

The Center for Local, State, and Urban Policy

Gerald R. Ford School of Public Policy >> University of Michigan

Michigan Public
Policy Survey June 2014

Fracking as a community issue in Michigan

By Thomas Ivacko and Debra Horner

This report presents the opinions of Michigan local government leaders on issues in their communities related to the process of extracting natural gas through high-volume hydraulic fracturing and horizontal drilling of underground shale deposits, also known as “fracking.” The findings in this report are based on a statewide survey of local government leaders in the Fall 2013 wave of the Michigan Public Policy Survey (MPPS).

>> The **Michigan Public Policy Survey (MPPS)** is a census survey of all 1,856 general purpose local governments in Michigan conducted by the **Center for Local, State, and Urban Policy (CLOSUP)** at the University of Michigan in partnership with the **Michigan Municipal League, Michigan Townships Association, and Michigan Association of Counties**. The MPPS takes place twice each year and investigates local officials’ opinions and perspectives on a variety of important public policy issues. Respondents for the Fall 2013 wave of the MPPS include county administrators and board chairs, city mayors and managers, village presidents, managers and clerks, and township supervisors, managers and clerks from 1,353 jurisdictions across the state.

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Key Findings

- High-volume hydraulic fracking is relatively rare in Michigan. The Michigan Department of Environmental Quality (DEQ) identifies 58 active applications or permits for such fracking activity statewide since 2008. The MPPS—asking about fracking activity or planning efforts more broadly—estimates about 6% of Michigan’s local jurisdictions currently have fracking operations or some kind of activity to add such operations within their jurisdictions’ borders. When further asked if there are current or proposed fracking operations in neighboring areas that impact the respondent’s own jurisdiction, the percentage of self-reported “fracking-affected” jurisdictions is estimated at approximately 13% of Michigan’s local governments statewide.
- Among officials who have heard of fracking, 35% report that fracking is an active topic of discussion within their communities at large or specifically among their jurisdictions’ government leaders. This increases to 77% among self-reported “fracking-affected” jurisdictions.
- Where it is an active topic, local officials believe that their citizens are more likely to oppose (37%) than support (11%) fracking in their communities, and say the same regarding their local councils or boards, reporting that 29% oppose fracking compared to 16% that support it. However, the MPPS respondents themselves—the chief elected and appointed officials—are more evenly split, with 36% opposing and 31% supporting such fracking.
 - » There are significant regional differences in opinions on fracking. Local leaders’ support is highest in the Upper Peninsula (54% support, 32% oppose) and Northern Lower Peninsula (37% support, 35% oppose), and lowest in Southeast Michigan (19% support, 51% oppose).
- For jurisdictions where fracking is an active topic, 43% of local leaders say revenue for land owners is the most common factor encouraging the development of fracking in their jurisdictions, while a majority say that risks to water resources (57%) and the environment (56%) are the most common factors discouraging local fracking.
- Few Michigan local governments have adopted policies that attempt to promote, restrict, or simply regulate fracking. However, despite state law that restricts some local authority regarding fracking, 63% of responding officials say local governments should have a “great deal” of authority to regulate fracking, compared to 45% who feel that way for the state government, and just 16% for the federal government.
- Finally, the MPPS asked local leaders how much they support or oppose a range of Michigan-specific energy sources that could be developed in the state. Support for fracking ranks near last, well behind both newer renewable sources, such as wind and solar, and other sources, such as increased use of biofuels and nuclear power.

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Background

Hydraulic fracturing, or “fracking,” is a process used to extract natural gas and oil by pressurizing wells with water, sand, and proprietary mixtures of chemicals to break-up underground rock formations and allow the gas or oil to escape and be collected through the well. Michigan has a long history of fracking, with oil and gas operators making use of some version of the hydraulic fracturing process as far back as the 1940s.¹ However, this earlier hydraulic fracturing was undertaken with vertical drilling only and relatively small volumes of water usage. More controversy has grown recently around the use of high-volume hydraulic fracturing, which uses horizontal drilling to expand the underground area that can produce gas or oil, but which also requires much higher volumes of water, and produces higher volumes of used “fracking fluid” mixtures that must be disposed of somewhere. All of these factors have raised potential health and environmental concerns.²

In Michigan, the issue of fracking has seen a marked increase in attention. Recent state legislative sessions have had a series of bills introduced—none of which became law—addressing concerns over fracking, including a call for a state-led study of the impact of fracking on Michigan’s environment and drinking water, proposed new disclosure requirements for companies engaged in fracking, and a proposed two-year moratorium on new permits.³ In addition, there was a citizen-led effort to establish a 2012 ballot proposition that would have banned fracking in Michigan, but the petition drive failed to secure the minimum number of signatures.

