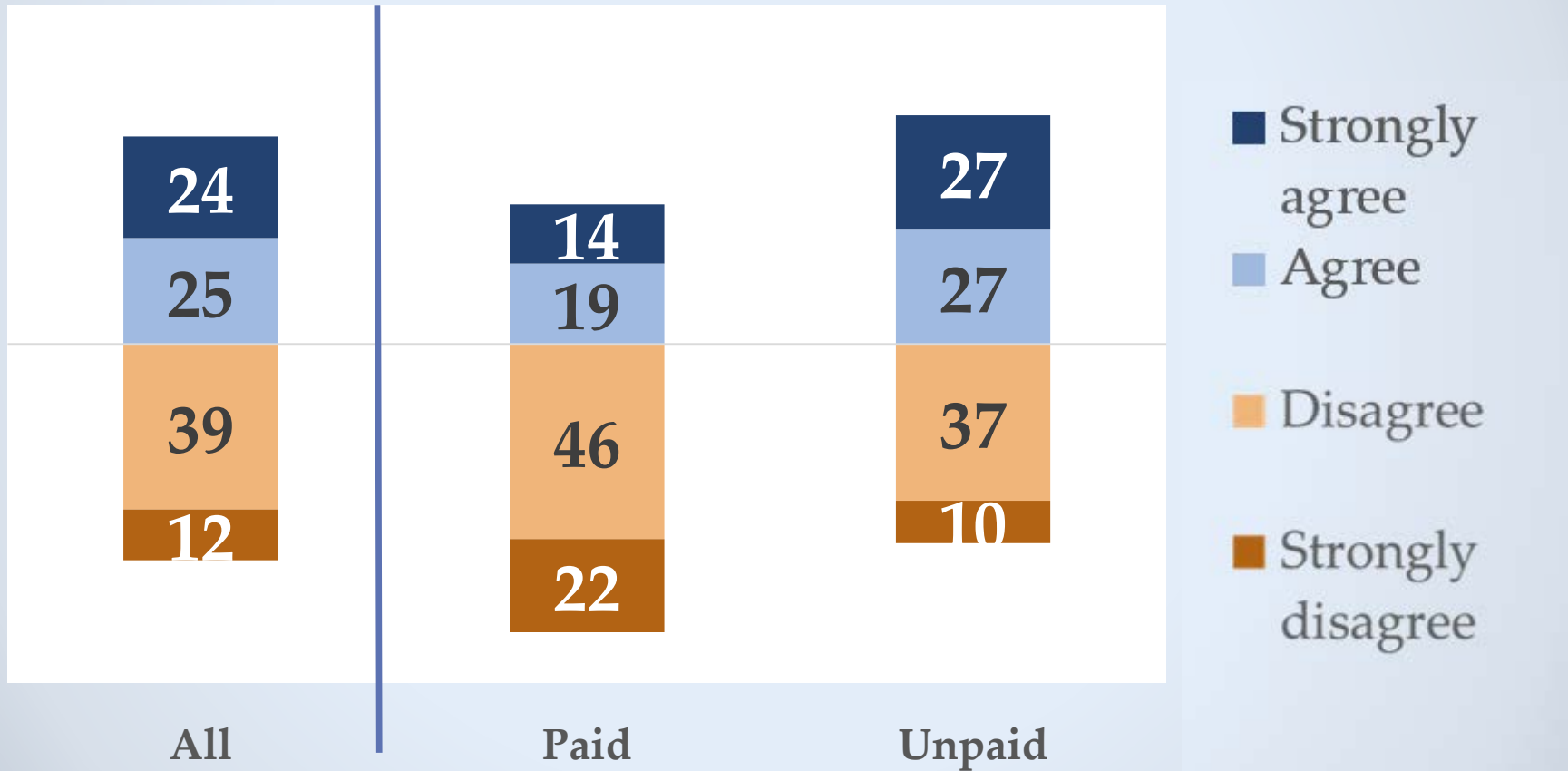
2016 Community Survey

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

Common Concerns about Wind Energy ...

Visual/Aesthetic

Turbines create visual/aesthetic problems

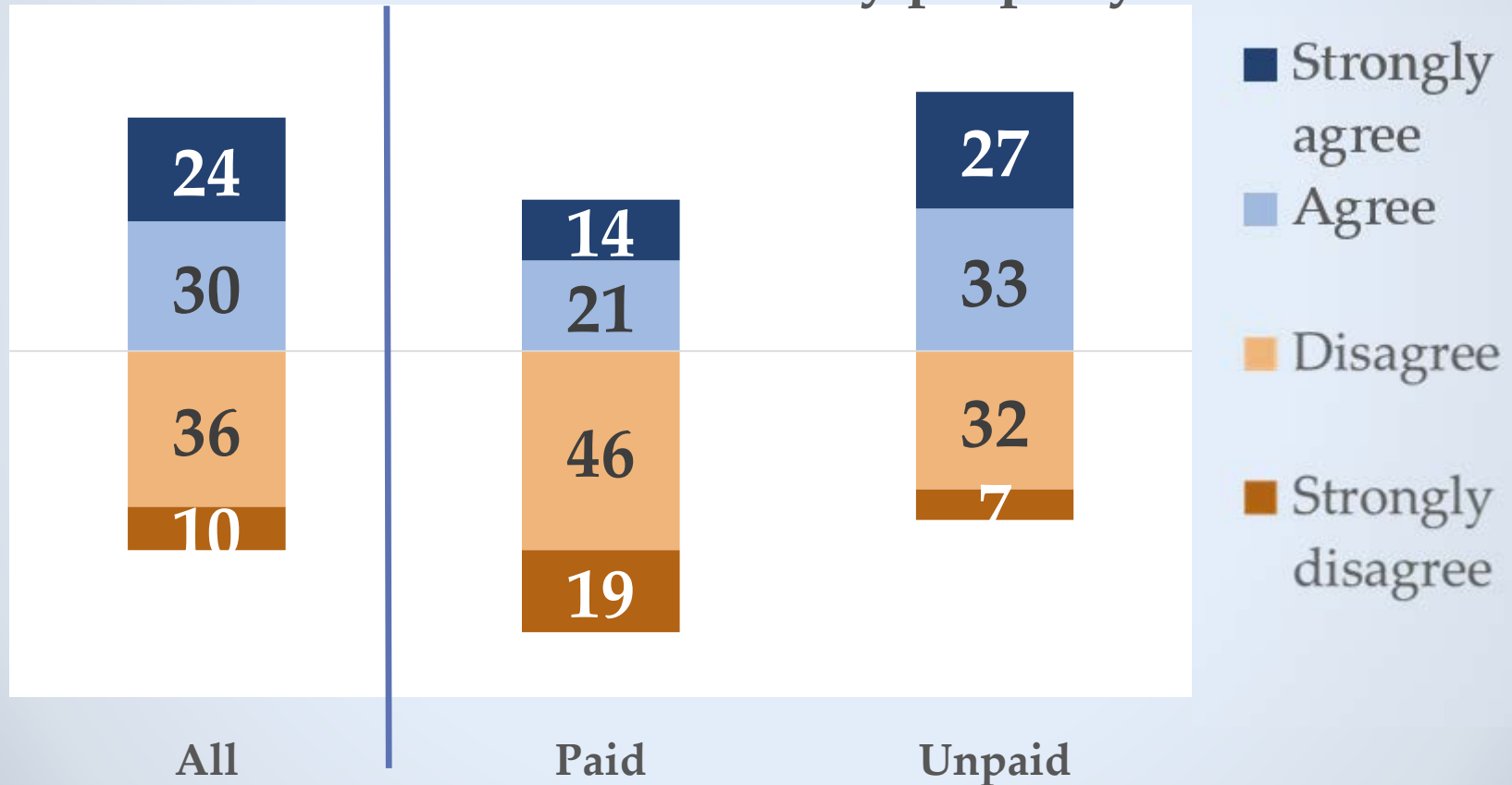


Visual/Aesthetic

- Research says similar size/shape
 - Your ordinance does this
- Daytime vs. nighttime
- Can apply to FAA for radar activated night lighting
 - But comes with pricetag
- **Some people are going to like them, others aren't; ask developer about ADS**

