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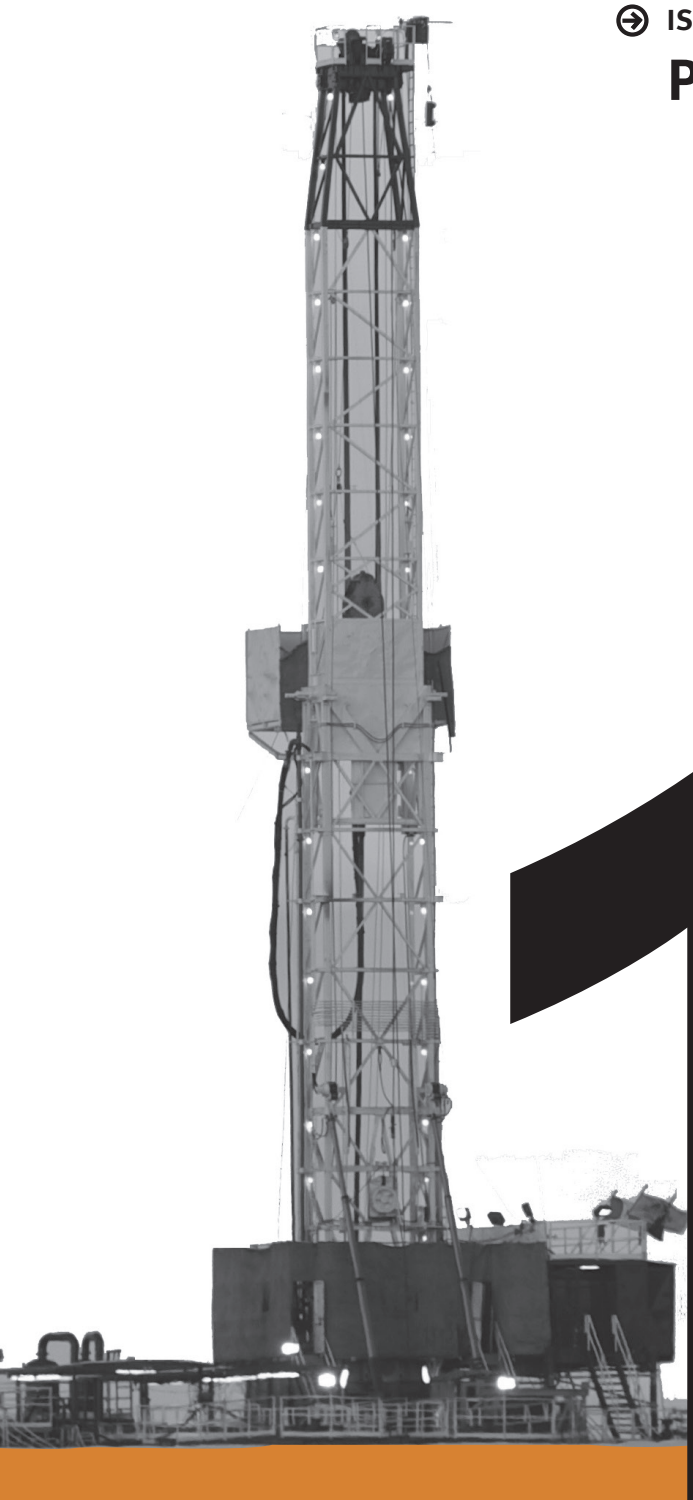

ISSUE NUMBER 10

PRACTICE FRACKING REGULATION

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Recent Developments in Regulating Fracking Activities

By Sorell E. Negro

Gas drilling underwent a boom starting in the mid-2000s in many communities, fueled by hydraulic fracturing.

Hydraulic fracturing, or fracking, is a process of oil and natural gas extraction that injects a mix of water, sand, and chemicals at high pressure underground to break up shale in order to release and recover the oil and gas. A decade later, local governments are still learning important lessons about how best to regulate impacts from oil and gas development, how local authority is determined by the state's regulatory approach to the industry, and how best to reap the benefits of economic growth to plan for a community's future.

Although states primarily regulate the oil and gas industry, and although the scope of a local government's authority varies from state to state, there is still often a substantial amount that local governments can do to plan for oil and gas development and regulate the impacts of drilling operations in their communities. For example, municipalities may have the authority to require setbacks for well pads and other fracking activities—including setbacks from residential properties, schools, water resources, and parklands. Local governments may also be able to regulate hours of operation, noise levels, and lighting impacts from fracking activities, just as they could impose such conditions on other industrial activities.