Despite this increased political activity, current fracking operations remain relatively limited across the state. The Michigan Department of Environmental Quality (DEQ) reports 58 instances of high-volume hydraulic fracturing activity (active wells, pending applications, pending permits, etc.) across the state since 2008, with most of the activity in the Northern Lower Peninsula (see *Figure 1*).⁴ Much more information from the state government about hydraulic fracturing in Michigan is available on the DEQ website.⁵

When it comes to regulating fracking operations in the state, the Michigan Natural Resources and Environmental Protection Act (1994) assigns exclusive regulatory authority to the DEQ for state oil and gas issues.⁶ The DEQ recently updated their rules regarding hydraulic fracturing operations, covering issues such as water withdrawals, baseline water quality sampling, monitoring and reporting, and chemical additive disclosure, in addition to well spacing requirements and terminology describing well locations and drilling tracts.⁷

At the local level, potential regulation of fracking by Michigan’s counties and townships is limited by the Michigan Zoning Enabling Act (Public Act 110 of 2006).⁸ PA 110 prohibits counties and townships from regulating the location, drilling, operation, and abandonment of oil and gas wells within their borders. While not preempted like counties and townships by these aspects of PA 110, cities and villages can only regulate wells if their local ordinances do not conflict with state and federal requirements and are not exclusionary in nature.⁹ Still, some believe counties and townships could attempt to circumvent PA 110’s restrictions by regulating activities related to fracking, such as the construction of roads or accessory buildings needed for a fracking operation, through ordinances rather than zoning. Local jurisdictions could also attempt to regulate operations related to the processing, refining, and transportation related to the fracking operations that may happen at other locations beyond the well site.¹⁰

As high-volume hydraulic fracturing has become a higher profile issue recently, arguments that support fracking include the belief that abundant natural gas supplies will help lower energy costs, boost the economy, and reduce dependence on foreign energy sources, while causing less environmental pollution compared to burning coal. On the other hand, arguments cited to oppose fracking often focus on health risks and potential environmental damage from methane leaks, water resource depletion, water pollution both above and below ground, and more.

Anecdotes abound regarding how fracking can divide communities,¹¹ and there is some evidence showing generally mixed views among Michigan citizens on the benefits and costs of fracking. For example, a survey conducted by the National Surveys on Energy and Environment (NSEE) in 2012 found that most Michigan residents believe fracking in the state has provided more benefits (52%) than problems (24%) to the state so far, with some citizens in support of fracking for its promotion of energy independence and job creation, and other citizens voicing concern about water contamination and other health risks.¹² However, that same survey