Property values

Turbines decrease nearby property values

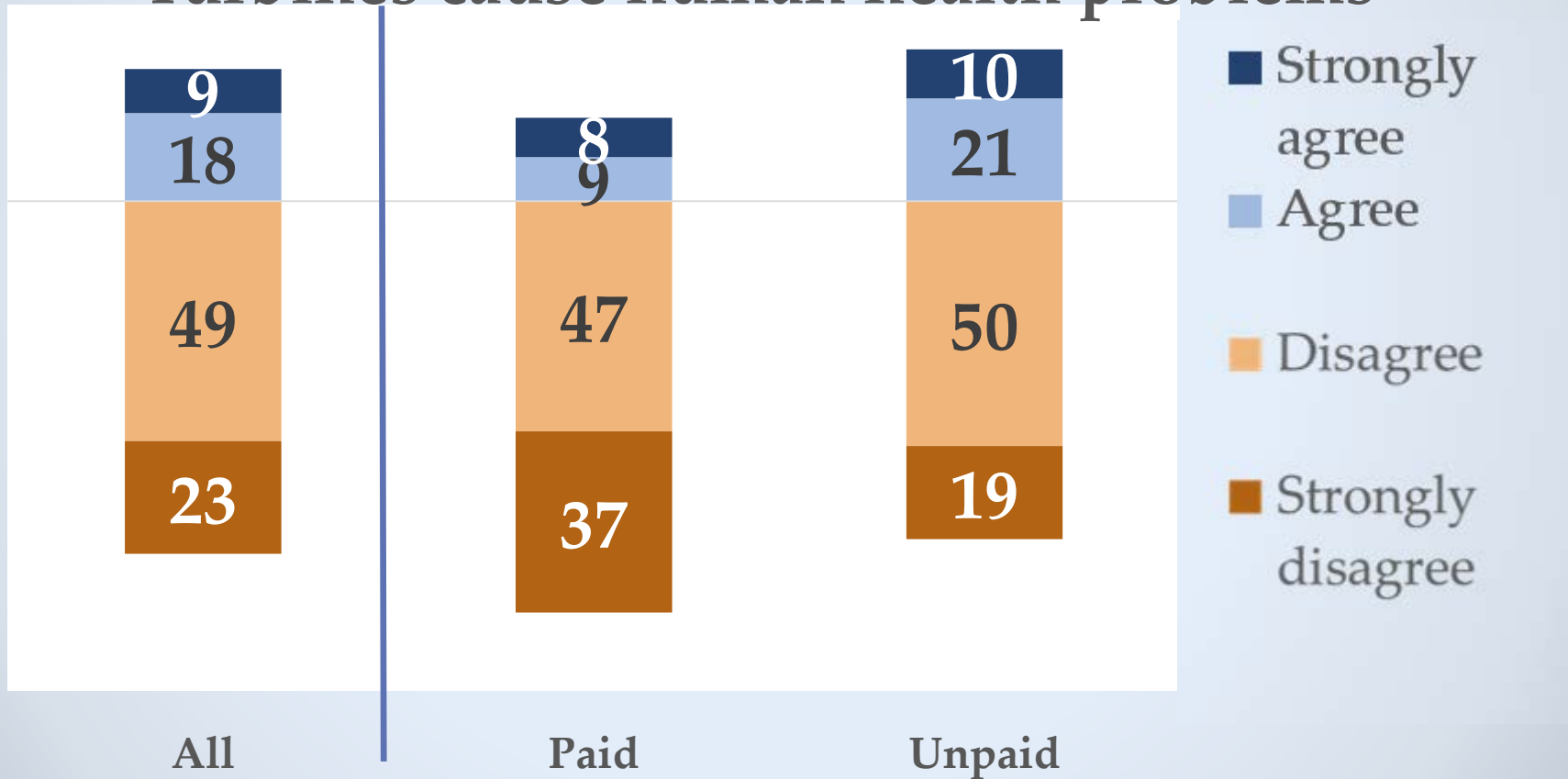


Property Values

- U.S. peer-reviewed studies say little/no impacts on home values
 - New study finds people self-sort into wind turbine communities
- No specific home value studies in Michigan
- Assessors / realtors say farmland values may increase
- **Wind turbines probably don't decrease home/property values, but we just don't know for certain in Michigan**

Health Problems

Turbines cause human health problems



Health Impacts (1)

- Most peer-reviewed studies find no direct causal link
- Concern about shadow flicker
- Low risk for health impacts
- Can be modeled (as in your ZO)
- Can be managed



Credit: Ben Vanderveen

Health Impacts (2)

- Concern about noise
 - Hearing loss not a concern
 - Sleep disturbance, quality of life disturbance question
 - WHO nighttime-standard, but not wind-specific
 - National study: 18% at least somewhat annoyed by noise
 - My study: 48% say turbines create noise pollution
 - Something you can regulate (and your ZO does)
 - Are you regulating noise for anything else?

Health Impacts (3)

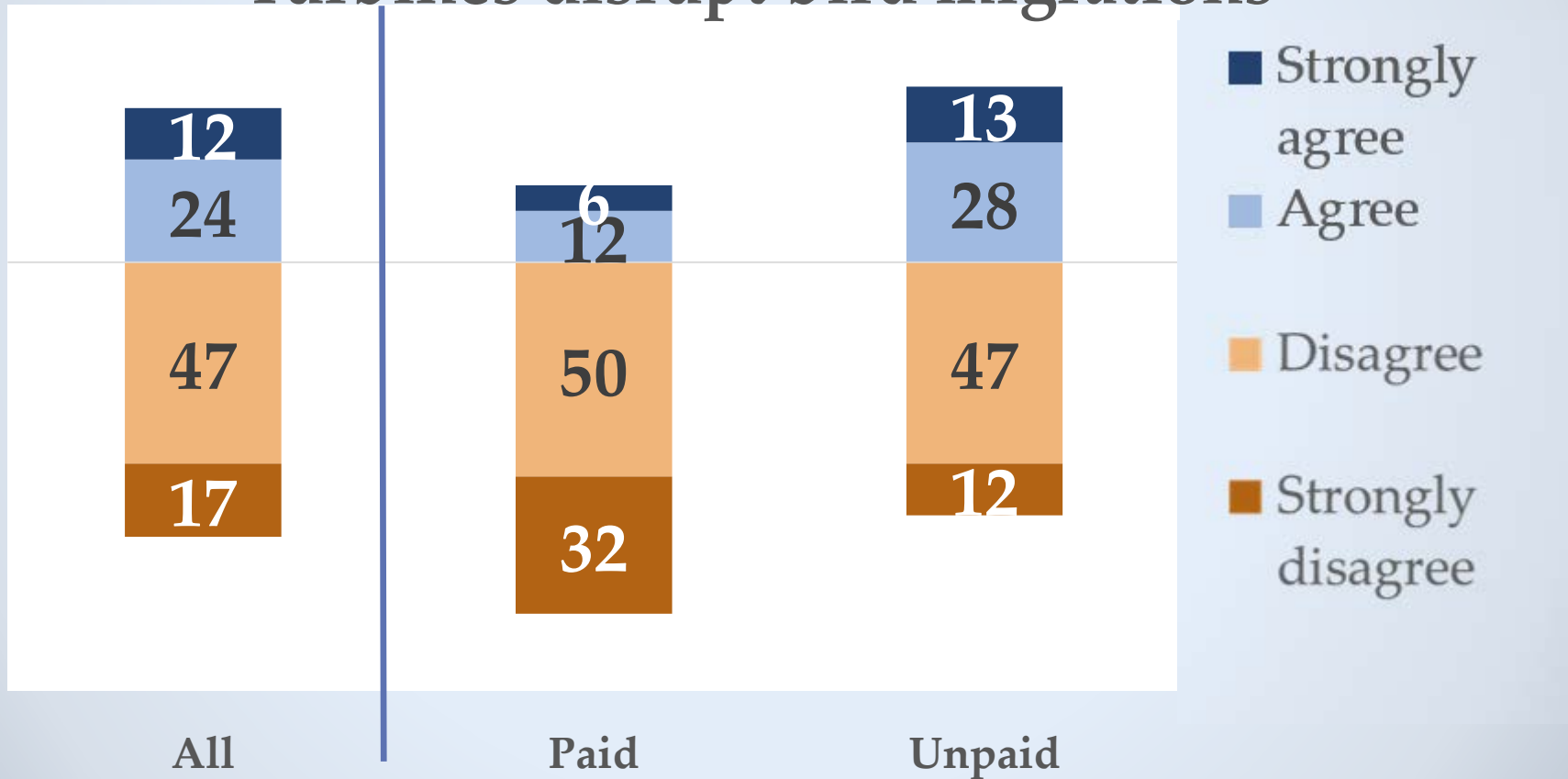
- Research underway on annoyance/stress indirect links
- **Medical research says no direct health impacts; Sarah says inclusive, transparent process may make project less stress-inducing**

Fire Fighting

- Rarely asked about this
- In Huron County, special training for fire department
- **Ask questions of developer**

