

**25 by 25 Proposed Legislation:
It's about the Water...The Water, Energy, Climate Change Nexus**

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When you think Michigan, you can't help but think water. I just moved here and I recently met a friendly Michigander who didn't skip a beat to proudly tell me that the state has the longest freshwater shoreline in the nation. The economy of this beautiful state is intricately connected and bound to the waters of the Great Lakes. So what does water have to do with the proposed 25 by 25 bill on the ballot this November that asks Michiganders to generate 25 percent of the state's electricity with renewable energy sources by 2025? Simply, everything.

It's a perspective that hasn't been discussed much, and that's not surprising given that the economy is on everyone's minds. 25 by 25 or the Michigan Energy Michigan Jobs initiative promises to create at least 74,495 jobs and spur \$10.3 billion in investment according to a recent MSU report, commissioned by the Michigan Environmental Council. Nearly 43,000 of those jobs would be in operations and management of new renewable energy facilities — commercial and small-scale wind projects, solar photovoltaics, anaerobic digesters, landfill gas, and biomass — and another 31,000 construction jobs. And in terms of job creation according to Wei et al. (2010), renewable energy and low carbon sources actually generate more jobs than the fossil fuel sector per unit of energy delivered.

So with water and the economy on your mind, let's focus on two points: (1) how our fossil fuel economy currently is affecting water levels in the Great Lakes, and (2) how lower and more unpredictable lake water levels in turn will negatively affect every economic endeavor in this state.

It is clear that our current carbon-producing energy practices are directly affecting lake levels throughout the Great Lakes. Scientific studies on climate change over the last several decades are linking more frequent storm patterns and shorter winters to higher erosion rates. In addition, warmer water temperatures, coupled with less ice coverage during the winter in the Great Lakes contribute to increased evapotranspiration rates, which in turn may lead to continued lowering of lake levels. For example, on Grand Traverse Bay, which is part of Lake Michigan—there are historical records of ice coverage dating back to the mid-19th century or approximately 160 years. From the 1850s through the 1970s, Grand Traverse Bay froze at least seven years every decade. In the past two decades, this Bay has frozen over only a total of five times. Plot this data

and one sees a "hockey stick" type curve, which does not represent typical and natural fluctuations of water data.

Lower water levels in the Great Lakes are already causing a host of problems for all industries, including shipping, tourism, commercial and recreational fishing, agriculture, manufacturing, utilities, as well as for the natural ecosystems themselves (e.g., fisheries, aquatic habitats and lakeshore wetlands). A small decline in water levels, for example, is significantly affecting the shipping industry and its overall revenues as ships are now forced to carry lighter loads to avoid scraping the bottom in channels linking the ports. This industry provides some 227,000 jobs and contributes \$34 billion in economic activity according to the Lake Carriers' Association. Last summer in 2011, tourism and the overall ecological health of Lake Erie were both at stake as high 1970s-like levels of phosphorus contamination created an enormous "dead" or hypoxic zone, the size of Rhode Island and Delaware combined. With current lake levels approaching record lows, another drop of just a few inches will have unprecedented impacts on all lake uses.

These signs, which link all of our collective actions, demonstrate a clear nexus or connection between energy, water, and climate change. The Great Lakes are a shared public "commons" that the organization I work for, FLOW (For Love Of Water), aims to protect by applying an overarching governing legal framework called the public trust doctrine.

This ancient legal doctrine is deeply rooted in our history. Years ago, actually 2000 years ago, the Roman Emperor Justinian established water as a commons held in trust for its citizens. Not long after the Magna Carta in 1215, British Courts ruled that the sea, its fish, and habitat were also held in trust, and that the Crown could not interfere with or alienate (transfer) the public's right to fish, boat, or swim. Fast forward to 1892, and since then, the United States Supreme Court, and virtually every Great Lakes state, including Michigan, have ruled that the Great Lakes are a perpetual trust in favor of citizens, and that neither government nor others can diminish, impair, or dispose of these treasured waters. It is the government's duty to protect these waters, exactly like that of a bank trustee protecting the trust for a beneficiary.

What the public trust adds to nearly all natural resource use conversations is an absolute back-stop to the traditional command-and-control environmental laws and regulations established in the late 1960s and early 1970s. Now, as we will plan for the future and make decisions about our energy consumption and generation, we must understand how it affects our water, our legacy preserved by the public trust.

This November Michiganders face a watershed moment where we can alter our energy consumption and generation practices through legislation like 25 by 25 *or* we can stay the course. According to Keith Schneider from Circle of Blue www.circleofblue.org, we have about another generation or approximately thirty years to change our thirsty fossil fuel energy habits; otherwise, the uncertainty and harms we are already witnessing, such as those to the Great Lakes, may be irreversible. Let's avoid business as usual and chart a new course that isn't tethered to fossil fuels and their heavy environmental impacts to

air, water, and land. Since the first modern environmental laws enacted in the 1960s and 1970s, Schneider and the American public have witnessed enormous pollution clean-up efforts; we can do it again by drawing on our ingenuity, innovation, capacity, and sheer will.

Adopting a renewable energy strategy like 25 by 25 may not be easy, but it's the right thing to do to avoid another impending energy crisis, to gain improved energy security with a shift to renewable energy sources, and to create an economic engine for state-wide growth.

Equally if not more important 25 by 25 will protect our precious Great Lakes, the real driver behind our economy, jobs, and quality of life.