



Michigan
Great
Lakes
Wind
Council

Morning Session

November 10, 2009

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Welcome

- Review of Governor's Charge to Council
- New Exec. Order objectives and timelines
- Review protocols and today's agenda

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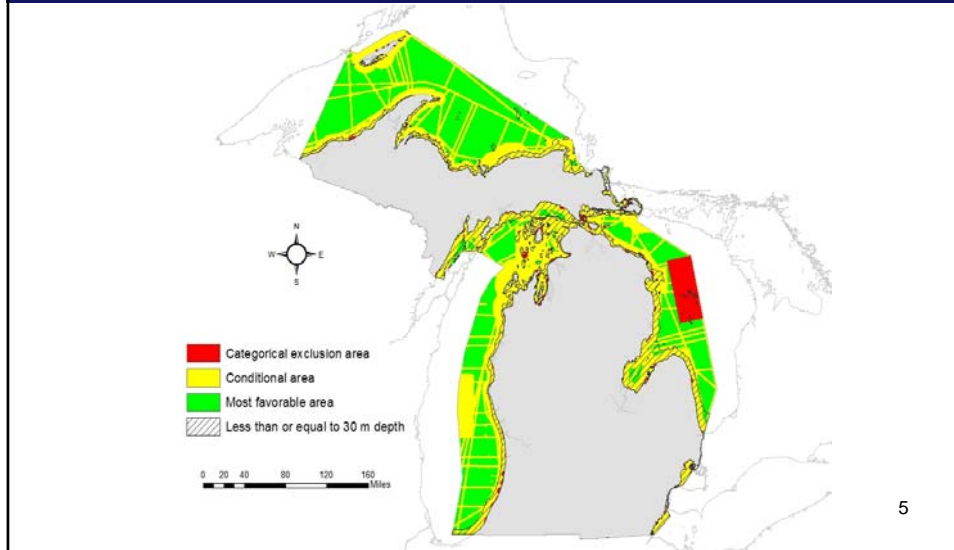
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Council Recommendations 09/09

- Legislation
 - non-riparian right to develop offshore
 - leasing program
 - regulatory framework
 - rents/incentives
- Public acceptance research and outreach
 - focus on selected lease candidate areas
 - statewide and local sampling research

“identify the most favorable places...”

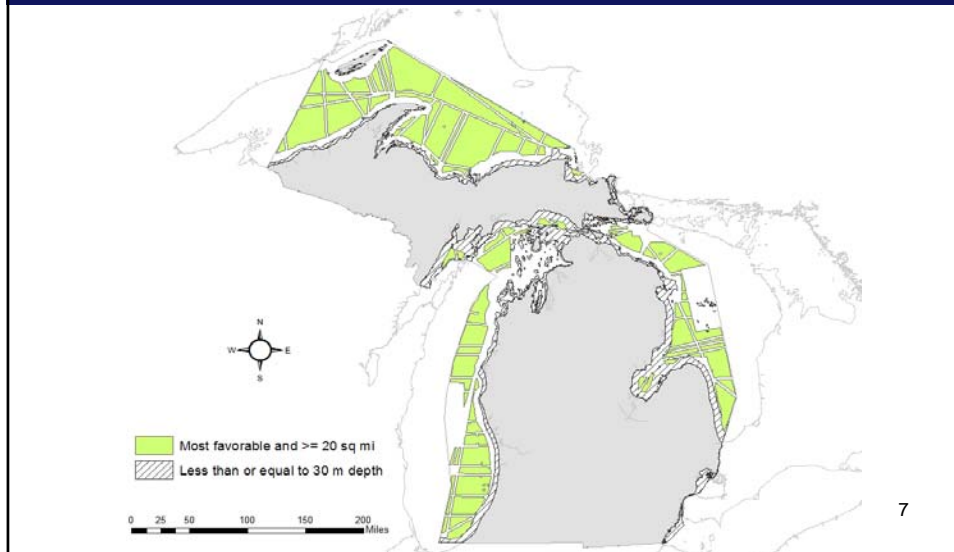
Offshore Wind Decision Support Tool



Council's 22 Criteria

- **Aids to navigation**
- **Buoyed navigation channels**
- **Coastal airports**
- **Military operation areas**
- **Submerged transmission lines**
- **Habitat/Biological (5 criteria)**
- **Disposal sites**
- **Harbors/marinas**
- **Large river mouths**
- **Shoreline (nearshore view buffer)**
- **National park lakeshores**
- **Shoreline parks and wilderness**
- **Shipwrecks**
- **State bottomland preserves**
- **Underwater archeological sites**
- **Commercial fishing areas**
- **International and state boundaries**
- **Recommended (shipping) course lines**
- **All of these filtering criteria are now in the integrating GIS software, the UM/IFR Decision Support Tool**
 - Some data still needed

Decision Support Tool Output



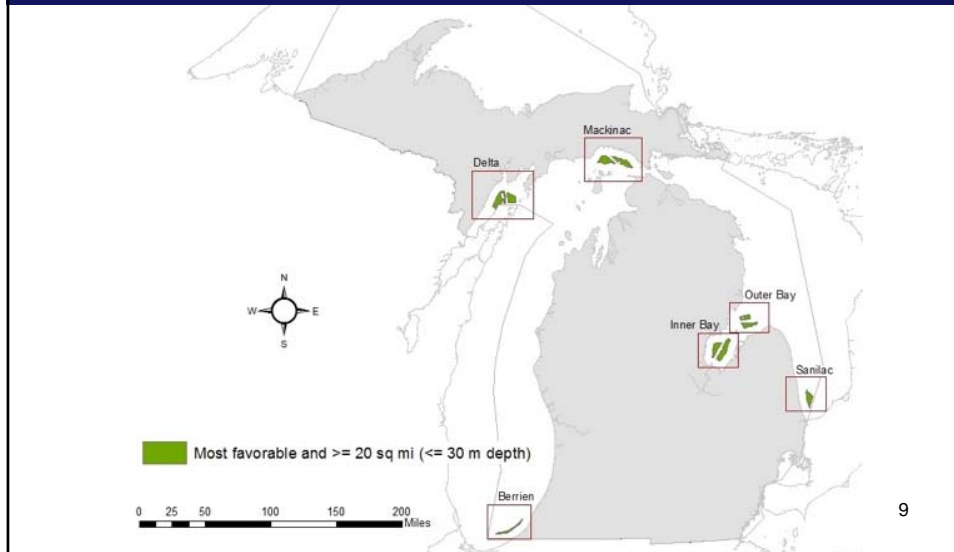
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Water Depth Considered