Wildlife Impacts

Turbines disrupt bird migrations



Wildlife Impacts

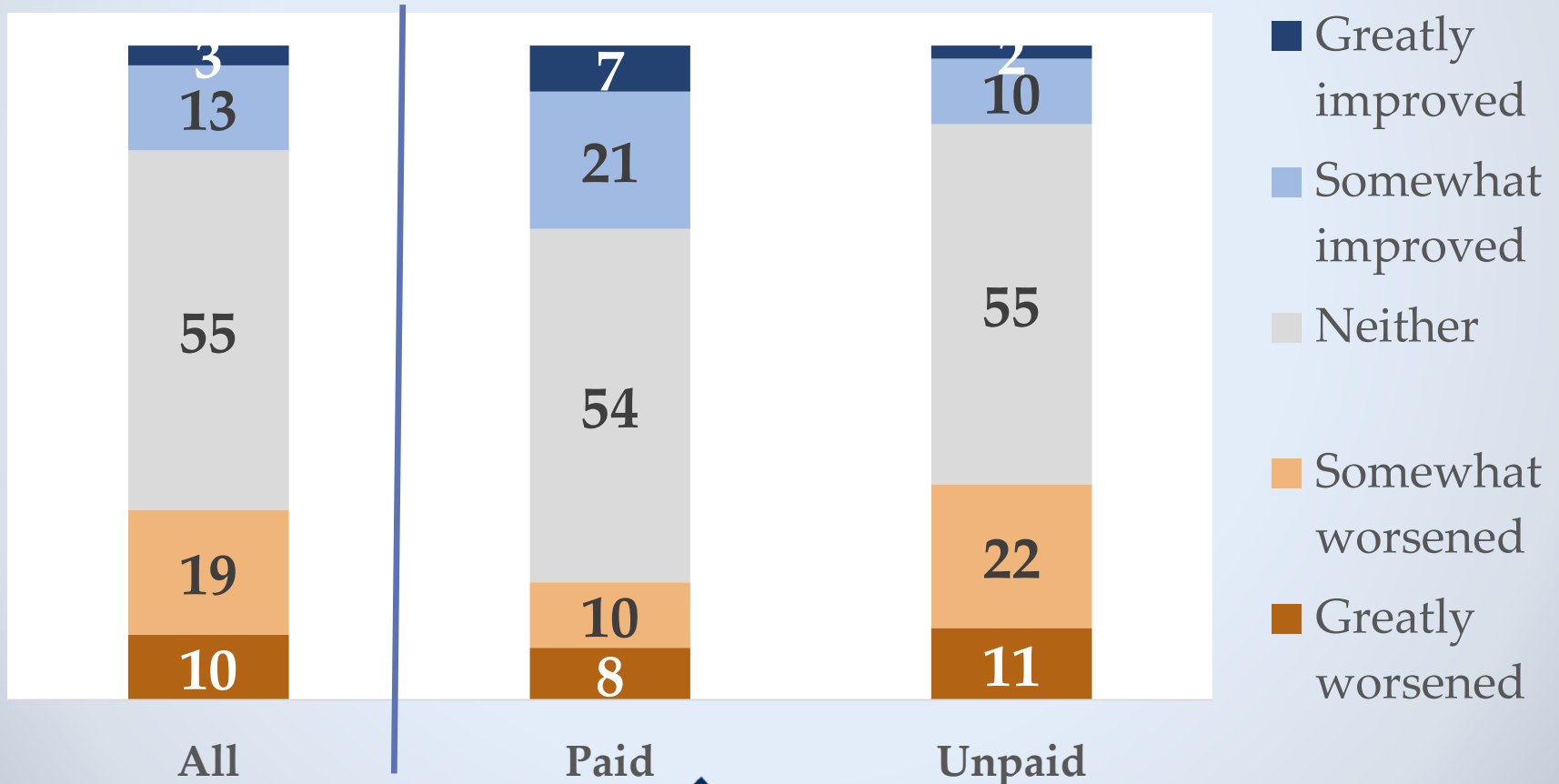
- Newer turbine towers better
- Farm fields better than forests
- 3-mile rule in Huron County
- Developers consider endangered species in siting
- **Not a huge concern in most of Michigan, but if concerned, ask developer**

Decommissioning

- What happens if project sold?
- Usually covered in private leases
- Also in zoning ordinance (including your ZO)
 - Plan
 - Financial guarantee
- Few residents know about it
- **Talk about it; ask questions of developer**

