



## Colorado Ballot Initiative #97 2500' Setback Requirement for Oil and Gas Development

GIS-Based Impact Assessment  
July 2, 2018  
Colorado Oil & Gas Conservation Commission

- 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.
- 78% of Weld County surface land (85% of non-federal land) would be off-limits to new oil and gas development. In Colorado's top five oil and gas producing counties combined, 61% of the surface acreage (94% of non-federal land) would be unavailable.
- "Vulnerable areas" buffers, which initiative #97 defines to include a range of surface hydrologic features, would have a significantly larger impact than "occupied structure" buffers on making surface lands inaccessible to new oil and gas activity.

Colorado ballot initiative #97, received by the Colorado Secretary of State in January 2018, is currently in the signature-collecting phase (through August 6, 2018) for inclusion on the November ballot. Similar to initiative #78 proposed in 2016, initiative #97 would designate 2500-foot buffer zones around "occupied structure" and "vulnerable areas" (see Appendix for full text). Initiative #97 proposes changing the Colorado Revised Statutes, as opposed to the 2016 initiative that aimed to modify the state constitution.

At the request of COGCC commissioners, the potential impact of initiative #97 on surface lands available for oil and gas development has been prepared. There are subtle, yet significant, differences in the language of the proposed 2018 initiative versus the 2016 version. This analysis addresses those changes and incorporates new GIS information building upon a study published by the COGCC in 2016 (methods and technical details of that study are available [here](#)).

Initiative #97 states:

*"OCCUPIED STRUCTURE" MEANS ANY BUILDING OR STRUCTURE THAT REQUIRES A CERTIFICATE OF OCCUPANCY OR BUILDING OR STRUCTURE INTENDED FOR HUMAN OCCUPANCY, INCLUDING HOMES, SCHOOLS, AND HOSPITALS.*

*"VULNERABLE AREAS" MEANS PLAYGROUNDS, PERMANENT SPORTS FIELDS, AMPHITHEATERS, PUBLIC PARKS, PUBLIC OPEN SPACE, PUBLIC AND COMMUNITY DRINKING WATER SOURCES, IRRIGATION CANALS, RESERVOIRS, LAKES, RIVERS, PERENNIAL OR INTERMITTENT STREAMS, AND CREEKS, AND ANY ADDITIONAL VULNERABLE AREAS DESIGNATED BY THE STATE OR A LOCAL GOVERNMENT.*

*THE PEOPLE OF THE STATE OF COLORADO HEREBY ESTABLISH THAT ALL NEW OIL AND GAS DEVELOPMENT NOT ON FEDERAL LAND MUST BE LOCATED AT LEAST TWO THOUSAND FIVE HUNDRED FEET FROM AN OCCUPIED STRUCTURE OR VULNERABLE AREA. FOR PURPOSES OF THIS SECTION, THE REENTRY OF AN OIL OR GAS WELL PREVIOUSLY PLUGGED OR ABANDONED IS CONSIDERED NEW OIL AND GAS DEVELOPMENT.*

Note that the 2018 initiative #97 exempts "federal land" from the 2500-foot setback requirement. Other differences from the 2016 initiative include defining "vulnerable areas" (roughly equivalent to "area of special concern") to include reservoirs but not riparian areas; and proposing to allow state or local governments the right to designate "vulnerable areas" independently.

This report does not directly analyze the extent to which mineral development would be impacted by the decrease in surface acreage available for new oil and gas development facilities or hydraulic fracturing operations. This report also does not attempt to quantify economic impacts resulting from the reduction of available surface acreage for new oil and gas development facilities or hydraulic fracturing operations.

## **DATA & ANALYSIS**

The methodology and data sources for this study remain nearly identical to those used for the COGCC 2016 report titled *2500' Mandatory Setback from Oil and Gas Development* (available on the COGCC website at [http://cogcc.state.co.us/documents/library/Technical/Miscellaneous/Init\\_78\\_Proposed\\_2500ft\\_Setback\\_Assessment\\_Report\\_20160527.pdf](http://cogcc.state.co.us/documents/library/Technical/Miscellaneous/Init_78_Proposed_2500ft_Setback_Assessment_Report_20160527.pdf)).