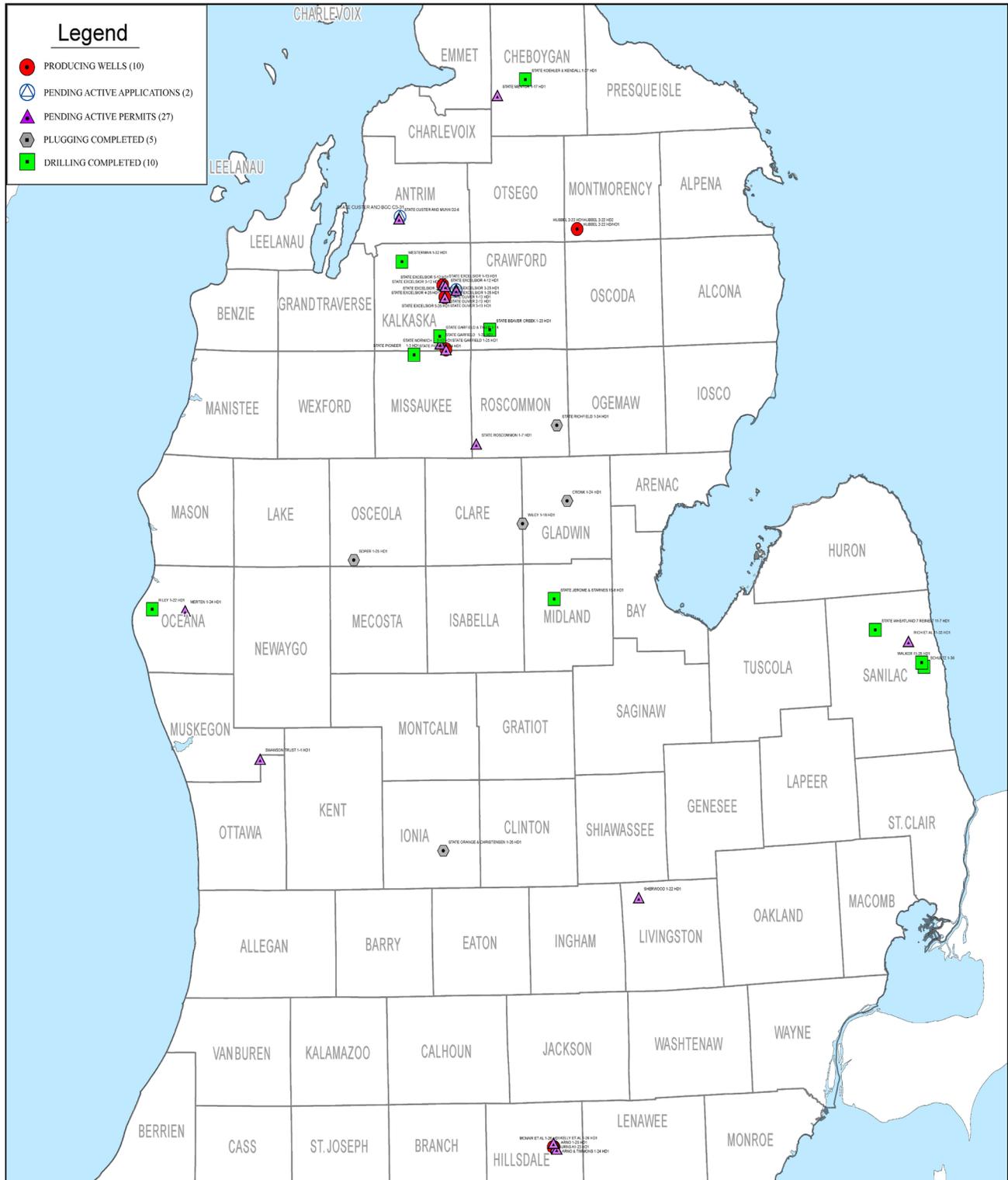


Figure 1
Michigan Department of Environmental Quality (DEQ) map of high-volume hydraulic fracturing, active applications and active permits since 2008

HIGH VOLUME HYDRAULIC FRACTURING

ACTIVE APPLICATIONS AND ACTIVE PERMITS - SINCE 2008*

AS OF 04/25/2014



Source: Michigan Department of Environmental Quality (DEQ)

(Retrieved from http://www.michigan.gov/documents/deq/High_Volume_Hydraulic_Fracturing_Activity_MAP_423435_7.pdf)

found that a majority (52%) of Michigan citizens statewide would support a moratorium on additional fracking until more is known about possible risks.

Meanwhile, what hasn't been known until now are the views of Michigan's local leaders. To fill this gap of knowledge, the Fall 2013 wave of the MPPS surveyed local officials across the state to get a sense of the issues regarding fracking in their jurisdictions. The survey asked local leaders to think specifically about high-volume horizontal drilling operations when responding to questions about fracking, and the rest of this report uses the term "fracking" to refer to this kind of hydraulic fracturing.

Fracking operations are relatively rare in Michigan currently

The Fall 2013 MPPS included a series of questions about local experiences with fracking across Michigan, and began by asking local officials if they were "familiar" with the process of hydraulic fracturing. Overall, 62% of Michigan local leaders report they are either very or somewhat familiar with fracking, while 27% say they are mostly unfamiliar and 8% say they are completely unfamiliar. (Respondents who reported being completely unfamiliar with fracking were not asked subsequent questions; please see the methodology section at the end of the report for more details.)

Next, officials were asked about local experiences with fracking, including the existence of any current fracking operations or potential plans to add or expand operations in the respondents' jurisdictions. The MPPS estimates that approximately 6% of Michigan's local jurisdictions overall currently have hydraulic fracturing operations within their borders, or have experienced some kind of efforts to add such fracking operations, which could range widely, including the earliest stages of interest expressed by oil and gas companies or surveyors.

However, environmental issues, such as concerns about water resource depletion or pollution, don't typically correspond to jurisdictional boundaries, and fracking operations on one side of a street, in "Jurisdiction A," might also impact residents on the other side of the street, in neighboring "Jurisdiction B." When asked if there are fracking operations or expansion efforts in neighboring jurisdictions that would impact their own community, the number of responding jurisdictions that report being "fracking-affected"—those that either have fracking themselves or are impacted by nearby fracking—is estimated at approximately 13% of Michigan's local jurisdictions statewide.



Fracking is a common topic of discussion in affected Michigan communities

To get a sense of how relevant the topic of fracking is across the state, the MPPS asked local officials (who have at least some knowledge of the term) to what extent it has been a topic of discussion, either within the community at large or among the jurisdiction’s government leaders. Overall, fracking is identified as a topic of community discussion by 35% of responding local officials, including 9% who say it is a major issue that is discussed extensively (see *Figure 2a*). By comparison, 61% of these local leaders say that fracking is not an issue at all in their jurisdictions.

Not surprisingly, the discussion of fracking is more or less common in different areas of the state. In the Northern Lower Peninsula, the region in which fracking is most common, more than half (57%) of all responding jurisdictions report that fracking is an active topic of discussion in the community at large or among local leaders (see *Figure 2b*). By contrast, in a number of regions where fracking is less prevalent, majorities of officials report it’s not an active topic of discussion at all.

Among the self-reported fracking-affected jurisdictions, 77% of local leaders say it is a topic of local discussion, and in 28% of those places it is a major topic of discussion (see *Figure 2c*). However, even in places where there is no reported fracking or nearby fracking, it is still a topic of discussion in a quarter (25%) of jurisdictions.

