

# Colorado Oil and Gas Conservation Commission

Cause 1-R, Docket No. 1211-RM-04

Regulatory Analysis pursuant to §24-4-103(4.5), C.R.S.

## INTRODUCTION

Commencing on November 14, 2012 at a duly noticed public hearing, the Colorado Oil and Gas Conservation Commission (“Commission”) will consider amendments to the 100 Series (Definitions), 300 Series (Drilling, Development, Production, and Abandonment), 600 Series (Safety Regulations), and 800 Series (Aesthetic and Noise Control Regulations) of the Commission’s Rules of Practice and Procedure, 2 CCR 404-1 (“Commission Rules” or “Rules”). All proposed modifications, additions, and deletions to current Commission Rules relevant to this Rulemaking are set forth in Exhibit A, Stakeholder Draft, and Exhibit B, Rule Changes to Correct References, to the Commission’s October 15, 2012 Notice of Rulemaking Hearing, Cause No. 1R, Docket No. 1211-RM-04 (for convenience, Docket No. 1211-RM-04 will be referred to herein as the (“Setback Rulemaking”).

On October 31, 2012, one or more persons filed a timely notice pursuant to Section 103(4.5) of the State Administrative Procedures Act, § 24-4-103(4.5), C.R.S., requesting the Commission to prepare a regulatory analysis of the proposed amended Rules in the Setback Rulemaking. The regulatory analysis follows, beginning with an overview of selected, key proposed amendments to specific Rules.

## OVERVIEW OF KEY PROPOSED RULE AMENDMENTS

### 100-Series Definitions.

A new defined term, “High Occupancy Building Unit,” is proposed to be defined as any Educational Facility, Hospital, Nursing Home, Board and Care Facility, or Jail designed to serve 50 or more persons.

The defined term “High Density Area” is proposed to be deleted.

A change to the definition of the term “Designated Outside Activity Area” has been proposed.

### 600-Series Safety Regulations.

Proposed amendments to Rule 603, Drilling and Well Servicing Operations and High Density Area Rules, would require a well to be located (“setback”) not less than two hundred feet from buildings, public roads, major above ground utility lines, or railroads. Existing Rule 603 requires

a setback distance of 150 feet or 1 ½ times the height of the derrick, whichever is greater. Current Rule 603.b., High Density Area Rules for Building Units, is proposed to be eliminated.

Former Rule 604 has been re-numbered to 605, and a new Rule 604 has been proposed that would establish Location Requirements for Oil and Gas Facilities, Drilling, and Well Servicing Operations in Designated Buffer Zones. New proposed Rule 604 would create: 1) an “Exception Zone,” defined as the area between a proposed Oil and Gas Location and any Building Unit(s) within 350 feet of a proposed well or production facility on the Location; 2) a “Buffer Zone, defined as the area between a proposed Oil and Gas Location and any Building Units located within 1,000 feet of a well or production facility on the proposed Location; and 3) a “High Occupancy Building Unit Zone,” which would require the Commission to approve a Form 2 or Form 2A proposing to locate a well or production facility within 750 feet of a High Occupancy Building Unit. As a result of the proposed elimination of the High Density Area Rules, the Exception Zone setback of 350 feet would apply in all areas, regardless of Building Unit density. Under proposed Rule 604a.(1), the Director may not approve a Form 2 or Form 2A proposing to locate a well or production facility within the Exception Zone unless all owners of Building Units located within the Exception Zone consent in writing to the proposed locations.

Proposed new Rule 604.c., Buffer Zone Mitigation Measures, would establish requirements to eliminate, minimize, or mitigate potential adverse impacts associated with oil and gas operations, including odors, noise, dust, and traffic. Mitigation measures would be required for Oil and Gas Locations proposed within the Exception Zone and Buffer Zone, within 1,000 feet of a High Occupancy Building, and within 700 feet of a Designated Outside Activity Area. In general, Rule 604.c. does not prescribe how any particular impact must be mitigated; rather, the operator has discretion about how to mitigate the impact. However, in some cases the Rule imposes specific requirements for or limitations on, for example, operating hours (Rule 604.c.(2)A); allowable noise levels (Rule 604.c.(2)B); use of pits, other than fresh water pits (Rule 604.c.(2)C); emission control systems (Rule 604.c.(2)D); or use of multi-well pads (Rule 604.c.(2)F).

