

Protecting the Quality of Water Rights of the Mahomet Aquifer

Mahomet-Seymour Ag Issues Team



Water Matters

- ❑ Quality
- ❑ Needs

Two Types of Aquifers

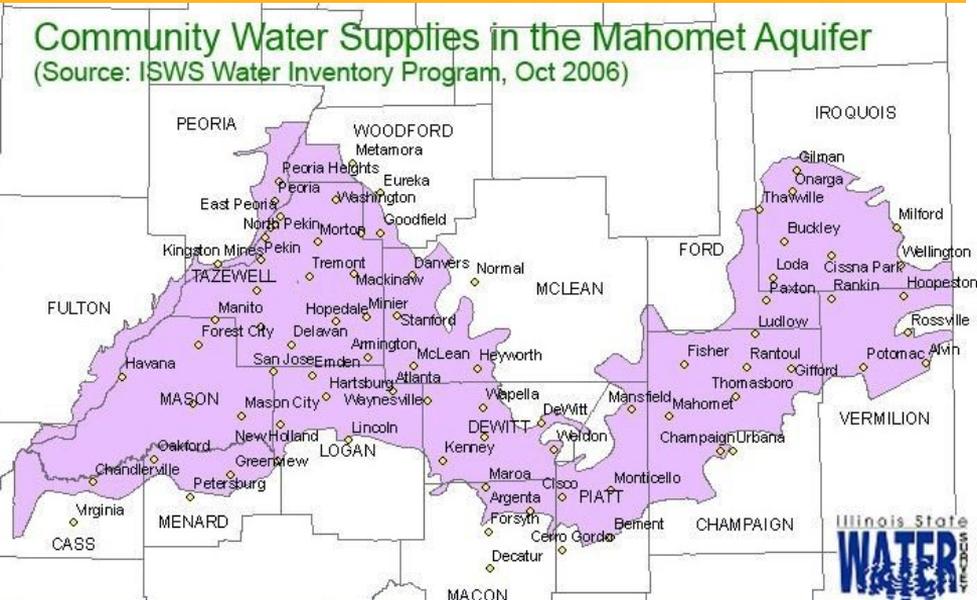
type of aquifer	unconfined	confined
description	water rests on an impermeable layer; ground above it is permeable; can be refilled from rainwater that infiltrates	water trapped between 2 impermeable layers; water becomes pressurized; cannot be refilled from rainwater infiltration
type of well	regular well <i>(water needs to be drawn or pumped out)</i>	Artesian well <i>(water rises under its own pressure)</i>

Background about Aquifers

- ❑ Aquifers can be owned privately or publicly.
- ❑ There are two types of aquifer.
 - ❑ Unconfined and Confined

Community Water Supplies in the Mahomet Aquifer

(Source: ISWS Water Inventory Program, Oct 2006)



Who Uses the Aquifer?

- The aquifer serves over millions of people in 15 counties in Illinois
- These counties include
 - Cass
 - Champaign
 - DeWitt
 - Ford
 - Iroquois
 - Logan
 - Macon
 - Mason
 - McLean
 - Menard
 - Piatt
 - Tazewell
 - Vermilion
 - Woodford



Sustainability

- ❑ Worldwide, 97% of the planet's liquid freshwater is stored in aquifers.
- ❑ Available blue water resources (rivers and aquifers) have only been depleted by 10% globally.



Introduction & Overview

As the world continues to change, we are the generation that is relied upon to make sure the climate issues are addressed in the proper manner.

As a team we realized we had opposing views on who is in charge of regulating and caring for our county's aquifer.

**The question emerges...who is
best fit to be protecting our
aquifer?**

Pro Statement

The government should have rights and regulations to the Mahomet Aquifer.

The Pro Side

The California Drought

- Politician, Jerry Brown, made water conservation rules in 2018
- Citizens favored the idea

“In preparation for the next drought and our changing environment, we must use our precious resources wisely... we have efficiency goals for energy and cars – and now we have them for water.”

- Jerry Brown

Con Statement

The government should not have full rights and regulations to the Mahomet Aquifer.