Total State-Owned Bottomland 38,448 Sq Mi	Depth of area (mi ²)	
	<= 30m	<= 45m
Excluded	356	528
Conditional	6,981	8,898
Most favorable	537	1,222
Total area sq. miles	7,874	10,648

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Six Largest Areas of Interest “Wind Resource Areas” - WRAs



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Strawman Ranking of 6 WRAs

Wind Resource Area Name	Size of WRA Square Miles	Gross Potential Megawatts (12.9 x area)	Nearest Port (WPI class \geq "medium")	(strawman) Ranking 11/9/9 6 = highest
InnerBay	104	1,347	Detroit	6
Berrien	25	324	Gary	5
OuterBay	53	686	Detroit	4
Mackinac	95	1,230	Manitowoc	3
Delta	94	1,217	Manitowoc	2
Sanilac	36	466	Detroit	1

Next market characteristics to consider could be:
transmission, port facilities details, substrate, engineering concerns, public acceptance....

Why These Areas?

- 22 Criteria were refined by workgroups between March and July
 - result: most favorable to least favorable
- Resources/Traditional uses were mapped
 - result: 10,000 sq miles “favorable”
 - Council decided on 30 meters depth as most “feasible” for 2009 tower technology
 - ♦ result: 537 sq. miles at this depth, some scattered, too small
- Workgroup used industry recommendation of “20 square miles” minimum size in 9/1/09 report
 - ♦ result: 6 large wind resource areas to study for Michigan’s first leasing program

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Why Focus on Just 6 Areas?

Public purposes

- We don’t need energy from all 38,000 mi²
 - a few hundred square miles can provide several million MWh energy
- We are concerned with which areas are most likely to be leased/developed
 - legislature may want to prioritize areas
 - administration may want to prioritize areas
- The 6 large wind areas represent a good cross-section of GL wind resources

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Why Focus on Just 6 Areas?

Business purposes

- Industry needs to know which areas are most favorable to develop
- Shallows are currently “feasible”
 - floating systems are at least 5 years away
- Cannot afford to study “everywhere”
 - Interconnection studies
 - Biological studies
 - Archeological and other site studies
 - MET tower placement costs must be focused

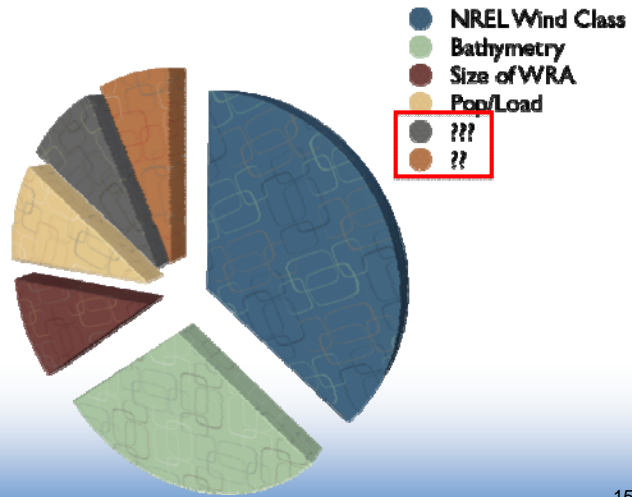
Putting Our Best Foot Forward for a New Leasing Program

- Q: If the state is going to offer some of Michigan’s “most favorable” areas, which of them are the “most marketable”?
(In other words, which will investors favor?)
- Staff considerations for “strawman” ranking

wind resource
water depth
expansion potential
proximity to load

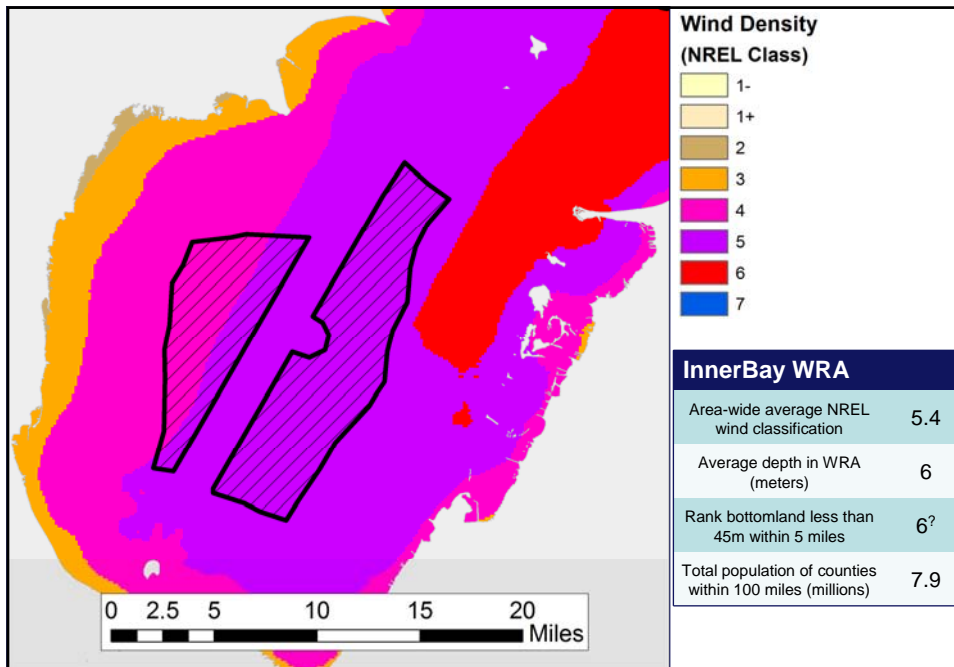
(unknowns)
price of power
site engineering
port facilities
transmission capacity
public acceptance

There is more than one way to slice it...