### 300-Series Drilling, Development, Production and Abandonment.

Proposed amendments to Rule 303 would make all Form 2As, Oil and Gas Location Assessment applications, subject to approval by the Director. Minor changes to the information required to be submitted with a Form 2, Application for Permit to Drill, and with a Form 2A are also proposed.

Proposed amendments to Rule 305, Notice, Comment, Approval, would change the comment period for a Form 2A proposing to locate a wellhead or production facility within the Exception Zone from 20 days to 40 days. In addition, proposed amendments to Rule 305 would require

operators to provide an Oil and Gas Location Assessment Notice to owners of Building Units within the exception zone, and to provide a simplified notice to Building Unit owners within the Buffer Zone.

Proposed amendments to Rule 306, Consultation, would require the Form 2A Applicant to confer with owners of Building Unit within the Exception Zone, if any, regarding the proposed Oil and Gas Location. The Rule 306.e.(1) conference would include discussion of the date operations are expected to commence, the anticipated duration of drilling and completion operations, a description and drawing of the proposed Location, including layout of production or injection facilities, pipelines, roads, and other areas to be used for operations; and mitigation measures proposed to be used to eliminate, minimize or mitigate noise, odors, dust, light, and traffic impacts associated with the operations. Under proposed Rule 306.e.(2), a Form 2A Applicant would also be required to hold informational meetings with owners of Building Units within the Buffer Zone to provide information on the same issues discussed under Rule 306.e.(1). The Form 2A Applicant must certify it has conferred or met with Building Unit Owners pursuant to Rule 306.e. before the Director may approve a Form 2A.

#### 800-Series Aesthetic and Noise Control Regulations

Proposed amendments to Rule 805, Odors and Dust, would require use of emission control devices of varying efficiency on crude oil, condensate, and produced water tanks, and glycol dehydrators within the Exception Zone and Buffer Zone, or within 1,000 feet of a High Occupancy Unit or Designated Outside Activity Area. Similarly, pits with a potential to emit volatile organic compounds of five tons per year would not be permitted within these areas. In addition, low- or no-bleed pneumatic devices would be required when installing new or replacing or repairing existing devices.

### **SUMMARY OF INTENT AND PURPOSE OF PROPOSED SETBACK RULES**

The intent and purpose of the proposed amendments to the Rules in the Setback Rulemaking is to establish new, or modify existing, Rules regarding the location of wells and production facilities in relation to occupied buildings. In addition, the proposed new and amended Rules are intended to promote clearer and more extensive communication between operators and residents and other Building Unit owners when Oil and Gas Facilities are proposed to be located within 1,000 feet of occupied buildings. It has been Commission Staff's experience that communicating with persons who live or work near drilling operations before those operations begin is a very effective means of mitigating concerns about what will occur, how long it will take, and what measures will be taken to eliminate, minimize, or mitigate potential effects of the operations, including odors, noise, dust, and lights.

The proposed Setback Rules also are intended to require operators to effectively eliminate, minimize, or mitigate the potential adverse impacts of oil and gas operations on persons within the Exception Zone, Buffer Zone, High Occupancy Building Zone, and Designated Outside Activity Area. Requiring oil and gas operations to be located a greater distance away from occupied buildings is one way to minimize or mitigate some potential adverse impacts. However, mineral owners' property rights, existing and planned surface uses, contractual rights and obligations, and technical and economic considerations are implicated when setbacks are increased. Other measures can be employed to eliminate, minimize or mitigate potential adverse impacts, such as noise, odor, dust, and light, directly. The proposed Setback Rules reflect Commission Staff's view, following an extensive series of stakeholder meetings, that requiring operators to address potential adverse impacts directly by employing mitigation measures is the most appropriate means of balancing the competing interests of mineral owners or lessees and surface owner/occupants.

Based on data analyzed by Commission Staff, since April 2009 less than 5% of well sites or production facilities are proposed to be located within the 350 foot Exception Zone proposed by new Rule 604.a.(1). Approximately 23% of proposed well sites or production facilities fall within the proposed 1,000 foot Buffer Zone. Thus, if recent trends continue, the new proposed Rules will have virtually no effect on 72% (4370 out of 6055) of well sites or production facilities.

