



**Hydro
Genyse**

A Tower Energy Company

AT QUARRY LAKE PARK

Fueling The Future

About This Project

This project is designed to solve a problem with the water quality at quarry lake park by connecting the lake with a hydrogen hydrolysis system that will clean the water while generating hydrogen. The site will also create a hydrogen fueling station for municipal vehicles.





Ralph Bencriscutto
Founder and President

Ralph Bencriscutto formed Tower Energy International in 2009 on the strength of more than 25 yrs of experience creating and operating companies committed to sustainable and renewable energy systems. In 1996 Mr. Bencriscutto designed radar absorption protection system for Raytheon anti - ballistic missile program that is still used today. Other projects include NASA Kennedy Space Center, UTMC at Galveston, BRP Marine Propulsion Division, General Motors and 100's of others with his sustainable roofing system for water catchment.

Mr Bencriscutto is the principal system designer of more than 3000 energy projects from heavy industrial process to commercial high-rise HVAC and has personally developed over forty custom software programs for energy and water efficiency.. Bencriscutto specializes and designs systems to reduce water consumption through heat recovery treatment loops, co-generation and NSF rainwater catchment.

His current focus is on the global transformation of fossil fuels to hydrogen by utilizing cold water filled quarries as an energy storage method when combined with municipal participation. The by products of the electrolysis are all used to treat water and the pressure created during expansion is converted to stored gravitation energy under the water which is used to fuel the reaction. The patent pending process is designed lower the net cost of hydrogen so it can replace fossil fuels.

To date it is estimated his company has removed over 380,000 metric tons of co2.



What Will This Do for Racine County?

1

Create a cleaner, more usable Racine Quarry for recreation and commerce.

2

Make Racine the leader in Hydrogen Fuel Delivery for the Auto-Market

3

Provide a way to reduce storm water and sewage over-flow from leaking into Lake Michigan and the Root River when used at other sites.

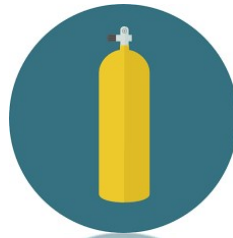
4

Make a substantial effect on Climate Change by meeting zero carbon emissions goal before 2050