Changes made for this study include:

- Excluding federal surface land as identified via US Bureau of Land Management (BLM) GIS data (<https://navigator.blm.gov/data?keyword=d8420fd21cd3f159>).
- Using the most recent USGS National Hydrography Dataset (NHD) information.
- Updating existing Colorado address point data and incorporating new address point data for counties that were not available in 2016.
- Removing USFWS National Wetlands Inventory (NWI) GIS data from the analysis as riparian areas are not explicitly mentioned in the initiative #97 language.<sup>1</sup>

As was the case in 2016, there are limitations and assumptions associated with using address point data to represent occupied structures, and no aggregated GIS data was available for public and community drinking water sources, playgrounds, permanent sports fields, amphitheaters, public parks, and public open spaces. Additionally, address point data was not available for the following counties: Baca, Cheyenne, Crowley, Jackson, Kiowa, Morgan, Phillips, Prowers, Otero, Washington, and Yuma. Because of data access restrictions, address point data for the following counties is from 2016 or prior: Fremont, Las Animas, Lake, Lincoln, Logan, and Moffat.

## **RESULTS**

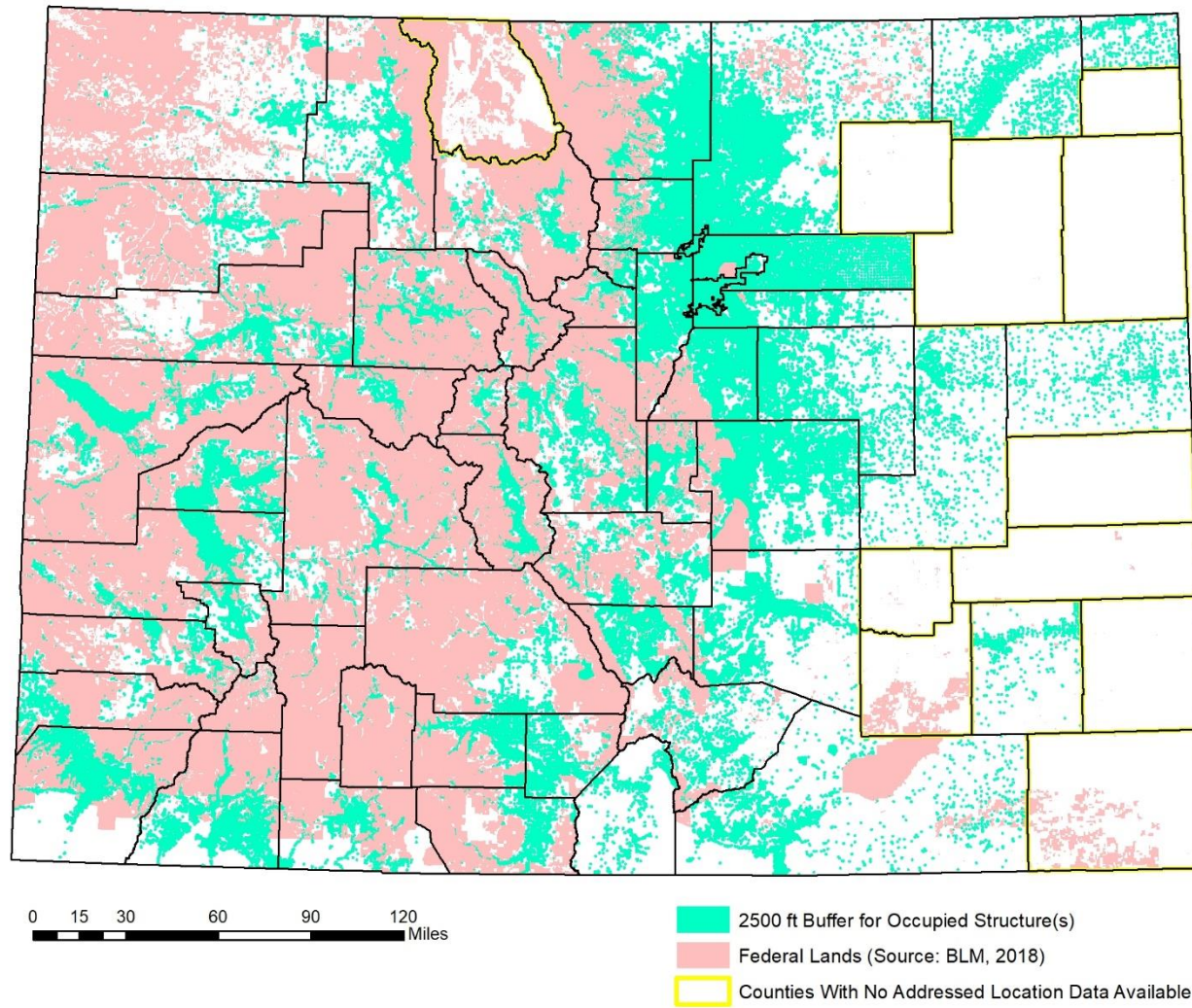
Geographic Information System (GIS) calculations show the proposed 2500-foot buffers of initiative #97 could preclude oil and gas development on more than 54% of the total land surface area of Colorado (Table 1). If considering only non-federal land, 85% of the land surface would be unavailable. As was the case in 2016, the proposed buffers for “vulnerable areas” (that includes lakes, rivers, perennial or intermittent streams, and creeks) would be the most impactful. The proposed federal land exemption, which in Colorado would be an estimated 36% of the state’s total surface area, does keep land available for oil and gas development in western Colorado, but has little impact on lands east of the Rockies including in Weld County. For Weld, an estimated 78% of surface land (85% of non-federal land) would be inaccessible to development with proposed buffers in effect. Maps prepared for this report show the potential areal impact of proposed buffers statewide (Figures 1 – 3). The GIS datasets used to generate these maps (available on the COGCC website at [http://cogcc.state.co.us/documents/data/downloads/gis/2018\\_Init\\_97\\_2500ft\\_Buffer\\_Zones.zip](http://cogcc.state.co.us/documents/data/downloads/gis/2018_Init_97_2500ft_Buffer_Zones.zip)) allow for more localized analysis.