## **REGULATORY ANALYSIS**

- I. Description of the classes of persons who will be affected by the proposed rule(s), including the classes that will bear the costs and that will benefit from the proposed rule(s).**
  - A. The classes of persons who will be affected by the proposed Setback Rules include:
    1. Oil and gas operators
    2. Oil and gas gathering and processing ("midstream") operators
    3. Developers and residential home builders; prospective home buyers
    4. Agricultural interests
    5. Owners and occupants of Building Units located within 1,000 feet of proposed Oil and Gas Locations
    6. Local governments
    7. Commission staff

B. The classes of persons who will bear the costs of the proposed Setback Rules include:

1. Oil and gas operators. Providing notice to owners of Building Units under proposed amendments to Rule 305 likely will result in modest increases in administrative costs to operators. Similarly, increasing communications with these Building Unit owners pursuant to Rule 306 likely will result in modest additional costs associated with assembling and presenting the necessary information, coordinating and conducting the required conferences or meetings, and follow-up related to same.

To the extent proposed changes to Rules 603 and 604 require a well or other production facility to be located at a greater distance from the minerals to be extracted, operation costs may be increased, and return on investment may be decreased. Securing consent of owners of Building Units within the Exception Zone pursuant to Rule 604.a.(1) may impose more significant costs if operators are required to engage in significant negotiations with, or possibly provide compensation to, such owners.

Mitigation measures that may be imposed pursuant to amendments to Rule 604.c., 802, 803, 804, or 805 also likely will increase operating costs for Oil and Gas Facilities located within the Exception Zone, Buffer Zone, or within 1,000 feet of High Occupancy Buildings or Designated Outside Activity Areas. The costs of various mitigation measures will vary widely. For example, in some locations, hay bales may provide adequate noise mitigation, but in others, an engineered sound wall may be required. Restricting operations to daylight hours, which has been proposed within the Exception Zone, likely would be the most costly mitigation measure.

2. Oil and gas gathering and processing (“midstream”) operators. A Form 2A is required for certain midstream operations, including compressor stations. Consequently, any compressor station proposed to be located within the Exception Zone or Buffer Zone would be subject to the notice, consultation, consent, and mitigation measures under the proposed new and amended Setback Rules. However, midstream operators have the flexibility to locate compressor stations outside the proposed Designated Buffers Zones and avoid any potential costs associated with the proposed rules.
3. Developers and residential home builders; prospective home buyers. Increasing setback distance between occupied buildings and a well or production facility has the potential to impact future residential or commercial development by reducing

the number of available building sites. Reducing the number of building units will increase the land cost per unit. It is anticipated these increased costs would be passed along from a developer to a home builder, and ultimately to prospective buyers. However, under current Commission Rules residential developments are regulated as High Density Areas, in which the setback is 350 feet. In 2012, only five locations have been approved as an exception to the 350 foot setback in the existing high density area. Consequently, the proposed Setback Rules are unlikely to have a significant impact on residential or commercial development.

4. Agricultural interests. Increasing setback distance between occupied buildings and a well or production facility has the potential to impact agricultural interests by reducing surface acreage available for growing crops or grazing livestock, and interfering with surface uses, such as irrigation. Even if the footprint of the well or production facilities does not change, locating those facilities farther from the perimeter of a parcel to meet setback requirements could decrease the productive surface area. Quantifying the economic impact of increasing the setback 200 feet (from 150 to 350 feet) in rural areas is difficult, but is expected to be minimal.

C. The classes of persons that will benefit from the proposed Setback Rules.

1. Owners and occupants of Building Units located within 1,000 feet of proposed Oil and Gas Locations. The proposed Setback Rules will eliminate, minimize or mitigate the impacts associated with oil and gas operations that historically have generated the most complaints from nearby residents and other Building Unit owners or occupants. Providing Building Unit owners with significantly more information about proposed oil and gas operations before those operations begin should alleviate many concerns and questions about the operations. Building Unit Owners within the Exception Zone will have an opportunity to confer about the proposed operations, including what measures are planned to mitigate impacts such as noise, odors, dust, and lights. Operators will be required to mitigate those impacts within both the Exception and Buffer Zone.