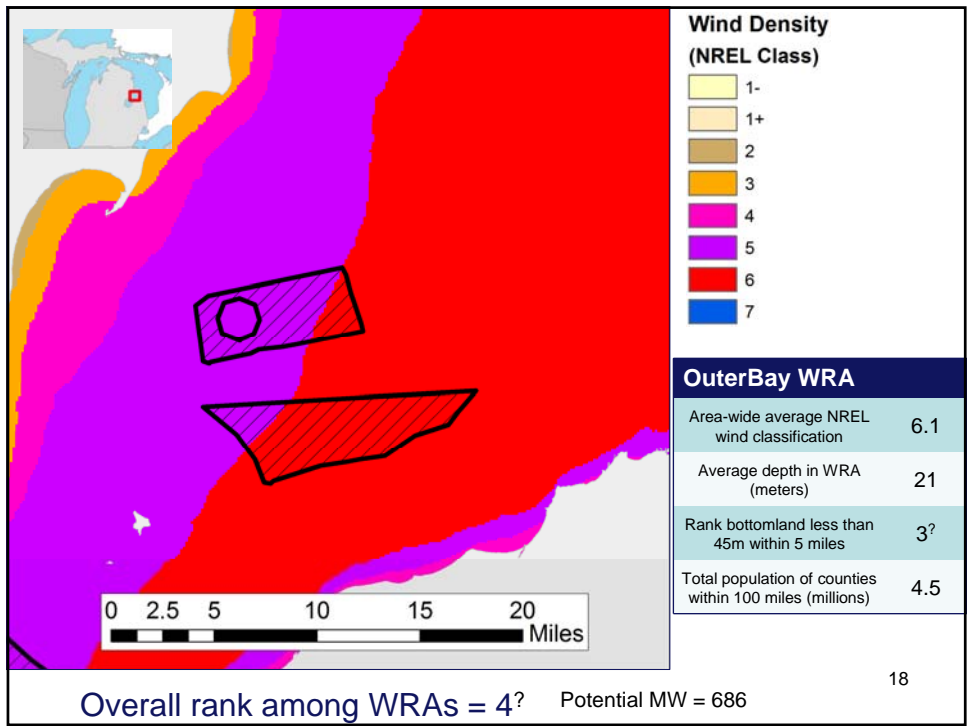
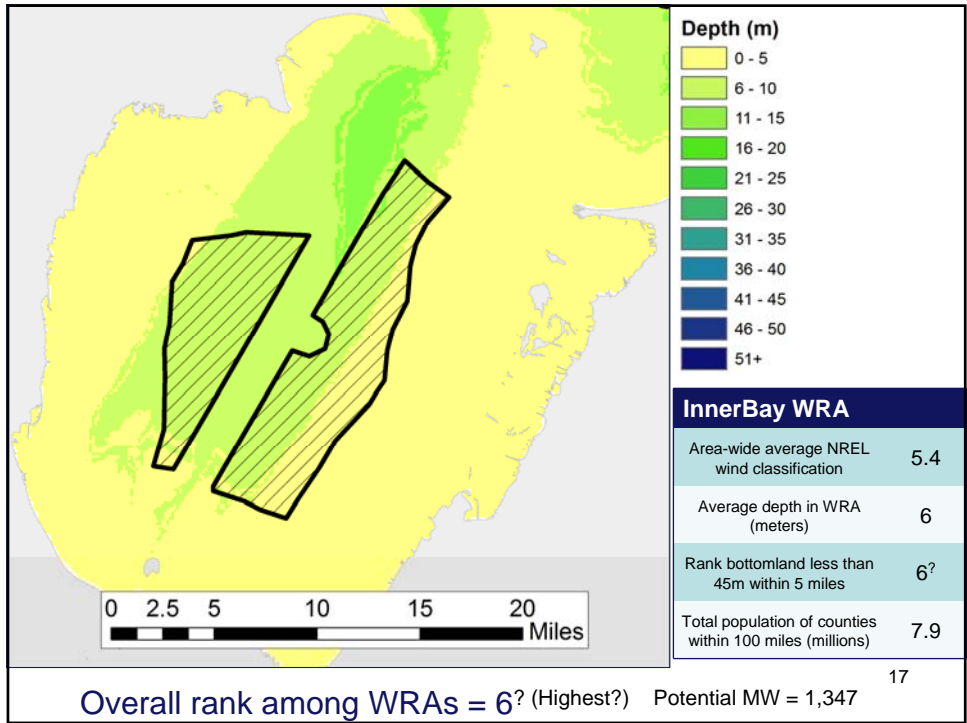
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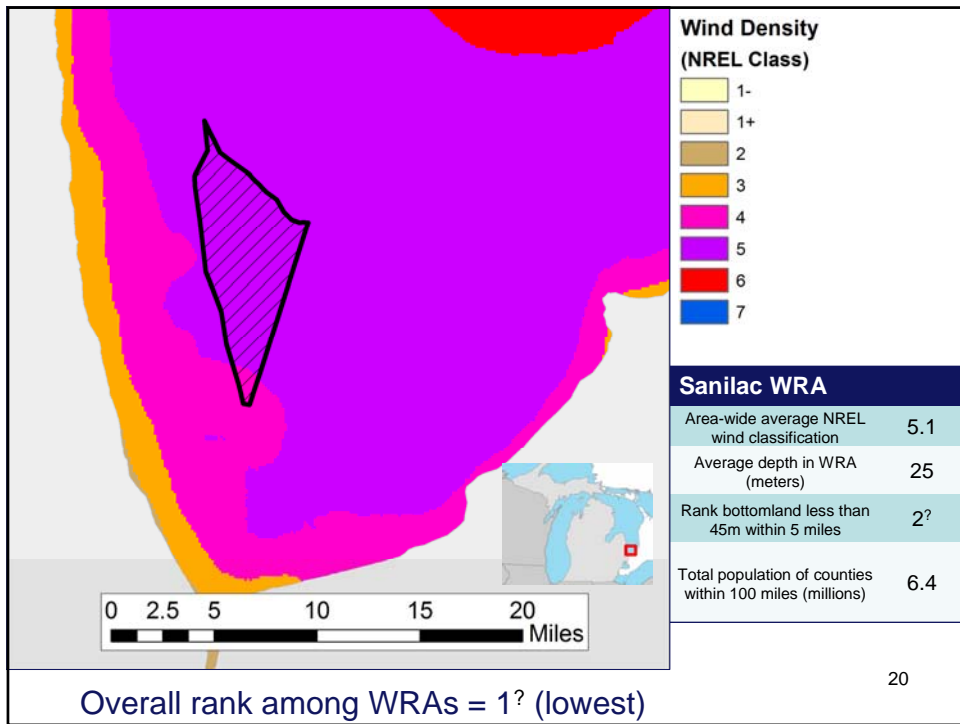