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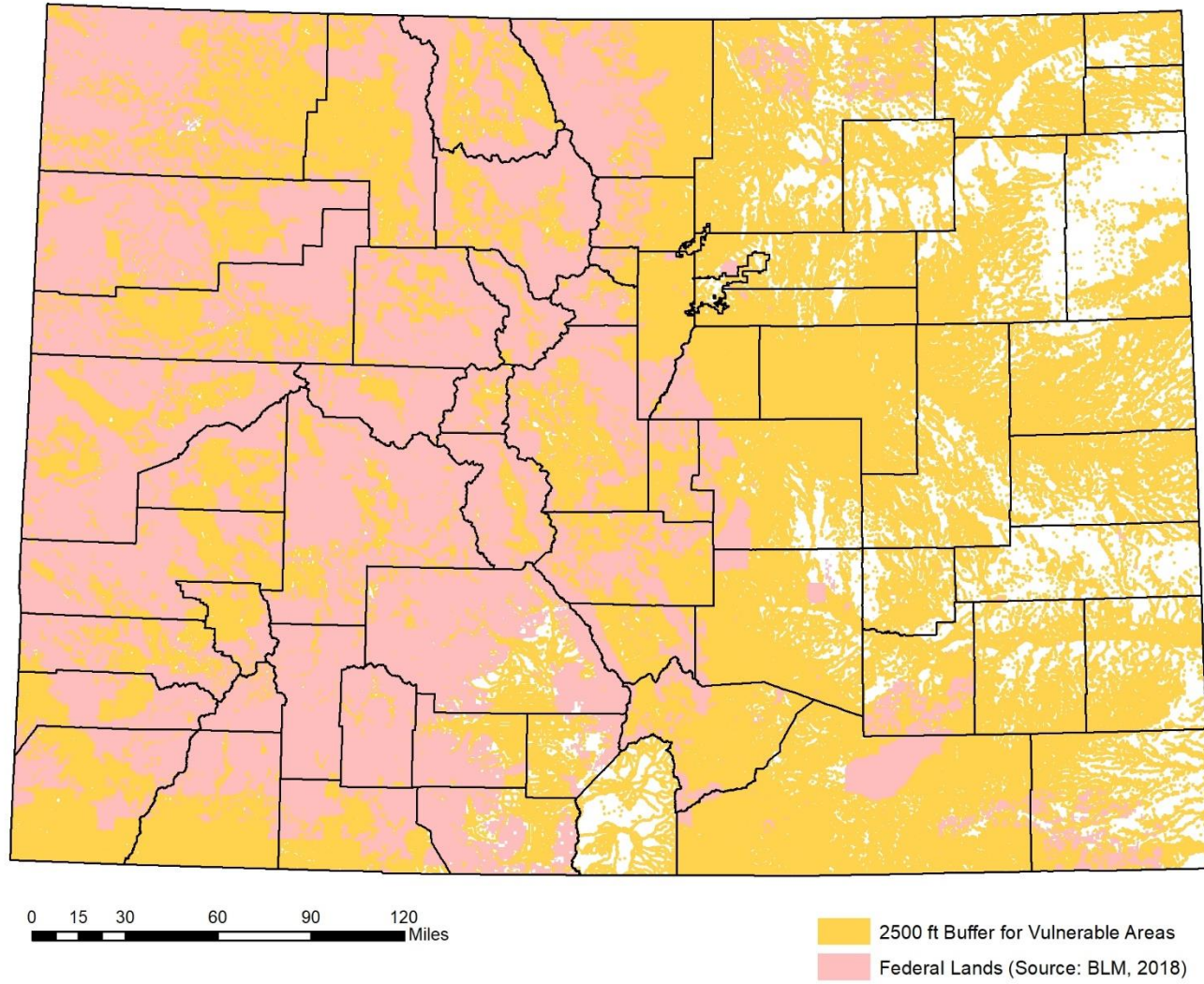
<sup>1</sup> Note that if local and/or state governments were to designate all wetlands as “vulnerable areas” in addition to what initiative #97 already proposes, an estimated 495,000 acres (<1% of the state’s total land, and primarily located in the San Luis Valley region) could also be placed off-limits to oil and gas development.