D. Other classes of persons who may be affected by the proposed Setback Rules.

1. Local Governments. The proposed Setback Rules may affect local governments by placing increased demands on Local Governmental Designees to participate in meetings with Building Unit owners and oil and gas operators. The proposed Setback Rules may also affect local governments by reducing the number of citizen

complaints associated with oil and gas operations due to the increased communication and mitigation measures.

2. Commission Staff. The proposed Setback Rules will place increased demands on COGCC Staff in the Environmental and Field Inspection groups, and will place additional burdens on the COGCC's information technology systems. Environmental staff will require additional time to review and assess the more comprehensive Form 2A Applications required by the proposed Rules. Environmental Staff will also attend and participate in informational meetings between Building Unit owners and operators. Field Inspection staff will spend additional time inspecting and analyzing equipment associated with enhanced mitigation measures. The COGCC information systems will need to be modified to incorporate new information required in the enhanced Form 2A applications.

**II. To the extent practicable, a description of the probable quantitative and qualitative impacts of the proposed rules, economic or otherwise, upon affected classes of persons.**

A. Quantitative impacts

1. Oil and gas operators. Under proposed changes to the 300-Series Drilling, Development, Production and Abandonment Rules, operators will incur relatively minor increased costs to create or gather new information required for Form 2A, and to prepare the Form 2A application. Operators also will incur additional costs to provide notice to, and meet with, Building Unit owners in the Designated Buffer Zones. These costs are expected to be minimal with respect to the Exception Zone, because so few Locations are constructed within this Zone, and because it is anticipated there will be relatively few Building Units within this Zone. Costs related to notifying and meeting with Building Unit owners in the Buffer Zone may be significantly higher. Securing consent from Building Unit owners within the Exception Zone may require significant negotiation time, and could in some cases require compensation. Any such costs are highly speculative and difficult to quantify.

Under proposed changes to the 600-Series Safety Regulations, operators will incur costs to implement measures to mitigate impacts such as noise, odors, dust, and light. Mitigation measures will be required for new Oil and Gas Locations within 1,000 feet of a Building Unit. More stringent and, in general, more costly mitigation measures will be required the closer a Location is to occupied buildings. The most

costly mitigation measure by far under the proposed Rules is limiting operations to daylight hours. It has been estimated that restricting post-casing operations to daylight hours could increase completion cost for a horizontal well by 19% (approximately \$427,000) and nearly double the time to perform well stimulation. This mitigation measure is proposed only for Locations within the Exception Zone, or roughly 1.4% of all Locations in 2012.

The costs of mitigating noise impacts will vary considerably. Installing an engineered sound wall would be relatively expensive, while using hay bales or constructing an earthen berm would be relatively inexpensive. The appropriate mitigation measure will be determined on a site specific basis. Staff estimates the per-Location cost of conducting baseline noise measurements at \$3,000 per location, and of implementing mitigation measures at \$7,000 per location. These costs reflect equipment costs only, and do not include continuing operation and maintenance or third-party vendor costs and, in that regard, may understate the actual impacts.

Operators may incur relatively small additional costs associated with reducing odors (pit-less drilling and completion; installing emission control systems). Most Locations being constructed in close proximity to residential areas already use closed-loop drilling systems and emission control devices. Small operators in rural areas that fall within the Buffer Zone may incur additional costs related to these mitigation measures.

A limit of two condensate or crude oil tanks per bermed area could impose substantial additional costs to construct additional berms. By one estimate provided by industry, costs would increase by 23%, or approximately \$4,600 per location. In addition, a larger surface area would be disturbed.

COGCC Staff has made a good-faith estimate of the total average costs of implementing and complying with the proposed Setback Rules at a new Oil and Gas Location within either the Exception Zone or the Buffer Zone. These estimates are based on Staff's experience with, and knowledge of, mitigation measures; industry-supplied cost-estimates for some measures; and input from third-party service providers. Mitigation measure cost estimates are based on initial equipment installation costs only: Commission Staff does not have adequate data to calculate on-going operation and maintenance or third-party vendor costs associated with the mitigation measures. As noted above, costs are likely to be highly site-specific and vary widely.