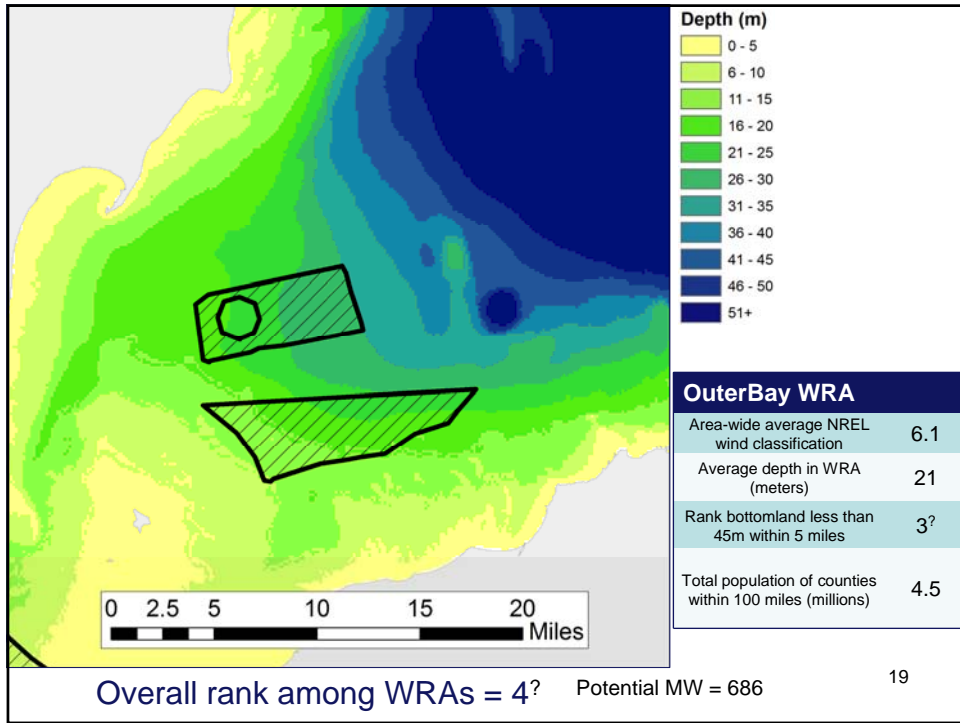
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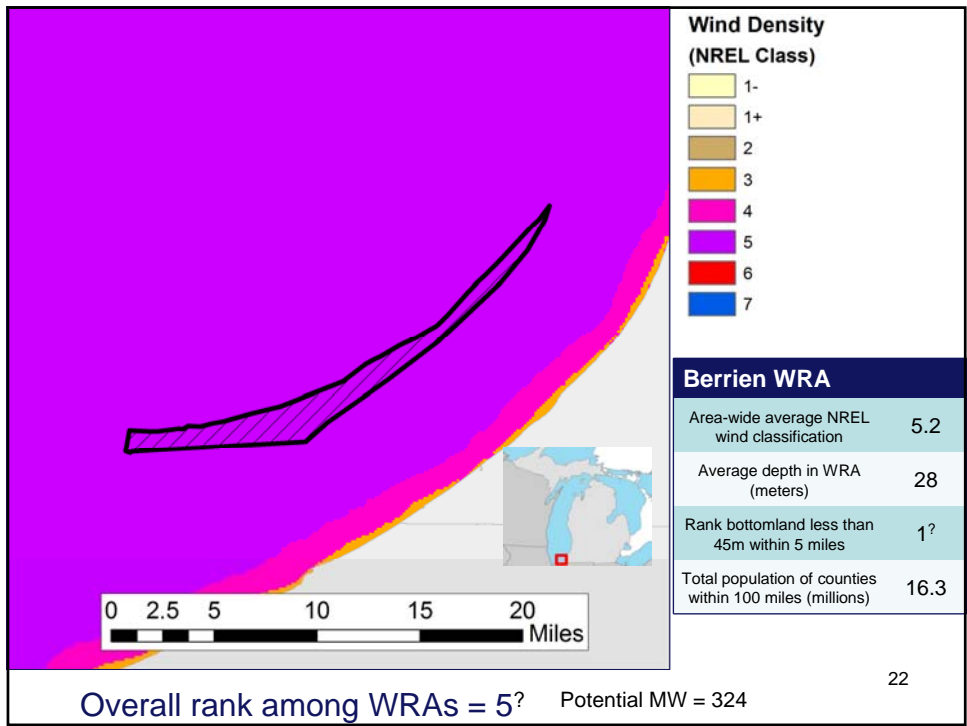
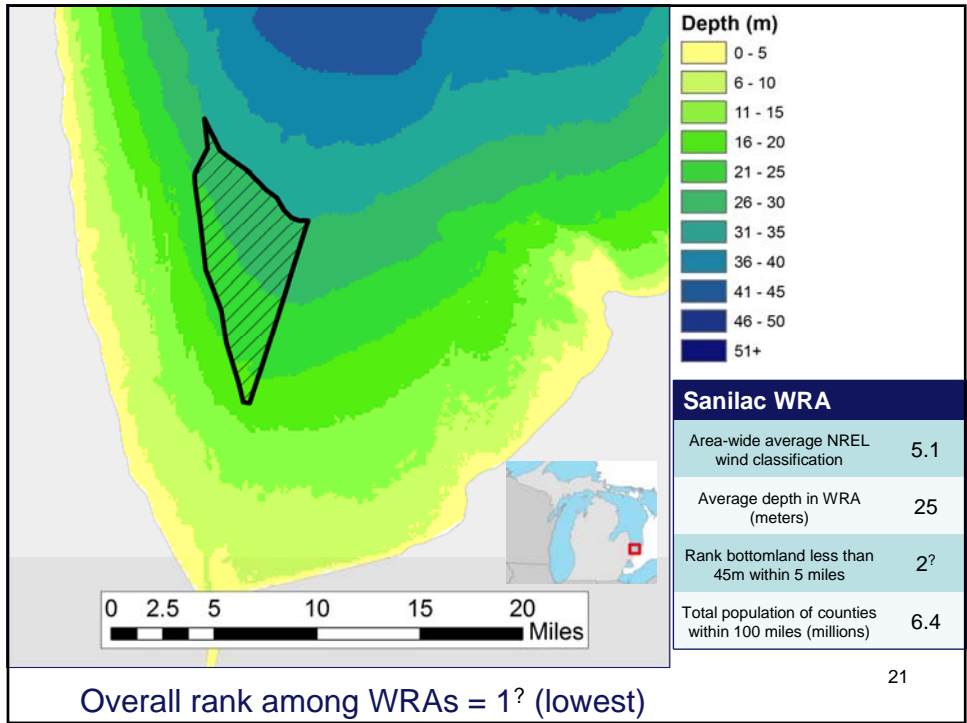