Such measures are increasingly important where drilling that used to occur in predominantly rural areas moves into more populated spaces. From setbacks to recycling wastewater, from moratoriums and bans to cooperative federalism, this article explores recent developments in the regulation of impacts from fracking activities on communities.

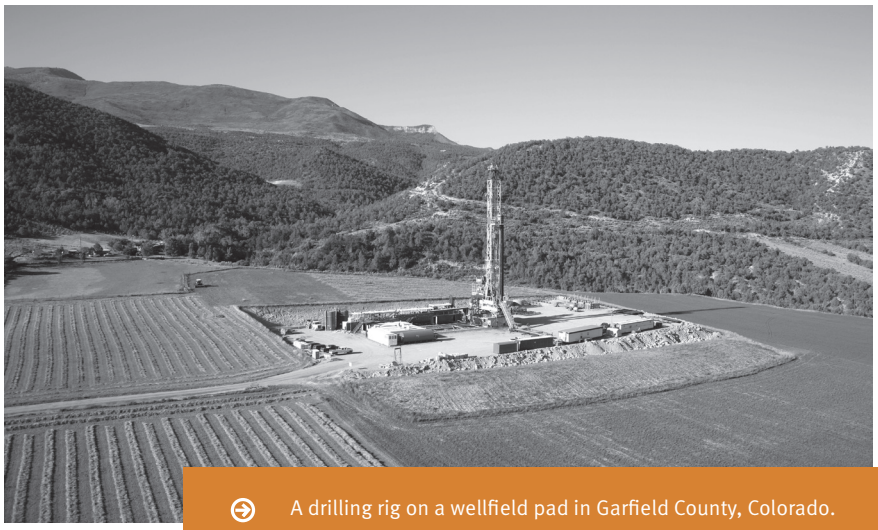
FRACKING BANS: A RISKY APPROACH?

Some communities have banned fracking—and in some instances, bans have been upheld, such as in New York—but generally speaking, ordinances that restrict fracking activities rather than ban them are less likely to be subject to challenge. In 2013, Mora County, New Mexico, became the first county in the United States to ban fracking out of concern for its water resources. All 5,000 residents of Mora County get their drinking water from wells, and their groundwater is noticeably limited (Cart 2013). Thus, although Mora County is one of the most economically depressed counties in New Mexico, it was not willing to risk impacts to its groundwater for job opportunities (Matlock 2013). In 2015, this ban was ruled unconstitutional by a federal district court in New Mexico. The court ruled that the ordinance was preempted by state law because it conflicted with state law, and it violated the First Amendment of the U.S. Constitution and the Supremacy Clause (*SWEPI, LP v. Mora County, NM*, 81 F. Supp. 3d 1075 (D.N.M. 2015)).

The scope of local governments' authority to regulate and even ban fracking is also the subject of debate in Colorado. On May 2, 2016, the Colorado Supreme Court issued its highly anticipated decision and struck down the Longmont's voter-approved ban on fracking, as well as the Fort Collins's moratorium on fracking, which voters approved in 2013 (*City of Longmont v. Colo. Oil & Gas Ass'n*, Case No. 15SC667 (Colo. Sup. Ct. May 2, 2016)).

Voters in Longmont added the ban to the city's charter in 2012. It was challenged by the Colorado Oil and Gas Association, which argued that the local government's ban is preempted by the state's interest in and authorization of fracking. COGA also challenged Fort Collins's moratorium on the same grounds.

The Colorado Supreme Court agreed that the fracking ban "is preempted by state law and, therefore is invalid and unenforceable." The court explained that "the state's interest in the efficient and fair development of oil and gas resources in the state suggests that Longmont's fracking ban implicates a matter of statewide concern." The court also found that the ban "could ultimately lead to a patchwork of regulations that would inhibit the efficient development of oil and gas resources" and it



Garfield County, Colorado

A drilling rig on a wellfield pad in Garfield County, Colorado.

could cause impacts outside the city limits. The court found, for example, that upholding the ban could also encourage other cities to ban fracking, "which could ultimately result in a de facto statewide ban." However, the court recognized the city's "traditional authority to exercise its zoning authority over land where oil and gas development occurs."