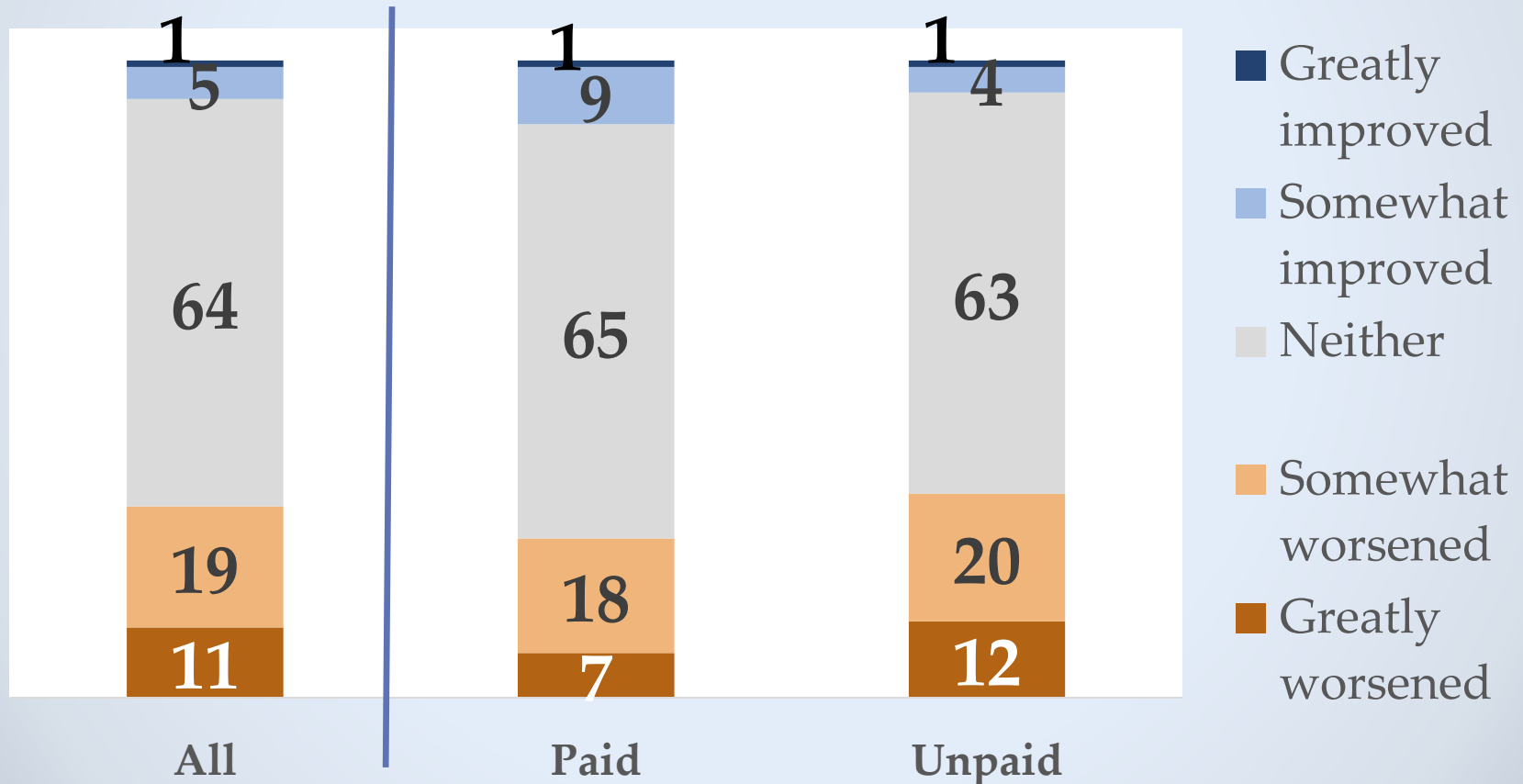
Quality of Life

Turbines' effect on overall quality of life in township



Relationships with Neighbors

Turbines' effect on relationships with neighbors



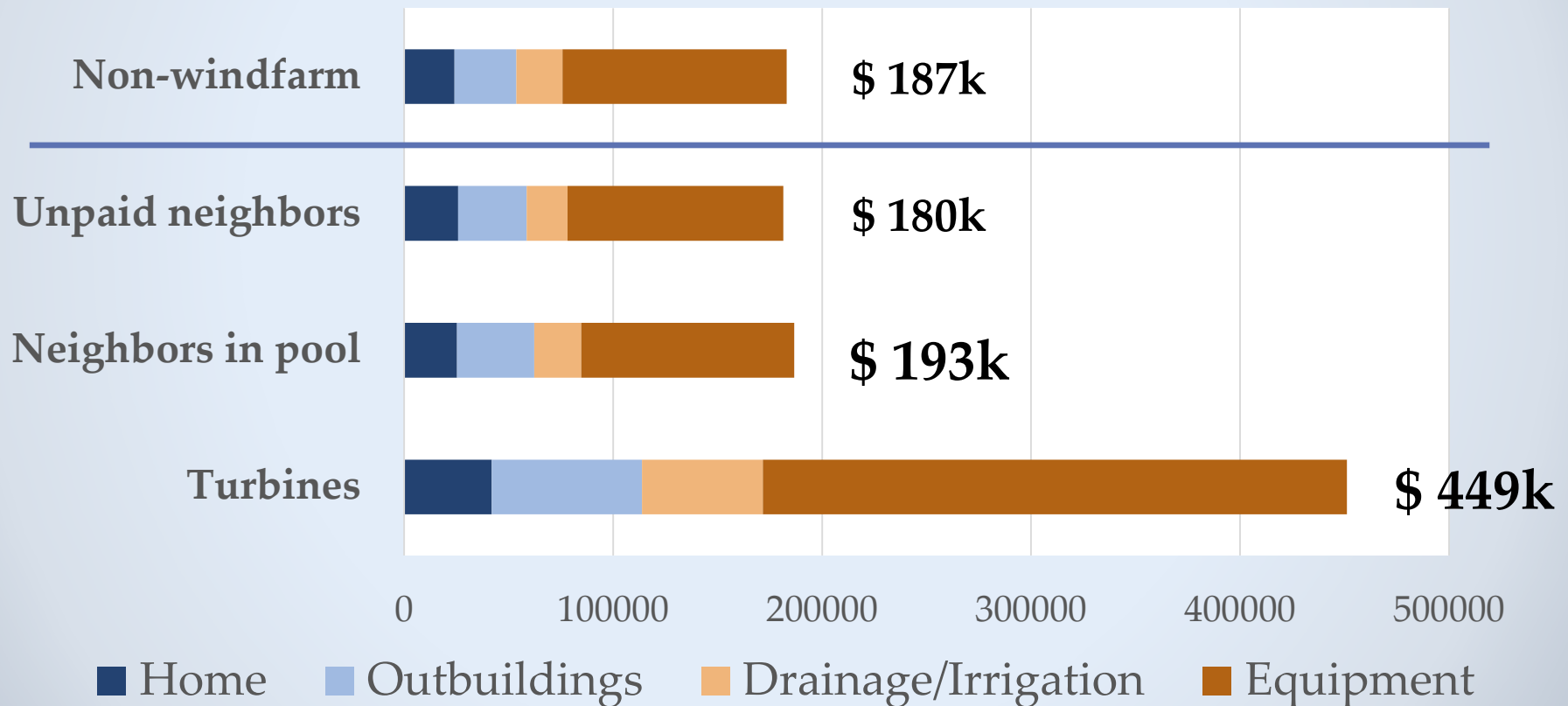
Relationships with Neighbors

- Majority don't think it's divided the community
 - Even in some pretty contentious projects
- Peer-reviewed research finds contention peaks at proposal/building stage
- Wind energy reopens right-to-farm fault lines
- **Whether gets built or not, divisions evident. Proactively plan/zone.**

Touted (Local) Benefits of Wind Energy Development ...