Buffer Zone Locations: The average per-location costs for a new Oil and Gas Location within the Buffer Zone is estimated to be \$15,472. Based on applications in recent years, we expect only 23% of all Oil and Gas Locations to be within the Buffer Zone.

Exception Zone Locations: . Exception Zone Locations would incur the \$15,472 average per-locations costs described above. In addition, Commission Staff proposed restricting operations to daylight hours once the well-casing has been set. Industry has estimated the cost of daylight hour operating restrictions at \$100,000-\$430,000 per well completion. Based on recent data for well completions, fewer than 4% of all well completions are likely to be within the Exception Zone annually.

2. Midstream operators. It is not expected that midstream facilities will be located within the Exception Zone and that few, if any, will be constructed within the Buffer Zone. Any such facilities within the Buffer Zone would incur costs similar to other Oil and Gas Locations, as described above, related to the Form 2A and to noise mitigation.
3. Commission Staff. Changes to the Form 2A application will result in minor costs to update the form and associated information technology systems. It is anticipated Environmental Specialists within the Oil and Gas Location Assessment (OGLA) group will attend numerous public meetings between operators and Building Unit Owners within Designated Buffer Zones, pursuant to proposed Rule 306. COGCC Staff estimates attending such meetings will require 1836 hours annually.<sup>1</sup> OGLA Staff will spend additional time reviewing more detailed Form 2A applications, assessing proposed mitigation measures, conferring with operators, affected Building Unit Owners, and Local Governmental Designees regarding mitigation measures, and reading and responding to public comments on Form 2A applications. COGCC Staff estimates the total additional time associated with reviewing and processing Form 2A applications will be 461 hours,<sup>2</sup> and reviewing or assessing mitigation measures will require and additional 509 hours annually.<sup>3</sup>

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<sup>1</sup> The following assumptions were used: 1850 new Oil and Gas Location Assessments annually; 25% of those applications are for locations within a Designated Buffer Zone; COGCC OGLA Environmental Specialists attend 1/3 of meetings held pursuant to Rule 306. Attending a meeting requires 6 hours, including preparation and travel time, and two Environmental Specialists attend each meeting.

<sup>2</sup> The following assumptions were used: 1850 new Oil and Gas Location Assessments annually; 25% of those applications are for locations within the Buffer Zone and 4% of the applications are within the Exception Zone.

In total, the proposed Rule modifications are expected to require 2800 hours of staff time annually to implement. Accordingly, it is anticipated the Environmental-OGLA Staff will require 1.3 additional full time employees (FTEs) as a result of the new proposed Rules.

Field Inspection Staff will be required to inspect the mitigation measures implemented at Oil and Gas Locations within the Designated Buffer Areas under the proposed Setback Rules. Inspectors will need to evaluate equipment to determine whether it is properly engineered, installed, and functioning. Inspectors may also need to take certain measurements, observe operating conditions, and memorialize their findings. The estimated additional time for the Field Inspection Staff to perform inspections related to the proposed Setback Rules is 6451 hours annually.<sup>4</sup> Accordingly, it is anticipated the Field Staff will require 3.1 additional FTEs as a result of the new proposed Rules

Modifications to existing COGCC information technology systems to integrate proposed Rule changes into existing electronic forms and databases are expected to require 857 additional hours per year of Office of Information Technology employee time. This is equivalent to 0.40 FTEs per year.

## B. Qualitative Impacts

1. Owners and occupants of Building Units located within 1,000 feet of proposed Oil and Gas Locations. Owners and occupants of Building Units within the Exception Zone and Buffer Zone will benefit from the enhanced, pre-drilling communications with operators required by the proposed revised 300-Series Rules. It is anticipated that enhanced communications will allay many concerns expressed by citizens who have no prior experience with drilling operations, and who do not know what to expect once such operations commence. Citizens will also be able to engage more actively with operators if they wish, and will have an opportunity to express

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Reviewing and processing a Buffer Zone application takes an additional 51 minutes; reviewing and processing an Exception Zone application takes an additional 87 minutes.

<sup>3</sup> The following assumptions were used: 1850 new Oil and Gas Location Assessments annually; 25% of those applications are for locations within a Designated Buffer Zone, and 25% of those will have a pit. Environmental Specialists will conduct site visits of these locations, which will require 4 hours each, including travel time.