This Process Creates 3 By-Products



Heat



Oxygen



Pressurized Gas



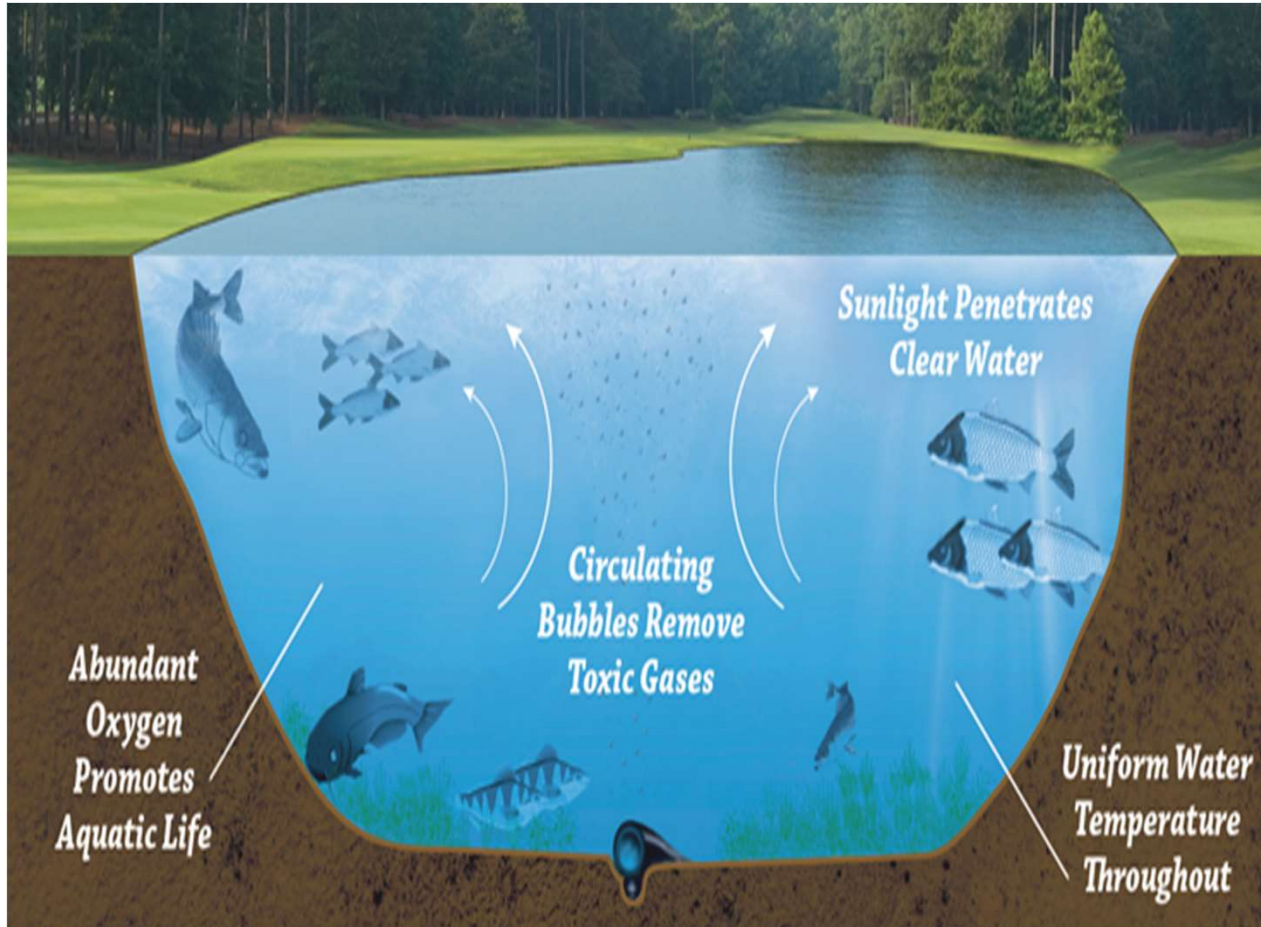


By-Product 1: Heat

The reaction creates heat that would normally be expelled with additional mechanical cooling. When utilizing a body of water however, we can cool the reaction with the water itself, or use the heat where needed. This is called co-generation.