Figure 2a
Percentage of officials who report fracking is a topic of local discussion (among local leaders who have heard of fracking)

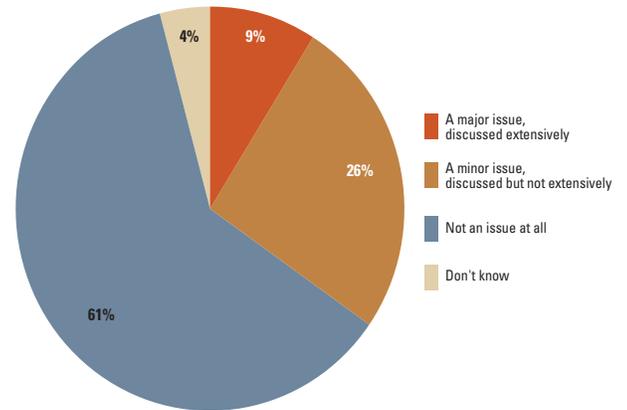


Figure 2b
Percentage of officials who report fracking is a topic of local discussion (among local leaders who have heard of fracking), by region

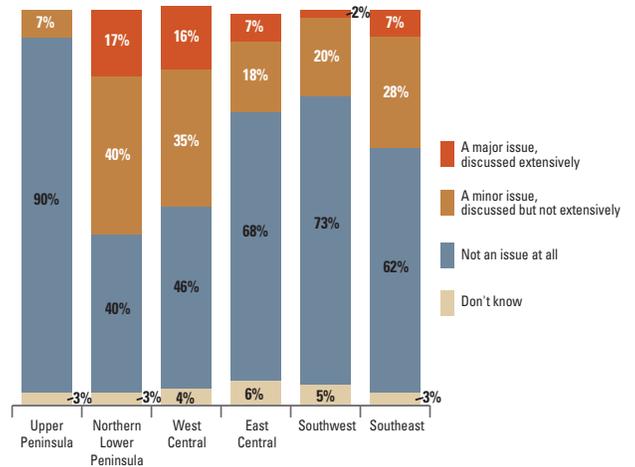
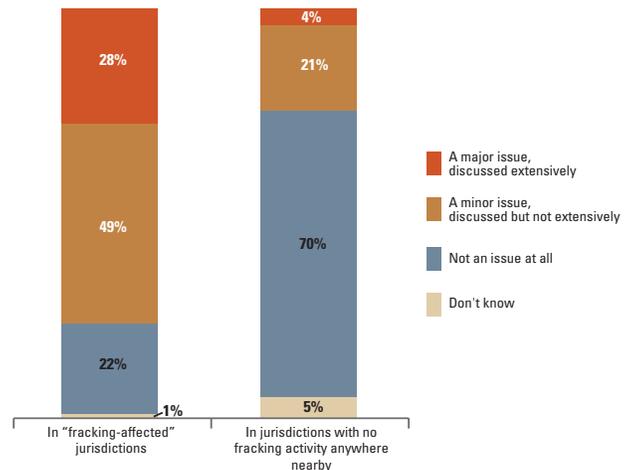


Figure 2c
Percentage of officials who report fracking is a topic of local discussion (among local leaders who have heard of fracking), by proximity to fracking operations



Local leaders see mixed fracking support and opposition among groups in Michigan communities

In places where fracking is a topic of discussion, the MPPS asked local officials to estimate support and opposition to fracking in their jurisdictions among different groups in their communities.

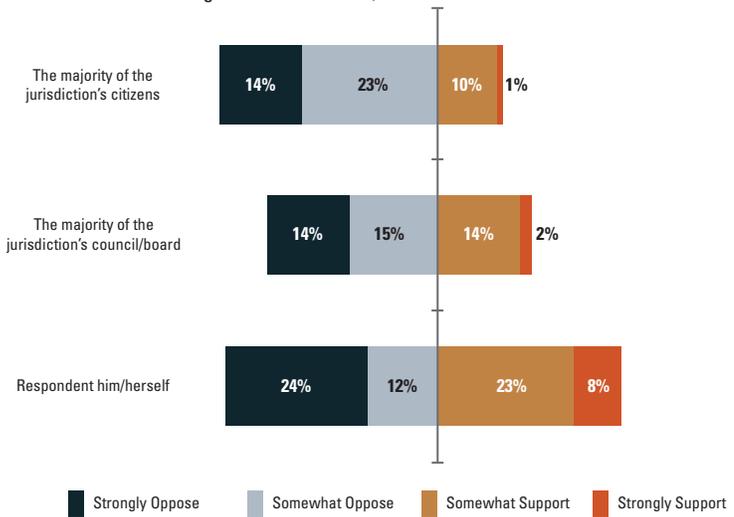
Overall, where fracking is an active topic of discussion, local leaders believe their citizens are more likely to oppose (37%) than support (11%) fracking in their jurisdictions (see *Figure 3*). Another 33% say they don't know their citizens' opinions on local fracking.

Compared to these perceived low levels of citizen support, local leaders believe there is slightly more support for local fracking among the majorities of their councils or boards. However, they still believe there is more opposition (29%) than support (16%) for fracking in their jurisdictions among the local political leadership. Another 28% say their councils or boards are neutral, while 28% don't know where the council or board stands (perhaps indicating that it has not been a particularly notable issue of governance in those locations). Interestingly though, among local government councils or boards in the Northern Lower Peninsula—where fracking is most common—perceived support for fracking in the area is a bit higher still, with 24% reported in support and 27% reported in opposition on the various boards.