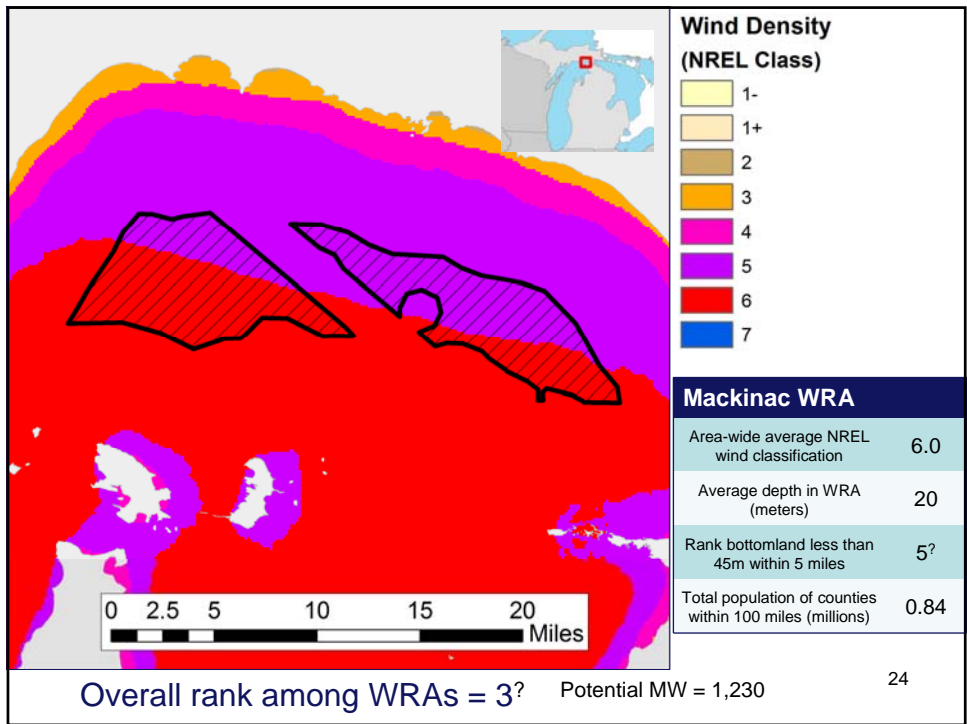
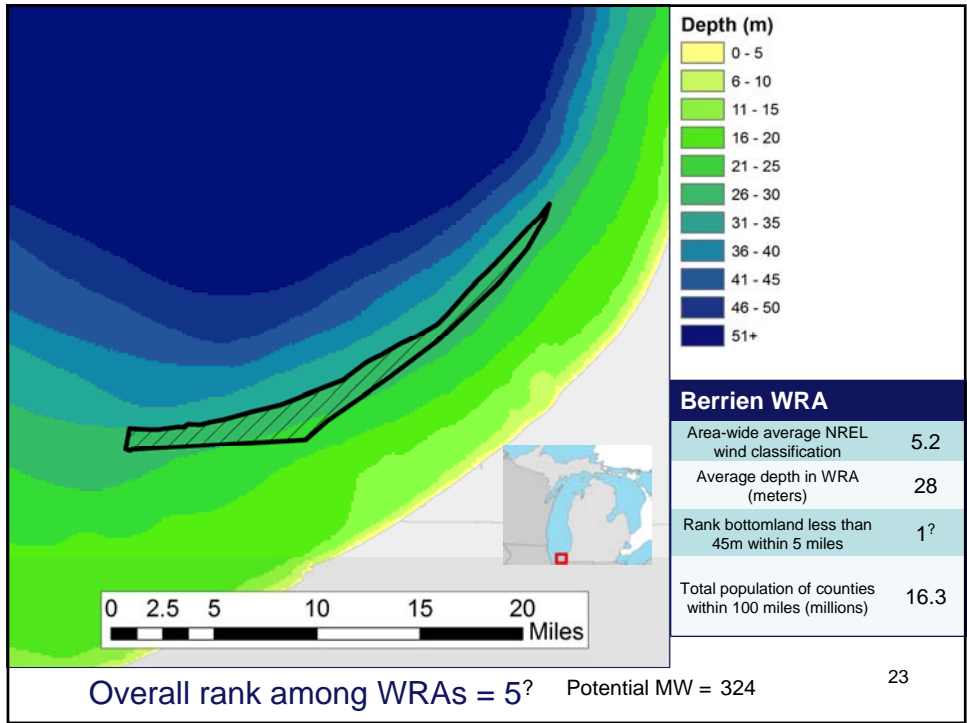
Overall rank among WRAs = 6? (Highest?) Potential MW = 1,347

