

**DATE:** January 22, 2013

**STAFF:** Laurie Kadrich, Dan Weinheimer, Wanda Nelson  
*Pre-taped staff presentation: available at [fcgov.com/clerk/agendas.php](http://fcgov.com/clerk/agendas.php)*

## **WORK SESSION ITEM FORT COLLINS CITY COUNCIL**

### **SUBJECT FOR DISCUSSION**

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Should the City Council submit a ballot measure for the April 2, 2013 Municipal election asking voters to ban hydraulic fracturing treatment in the City of Fort Collins and/or on City-owned lands?

### **EXECUTIVE SUMMARY**

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In December 2012, City Council authorized a moratorium preventing any further drilling of oil and gas well in the city limits or on City-owned lands until July 31, 2013. Since that time, citizens asked the Council to consider banning hydraulic fracturing in the city. Hydraulic fracturing treatment or “fracking” is defined under the Colorado Oil and Gas Commission rules as “all stages of the treatment of a well by the application of hydraulic fracturing fluid under pressure that is expressly designed to initiate or propagate fractures in a target geologic formation to enhance production of oil and natural gas.”

### **GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED**

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1. Should the City Council direct staff to draft a ballot measure for the April 2, 2013 Municipal election asking voters to ban hydraulic fracturing treatment in the City of Fort Collins or on City-owned lands?
2. Should the question be addressed by Land Use Code or the Environmental Health section of the Municipal Code?
3. Should the question be limited to hydraulic fracturing or apply to storage, disposal of waste materials?

### **BACKGROUND / DISCUSSION**

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The use of hydraulic fracturing is one of two recent developments that may result in significant changes in oil and gas exploration in Larimer County, which has raised considerable public concern. The first is the successful exploration of the Niobrara formation, which lies deep under much of northeastern Colorado, and the second is the advancing technology of hydraulic fracturing to extract the resource from within deeply located shale deposits. Currently, all oil production in the city is located in the Fort Collins Field. The Fort Collins Field is regulated by the Colorado Oil and Gas Conservation Commission (COGCC) and has been in production since about 1925. In the City limits, the field consists of seven producing wells and seven injecting wells within the City limits, all of which are managed by one operator. Four residential subdivisions have developed around the Fort Collins Field, with an additional subdivision planned in the area. In addition to the Fort Collins Field, historically, well development has occurred southward along the I-25 corridor, though there

have been no permits issued by the City of Fort Collins. There currently are no “gas” producing wells in the city limits.

In Colorado, oil and gas exploration and production is regulated by the State. Colorado permits oil and gas activity through the COGCC. Local jurisdictions are limited in their ability to control the location, procedures, and impacts of oil and gas drilling in and around their boundaries. Local regulations cannot present an “operational conflict”, and a combination of the State’s laws and several court cases have resulted in the preemption of local control of setbacks, noise, and visual impacts.

Since the City enacted a moratorium, the COGCC preliminarily approved new rules to limit the impact of drilling near residences and other occupied buildings. These new rules combine additional mitigation measures, expanded notice and outreach to local communities and heightened distances (called “setbacks”) between drilling and dwellings and are expected to be adopted by the end of January, 2013.

The new rules include important local provisions:

- Operators proposing to drill within 1,000 feet of an occupied structure would be required to meet new and enhanced measures to limit the disruptions a nearby drill site can create. Those measures include closed loop drilling that eliminate pits, liner standards to protect against spills, capture of gases to reduce odors and emissions, as well as strict controls on the nuisance impacts of noise, dust and lighting.
- Existing setback standards of 150 feet in rural areas and 350 feet in urban areas are extended to a uniform 500 feet statewide.
- Operators cannot operate within 1,000 feet of buildings housing larger numbers of people such as schools, nursing homes and hospitals, without a hearing before the Commission.
- Operators must engage in expanded notice and outreach efforts with nearby residents and conduct additional engagement with local governments about proposed operations. Operators proposing drilling within 1,000 feet must meet with anyone within that area who asks.
- An expanded definition of “Designated Outside Activity Areas” to include more public spaces than currently allowed. If adopted, this tool will allow for Cities to apply for drilling exemptions on city-owned parks or other similar place of public assembly owned or operated by a local government. This expanded definition would likely not include Natural Areas.
  - *Current COGCC Proposed Language - Designated Outside Activity Area: Upon Application and Hearing, the Commission, in its discretion, may establish a Designated Outside Activity Area (DOAA) for:*
    - (a) An outdoor venue or recreation area, such as a playground, permanent sports field, amphitheater, or other similar place of public assembly owned or operated by a local government, which the local government seeks to have established as a Designated Outside Activity Area; or