Finally, as shown in *Figure 3*, opinions on local fracking are somewhat more evenly split—with higher support but still more opposition—among the MPPS' respondents themselves (the chief elected and appointed local government leaders). Overall, 31% of these local leaders say they support local fracking operations in their jurisdictions, while 36% oppose the use of fracking locally. But once again, support is at one of its highest levels where fracking is most common—in the Northern Lower Peninsula—where 37% say they support local fracking and 35% oppose it. By contrast, only 19% of leaders in Southeast Michigan say they support fracking, while 51% oppose it.

Figure 3

Local leaders' reports of support and opposition to fracking in their communities (among jurisdictions where fracking is an active issue)



Note: responses for "neither support nor oppose" and "don't know" not shown

Interestingly, levels of support and opposition to fracking among local leaders and board or council members show some significant differences when looking at self-reported fracking-affected jurisdictions versus jurisdictions where there are no reported fracking operations anywhere nearby. For instance, among Northern Lower Peninsula jurisdictions that have no reported fracking activity anywhere nearby, 23% of local leaders themselves support fracking while 40% oppose it, for a net support level of -17%. By comparison, in self-reported fracking-affected jurisdictions in the Northern Lower Peninsula, 49% of local leaders support fracking compared to 32% who oppose it, for a net support level of +17%. Support for fracking is also somewhat higher in fracking-affected jurisdictions than in non-affected jurisdictions in the Southwest and Southeast regions of the state, but conversely it is lower in the West and East Central regions. It is important to note that the numbers of reporting jurisdictions gets particularly small when breaking the data down in these ways, which calls for caution in generalizing findings from these particular estimates. Nonetheless, these findings point to potentially higher support levels among local leaders when fracking has arrived in a local jurisdiction, and may deserve more study.



Revenue for land-owners is the most common factor encouraging fracking operations, while environmental and health risks top list of discouraging factors

High-volume hydraulic fracturing appears to be a highly charged and emotional policy topic in local communities, as reported in the media, with various local entities arguing for or against fracking based on a number of possible issues.¹³ To help understand what kinds of factors may be encouraging or discouraging the development of fracking in Michigan, the MPPS presented a list of 14 factors to local leaders in communities where fracking is an active topic, and asked whether those factors were relevant in their communities.

The most common factor that local officials say is encouraging fracking operations in their communities is revenue for land-owners, with 43% identifying this factor (see Figure 4). Other factors reported to be encouraging fracking in local Michigan communities include property tax revenue for the jurisdiction (32%); potential environmental benefits from cleaner-burning natural gas instead of coal (30%); lower energy prices (29%); local economic development and jobs (24%), and the simple availability of shale gas deposits for fracking (25%).

Factors that are reported to be discouraging local fracking operations appear to be more widespread and common than those encouraging fracking. For example, more than half (57%) of responding officials cite potential risks to water resources as a factor that discourages fracking in their local communities (see Figure 5). Similarly, 56% say that potential environmental damage from fracking spills or leaks is another factor that discourages local fracking. Other factors reported to be discouraging fracking include potential health risks to citizens (47%), impacts on property values (41%), and community organizations that are active on fracking issues (31%), presumably representing citizen groups mobilizing to fight against local fracking.

Figure 4
Percentage of officials identifying various factors encouraging the use of fracking within their jurisdictions (among jurisdictions where fracking is an active issue)

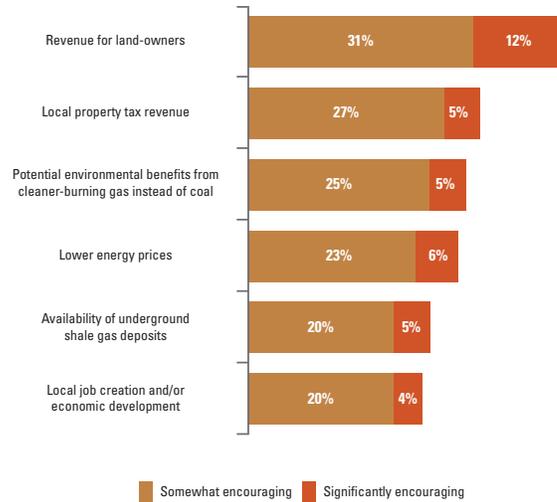
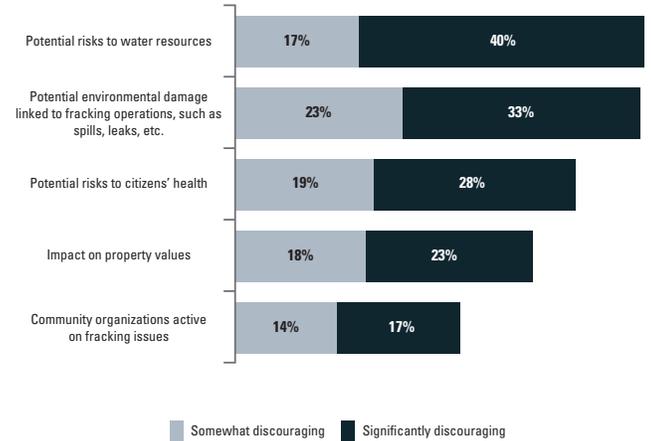