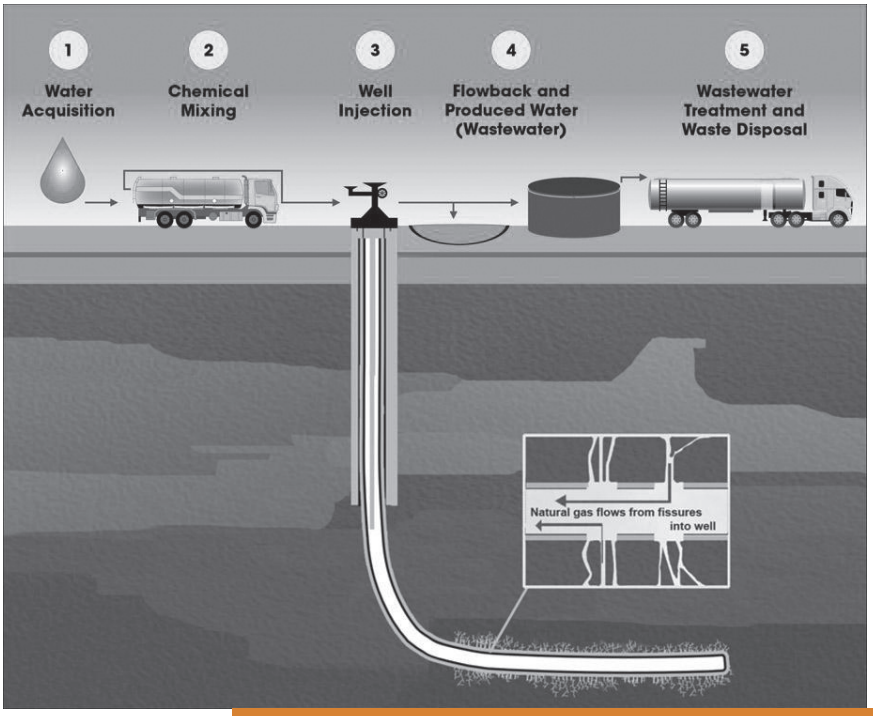
Communities in other states are still enacting, drafting, and considering outright bans. As local governments enact regulations on fracking or seek to ban fracking or impose moratoriums, state legislators are increasingly proposing legislation to ban local governments from enacting bans or from even regulating oil and gas development.

In Florida, a proposed state law prohibiting local governments from banning fracking (a ban on bans) gained traction this year. However, the bill's life ended in the Florida Senate Appropriations Committee, which narrowly voted down Senate Bill 318. The sweeping bill had declared that state law preempted local regulations related to the exploration, development, production, processing, and transportation of oil and gas. Zoning ordinances adopted before January 1, 2015, would have been allowed to stand.

A house version of the bill had passed the state house of representatives in January 2016. The bill would have had far-reaching impacts across the Sunshine State. In December 2015, it was estimated that 57 counties and cities in the state had passed resolutions supporting a ban on fracking (Cordeiro 2015).

Unlike Florida, North Carolina accomplished this mission. Senate Bill 119, signed into law on October 1, 2015, prohibits cities and counties from adopting regulations or ordinances on natural gas drilling or fracking. The law was intended to maintain a uniform system of regulating oil and gas exploration, development, and production. It invalidated all provisions of local ordinances, including land-use regulations, that either regulate or "have the effect of regulating" oil and gas development to a greater extent than state law. Certain counties had passed, or had been considering, a moratorium on fracking or regulations of natural gas development.

Questions remain as to the scope of the law including, for example, whether it applies to moratoriums. Chatham County Commission Chair Jim Crawford is not sure if its county's ban is covered by the law, noting that a moratorium is not necessarily a regulation (Nicholson and Thetford 2015). However, the law is so broad that one is hard-pressed to imagine any exceptions whatsoever.



U.S. Environmental Protection Agency

The major stages of the hydraulic fracturing water cycle.

Bans in Texas faced a similar fate in 2015 when the state passed House Bill 40, expressly preempting local governments from banning fracking and enacting other ordinances regulating oil and gas development including any ordinance that is not "commercially reasonable." The law defines "commercially reasonable" as "a condition that permits a reasonably prudent operator to fully, effectively, and economically exploit, develop, produce, process, and transport oil and gas . . ." This was another state legislative response to a local ban on fracking, this one passed by voters in the city of Denton in 2014.

Following passage of House Bill 40, Denton repealed its ban. The law also bars cities from enacting ordinances that effectively ban oil and gas development or ordinances regulating underground activity. Cities can still regulate above-ground impacts from fracking including traffic, light, and noise.