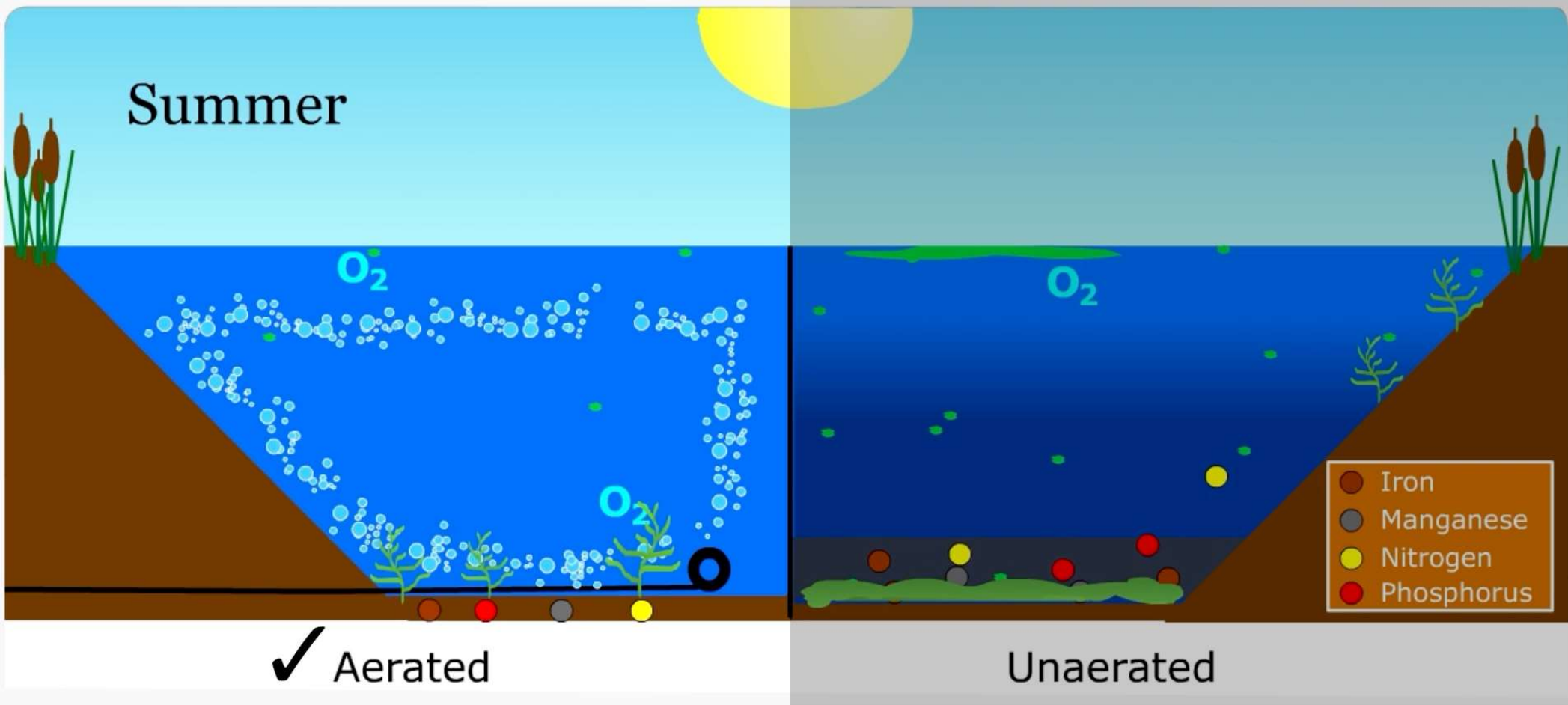
The Aeration Effect on Quarry Lake



By-Product 2: Oxygen

Oxygen is also normally expelled in the atmosphere. We will use it to clean the lake and help the aquatic life flourish.

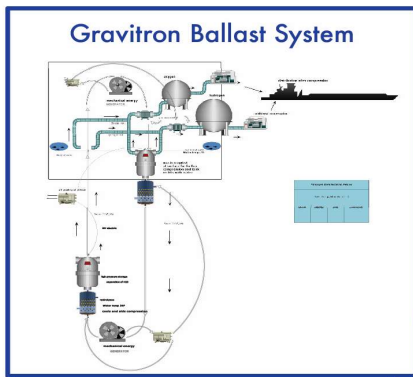
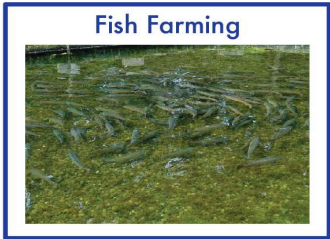
This creates a cleaner quarry
-safer for people
-safer for fish



A small amount of algae dies and falls to the bottom of the dugout. The dead algae decompose and consume oxygen,



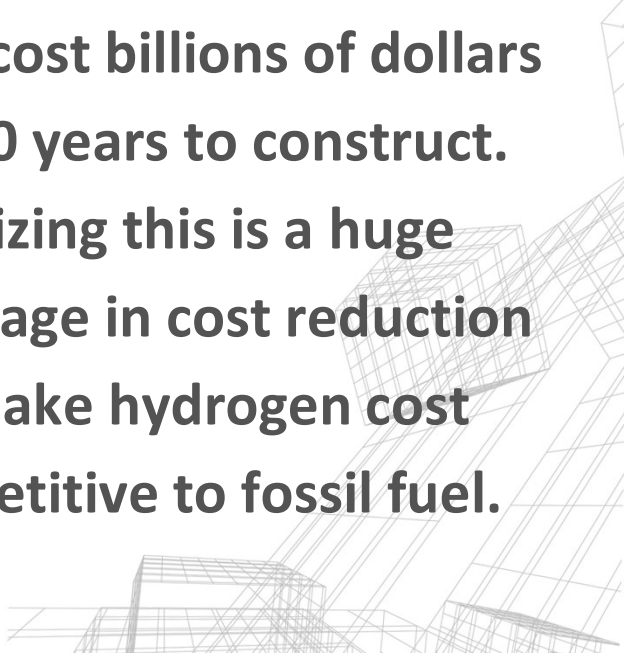
**The circulation loop
would create a
waterfall that would
be used to help
regulate water
temperature and create
an attraction in the
summer.**



Racine Quarry : The Ideal Body of Water

This man-made quarry would cost billions of dollars and 20 years to construct. Utilizing this is a huge advantage in cost reduction to make hydrogen cost competitive to fossil fuel.

Racine Quarry Lake Park Hydrogen Project





The northwest lot is currently undeveloped.