- (b) an outdoor venue or recreation area, such as a playground, permanent sports field, amphitheater, or other similar place of public assembly where ingress to, or egress from the venue could be impeded in the event of an emergency condition at an Oil and Gas Location less than three hundred and fifty (350) feet from the venue due to the configuration of the venue and the number of persons known or expected to simultaneously occupy the venue on a regular basis.
- The Commission shall determine whether to establish a Designated Outside Activity Area and, if so, the appropriate boundaries for the DOAA based on the totality of circumstances and consistent with the purposes of the Oil and Gas Conservation Act.

### **Geographical Summary**

Currently, the COGCC's setback rules exclude 89.33% of the city limits from drilling. If the Growth Management Area (GMA) is considered 90.71% is excluded. Combining the GMA and the city limits 89.58% of the area is non-drillable. Applying the COGCC's proposed setback rule changes to the city staff determined as follows:

- Inside the City Limits, about **89%** of the land is excluded from drilling
- Inside the GMA, about **91%** of the land is excluded from drilling
- Inside the Combined Area of the City Limits and GMA, about **90%** of the land is excluded from drilling

The reasons for the slight differences and the possibly counterintuitive number for the city is because of the Coyote Ridge Natural Area in the southwest and the development in the northwest of the Growth Management Area (GMA). Coyote Ridge Natural Area is part of the city limits, but outside the GMA, and that adds to the open land in the City but not the GMA. There is a lot of buildup of the area northwest of the city and inside the GMA which increases the GMA numbers. The new rules add about 5% more land to the non-drillable areas.

### **Hydraulic Fracturing Background - What do both sides generally agree upon?**

#### **More scientific research is needed.**

- Hydraulic fracturing is a relatively new method, and more time is needed to evaluate its impacts.
- The associated environmental and human health issues are complex. Both short-term and long-term research studies are needed to more fully understand the issues (e.g., differences in exposure length to contaminants, seasonal variations that affect air or water quality).
- There is wide variability in research results due to the differences in geology, well extraction techniques, and the hydrocarbons that are being extracted.
- More collaboration is needed in research between regulators and operators.

### **Air Quality**

- Burning natural gas creates fewer greenhouse gas (GHG) emissions and smog ingredients than coal or oil. However, research shows evidence of fugitive methane emissions during drilling and shipping. More studies are needed to determine to what extent because methane itself is a potent GHG. Because the amount of fugitive methane emissions is unknown, there is no consensus on whether the life-cycle emissions from natural gas are lower than for other fossil fuels.
- Long-term studies are needed to determine if there are any links between air pollution on a regional scale from large scale energy operations as a result of the shale gas boom and human health.
- Open pit storage or treatment of wastewater contributes to emissions of volatile organic compounds (VOCs).

### **Water Quality**

- Studies are few, but research does suggest a link between high-pressure underground injection and gas migration near the well (movement of methane gas into groundwater). There is no consensus on the mechanism responsible yet. A USGS study by Ellsworth near wastewater wells (Class II Underground Injection Control (UIC) wells) in Menlo Park, CA suggests the high pressure injection might make well cement cracks more likely. This may have implications for high pressure injection techniques used in hydraulic fracturing.
- Most shallow groundwater contamination resulting from hydraulic fracturing operations have been linked to surface activities resulting in releases of wastewater due to accidents, poor management of wastewater storage and disposal, and illicit dumping.
- Most drinking water contamination from conventional oil and gas production has been linked to well casing failures. There isn't enough research for hydraulic fracturing operations to show a similar link.

### **Waste and Wastewater**

- Hydraulic fracturing produces higher volumes of wastewater that surface as flowback in a shorter period of time than conventional drilling techniques. This creates unique challenges for capture, storage, and disposal than for conventional drilling operations (e.g., more VOC emissions if not captured adequately, more potential for accidental spills).
- Deep injections of wastes in Class II UIC wells, not fracturing operations, have been linked to earthquakes to date.
- Wastewater management and disposal may be the single most important issue associated with environmental and human health protection. The BLM has proposed new requirements for submission of wastewater management plans prior to drilling.