SHARPER TOOLS FOR REGULATING IMPACTS FROM OIL AND GAS DEVELOPMENT

The exploration, development, processing, and transportation of oil and gas can have a wide variety of impacts on communities including impacts on road conditions; impacts from noise, light, and vibrations; impacts on property values and housing stock; potential soil, water, and air pollution; and increased costs of providing local government services and emergency services. To the extent allowed under state law, it is common for local ordinances to establish a permitting scheme for well permits in order to regulate the location and extent of drilling activities, and they may also establish regular inspection and reporting requirements. An instructive example of such an ordinance is Arlington, Texas's Ordinances Governing Gas Drilling and Production (Ordinance No. 11-068).

Local governments may also enact regulations to specifically target certain impacts, such as to minimize transportation impacts. Collier Township, Pennsylvania, for example, requires a gas drilling applicant to provide proposed routes of all trucks to be used for hauling, the trucks' estimated weights, evidence of compliance with weight limits on its streets or a bond and an excess maintenance agreement to ensure repair of road damage, and evidence that the intersections on the proposed routes have sufficient turning radius (§27-1906.34.F, G, H).

Marco A. Negro

This pole marks the location of an underground petroleum pipeline in Greensburg, Pennsylvania, in 2016.

Two areas of local regulation that have seen significant developments and debate recently are discussed further below: setbacks and the regulation of water usage.

Setbacks: Still a Powerful Tool in the Toolbox?

While municipal setbacks typically apply to separating gas wells from sensitive uses like day cares and residences, state setbacks commonly apply to protect water resources. For example, in Pennsylvania, wastewater can be discharged into a pit only if the pit is more than 200 feet from a water supply or 100 feet from a stream, body of water, or wetland, unless a waiver is obtained (25 Pennsylvania Code §78.60(b)(7)). Collier Township, Pennsylvania, has prohibited gas drilling within 300 feet of the property line, or within 1,000 feet of a school or day care center without consent (or within 300 feet of these uses with consent) (§27-1906.34.D).

Illinois's Hydraulic Fracturing Regulatory Act prohibits locating a gas well within 500 feet of a water well; within 300 feet of a perennial stream, river, lake, pond, or reservoir; or within 1,500 feet of a surface water or groundwater intake of a public water supply (Illinois Public Act 098-0022 §1-25(3), (4), (6)).

Setbacks are important tools for protecting sensitive uses and natural resources from potential impacts from natural gas activities. However, it is challenging to know what distance of setback is enough. From Texas to North Carolina, battles are being fought over the appropriate size of buffer zones between well sites and other uses.

In January 2014, the North Carolina Mining and Energy Commission (MEC) preliminarily approved a set of rules regarding setbacks, which included requiring 500 feet between gas wells and homes, hospitals, schools, and drinking water wells. Shorter setbacks of only 100 feet were provided for streams and public roads. Environmentalists protested and demanded 650-foot setbacks for homes, hospitals, schools, and drinking water wells and 200-foot setbacks for streams and public roads (Rivin 2014). The MEC ultimately agreed to revise the recommended setbacks, but commissioners admitted that these distances were not based on science. The MEC had studied setbacks in place in the 33 states that regulate oil and gas development and found a lack of scientific justification for setbacks, but noted that North Carolina was in the upper range of setbacks in this regard (Camp 2015). The final rules provide a 650-foot setback for occupied dwellings, high-occupancy buildings, and public or private water wells intended for human consumption or household purpose; a 200-foot setback for "a perennial stream, river, watercourse, pond, lake, or other natural and artificial bodies of water, including wetlands and trout stream"; and 100-foot setbacks for public roads, highways, utility or railroad track rights-of-way, or other rights-of-way, and for intermittent streams (15A North Carolina Administrative Code §05H.1601).

Although setbacks continue to be regularly used as a tool to regulate impacts from fracking activities, there remains substantial debate over this common tool.

The lingering questions include how much distance is appropriate, whether the distances are or can be based on science, and whether a setback that is too large is a de facto ban and therefore impermissible, depending on the jurisdiction.

Kirby Wynn

A wastewater storage pit for a fracking operation in Colorado.

How to Regulate Water Usage?

One area seeing greater creativity and progress in the regulation of fracking activities has to do with water usage and recycling. Given the two to five million gallons of water used to frack a horizontal shale gas well and extract gas, the natural gas industry's expansion throughout the United States has raised water supply concerns (API 2010). While this amount of water might not be a large percentage of overall water uses for a given state or region, this can be an enormous amount for certain arid communities, particularly in times of drought.

