SETBACKS FOR OIL AND GAS DEVELOPMENT IN COLORADO

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This brief considers several of the issues salient to the ongoing discussion (and now ballot Proposition) in Colorado about the setback distances for oil and gas development. No matter the result of the voting in early November, these issues require further discussion and analysis.

Colorado is a significant producer of both oil and natural gas, and has a long history of resource development. At the same time, the state is also urbanizing and has a rapidly growing economy and population. This combination of factors has created tensions and issues of “social license to operate.”¹,² The social license question in this instance relates to the extractive industry and concerns about interaction between business and society.³ A new ballot Proposition regarding the planning criteria for new drilling has again brought these discussions to the fore. Similar measures have been put forward over the last few election cycles. In this short piece, we consider some of the pros and cons of the current measure, and the strengths and limitations of available data and analysis, noting that these issues will not go away and require further thoughtful discussion and analysis.

¹https://ehp.niehs.nih.gov/doi/10.1289/ehp.1510547
²https://digitalcommons.law.ou.edu/cgi/viewcontent.cgi?article=1006&context=onej
A PROPOSITION

The 2018 Colorado ballot Initiative 97 (after signature gathering now called Proposition 112)\(^4\) was placed on the ballot after 123,195 verified signatures were presented to the state, exceeding the required hurdle of 98,492 signatures.\(^5\) The principal text of #112 states: “All new oil and gas development not on federal land must be located at least 2500 feet from an occupied structure or vulnerable area.” The current limits are 500 feet from homes, and 1000 feet from schools. Occupied structures are for any building that requires a certificate of occupancy or is intended for human occupancy, including homes, schools, and hospitals. Although hydraulic fracturing (commonly called fracking) is the primary target, the measure refers generally to oil and gas development. Vulnerable areas include playgrounds, sports fields, parks, amphitheaters, public open space, irrigation canals, reservoirs, lakes, streams, creeks, and any other area the state identifies as vulnerable. The impetus for the proposition as stated in Section 1c is to, “Preserve public health, safety, welfare, and the environment.” The issue has been covered widely in the media, and was a major driver of the Governor’s Task Force process in 2014-2015.\(^6\) Voting will take place on November 6, 2018.

Proposition 112 is similar to Initiative 78, which was proposed in 2016 but did not get enough signatures to make it onto the ballot. However, this year’s proposition would change the Colorado Revised Statutes, as opposed to the 2016 initiative that aimed to modify the state constitution. The Proposition’s supporters range from local and state politicians, to well-known environmental activists, to large environmental organizations. On the other hand, both Colorado Governor candidates have stated their opposition to the measure because of the negative impacts on jobs, wages, and foregone taxes. Jared Polis, the Democratic candidate, took a very different view of a similar measure in 2014. A related measure connected to potential economic losses #74 has also made the ballot.\(^7\)

EXISTING NUMBERS

An impact analysis on the measure was conducted using geospatial techniques by the Colorado Oil and Gas Conservation Commission (COGCC).\(^8\) This impact analysis considered the changes in surface land area that would be available for oil and gas development under Proposition 112, but does not consider public health, safety, environmental impacts, or economic welfare more broadly. The headline finding was, “An estimated 54% of Colorado’s total land surface would be unavailable for new oil and gas development by adopting the buffer zone setbacks and federal land exemption proposed by Initiative #97. Of the non-federal land in Colorado, 85% would be inaccessible using these same criteria.” However, the report, “does not

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\(^4\) Hereafter called 112.

\(^5\) Documents can be found: https://leg.colorado.gov/content/setback-requirement-oil-and-gas-development


\(^7\) https://www.sos.state.co.us/pubs/elections/Initiatives/ballot/contacts/2018.html

\(^8\) The 2016 analysis by COGCC can be found here: https://cogcc.state.co.us/documents/library/Technical/Miscellaneous/Init_78_Proposed_2500ft_Setback_Assessment_Report_20160527.pdf
directly analyze the extent to which mineral development would be impacted by the decrease in surface acreage.”

A report entitled *The Economic and Fiscal Impacts of 2018 Proposition 112* published by the Common Sense Policy Roundtable analyzed economic costs in terms of the value of foregone oil and gas production, employment, and state and local tax revenue. It is estimated that $258 million in tax revenues would be lost in year one, and that by 2030 tax revenues would decline by more than $1 billion, driven by forecasted declines in drilling activity associated with the increased buffer zone. This analysis did not consider the economic value of health, environmental, and safety impacts or changes in real estate values that may also occur under Proposition 112. While regional impact models can overstate the impact of a change in industry size through its use of spending multipliers, it is clear that Proposition 112 would have a negative impact on the oil and gas industry.