<sup>4</sup> The following assumptions were used: 1400 inspections annually. Determining whether an oil and gas location is within a Buffer Zone due to encroachment will require .25 hours per inspection, or 3,500 hours annually; 25% of new Oil and Gas Locations are within Buffer Zones and pit inspections at those locations requires 5 hours, or 2313 hours annually; checking compliance with Rule 805 requires one hour per location; inspecting other aspects of the new Rules requires approximately 175 hours annually, depending on various factors.

concerns, recommend mitigation measures, or call attention to site-specific characteristics or issues.

The enhanced mitigation measures required by the proposed Setback Rules should improve the quality of life and overall welfare of Building Unit owners and occupants within the Designated Buffer Zones. Operators will be required to eliminate, minimize, or mitigate impacts such as noise, odors, dust, and light from oil and gas operations to the extent reasonably technically and economically feasible on Oil and Gas Locations within the Designated Buffer Zones.

2. Users of High Occupancy Buildings. Proposed Rule 604.a.(3) excludes Oil and Gas Locations within 750 feet of a High Occupancy Building unless the Commission approves such a Location following a public hearing. Users of High Occupancy Buildings will benefit from this proposed Rule, which effectively doubles the existing setback, makes the approval process more rigorous, and provides a public forum for concerned citizens to raise their concerns.
3. Agricultural interests. Agricultural interests with property or operations within the Designated Buffer Zones generally will benefit from the enhanced notice and communication requirements provided under the proposed 300-Series Rules, and from mitigation measures required under the 600-Series Rules, similar to Building Unit owners. In some cases, the 350 foot setback requirement could limit the locations where Oil and Gas Facilities could be located on agricultural property, contrary to the surface owner's wishes or to prior agreements with an operator.
4. Local governments. Local governments will benefit from the extended comment period for Form 2A applications provided under proposed Rule 305.c. Local governments will have more time to assess the application and to provide comments to the COGCC and the operator regarding a proposed Oil and Gas Location.

The enhanced communication with citizens required by proposed Rules 305 and 306 may benefit local governments indirectly by reducing the number of citizen inquiries and complaints directed to local governments. The mitigation measures required under the proposed 600-Series Rules may also benefit local governments indirectly by reducing citizen complaints to local governments.

5. Developers and residential home builders, prospective home buyers. Impacts to developers and residential home builders may include better information concerning planned oil and gas locations as a result of enhanced Form 2A application requirements. Because the Building Unit setback is the same under the proposed Rules as it is under the current High Density Area Rules, the Setback Rules are not expected to result in significant increases in land costs.

**III. The probable costs to COGCC and to any other agency of implementing and enforcing the proposed rules, and any anticipated effect on state revenues.**

A. Costs to COGCC

The anticipated costs to COGCC of implementing and enforcing the proposed Setback Rules are described under Section II.A.3, above. It is estimated COGCC would require one additional Environmental (OGLA ) Specialist and three additional Field Inspectors.

B. Costs to any other agency.

The proposed Setback Rules are not expected to impose material costs on any other agency.

C. Anticipated effect on state revenues.

The proposed Setback Rules are not expected to materially affect state revenues, positively or negatively.

**IV. Comparison of the probable costs and benefits of the proposed Setback Rules to the probable costs and benefits of inaction.**

A. The probable costs and benefits of the proposed Setback Rules. Please refer to Section II, above.

B. The probable costs and benefits of inaction.

1. Oil and gas operators. Inaction will benefit operators in the short term through avoidance of the increased costs of implementing and complying with the proposed Setback Rules described in Section II. In the longer term, however, absent the changes proposed in the Setback Rules, popular discontent with where and how oil

and gas operations occur likely will increase, making it more difficult and more expensive for the industry to conduct business in Colorado. Inaction increases the likelihood local governments, which lack the resources and technical experience and expertise the COGCC Staff, will adopt local oil and gas operations that vary widely across jurisdictions. Inaction also increases the likelihood citizens will carry their concerns to state legislators, or that citizen-led initiatives like the one recently adopted in Longmont, will be launched in other communities.