	Total Surface Area	Federal Surface Area		Non-Federal Surface Area		2500' Buffer Zone for "Occupied Structure"			2500' Buffer Zone for "Vulnerable Areas"			2500' Buffer Zone for "Occupied Structure" AND "Vulnerable Areas"		
	Acres	Acres	% of Total Surface Area	Acres	% of Total Surface Area	Acres	% of Total Surface Area	% of Non-Federal Surface Area	Acres	% of Total Surface Area	% of Non-Federal Surface Area	Acres	% of Total Surface Area	% of Non-Federal Surface Area
<b>Statewide</b>	66,620,310	24,126,153	36.2%	42,494,157	63.8%	13,726,084	20.6%	32.3%	35,388,811	53.1%	83.3%	36,287,528	54.5%	85.4%
<b>Weld</b>	2,568,948	210,603	8.2%	2,358,345	91.8%	1,076,897	41.9%	45.7%	1,856,685	72.3%	78.7%	2,005,435	78.1%	85.0%
<b>Garfield</b>	1,893,530	1,177,938	62.2%	715,592	37.8%	270,574	14.3%	37.8%	712,661	37.6%	99.6%	713,842	37.7%	99.8%
<b>La Plata</b>	1,087,758	427,657	39.3%	660,101	60.7%	394,938	36.3%	59.8%	658,432	60.5%	99.7%	659,119	60.6%	99.9%
<b>Rio Blanco</b>	2,064,877	1,514,889	73.4%	549,988	26.6%	170,076	8.2%	30.9%	548,682	26.6%	99.8%	548,864	26.6%	99.8%
<b>Las Animas</b>	3,051,421	331,589	10.9%	2,719,832	89.1%	514,030	16.8%	18.9%	2,616,301	85.7%	96.2%	2,627,077	86.1%	96.6%
<b>Top 5 Producing Counties</b>	10,666,534	3,662,676	34.3%	7,003,858	65.7%	2,426,515	22.7%	34.6%	6,392,761	59.9%	91.3%	6,554,338	61.4%	93.6%