The Con Side

Flint Water Crisis

- ❑ The Michigan Government purchased treated water from Detroit
- ❑ 2014 the Government decided instead of paying for water from Detroit they would just treat Flint's River water

If the Government had done their job the corrosion wouldn't have happened and the citizens wouldn't have to worry about their water

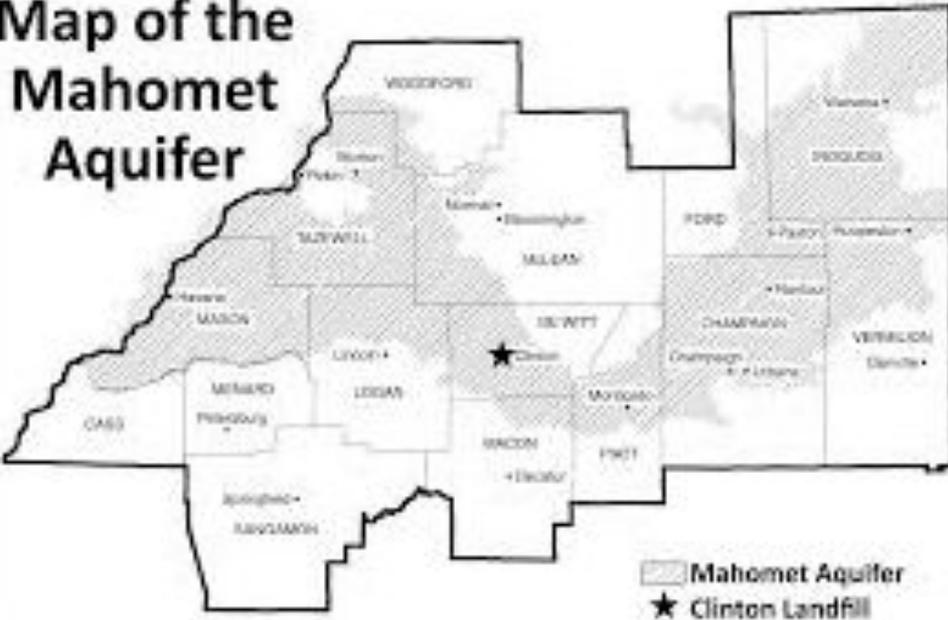
Pro Supporting Facts

- ❑ Sole Source Aquifer
- ❑ How many people are too many?
- ❑ A complicated Process
- ❑ High Level of Education needed
- ❑ The Mahomet Aquifer Task Force
- ❑ Recent news

Pro Statement

The government should have rights and regulations to the Mahomet Aquifer.

Map of the Mahomet Aquifer



Sole Source Aquifer

- ▣ **Sole Source Defined**
 - ▣ The sole or principle source of drinking water in the area
- ▣ Produces an average of 57 million gallons of water a day
 - ▣ The EPA granted permission for the government to assess any federal funded projects for potential to contaminate the aquifer
 - ▣ The government can't assess local projects for potential contamination



How many people are too many?

- ❑ It is suggested by 2020, the mahomet aquifer region will increase by 100,000 people.
 - ❑ Reaching a total of 900,000 people



Reverse Osmosis Tanks

A Complicated Process

- ❑ Sewage water goes through a advanced treatment
 1. Reverse osmosis is used to eliminate viruses and bacteria
 2. Water is then disinfected by ultraviolet light
- ❑ Second treatment and fourth step would take 2 years

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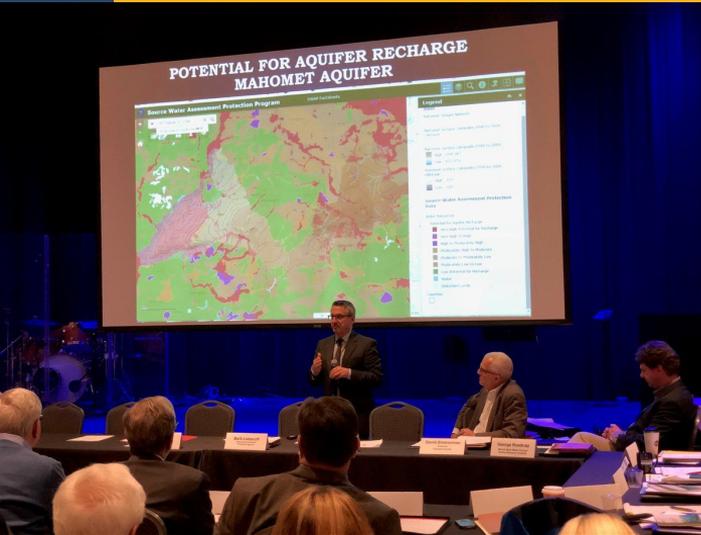
“In secondary treatment, bacteria are added to the wastewater to ingest organic solids, producing secondary sludge that settles to the bottom.”