Where fracking is permitted, water supply issues include identifying the sources of the water that will be used for fracking, how much water is needed and projected to be needed for natural gas operations in a particular state or watershed, how this will affect competing uses, and what will happen to the water after it is used. Some states have taken steps toward monitoring or regulating the amount of water to be used in gas drilling. For example, in 2011, Michigan's Department of Environmental Quality began requiring gas companies to provide a proposed total volume of water needed for fracking operations, complete an online water withdrawal evaluation, and explain the source of their water before beginning extraction. Companies must also disclose the amount of water pumped out following the fracturing process.

Much of the water used in fracking remains trapped deep underground (Ohio EPA 2012). The U.S. Environmental Protection Agency estimates that anywhere from five to 75 percent of the water is pushed back up to the surface (U.S. EPA 2015). This water, called "flowback," may contain elements of the chemicals added to the fracking fluid or hazardous chemicals from below the earth's surface. Flowback contains not only chemicals that were initially added to the water, but also other chemicals that were located underground and mixed with the water when the shale was burst open from the fracking process, some of which may be hazardous. Because of these chemicals, flowback cannot be treated by typical municipal water treatment plants, which are not designed to process and treat hazardous wastes. Operators commonly dispose of water used in fracking operations by injecting it down disposal wells, which has often been the most inexpensive means of disposal.

In certain areas where the demands on the water supply are unsustainable or unable to be met by current supplies, or where underground injections have caused earthquakes, or are suspected of causing or contributing to earthquakes, more drastic measures might be taken. For example, the Oklahoma Corporation Commission (OCC) has restricted fracking operations within a zone of approximately 10,000 square miles in central Oklahoma (Collins 2016). The OCC aims to reduce the amount of wastewater being injected underground for disposal by 300,000 barrels per day and now requires new injection well applications to go through a substantial application process, requiring a majority vote of commissioners for approval (Collins 2016). In addition, permit approval is limited to six months, and operators must undergo seismic monitoring and regular testing (Collins 2016).

Kirby Wynn

A truck spraying water on a lease road for a fracking operation in Colorado.

There is also the option to incentivize wastewater recycling. The Texas Railroad Commission adopted regulations in 2013 to encourage recycling of fracking wastewater on well sites. Drilling operators do not need a permit to recycle water on land that they are leasing, including directly on well sites, or to transfer fluids to another operator's lease in order to be recycled (16 Texas Administrative Code §3.8(d)(7)(B)). In addition, operators may store fluids that are awaiting recycling, or treated fluids, on-site in recycling pits that meet certain criteria (§§3.8(d)(3)(F), (d)(4)(G)). Recycled fluids may also be reused without a permit in oil and gas operations for any use authorized by a permit obtained from another state or the federal government (§3.8(d)(7)(B)(ii)). A year later, the Railroad Commission hosted a Texas Oil and Gas Water Conservation and Recycling Symposium and assessed the impact of the regulations. Operators said that the new regulations made it economically viable to enhance their water recycling efforts (TRC 2014). Companies reported a recycling capacity of up to 1.5 million barrels of water per day and had recycled up to 50 million barrels of water since 2012, and the amount of wastewater being trucked and disposed underground decreased (TRC 2014).

There is currently no set goal for the amount of wastewater recycling that the state hopes to achieve, and there are currently no reporting requirements related to recycling. The Texas Railroad Commission relies on operators to self-report recycling efforts in order to understand how much recycling is taking place (Moravic 2015). Setting specific targets for water recycling and requiring that operators report on their recycling efforts are potential ways to further expand recycling programs and increase their efficacy. Alternatively, there is also the approach of banning subsurface injection of waste altogether, which is the path that North Carolina took (General Statutes §113-395.2).

CAN COOPERATIVE FEDERALISM HELP US?

Another important factor to consider when discussing the scope of local authority is not just the ways in which state law preempts local regulation, but also which federal laws may apply and may influence—and even incentivize—the actions of local and regional authorities. A fascinating example of this is the Endangered Species Act and, specifically, what occurred with the potential listing of the greater sage grouse over the last couple of years. The greater sage grouse was proposed to be listed on the Endangered Species Act as threatened or endangered. The habitat of the sage grouse as recognized by the federal government covers huge expanses of land across 11 western states including Colorado, Utah, Wyoming, Montana, Idaho, and Oregon—approximately 165 million acres. Much of these areas are also prime areas for oil and gas development.