2. Mineral estate owners. Inaction increases the likelihood the General Assembly will mandate an increase in existing setbacks, or that local jurisdictions may attempt to ban drilling or hydraulic fracturing within their jurisdictions, or portions thereof. In either case, oil and gas resources under affected portions of the jurisdiction or within the larger setback areas could become uneconomical to extract.
3. Developers and residential home builders; prospective home buyers. An increase in the setback distance reduces the number of lots that can be developed within a subdivision. As a result, home prices must increase to cover the increased land cost per building unit. At the same time, increased setbacks result in suburban sprawl, as much more acreage is required to build the same number of building units. Sprawl has many potential adverse environmental impacts, including the need for more roads and other infrastructure, and encouraging more vehicle miles travelled.
4. Owners and occupants of Building Units located within 1,000 feet of proposed Oil and Gas Locations. In the absence of the changes proposed by the Setback Rules, owners and occupants of Building Units within 1,000 feet of Oil and Gas Locations will continue to be subjected to impacts associated with drilling, completion and production activities that can adversely affect public welfare. Absent the proposed Rules, affected Building Unit owners are more likely to challenge operators' right to conduct business in their communities, and to seek redress through stringent local regulations, statutory changes, or through a citizen initiative.
5. Local governments. The impacts of inaction on local governments will vary widely. Many local jurisdictions favor no change to existing Commission setback Rules. Colorado Municipal League and Colorado Counties, Inc., recommended the Commission make no changes to its setback rules. However, many other local jurisdictions have expressed a strong desire for greater setbacks, and some have adopted setback regulations that conflict with existing COGCC regulations, or have

sought to have operators voluntarily accept setbacks greater than those currently required by COGCC.

6. Commission Staff. The direct impacts of inaction upon Commission Staff will be minimal. Indirectly, Commission Staff will be adversely affected if citizens believe the Commission is unresponsive to concerns regarding potential adverse impacts of oil and gas operations in or near populated areas.

**V. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule(s).**

The purposes of the proposed Setback Rules are to modify existing setback distances between occupied buildings and Oil and Gas Locations; improve communications between oil and gas operators and owners of occupied buildings in close proximity to Oil and Gas Locations; and to eliminate, minimize, or mitigate impacts of oil and gas operations, such as noise, odors, dust, and light, on residents and others who live or work near oil and gas facilities.

Following a lengthy stakeholder meeting process, the Commission Staff is proposing new Setback Rules that strike a fair and appropriate balance among diverse stakeholders who are pursuing competing and, frequently, incompatible land uses on the same lands or in close proximity to one another. In this context, the principle conflict is between use and development of the surface and mineral estates. More specifically, the conflict is between development and production of oil and gas resources and residents in urban and suburban communities along the Front Range. The stakeholders include home owners, mineral owner and lessees, farmers and ranchers, and home developers and builders, among others. Recent technological advances allowing economic production from the Niobrara Shale formation have brought these two groups in closer contact than ever before.

In general terms, community and environmental stakeholders contend the Commission's existing setback rules are inadequate to protect residents and other citizens from adverse impacts associated with drilling and production operations in close proximity to residential areas and other occupied buildings, such as schools, churches, and hospitals. These groups advocate increasing the building setback distance to 1,000 feet or more, which undoubtedly would mitigate the adverse impacts to some degree. However, as described in Sections II and IV, above, increasing the setback distance imposes additional costs on oil and gas operators, and potentially on developers and homebuilders, prospective home owners, and agricultural interests. Consequently, Commission Staff does not believe increasing setbacks

to 1,000 feet or more is a less costly or less intrusive method to achieve the purpose of the proposed Rules.

The oil and gas operators, agricultural interests, developers and homebuilders, and city and county government trade associations, favored making no change to existing Commission setback Rules. They contend that increasing setbacks would interfere with their property and/or contractual rights, and increase their operating costs and reduce return on investment. They also contend that a “one-size-fits-all” regulatory scheme deprives operators, local governments, and surface owners of the flexibility needed to address competing land use interests on a site specific basis. However, oil and gas operations impose real and perceived impacts on owners and occupants of nearby residences and other occupied buildings, which can adversely affect public welfare and the environment. Thus, Commission Staff also does not believe that making no change to the existing setback Rules is less intrusive or less costly than the proposed revised Setback Rules.