An initial analysis of the potential impacts to oil and gas access, which incorporates the industry’s capability to drill horizontally underground, has been conducted at the Colorado School of Mines.\(^9\) Assuming that horizontal wells can reach one mile, which is a conservative estimate in the most heavily drilled portions of the state, the analysis finds that approximately 42% of Colorado’s nonfederal subsurface is potentially reachable via horizontal drilling from an accessible surface location. While nearly half of the subsurface would be directly accessible via directional or horizontal drilling, this understates the potential difficulty of accessing resources. If surface operating locations are restricted, operators will face much more difficulty in planning drilling to maximize production. Further, they may be unable to site drilling near roads and utilities. In that case, they would have to build new access roads, which would have their own environmental impacts.

Considering other jurisdictions, Haley and co-authors in a 2016 analysis considered setback distances in Texas (200’), Pennsylvania (500’), and Colorado (500” and 1000’).\(^10\) They note, “[the states] should consider adopting more generous setback distances, particularly in reference to vulnerable populations; however, distance is not an absolute measure of protection. Unfortunately, there is no defined setback distance that assures safety. As mitigation technology advances, current setback distances may eventually be sufficient to protect the public.”

While health and safety has been a primary focus of proponents of Proposition 112, business and industry representatives have highlighted the potential economic costs. A complete economic analysis would require accounting for all the societal benefits and costs associated with the action, including: the economic value of health, environmental and safety benefits, changes in real estate values associated with proximity to energy development, as well as the lost value to the oil and gas industry and related supporting industries from foregone production opportunities. Such an analysis has not been performed to our knowledge.

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\(^10\) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5010420/
RESOURCE-RICH COLORADO

Colorado has been at the forefront of developing policies to regulate the use of hydraulic fracturing. There are about 50,000 oil and gas wells active in the state, using Denver Post data. The state is the 5th and 7th largest gas and oil producer in the USA. As nearly 80% of Colorado oil production comes from the Denver Julesberg Basin, and part of the Basin is located along the edge of communities north and east of metro Denver, there has been increasing tension between oil and gas drilling companies operating in close proximity to growing neighborhoods.

Conflict over the issue of local control has grown in communities throughout the state. Cities such as Longmont and Fort Collins placed restrictions on fracking activities in 2012 and 2103 respectively. In 2016, those restrictions were overturned by the Colorado Supreme Court, which ruled that state power supersedes local rights to regulate the oil and gas industry. The public concerns were further heightened by a gas explosion at a home in Firestone, Colorado in April of 2017 that took the lives of two individuals due to “fugitive gas” from a severed and uncapped flowline. Despite significant regulations related to flowlines, and location requirements following the incident, resistance in the state appears to have continued to rise.

There is a long history of tension between natural resource development, and the social, economic, and environmental concerns of citizens all over the world. These tensions are likely heightened by the fact that most Colorado residents—and the overwhelming majority of new arrivals—do not own the subsoil mineral rights associated with their property. In Colorado, land owners may separate land ownership from mineral ownership. When the owners of the land are different than of the minerals, the estate is considered “split” or “severed.” The mineral rights owner can lease her land for oil and gas development even though the land is owned by someone else. Oil and gas companies can enter the subsurface in one location and then drill horizontally to access reserves in another.

Colorado’s regulatory approaches have served as a model for many other U.S. states. An example comes from the development of world-class regulations on methane and volatile organic compounds (VOCs), which were designed over several years in partnership between government, industry, and NGOs. Such a long-standing and balanced dialogue is now required for other aspects of the industry.

Proposition 112 is only the latest flashpoint in the ongoing conflict between Colorado communities and the oil and gas industry. The passage or rejection of the ballot issue will not resolve the myriad issues related to oil and gas drilling in Colorado (e.g., severance taxes, inspection and enforcement, orphaned wells, and wider climate change mitigation). However, the issue brings to light the polarization of opinions regarding this activity. Further objective research, analysis, and discussion (among community, industry, academic, and political actors) are needed to identify long term solutions to allow Colorado to continue to profit from the economic benefits of being a resource rich state while satisfying its health, environmental, and safety concerns.

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11 See e.g., https://www.tandfonline.com/doi/full/10.1080/02646811.2016.1216696
12 https://www.eia.gov/state/analysis.php?sid=CO
13 For one perspective on this dialogue see Schuller, T. 2018. Accidentally Adamant. Lodgepole Pine, USA
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