Figure 5
Percentage of officials identifying various factors discouraging the use of fracking within their jurisdictions (among jurisdictions where fracking is an active issue)



Few Michigan local governments are taking action specific to fracking, but they believe they should have the authority

Among jurisdictions where fracking is a topic of discussion, the MPPS asked whether Michigan local governments have taken any policy actions that attempt to promote, restrict, or simply regulate fracking. As described in the background section of this report, the options available to Michigan counties and townships in particular to regulate fracking operations in their communities are constrained by Michigan’s Zoning Enabling Act.

And as it turns out—even among places where fracking is currently an active issue—relatively few Michigan local jurisdictions have adopted policies related to fracking, or are likely to do so in the near future. For instance, none of these local jurisdictions report currently offering tax or other incentives targeting hydraulic fracturing operations and only 3% say they are likely to do so (see *Figure 6*). Likewise, none of these jurisdictions report currently having intergovernmental agreements with neighboring jurisdictions regarding fracking, although 9% say they are planning to adopt such agreements. A tiny fraction (2%) of these Michigan jurisdictions report having already adopted a local moratorium or ban on fracking, though 9% say they are likely to do so. Finally, almost two in ten (18%) of these jurisdictions say they are likely to adopt some kind of local ordinances or zoning codes regarding fracking, and 1% indicate they already have done so.

Although little local policy action is currently taking place in regard to fracking operations, when it comes to who should have authority to regulate fracking, local leaders believe all levels of government—local, state, and federal—have a role to play. However, by far, local officials believe the greatest amount of authority should be at the local level.

Overall, 93% of responding local officials believe local government—those closest to the ground where fracking takes place—should have some (30%) or a great deal (63%) of authority for decisions regarding fracking. By comparison, 91% believe the state government should have some (46%) or a great deal (45%) of authority, while 66% feel the federal government should have some (50%) or a great deal (16%) of authority (see *Figure 7*). Meanwhile, 28% of these local leaders say the federal government should have no authority regarding

Figure 6
Percentage of jurisdictions that have adopted or plan to adopt specific policies related to fracking (among jurisdictions where fracking is an active issue)

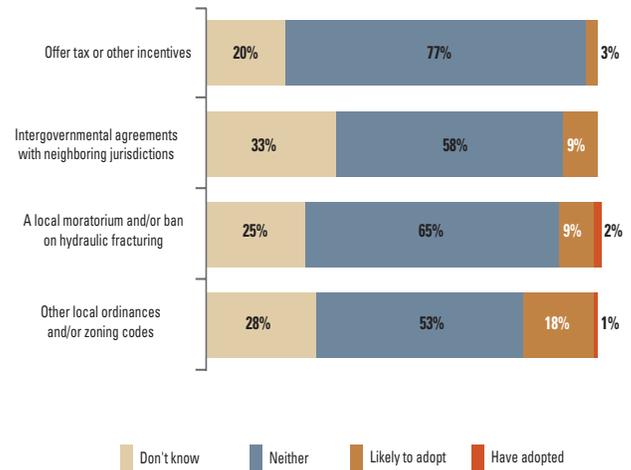
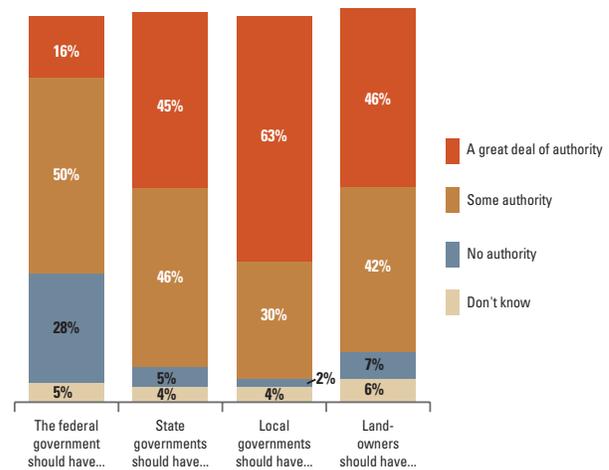


Figure 7
Local officials’ assessments of appropriate levels of control over decisions regarding fracking in local communities (among local leaders who have heard of fracking)



fracking, while just 5% feel that way toward state government, and 2% regarding local government.

Finally, 88% of local leaders believe land-owners themselves should also have some (42%) or a great deal (46%) of authority on decisions regarding fracking, while 7% believe that land-owners should have no authority over fracking regulation at all.



The MPPS also provided an open-ended question in which local leaders could identify additional issues regarding fracking in their communities. Highlights are provided below:

Voices Across Michigan

Quotes from local leaders regarding hydraulic fracturing issues in their jurisdictions

“At the county level there was an evening devoted to people from various perspectives on the fracking issue giving presentations. It was a fairly good introduction to fracking in our area. More information is better so the more that is done to educate the public the better it is.”