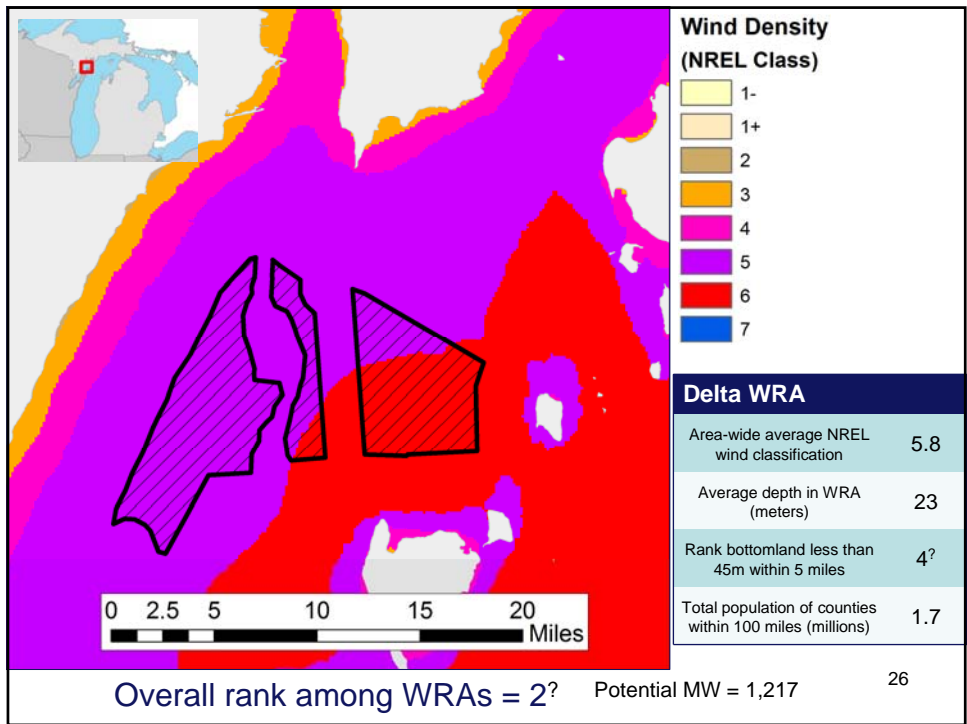
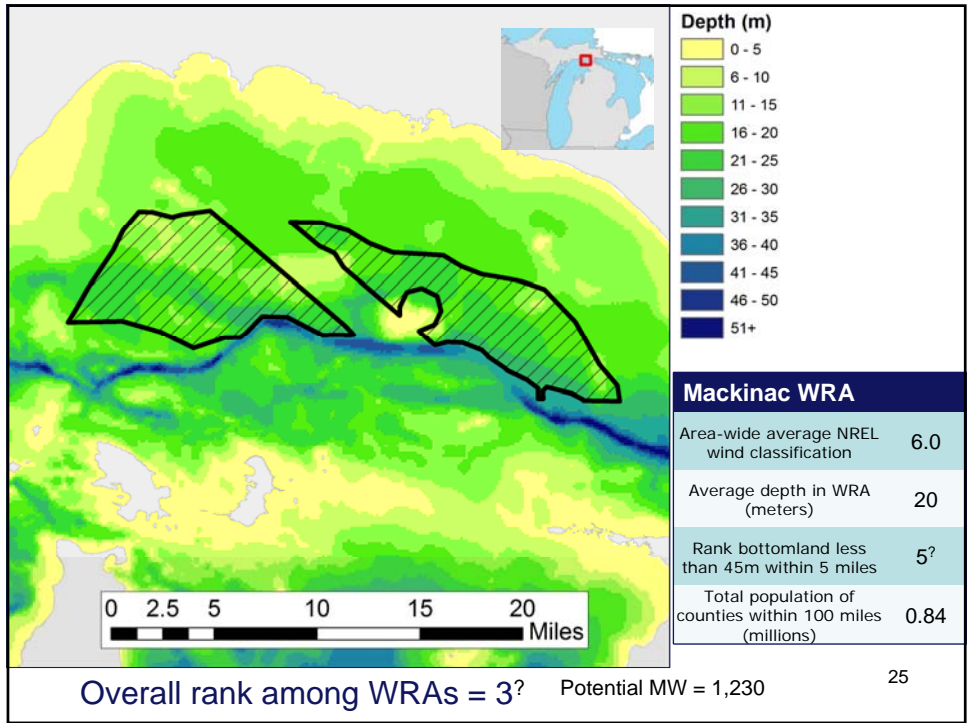
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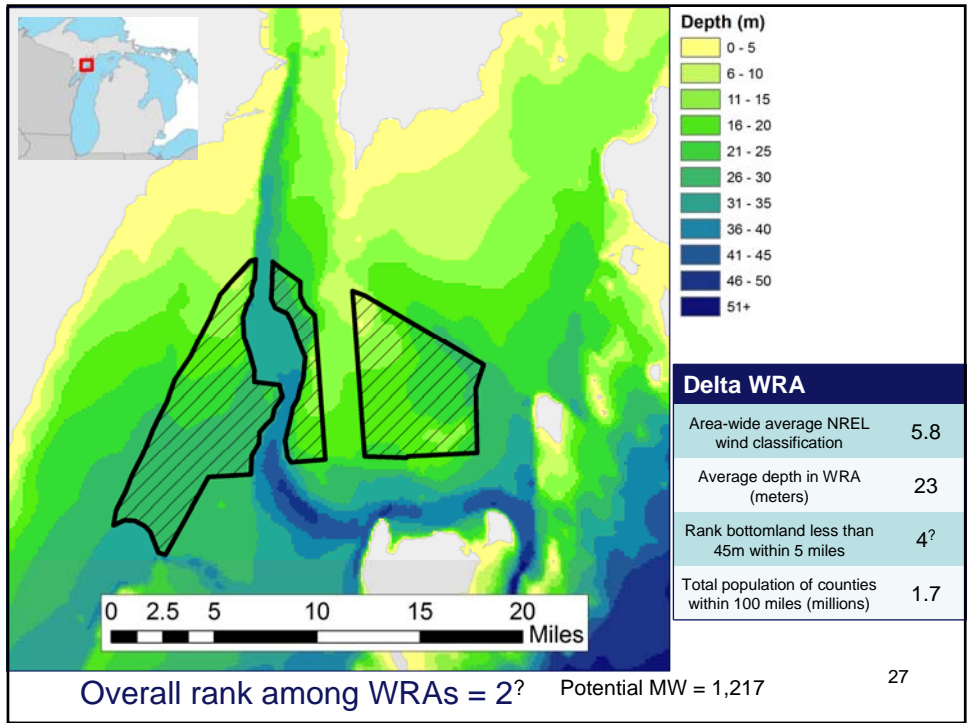