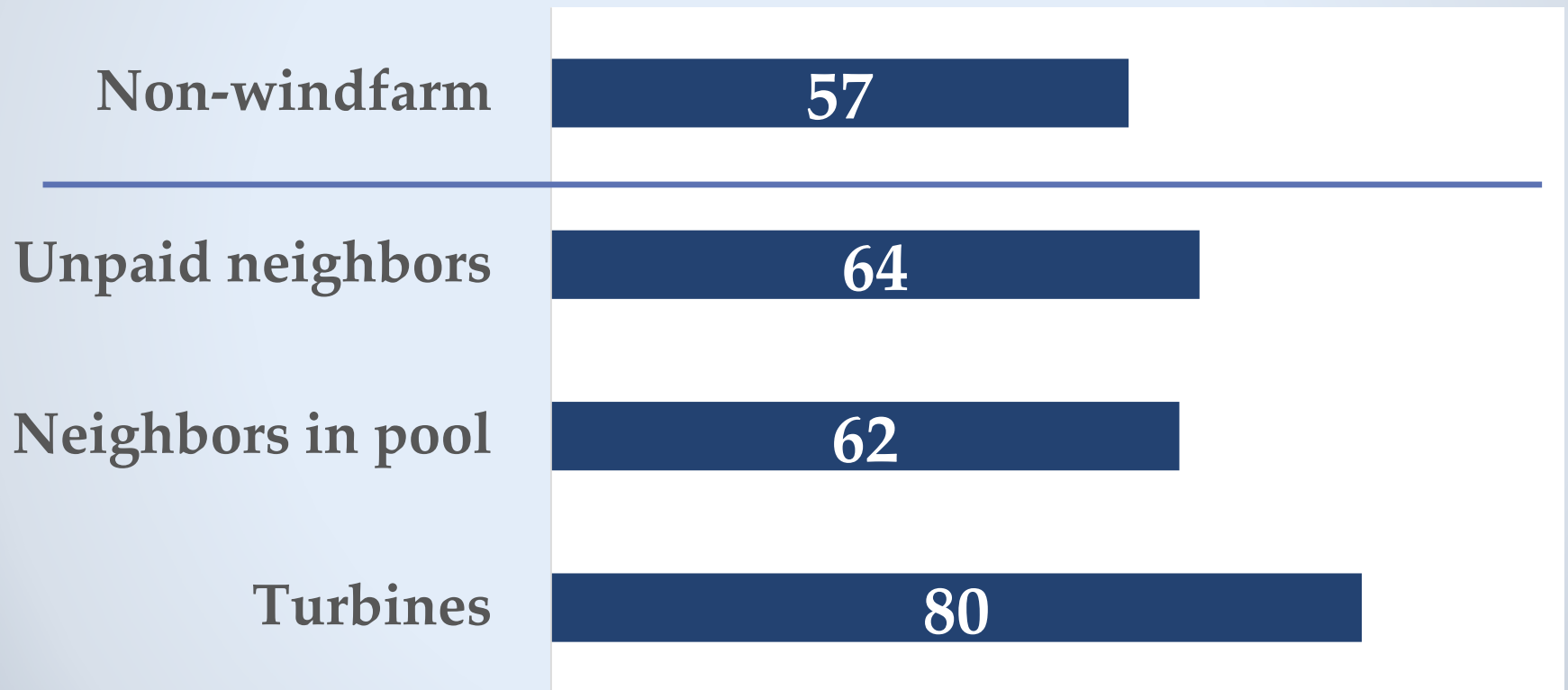
Impacts on Farmers

Investments over 5 years: 2009-2013



Farm Succession

% that have farm succession plan



Impacts on Farmers

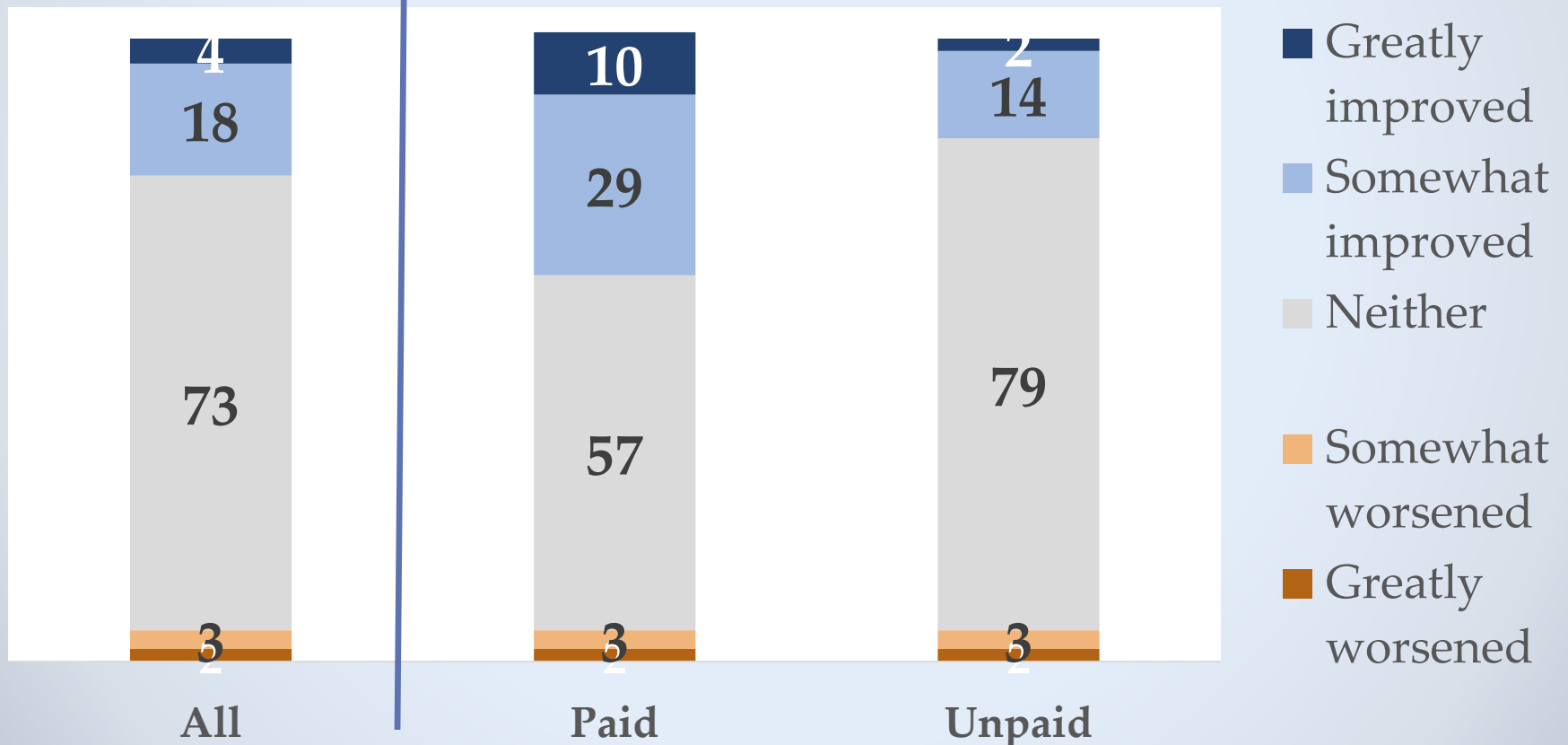
- Farm income diversification & succession planning
 - Reinvestment in farm
 - May stabilize population (where population loss)
- Siting on property lines takes little land out of production
 - Compatible with PA 116
- **For farmers, another way to make their land productive**

Tax Revenues

- Turbine value + easement (~\$2.1M)
 - x 100% in year 1
 - x 30% in year 10+
- ~\$20M per year statewide
- Huron County (just in 2015)
 - \$2.6M to townships
 - \$2.748 to county gov't
 - \$2.083 Million to ISD
 - \$2.074 Million to local schools