If the sage grouse were listed as an endangered species, the impact on the oil and gas industry would have been tremendous.

U.S. Geological Survey, photo by Bill Cunningham

Well heads hooked up in preparation for a hydraulic fracturing operation in Arkansas.

The potential listing of this species on the endangered species list brought together an unusual coalition of environmentalists, members and proponents of the oil and gas industry, property owners, and local and regional government officials and planners to try to implement measures to preserve the sage grouse and its habitat to a significant enough degree to avoid the listing. The measures included voluntary local and regional land-use plans and efforts that looked at local threats to the species' habitats and implemented measures to address those threats. Local governments worked with the Bureau of Land Management to coordinate local plans with federal plans and goals. This allowed for more targeted and effective approaches to preserving the bird, rather than a one-size-fits-all approach that is typical of federal conservation efforts. They were also able to create more effective local mapping of the bird's habitat to understand where to focus efforts and which areas needed the most protection.

In the end, the sage grouse was not listed. But that potential spurred very effective cooperation and efforts to carefully consider various impacts of economic development and human activities on the environment and to plan accordingly to achieve a desired result. Lessons can be learned from this experience—the importance of local efforts and knowledge in land-use planning and the potential for communities to cooperate to increase their efficacy in order to avoid losing control.

HOW TO BRACE FOR FRACKING 'BUSTS'?

This is a very important and challenging issue for communities that depend on oil and gas development. Communities that have gone through multiple boom-and-bust cycles, such as in Colorado or North Dakota, have learned lessons that they have implemented, but it is still difficult. These cycles are not predictable and depend on many variables, from government subsidies being available or taken away to global geopolitics. It can be very hard for a community to keep up with the fast-paced development required during the boom periods and then to immediately have that development stall or stop altogether. In extreme cases, if a community has a significant number of transient workers for the industry, many people may leave the community once the work has slowed or stopped, very quickly decreasing the population and the tax base. That, plus the lack of economic activity, means significantly less money for the local government. This can be a problem not just for ordinary costs, but also if the government has bonds to pay—bonds it had used during the boom to pay for much-needed infrastructure upgrades, roads, or a new water treatment control plant. There may suddenly be a surplus of housing when previously there was a shortage. Housing prices may decrease quickly as a result. This is not to say that all of these impacts will be felt by a community, but some or all of them might be, to varying degrees. To the extent possible, the local government should try to plan for such busts by saving its greater revenues during the boom times and, to the extent possible, it should try to plan for the long term and diversify its economy.

One successful example of this is Rifle, Colorado, which suffered a severe bust in 1980. The town was devastated, saw significant population decline, and did not issue a building permit for close to a decade. The community had been very reliant on the oil and gas industry. When the next boom picked up again the 1990s, the mayor had the foresight to plan for the long term. Mayor Keith Lambert remembered the previous bust and worked to encourage Rifle to diversify its economy by investing in solar energy. It had the opportunity to do that when the next boom came around. This community still significantly supports and relies upon the oil and gas industry, but it has also positioned itself to have more solar panels per capita than any other municipality in the United States (Essex 2015). Additionally, it has played on the strengths of its location, at the intersection of major highways and on the Colorado River, to increase tourism. These efforts have strengthened its economy and helped it to save money for the long run and to weather the busts.

It's important to keep in mind during the boom times that the boom growth is not sustainable, and it is critical to think about options and savings for when that growth slows or stops.

CONCLUSION

Although the scope of a local government's authority related to fracking is state-specific and, in many cases, changing quickly due to new state laws and new case law addressing preemption issues, communities can still learn from others who have gone through boom-bust cycles with regard to planning techniques and longer-term strategies. States and local governments also continue to look to each other for examples of specific regulations that have been successful—whether to increase recycling of wastewater or minimize

impacts from noise and light—and that are evidence-based. As technology continues to advance, regulations will need to keep up with what the industry is capable of achieving, from recycling wastewater to seismic detection. Regulations will likely need to be revisited and amended more often than for other industries in order to be most effective at achieving a community's goals.

President Eisenhower's words are as true in the context of regulating fracking as ever: "Plans are worthless, but planning is everything" (1957).

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HOW DOES YOUR COMMUNITY REGULATE OIL AND GAS DEVELOPMENT?

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