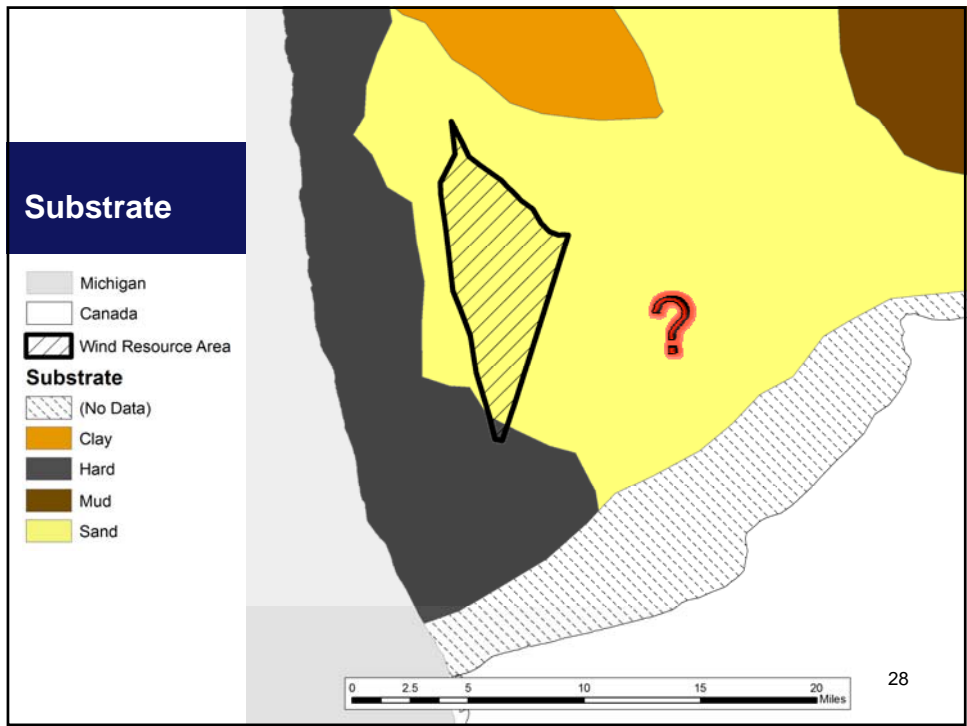




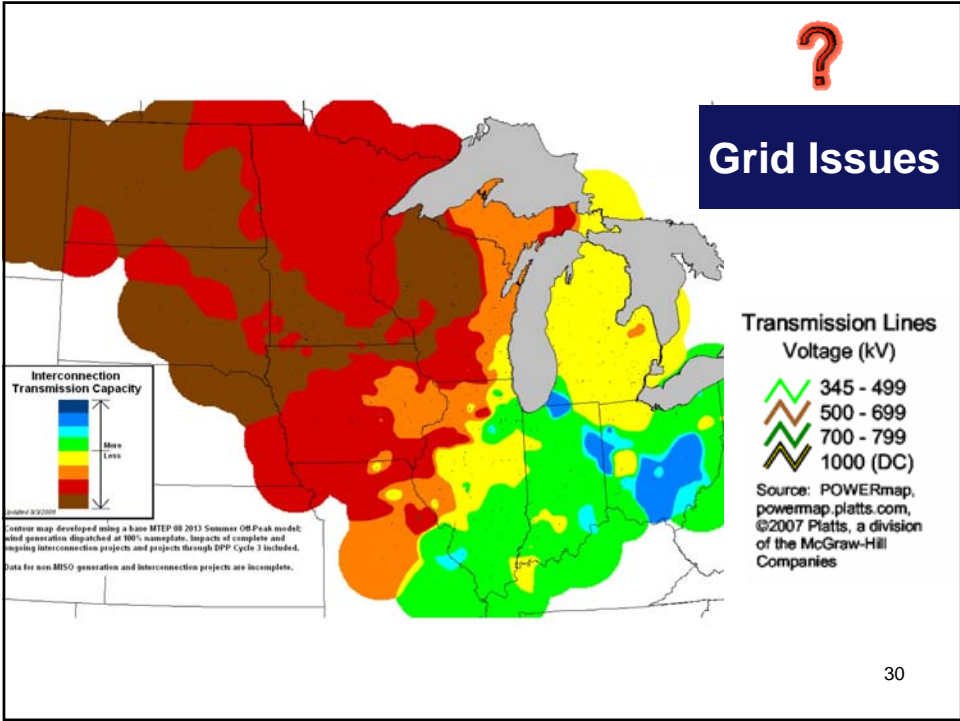
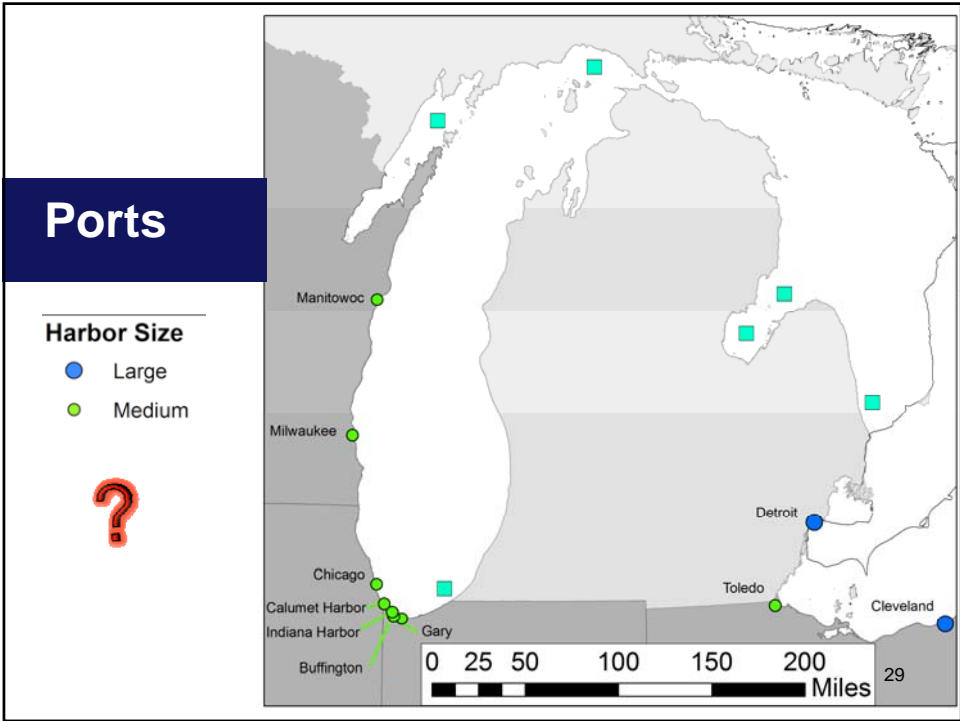




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Workgroup Task:

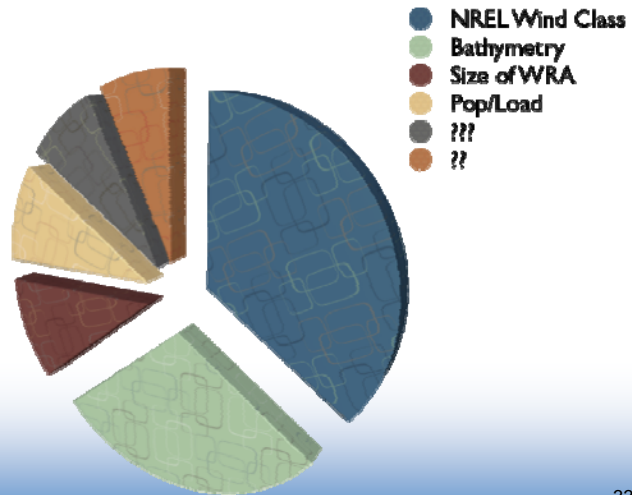
Decide Which Areas Should Receive State's Focus

- Improve upon staff's ideas for "strawman" ranking or devise a new way for council
 - what are the important considerations?
 - how should they be weighted?
- Full council will consider workgroup's output

wind resource
water depth
expansion potential
proximity to load

(unknowns)
price of power
site engineering
port facilities
transmission capacity
public acceptance

There is more than one way to slice it...



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Strawman Ranking of 6 WRAs

Wind Resource Area Name	Size of WRA Square Miles	(strawman) Ranking 11/9/9 6 = highest
InnerBay	104	6
Berrien	25	5? or 1?
OuterBay	53	4? or 3?
Mackinac	95	3? or 5?
Delta	94	2? or 4?
Sanilac	36	1

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- Workgroup effort needed before community meetings
 - Objective: Select three counties before end of holiday season
 - Process:
 - ◆ Workgroup will review/revise the ranking criteria
 - ◆ Look closely at the features of six largest areas
 - ◆ Workgroup decide meeting duration, format, and recommended counties for hosting 3 meetings

- Council decisions next meeting...
 - Confirm counties for coastal community public meetings
 - Confirm meeting content and approach
 - Identify which council members will be hosting coastal meetings

Public Engagement

- First step for Council - Conduct 3 public meetings in counties near “best” places
 - Present the pros and cons
 - Listen and learn from all concerned

- Advise researchers and outreach team during the next 12 months