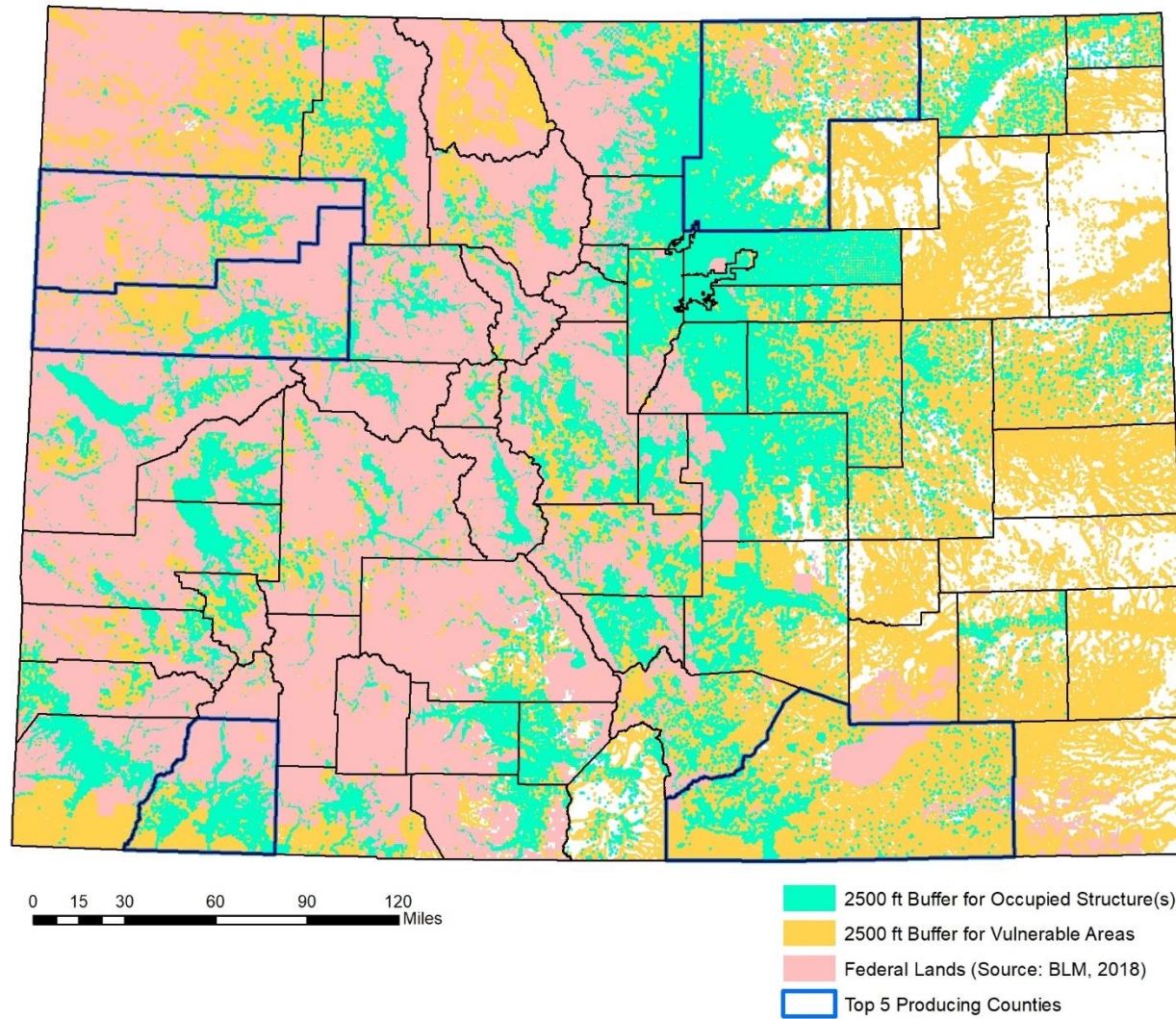
*Table 1 – Surface area impact of proposed 2500' buffers (with federal land exemption) statewide and for top five oil and gas producing counties.*



**Figure 1** – 2500' buffer zones for "occupied structure". No addressed location data available for counties outlined in yellow.



**Figure 2** – 2500’ buffer zones for “vulnerable areas”.



**Figure 3** – 2500’ buffer zones for both “occupied structure” and “vulnerable areas”. The top five oil and gas producing counties in Colorado are outlined in blue. Unshaded areas would be the only non-federal land available for new oil and gas surface development.