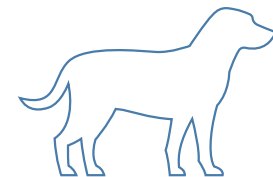
The northwest corner would fit the operation and not disrupt any other operations at the park. A Waterfall would be added to the same corner for aeration.



Alternative energy would power the system and improve the dog park

Solar

The dog park could have a solar array that could be installed as to not interfere with the dogs and add shade.



How could this system help manage storm water runoff?

**“OUR TWO MOST VALUABLE,
PRECIOUS NATURAL RESOURCES ARE
LAKE MICHIGAN AND THE ROOT
RIVER. IF WE CAN DO SOMETHING
WITH THAT STORM WATER RUNOFF
TO MANAGE IT, WE CAN HELP
DECREASE POLLUTANTS GETTING
INTO THOSE TWO WATER BODIES.”**

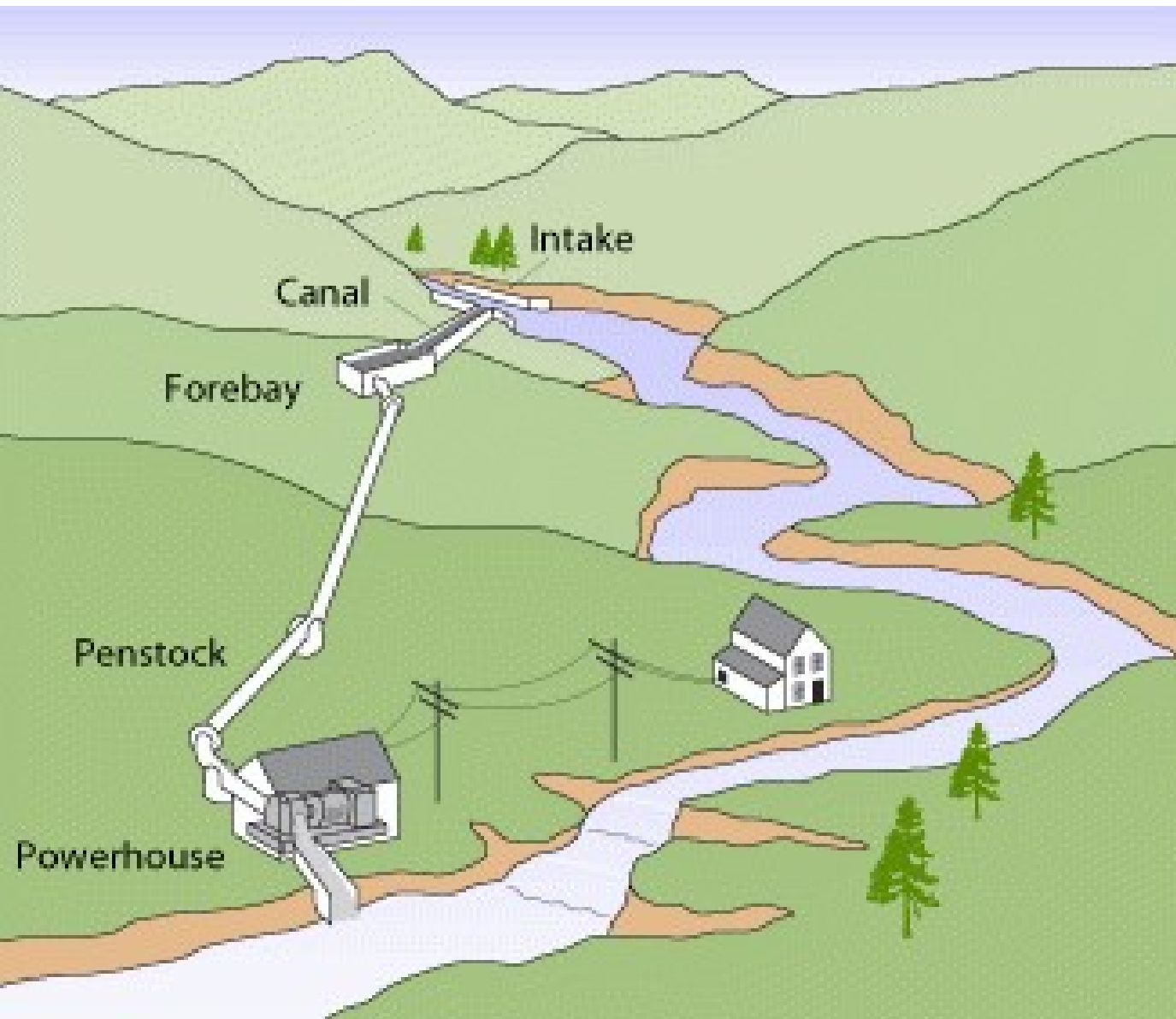
-JOHN ROONEY