-Columbia University



High Level of Education Needed

- ❑ The average citizen doesn't have the time, money, or education needed to complete these intricate tasks
- ❑ If anything goes wrong you could end up drinking water that is contaminated



The Mahomet Aquifer Task Force

- **What:** A group of community members that are asked onto the board based on knowledge, passion, and generosity to care for the aquifer.
- **When:** Meetings monthly or more frequently if pressing matters.
- **Why:** To observe and provide information about the aquifer.



The Mahomet Aquifer Task Force

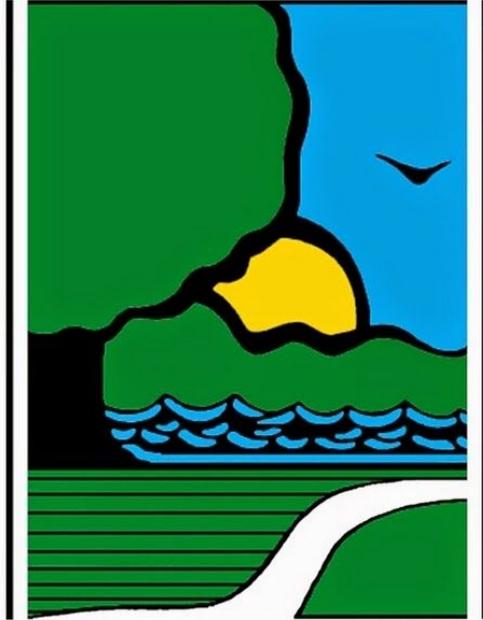
- How do they reflect the government's work?
 - Power to make legislative suggestions
 - Agenda plans are always made public
 - The governor appoints members to task force each year



The Mahomet Aquifer Task Force

- How does the Task Force do their job better than citizens?
 - Background knowledge
 - Operation as a group
 - Vote
 - Connections to superiors
 - Availability of funding

ILLINOIS



DEPARTMENT OF

**NATURAL
RESOURCES**

In Recent News

November 28, 2018

- Sen. Chapin Rose passes legislation for more protection under IDNR
- Full jurisdictional authority to IDNR to protect against gas leaks
 - Monitoring storage facilities above aquifer, and natural gas pipelines nearby



In Recent News Cont.

- In 2016 underground natural gas leak of a storage facility owned by Peoples Gas tainted the water
 - Mostly providing to rural wells
- New bill will allow the state to enforce action and complaints against operators who fail to protect water supply.

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“It seems that older generations don't typically want the gov't involved... people who are younger realize the need for more regulation”

-Jim Risley



Varying Beliefs

Why is this an issue?

- People are so varied in their beliefs
 - Due to misinformation, non-education, and being brought up differently
- *It is easier* to have one single source direct people around
 - Government has power to educate people around the community



The Issue

- Not having all citizens on the same page
 - Recipe for disaster
- There would be no regulation on what can/cannot be used
 - Water would not be pure if not *every single person* is doing the same purification.

Con Supporting Facts

- ❑ Illinois Government
- ❑ Contaminating Fertilizers
- ❑ Salt on Roads
- ❑ Rationing water
- ❑ Possible water crisis
- ❑ Landfill liners
- ❑ Abandoned Landfills
- ❑ Gas Leak

Con Statement

The government should have more limited rights and regulations to the Mahomet Aquifer.