“Use of Michigan’s water resources for fracking are extensive (millions of gallons per well) ... The use of these large amounts of water ... should be taken as a whole and be subject to the Great Lakes Water Compact and the limitations on withdrawal & removal from the Great Lakes Basin (contaminated water does not return to the hydrologic system, therefore should be subject to water withdrawal regulations just like any other major water user.)”

“Local units of government need to receive a portion of the state’s severance tax to compensate for local costs associated with drilling operations.”

“Our watershed is of utmost importance to our community.”

“Michigan is behind the eight ball in assessing and taxation of fracking...we should be looking to Pennsylvania Act 13 as a starting point.”

“People are skeptical, don’t trust info being given.”

“Other than a few folks complaining that the heavy trucks are hurting county roads, it’s not been a problem. Frankly, our road problem is more due to a lack of funding than truck traffic.”

“The general public is not aware that hundreds of ‘fracking’ wells are already in use in the state with no or very little problems.”

“The whole process is very secretive and you have to be proactive to find out exactly what is going on in your jurisdiction.”

“Water is a huge part of our township. We encompass three bodies of water. They mean EVERYTHING to our vacationer/tourist-based tax revenue base. People visit here, and people have second homes here (these non-homesteaders pay twice the number of tax dollars as the homesteaders but get relatively little return on their “investment,” no kids in school, etc.) and they come, pay higher taxes, because of the (near-)pristine environment. Therefore protecting the water, and not removing significant amounts of water from the water table and water cycle, is paramount to our interests.”

“The whole State could benefit from the discovery of oil and gas.”

“Education is key to successful implementation of hydraulic fracturing in any area. The emotion and ‘wives tales’ must be dispelled.”

Support for fracking lags behind support for other energy sources in Michigan

So where—in the view of local leaders—does hydraulic fracturing for natural gas stand as a priority for development among a range of possible Michigan-specific energy sources? The MPPS presented eight different Michigan energy sources to local leaders and asked which they would support or oppose, as a means to address energy supply needs for the state. Local leaders clearly favor clean renewable sources, with a wide majority indicating support for increasing the use of solar (86%), hydroelectric (82%), and land-based wind power (79%) to meet the state’s energy supply needs (see *Figure 8*). There is also majority support for the increased production and use of biofuels/biomass (72%), offshore wind power (69%), and nuclear power (57%). However, fewer than half (45%) of officials surveyed say that there should be increased use of gas and oil drilling through fracking. Only the option of offshore drilling for oil and gas in the Great Lakes receives less support (37%) than fracking on land, with a majority (55%) of local officials saying they oppose this option of allowing oil and gas drilling in the Great Lakes.

However, despite the clear preference for clean renewable energy sources, Michigan’s local leaders are evenly split regarding whether the state should mandate an increase in these sources. As shown in *Figure 9*, 44% say they support a state mandate for the use of renewable energy and 45% say they oppose it (the remaining 11% are unsure). Opinions on this question in particular are strongly associated with officials’ partisan identification. Among officials who identify themselves as Republicans, more than half (54%) oppose a renewable energy mandate, while just over one-third (36%) support it. Conversely, 68% of Democratic officials support such a mandate, while only 21% oppose it. Officials who identify themselves as Independents are balanced in-between, with 44% in support of a mandate and 48% in opposition.

Figure 8
Percentage of local leaders who support or oppose the development of possible Michigan energy sources

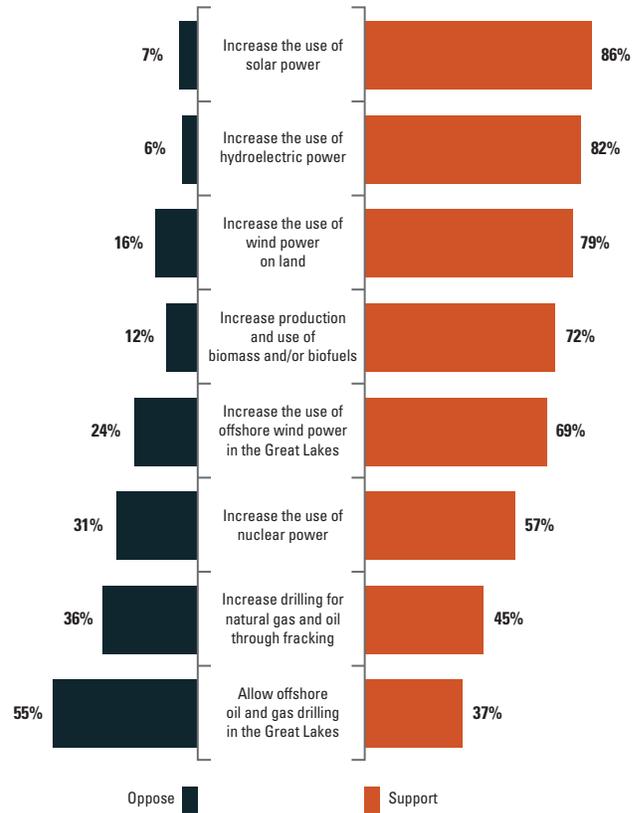
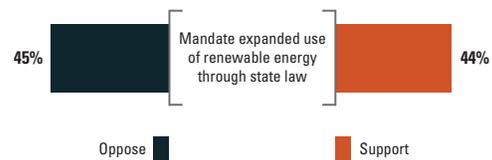