Colorado Secretary of State

2017-2018 #97 FINAL

*Be it Enacted by the People of the State of Colorado:*

SECTION 1. In Colorado Revised Statutes, add 34-60-131 as follows:

**34-60-131. Mitigation of adverse oil and gas impacts to health and safety – buffer zones – legislative declaration - definitions.** (1) THE PEOPLE OF THE STATE OF COLORADO FIND AND DECLARE THAT:

(a) PROXIMITY TO OIL AND GAS DEVELOPMENT, INCLUDING THE USE OF HYDRAULIC FRACTURING, HAS DETRIMENTAL IMPACTS ON PUBLIC HEALTH, SAFETY, WELFARE, AND THE ENVIRONMENT;

(b) SUCH IMPACTS ARE REDUCED BY LOCATING OIL AND GAS OPERATIONS AWAY FROM OCCUPIED STRUCTURES AND VULNERABLE AREAS; AND

(c) TO PRESERVE PUBLIC HEALTH, SAFETY, WELFARE, AND THE ENVIRONMENT, THE PEOPLE DESIRE TO ESTABLISH A BUFFER ZONE REQUIRING ALL NEW OIL AND GAS DEVELOPMENT IN THE STATE OF COLORADO TO BE LOCATED AN INCREASED DISTANCE AWAY FROM OCCUPIED STRUCTURES, INCLUDING HOMES, SCHOOLS AND HOSPITALS, AS WELL AS VULNERABLE AREAS.

(2) AS USED IN THIS SECTION, UNLESS THE CONTEXT OTHERWISE REQUIRES:

(a) "OCCUPIED STRUCTURE" MEANS ANY BUILDING OR STRUCTURE THAT REQUIRES A CERTIFICATE OF OCCUPANCY OR BUILDING OR STRUCTURE INTENDED FOR HUMAN OCCUPANCY, INCLUDING HOMES, SCHOOLS, AND HOSPITALS.

(b) "OIL AND GAS DEVELOPMENT" MEANS EXPLORATION FOR, AND DRILLING, PRODUCTION, AND PROCESSING OF, OIL, GAS, OR OTHER GASEOUS AND LIQUID HYDROCARBONS, AND FLOWLINES AND THE TREATMENT OF WASTE ASSOCIATED WITH SUCH EXPLORATION, DRILLING, PRODUCTION AND PROCESSING. "OIL AND GAS DEVELOPMENT" INCLUDES HYDRAULIC FRACTURING.

(c) "VULNERABLE AREAS" MEANS PLAYGROUNDS, PERMANENT SPORTS FIELDS, AMPHITHEATERS, PUBLIC PARKS, PUBLIC OPEN SPACE, PUBLIC AND COMMUNITY DRINKING WATER SOURCES, IRRIGATION CANALS, RESERVOIRS, LAKES, RIVERS, PERENNIAL OR INTERMITTENT STREAMS, AND CREEKS, AND ANY ADDITIONAL VULNERABLE AREAS DESIGNATED BY THE STATE OR A LOCAL GOVERNMENT.

(d) "LOCAL GOVERNMENT" MEANS ANY STATUTORY OR HOME RULE COUNTY, CITY AND COUNTY, CITY, OR TOWN LOCATED IN THE STATE OF COLORADO.

(3) THE PEOPLE OF THE STATE OF COLORADO HEREBY ESTABLISH THAT ALL NEW OIL AND GAS DEVELOPMENT NOT ON FEDERAL LAND MUST BE LOCATED AT LEAST TWO THOUSAND FIVE HUNDRED FEET FROM AN OCCUPIED STRUCTURE OR VULNERABLE AREA. FOR PURPOSES OF THIS SECTION, THE REENTRY OF AN OIL OR GAS WELL PREVIOUSLY PLUGGED OR ABANDONED IS CONSIDERED NEW OIL AND GAS DEVELOPMENT.

(4) THE STATE OR A LOCAL GOVERNMENT MAY REQUIRE THAT NEW OIL AND GAS DEVELOPMENT BE LOCATED A LARGER DISTANCE AWAY FROM OCCUPIED STRUCTURES OR VULNERABLE AREAS THAN REQUIRED BY SUBSECTION (3) OF THIS SECTION. IN THE EVENT THAT TWO OR MORE LOCAL GOVERNMENTS WITH JURISDICTION OVER THE SAME GEOGRAPHIC AREA ESTABLISH DIFFERENT BUFFER ZONE DISTANCES, THE LARGER BUFFER ZONE GOVERNS.

(5) THIS SECTION TAKES EFFECT UPON OFFICIAL DECLARATION OF THE GOVERNOR AND IS SELF-EXECUTING.

(6) THIS SECTION APPLIES TO OIL AND GAS DEVELOPMENT PERMITTED ON OR AFTER THE EFFECTIVE DATE.