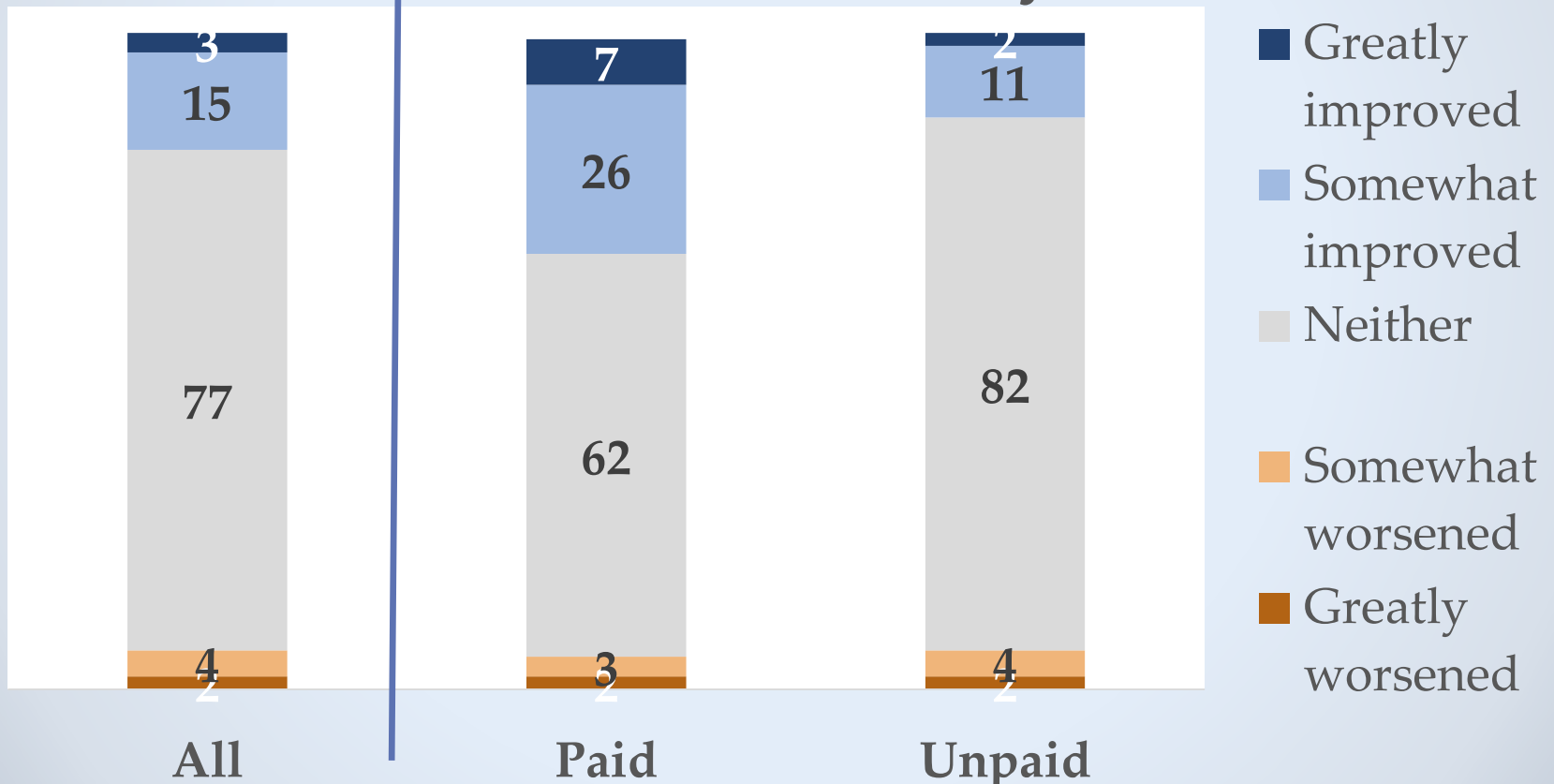
Township Taxes

Turbines' effect on township services



County Taxes

Turbines' effect on county services

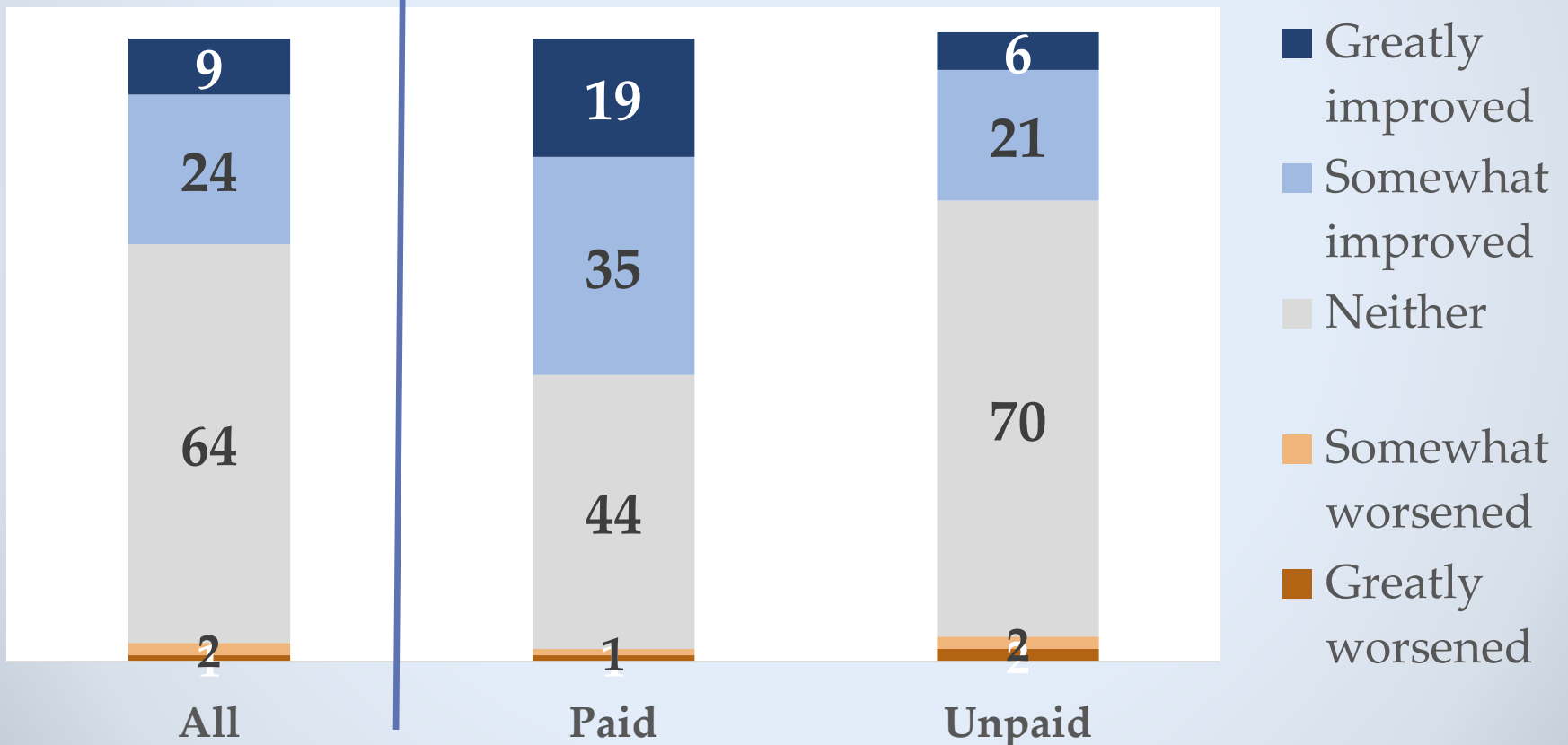


Tax Revenues

- There will be increases to township, county tax base and special districts, but residents may not “feel” it
- Hard to predict total, as State controls tax table
- **Ask developer current projection; ask township officials how that relates to current tax base**

School Taxes

Turbines' effect on local schools

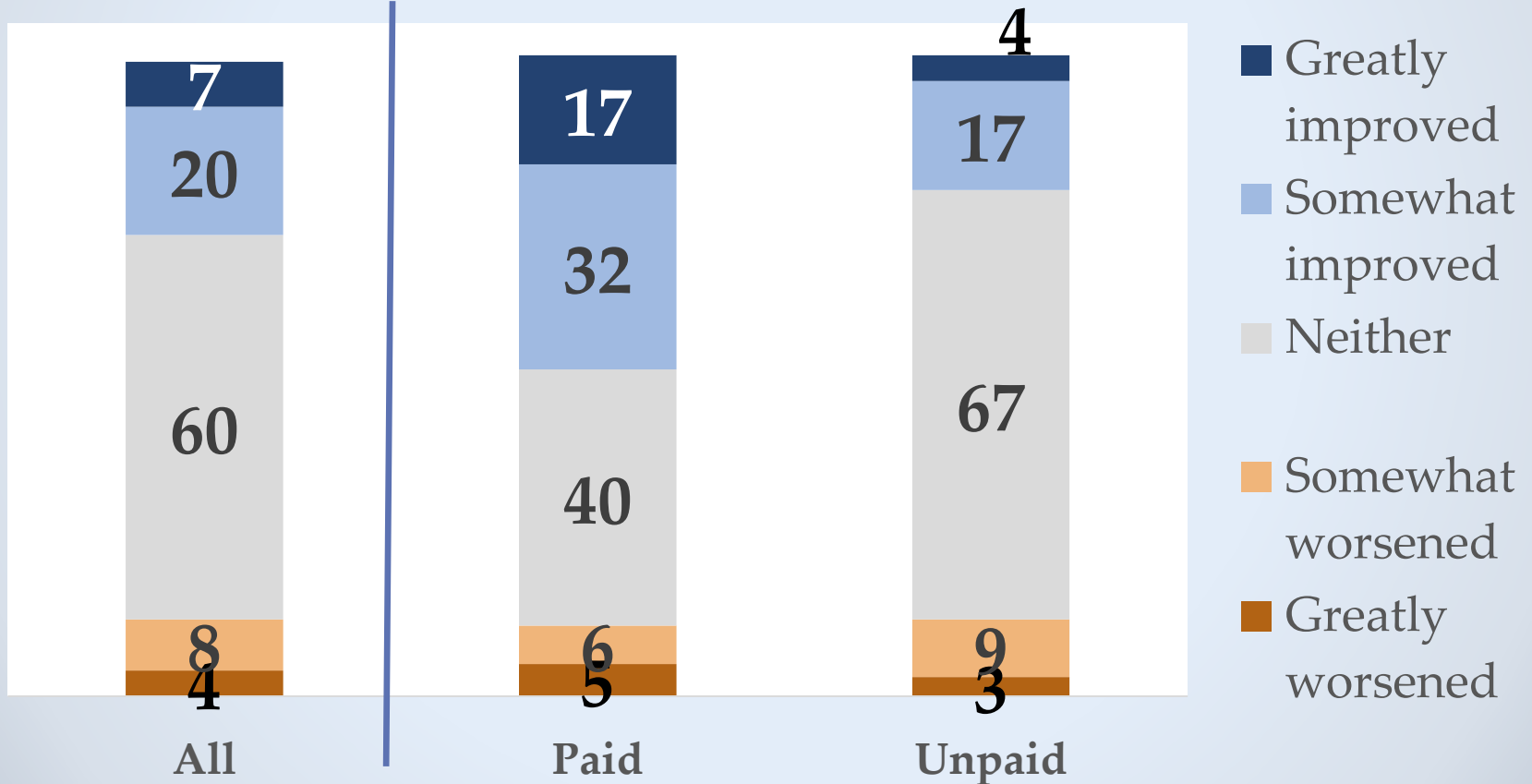


School Taxes

- Per Proposal A (1994), local school district general funds are redistributed on per-pupil basis
- Local districts keep sinking/debt fund revenues
- ISDs keep revenues; some take on local-district services
- Some developers donate to local schools
- **The local school district may see little impact; ISDs do see increase**