*Racine Assistant Commissioner of Public
Works*

A future project with the same objective

Storm water could be diverted to empty quarries to await treatment. This massive amount of water would divert stress on the lake water levels. Local treatment of the water would be done all with the by-product of Hydrogen.





Microhydropower Systems

The inflow of water to the empty quarry could generate clean hydroelectric power.

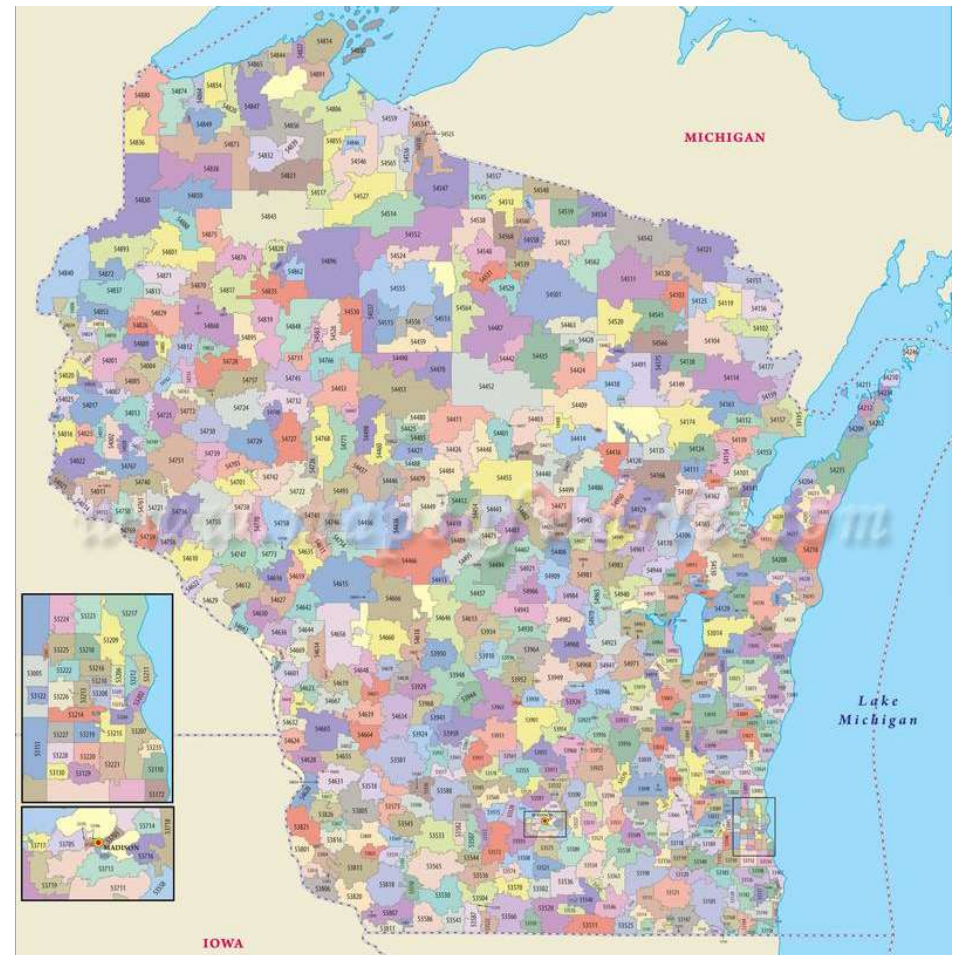
- **Water conveyance** -- channel, pipeline, or pressurized pipeline (penstock) that delivers the water
- **Turbine, pump, or waterwheel** -- transforms the energy of flowing water into rotational energy
- **Alternator or generator** -- transforms the rotational energy into electricity