The proposed revised Setback Rules will impose modest costs on oil and gas operators by requiring them to eliminate, minimize or mitigate the impacts of oil and gas operations that lead to some of the most common citizen complaints. In addition, operators will incur modest costs to notify and meet with interested citizens who live nearby. Commission Staff believes these two measures will alleviate many citizens’ concerns, and significantly lower the potential for adverse impacts to public welfare and the environment. The changes to physical setback distances proposed by the Setback Rules will not impose substantial costs on operators, developers and homebuilders, or agricultural interests. For these reasons, the Commission Staff believes the proposed Setback Rules strike a fair and appropriate balance between the competing interests involved without imposing undue costs or burdens on any stakeholder group.

**VI. A description of any alternative methods for achieving the purpose of the proposed rule(s) that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.**

Two alternatives to the proposed Setback Rules were considered: 1) a *No Change* alternative; and 2) a *Larger Setback* alternative, requiring a setback distance of 1,000 feet between an Oil and Gas Location and an occupied Building Unit. A brief description of these alternatives and the reasons the Commission Staff rejected them follows.

## A. The No Change Alternative

Under the No Change alternative, existing Commission Rules regarding setback would remain and no new Rules would be adopted. This alternative was favored by many stakeholder groups, including oil and gas operators, developers and residential home builders, agricultural interests, and city and county government trade associations.

Commission Staff rejected the No Change alternative because drilling and completing an oil and gas well is an industrial process that, in many ways, conflicts with residential and commercial land uses. Oil and gas operations can and do result in adverse impacts to owners and occupants of nearby homes and businesses, mostly in the form of noise, odors, increased heavy truck traffic, dust, and bright lighting. In addition, because exploration and production activities are taking place in many new areas of the state, citizens are unfamiliar with, and anxious about, drilling activities and the possible adverse impacts associated with drilling. Both the citizens' concerns and the actual impacts generate hundreds of citizen complaints to the COGCC every year.

In many instances oil and gas operators work cooperatively with the COGCC Staff, Local Governmental Designees, and affected citizens to address concerns and mitigate adverse impacts voluntarily. However, development of the Niobrara Shale has brought oil and gas operations closer to populated areas of the state, and increasing use of multi-well pads and multi-stage hydraulic fracturing has increased the size, scale, and duration of oil and gas operations. With these trends expected to continue, Commission Staff concluded that the mandatory notice, communication, and mitigation requirements, the setback distance changes in the proposed Setback Rules, are preferable to relying solely on voluntary cooperation by operators to voluntarily engage with nearby building owners and undertake appropriate mitigation measures. Consequently, Commission Staff rejected the No Change alternative.

## B. The Larger Setback Alternative

Commission Staff also considered establishing a setback distance of 1,000 feet. This alternative was favored by citizen's groups and environmental stakeholders.

Commission Staff rejected the Larger Setback alternative due to the significant associated costs, which are described in Section II, above. A 1,000 foot (or greater) setback would eliminate, minimize, or mitigate many of the impacts associated with oil and gas drilling and completion operations. However, Commission Staff concluded that most, if not all, of these impacts can be eliminated or effectively mitigated at lower cost through the mitigation measures included in the proposed Setback Rule. Additionally, although stakeholders who favored the Larger Setback alternative contend that allowing oil and gas operations closer



than 1,000 feet is a potential threat to human health, both Commission Staff and the Colorado Department of Public Health and Environment (CDPHE) have concluded that existing studies regarding human health impacts associated with exploration and production activities are inconclusive. In addition, CDPHE presented air emissions data demonstrating ambient concentrations of benzene and other chemicals associated with oil and gas operations have steadily declined in the Front Range since 2008, when operators were required to install emission control equipment on production facilities. This data strongly suggests that mitigation measures like those required by the proposed Setback Rules can effectively eliminate or minimize adverse impacts.

Ultimately, increasing setback distances is only one means of mitigating many of the impacts associated with oil and gas operations, and it is a comparatively expensive one. Moreover, absent other measures, increasing the setback distance does not eliminate the impacts, it merely moves them farther away. Consequently, Commission Staff concluded the proposed Setback Rules are preferable to increasing the setback distance to 1,000 feet or more.