Roads

Turbines' effect on local roads

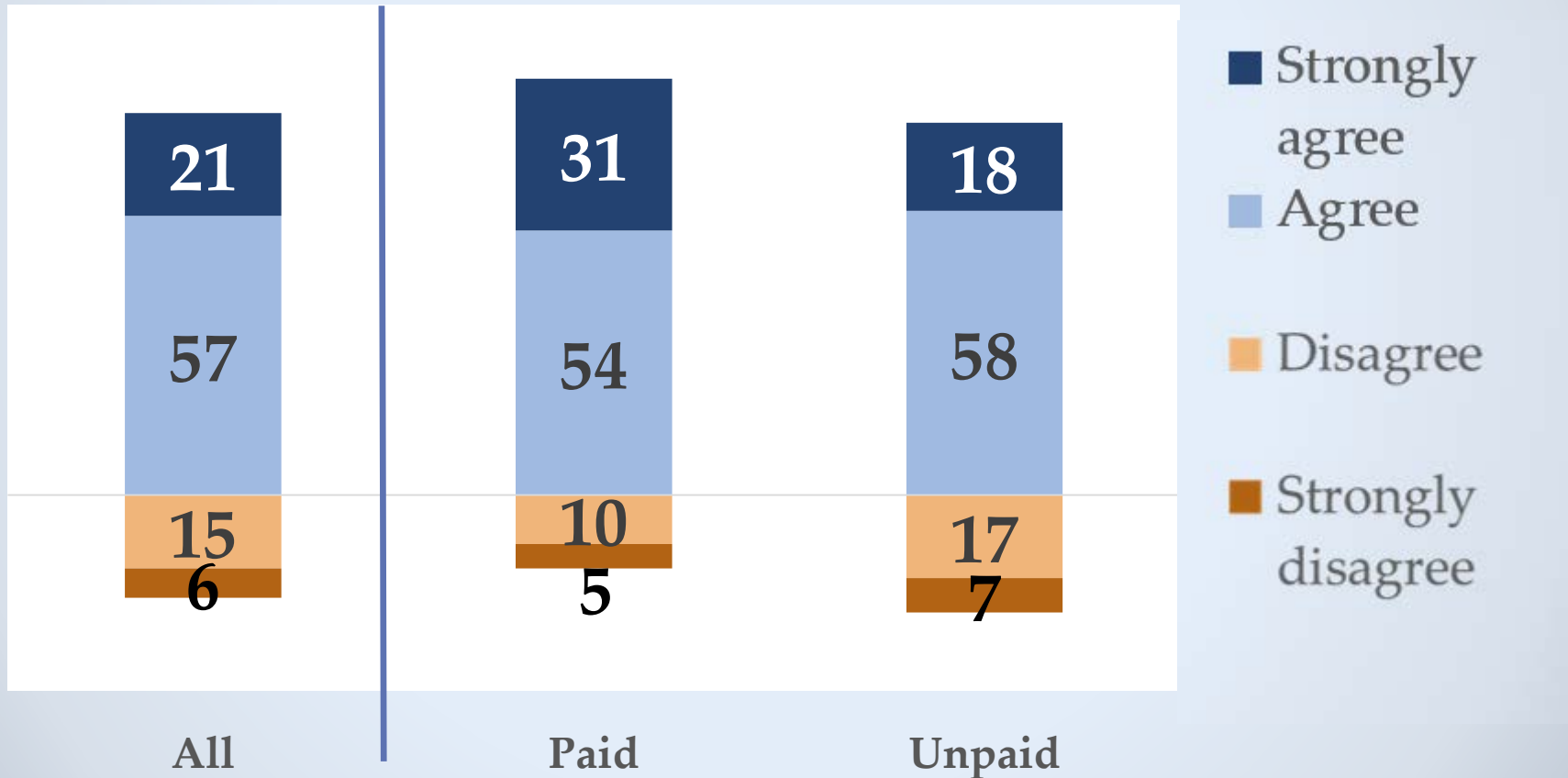


Roads

- Most townships have put additional revenue towards road maintenance (but don't have to)
- County road commissions often require bonding for any damage done (but not all do)
- Some residents note increased traffic during windfarm construction, wind tourism
- **The impact on roads completely depends; ask about road bonding**

Job Creation

Turbines create jobs



Job Creation

- Most direct local jobs are...
 - during construction
 - in hospitality industry, aggregate & earth moving
- “Induced” jobs
 - Leaseholders spending money
 - Township spending tax revenue
- **Local jobs are created, just not tons of high-paying, direct long-term jobs**

Summary

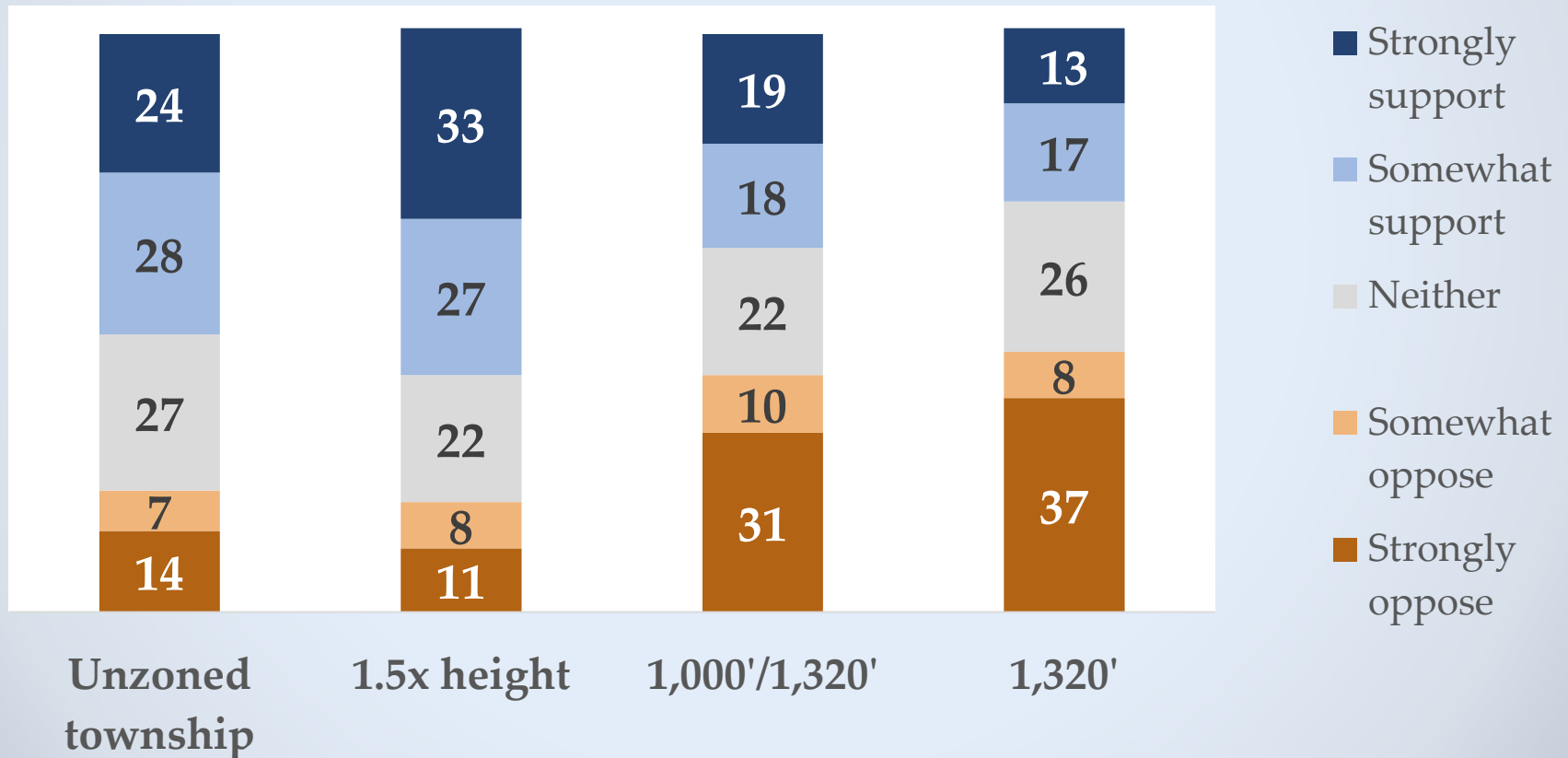
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My advice in most communities

- Wind = economic development, but not a good fit for all communities
- Figure out how it fits in your long-term plan
- Make zoning match your goal