The Illinois Government

- Gov't needs citizens that know about the aquifer to help them make decisions
 - Citizens with own water plants know more about aquifer
- Gov't involvement is necessary to help
- Citizens monitor gov't

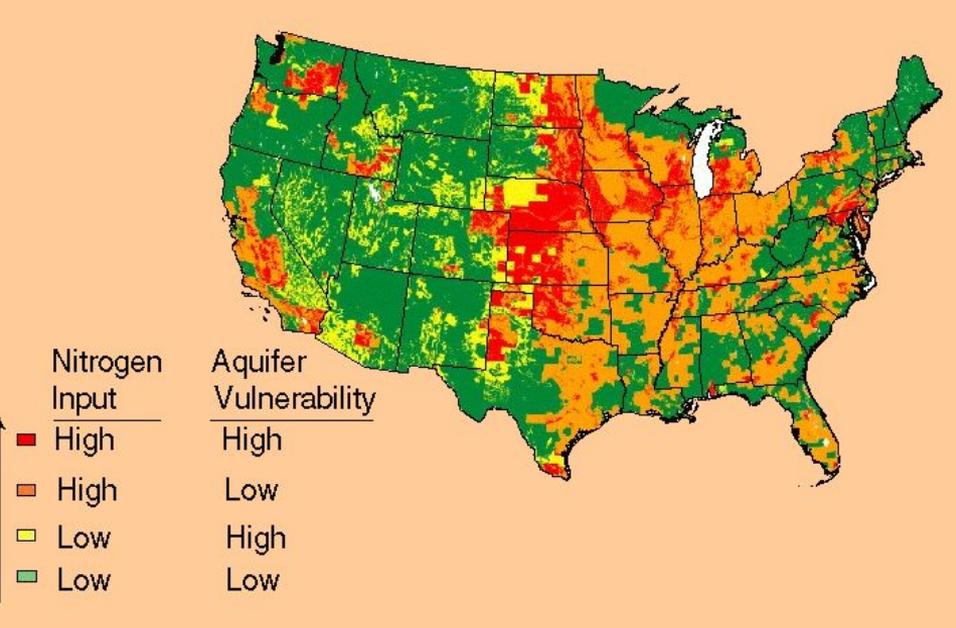


The Task Force

- Some citizens have connections with superiors
- They bring in citizens to talk to them about the aquifer
 - Citizens know about the aquifers problems and how to solve them
- Citizens understand urgency to help the aquifer

Contaminating Fertilizers

- Why and how do some fertilizers contaminate the aquifer?
 - Nitrate
 - Used in fertilizers, except for organic
- What could the government do?
 - Require organic fertilizers, or none at all
 - Government regulations apply to **ALL** of Illinois





Salt on Roads

- The combination of sodium and chloride seeps into the ground
 - Adds sodium chloride to the water
- What could the government do?
 - Ration salt, but different counties
- People can use the right amount for themselves if they're educated



Government's rationing of water

- The Illinois Government will ration out water and leaves Illinois to depend on the rain

It's been four years since the Flint water crisis

- The citizens of Flint still don't trust their water
- So the Michigan Government rations out bottled water

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“When we are low on water, I can't make soup... It takes four bottles of water to boil macaroni.”

-BBC, Melissa Mays



Water Crisis

Flint Michigan water crisis affected the citizens of Flint

- Michigan Government did nothing about the situation until it was out of control
- Citizens blame the Michigan Government for not doing anything about the issue sooner



Landfill Liners

- Regulated by the Government
 - Blocks dirty water from seeping into aquifer
- Due to natural deterioration it could fail
 - There could be a crack in the topsoil due to slope failure and weakened stability of the ground
- How will the gov't know?



Abandoned Landfills

- Old landfills could be producing gas that the water still runs through
- Illegal dumping going on
- Liners materials are expensive

There is still a big debate about legacy landfills



Gas Leak 2018

- What did the government do?
 - Gov. Rauner passed a law requiring that citizens be notified of leaks
- How will this help?
 - Will not stop the leaks from happening
 - People still won't have water

Pro side conclusion

- The Pro Side concludes that the government should be heavily involved with regulating the Mahomet Aquifer. Due to how misinformed many citizens are, it is valid to have educated officials lead the way in business surrounding the aquifer.

Con side conclusion

- The Con Side concludes the citizens should be in charge of regulating the Mahomet Aquifer. The government is not informed enough about the counties needs to regulate the landfill liners and the citizens know what is best for their county.

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Questions?

<https://bit.ly/2Up2GrM>



Please take our
survey to provide us
with local data!