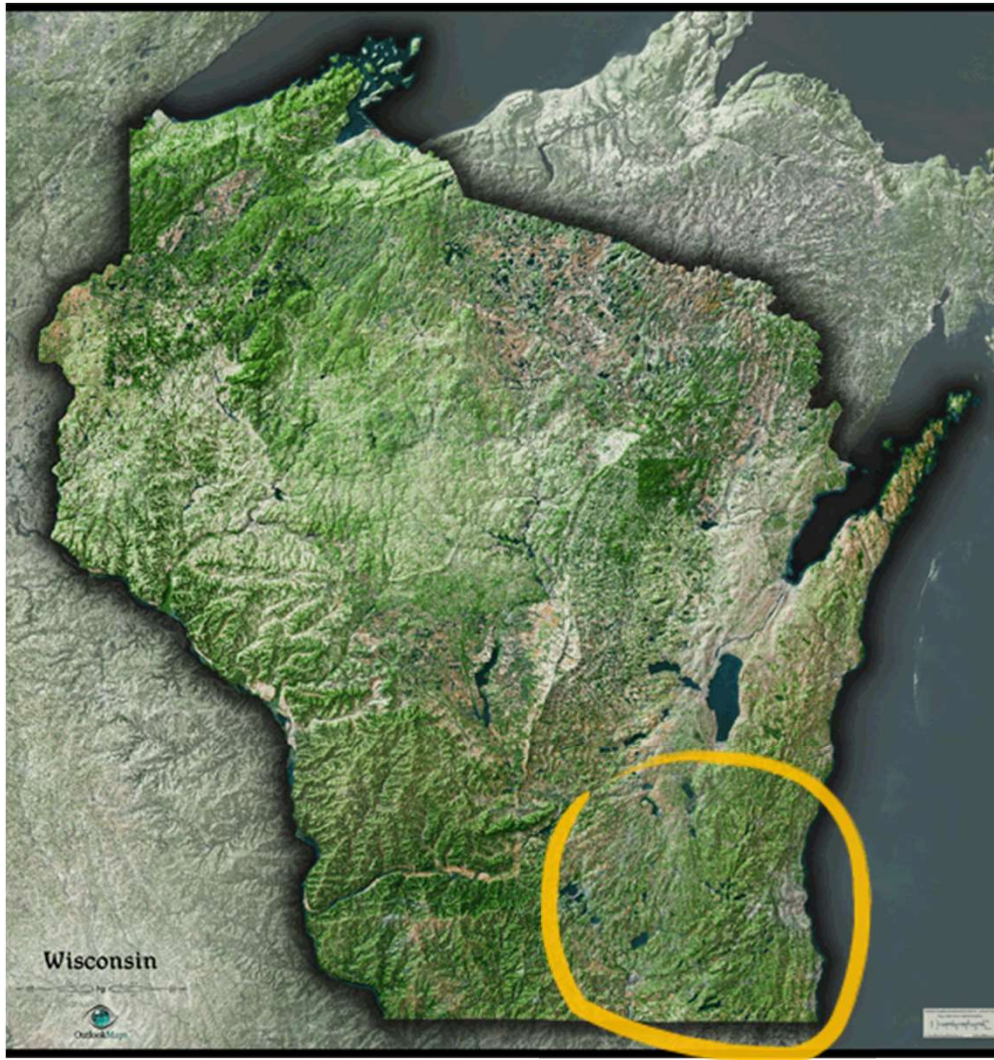
Water Collection Potential For the State of Wisconsin

- **Hundreds of Quarries** = trillions of gal of storm water run off that could be collected and used to manage lake levels while generating hydrogen.

- **Surrounding Watershed** 1000's of sq miles in urban areas

Water can be treated on site with mini plants for reuse saving billions in costs





Distribution of Hydrogen
is efficient within 100
miles of production
facility- Future production
could supply all of SE
Wisconsin

(Madison – 95 mi)
(Chicago – 80 mi)

Single Treatment Plant Effect

Over 14,000 metric tons of CO₂ saved per year with on the first prototype alone

Over 20,000,000 kWh saved from free cooling at one facility

Up to 2MW of Power Saved 24/7

Over 420,000 kg of H₂ replacing 840,000 gal of gasoline per year



Statewide Potential Impact

100's of billions of gal of water saved from municipal plant overflows and flooding, saving lake pollution and billions in costs.

Creation of a new hydrogen economy that will transform the fossil fuel to clean energy.

Millions of tons of carbon saved for the future of the planet.

Transform Wisconsin to a leader in water and energy efficiency worldwide.



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