No zoning silver bullet

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

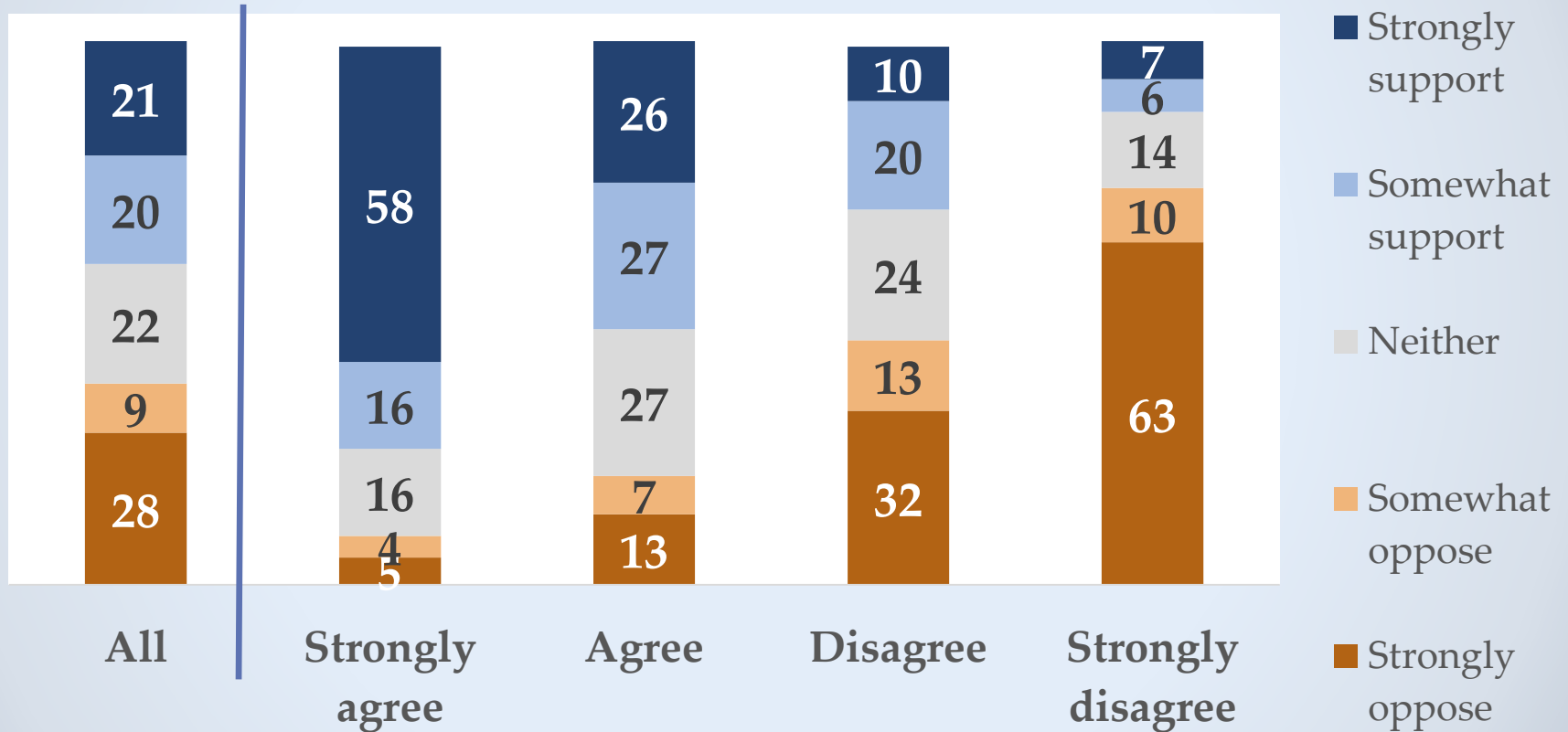


My advice to Casnovia

- **Ask questions** of developer
 - About your concerns (visual, wildlife, etc.) and what might be done to mitigate
 - The impacts (noise, flicker) on specific homes
 - Decommissioning
 - Amount of tax revenue
- Understand what you can/can't place conditions on

The importance of participation

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."

Thank you!

Questions

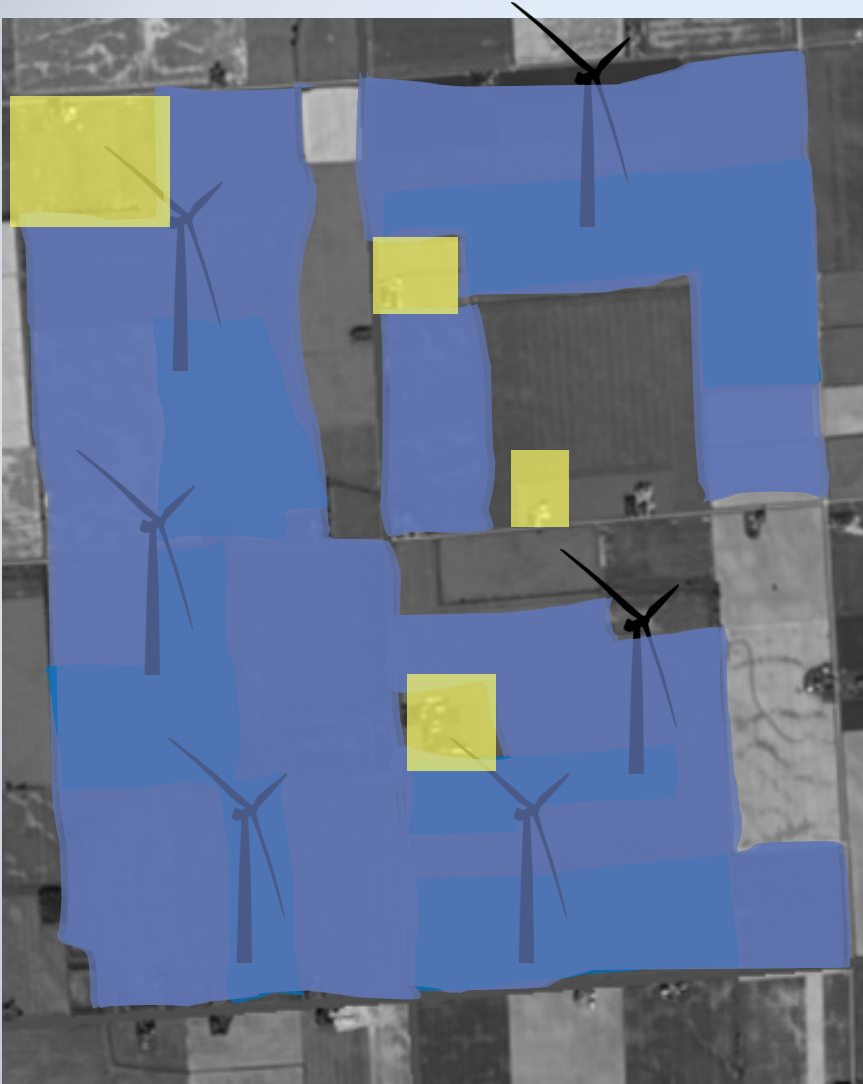
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Wind Development 101

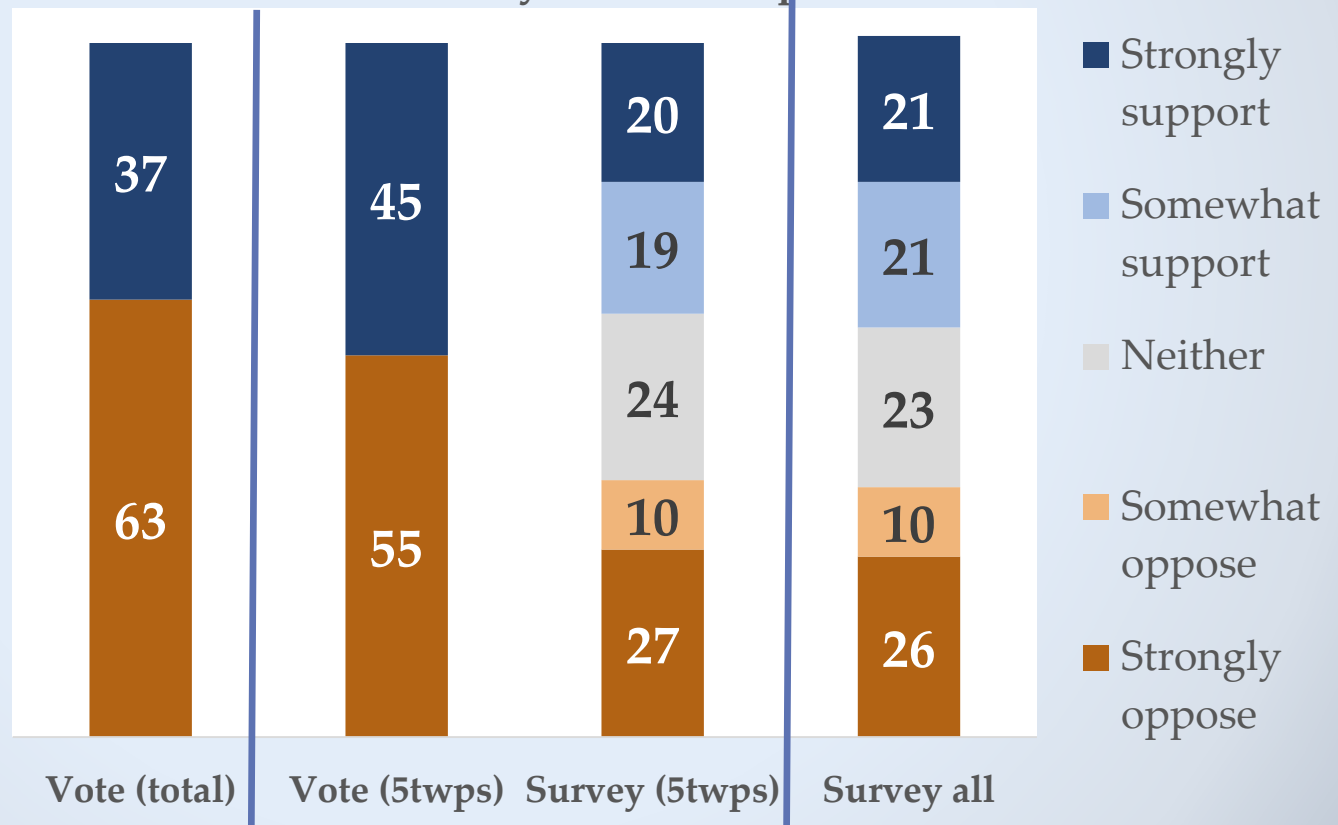


- Zoning constraints
- Old Model: Winner takes all
 - Disturbance
 - Royalty
- Newer Model: Pooled Royalties
 - Usually per-acre
- Newest Model: Includes Ranchettes

May 2 Referendum vs. Survey

Willingness to host additional turbines
in your township

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



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