



ADVANCING PUBLIC TRUST SOLUTIONS
TO SAVE THE GREAT LAKES

LEGAL STRATEGIES AND TOOLS TO EMPOWER LOCAL COMMUNITIES AGAINST POTENTIAL RISKS AND IMPACTS FROM UNCONVENTIONAL HORIZONTAL FRACKING

The Great Lakes deserve great laws; the public trust is a key legal principle that empowers citizens and governments to protect our waters as a commons, owned and shared by the public for the use and enjoyment of all. FLOW (“For Love of Water”) has been working since 2011 to advance public trust solutions to address the systemic threats facing the Great Lakes. One recent threat to our waters has centered on the extraction process of deep oil and natural gas formations within the Great Lakes Basin.

HYDRAULIC FRACTURING, OR “FRACKING,” IN MI
High volume hydraulic fracturing, “HVHF” or fracking for short, is an unconventional method of extracting natural gas from deep shale rock formations.

Spanning across Michigan’s Lower Peninsula, the Collingwood/Utica deep shale, and A-1 Carbonate oil and gas formations are notably different than the Antrim shale formation developed in the late 1980s/early 1990s. Here are some key differences:

- **Depth:** The Collingwood/Utica/A-1 Carbonate geologic formation ranges from 5,000 to 10,000 feet deep, compared to the relatively shallow Antrim deposit, which is 600 to 2,000 feet deep.
- **Horizontal Drilling:** The Collingwood/Utica/A-1 Carbonate require unconventional horizontal drilling and fracking to capture the trapped natural gas as opposed to the Antrim’s vertical and slant drilling to tap isolated “reservoirs” of oil or gas.
- **Water Use:** Deeper geologic formations can require up to 30 million gallons of water and chemical/sand mixtures or more than 1,000 times more than used in a vertical or typical shallow Antrim well (30,000 gallons of water per well). Unlike normal water use where water returns to the watershed, “frack” water is permanently removed from the water cycle – remaining partially in the fracked formation with some 30 % flowback discharged into deep injection waste wells.

POTENTIAL RISKS AND IMPACTS OF FRACKING

A review of literature on fracking and its associated risks reveals several concerns: massive water withdrawals; surface and groundwater contamination; surface spills and leaks; wastewater management; land use impacts; truck traffic and burden on infrastructure; lack of public disclosure; air pollution; and noise.

OUR LOCAL GOVERNMENT ORDINANCE PROGRAM

Since 2010, Michigan has experienced a flurry of fracking activity on both private and state leased lands. Early on, FLOW recognized a growing and urgent need to develop sound legal strategies and policies for local governments to safeguard their communities against the unprecedented, large, and cumulative impacts of fracking. FLOW’s Local Government Ordinance Program intends to empower citizens and local governments with existing legal strategies and tools and address the industrial-scale impacts of fracking.

LEGAL OVERVIEW: WHO IS IN CHARGE?

Citizens and communities located in Michigan’s oil and natural gas-rich basin have good reason to be concerned about the risks fracking poses to state waters and other natural resources.

- The natural gas and oil industry is largely exempt from key federal environmental laws, including the Safe Drinking Water Act and Clean Water Act.
- States thus are primarily responsible for regulating fracking activities. Yet, this industry is largely exempt from key water statutes like Michigan’s codification of the Great Lakes Compact, which regulates surface and ground waters.
- Under Michigan’s Great Lakes Compact statute, local governments are expressly prohibited from enacting an ordinance that regulates a large quantity withdrawal (> 100,000 gallons per day).
- Under Michigan’s Zoning Enabling Act, local governments also are prohibited from enacting or enforcing an ordinance that regulates permit issues related to the location, drilling, operation, completion, or abandonment of oil and gas wells.

If the federal government has deferred regulation of the oil and gas industry to the states, and the states have exempted the industry, and the local governments are prohibited from regulating the actual wells, *then who is regulating this industry? What can citizens and local governments do?*

LOCAL ZONING AND POLICE POWER ORDINANCES

One approach townships, cities, and counties can take is to adopt carefully crafted zoning or police power ordinances to protect Michigan's air, water, resources, and property and the health, safety, and welfare of residents and communities from the unprecedented impacts and harmful risks of fracking and related oil and gas drilling processes.

The two principle statutes delegating local government legal authority to address oil and gas development like hydraulic fracturing and related processes include the Michigan Zoning Enabling Act of 2006 and the Township Ordinance Act of 1945. Both Acts provide townships and counties legal authority to adopt either zoning ordinances that govern *land use or police power ordinances* that govern health, safety, and pollution issues associated with unconventional hydrocarbon development (e.g., massive water withdrawals, transportation, handling, and disposal of contaminated fracking wastewater).

Despite the Zoning Enabling Act's prohibition to regulate oil and gas wells or operations, townships do maintain some zoning authority to regulate related oil and gas activities, such as natural gas pipelines, flow lines, gathering lines, treatment or production facilities, or compressors, water and chemical mixing stations, emission releases, high truck traffic and transportation issues, land impact, odors, noise, and handling, reuse, and disposal of wastewater, and hazardous solids or liquids.

The Township Ordinance Act authorizes a township to adopt police power ordinances, which are distinct from zoning ordinances, because they can only regulate harms and activities rather than land uses. Thus, townships could adopt police power ordinances that reasonably relate to the transport, disposal, and

transfer, diversion, use, or handling of "produced" water and chemical mixing for fracking.

MICHIGAN ENVIRONMENTAL PROTECTION ACT

MEPA empowers each citizen of this State to act as a private attorney general "for the protection of the air, water, and other natural resources and the public trust in these resources from pollution, impairment, or destruction." MEPA applies to oil and gas orders, permits, and proposed projects unless there exists "no feasible and prudent alternative." MEPA applies to agency actions approving, licensing, or permitting conduct likely to harm, impair, pollute, or destroy the "air, water, natural resources, or public trust" in those resources. MEPA is applicable at some stages in the local zoning process because zoning, as it authorizes land use, can ultimately affect natural resources.

Citizens can apply MEPA to intervene in permit and other government proceedings by both statute and common law authority. Townships can apply MEPA to amend and incorporate MEPA duties and standards into their existing zoning or police power ordinances.

FRACKING MORATORIUM AND BAN ORDINANCES

Another successful local strategy adopted by some townships is to enact a fracking moratorium ordinance that delays oil and gas exploration for a finite period of time (e.g. 6-12 months) so that the local government can study potential impacts. The Townships of West Bloomfield, Cannon, and Courtland in Michigan adopted moratoriums to fully explore the potential irreparable harm to the natural resources and environment within the townships.

If not drafted carefully, fracking ban ordinances may be more prone to claims of invalidity because they totally prohibit a land use within the township, which violates "exclusionary" zoning principles. In late 2012, the New York State Supreme Court invalidated the ban ordinance of City of Binghamton, New York. However, by tailoring an ordinance to a specific geological formation or a specific geographical area, townships may avoid the argument that there has been an outright prohibition of oil and gas development per se and categorical "takings" claims from the oil and gas industry.

FLOW is a 501(c)(3) nonprofit organization. Our mission is to advance public trust solutions to save the Great Lakes. Through our law and policy work, FLOW is raising public awareness about the public trust doctrine and its principles as a unifying framework to protect the commons and address systemic threats to water, public lands, and environment throughout the Great Lakes.