Figure 9
Percentage of local leaders who support or oppose mandates for expanded use of renewable energy through state law





Conclusion

Although fracking is relatively rare in Michigan communities today—with an estimated 6% of Michigan’s local jurisdictions reporting they currently have fracking operations or some kind of efforts to add them and approximately 13% saying they are somehow affected by fracking in their own or neighboring jurisdictions—the issue is an increasingly active topic of conversation.

Where fracking is an active topic, local leaders believe that their citizens and their boards or councils are more likely to oppose than support the use of fracking in the area, while local leaders themselves are somewhat more evenly split between support and opposition. In the Northern Lower Peninsula, where fracking operations are most common today, the data suggest that perceived support may be higher among local leaders and board or council members relative to statewide support levels.

When it comes to factors that are encouraging support for fracking in a community, 43% of responding local officials say revenue for land-owners is a primary driver, with additional encouragement coming from local issues such as property tax revenue for the jurisdiction, environmental benefits, and economic benefits such as job creation and lower energy costs. By contrast, factors discouraging support for local fracking are reported to be more common, with more than half (57%) of responding officials citing environmental concerns such as potential risks to water resources or other environmental damage, and others reporting factors such as health risks to citizens, impacts on property values, and community groups active on fracking.

While the State of Michigan has primary control over the regulation of fracking, local leaders believe local governments should have that primary responsibility, with 63% of responding officials saying local jurisdictions should have a great deal of authority, compared to 45% who believe the same for the state government, and just 16% who feel that way for the federal government. Nevertheless, few local jurisdictions have taken action so far, or expect to do so soon, to regulate fracking in any way.

Notes

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Survey Background and Methodology

The MPPS is a biannual census survey of Michigan's 1,856 units of general purpose local government (83 counties, 277 cities, 256 villages, and 1,240 townships), conducted once each spring and fall. While the spring surveys consist of multiple batteries of the same "core" fiscal, budgetary and operational policy questions and are designed to build up a multi-year time-series of data, the fall surveys focus on various other topics.

In the Fall 2013 iteration, surveys were sent by the Center for Local, State, and Urban Policy (CLOSUP) via the internet and hardcopy to top elected and appointed officials (including county administrators and board chairs, city mayors and managers, village presidents, managers, and clerks, and township supervisors, managers and clerks).

The Fall 2013 wave was conducted from October 7 to December 17, 2013. A total of 1,353 jurisdictions in the Fall 2013 wave returned valid surveys, resulting in a 73% response rate by unit. The margin of error for the survey as a whole is +/- 1.4%. The key relationships discussed in the above report are statistically significant at the $p < .05$ level or below, unless otherwise specified. Missing responses are not included in the tabulations, unless otherwise specified. Some report figures may not add to 100% due to rounding within response categories. Data are weighted to account for non-response.

The Fall 2013 wave questionnaire items on hydraulic fracturing are filtered to exclude those respondents who initially report they are "completely unfamiliar" with the terms "hydraulic fracturing" or "fracking." Several subsequent items are filtered to exclude those respondents who report that current or potential fracking is not an issue in their community at all, and that there has been no discussion of fracking in the jurisdiction now or in the recent past. CLOSUP staff calculated the percentage of estimated jurisdictions that have current or planned fracking activity by taking the total number of unique jurisdictions that reported having current or planned fracking (113) and divided it by the total number of jurisdictions in the state (1,856). Local officials who were completely unfamiliar with fracking were not asked if there were fracking operations in their jurisdictions, based on the assumption that they would have been familiar with the term "fracking" if there were such operations in their jurisdictions.

The full Fall 2013 wave questionnaire is available for review online at the MPPS homepage: <http://closup.umich.edu/mpps.php>. Contact CLOSUP staff for more information.

Detailed tables of the data analyzed in this report—by jurisdiction type (county, city, township, or village), by population size of the respondent's community, and by the region of the respondent's jurisdiction—are also available online at the MPPS homepage: <http://closup.umich.edu/mpps.php>.

The survey responses presented here are those of local Michigan officials, while further analysis represents the views of the authors. Neither necessarily reflects the views of the University of Michigan, or of other partners in the MPPS.



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All MPPS reports are available online at: <http://closup.umich.edu/mpps.php>

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The **Center for Local, State, and Urban Policy (CLOSUP)**, housed at the University of Michigan's Gerald R. Ford School of Public Policy, conducts and supports applied policy research designed to inform state, local, and urban policy issues. Through integrated research, teaching, and outreach involving academic researchers, students, policymakers and practitioners, CLOSUP seeks to foster understanding of today's state and local policy problems, and to find effective solutions to those problems.

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