**Both sides tend to agree on the need for chemical disclosure rules**

- Important to enable medical professionals and emergency responders to know what they are dealing with.
- To help regulators determine if hydraulic fracturing is linked directly to water contamination.
- Trade secrets on fracturing chemicals tend to create distrust and higher public concern.

**More stakeholder involvement is needed in:**

- Regulatory and rule-making process
- Dissemination of research results.

**Consequences of a Ban**

It is likely no new drilling would be possible since current oil and gas operators utilize hydraulic fracturing processes to initiate a new well. Depending upon the geological formation that is being drilled additional hydraulic fracturing processes may be used to further stimulate the well and increase production. If hydraulic fracturing was the only method banned, operators may choose to use previously used “conventional” methods or yet to be devised “new” methods to drill new wells.

It is also likely a lawsuit would be filed against the City since similar ballot measures have resulted in lawsuits being filed. The City of Longmont is being sued by the State for its regulation of drilling and by the industry (Colorado Oil and Gas Association (COGA)) for its citizen-approved ban on hydraulic fracturing.

If the City would ban hydraulic fracturing, this action would prohibit any use of this treatment in the Fort Collins field. Whether the local operator, Prospect Energy would be able to present a claim for damages is unknown.

There could be a loss of local revenues generated from oil and gas development within the city limits. Revenues for the last two years average \$215,460. This revenue is based on state formulas that include well sites, jobs, roads and other measures to determine the revenues sent to individual communities. It is difficult to estimate what impact the loss of future wells or reduced production would have on this amount received by the City.

**Methods Available to Implement a Ballot Measure**

Council may choose to place a measure on the ballot to either amend the City Code or City Charter. If Council chooses to amend the City Code it could amend either the Land Use Code (LUC) or the Municipal Code. Staff suggests that discussions related to this topic may fit in Municipal Code Chapter 12 (Health and Environment). If Council agrees, an amendment similar to what is listed below may be an option for a ballot measure question.

**Sample Ballot language** (includes storage language):

SHALL CHAPTER 12 OF THE CODE OF THE CITY OF FORT COLLINS BE AMENDED BY ADDING A NEW ARTICLE VIII *HEALTH AND ENVIRONMENT* TO PROHIBIT WITHIN FORT COLLINS CITY LIMITS THE USE OF HYDRAULIC FRACTURING TO EXTRACT OIL, GAS, OR OTHER HYDROCARBONS, AND PROHIBIT WITHIN THE FORT COLLINS CITY LIMITS THE STORAGE IN OPEN PITS OR DISPOSAL OF SOLID OR LIQUID WASTES CREATED IN CONNECTION WITH THE HYDRAULIC FRACTURING PROCESS, INCLUDING BUT NOT LIMITED TO FLOWBACK OR PRODUCED WASTEWATER AND BRINE?

**BALLOT OPTIONS**

Type of Measure	Action Required	Timeline
Charter Amendment	Ordinance (two readings)	February 5 and 19
Code Amendment	Resolution Planning & Zoning Board (if LUC)	February 19 February 7
Cost to place a measure on the ballot: less than \$1,000 (ballot design and tabulation programming costs).		

**ATTACHMENTS**

1. COGCC “setback” exclusion numbers
2. PowerPoint presentation

	Area (sq ft)	
City	Preliminary New Rules	Original Rules
OG Exclusion	1386935376.23	1328196088.99
CITY LIMITS	<b>1552623751.79</b>	<b>1552623751.79</b>
percentage excluded:	<b>89.33%</b>	<b>85.55%</b>
<b>GMA</b>		
OG Exclusion	1958607001.31	1862566039.67
GMA part	376158.95	
GMA part	2158924461.20	
GMA Total	<b>2159300620.15</b>	<b>2159300620.15</b>
percentage excluded:	<b>90.71%</b>	<b>86.26%</b>
<b>Combined GMA and City Limits</b>		
OG Exclusion	1987057966.74	1889865780.43
GMA and City Limits	<b>2218140987.12</b>	<b>2218140987.12</b>
percentage excluded:	<b>89.58%</b>	<b>85.20%</b>

# Should the City Council submit a Ballot Measure Banning “Hydraulic Fracturing Treatment”?

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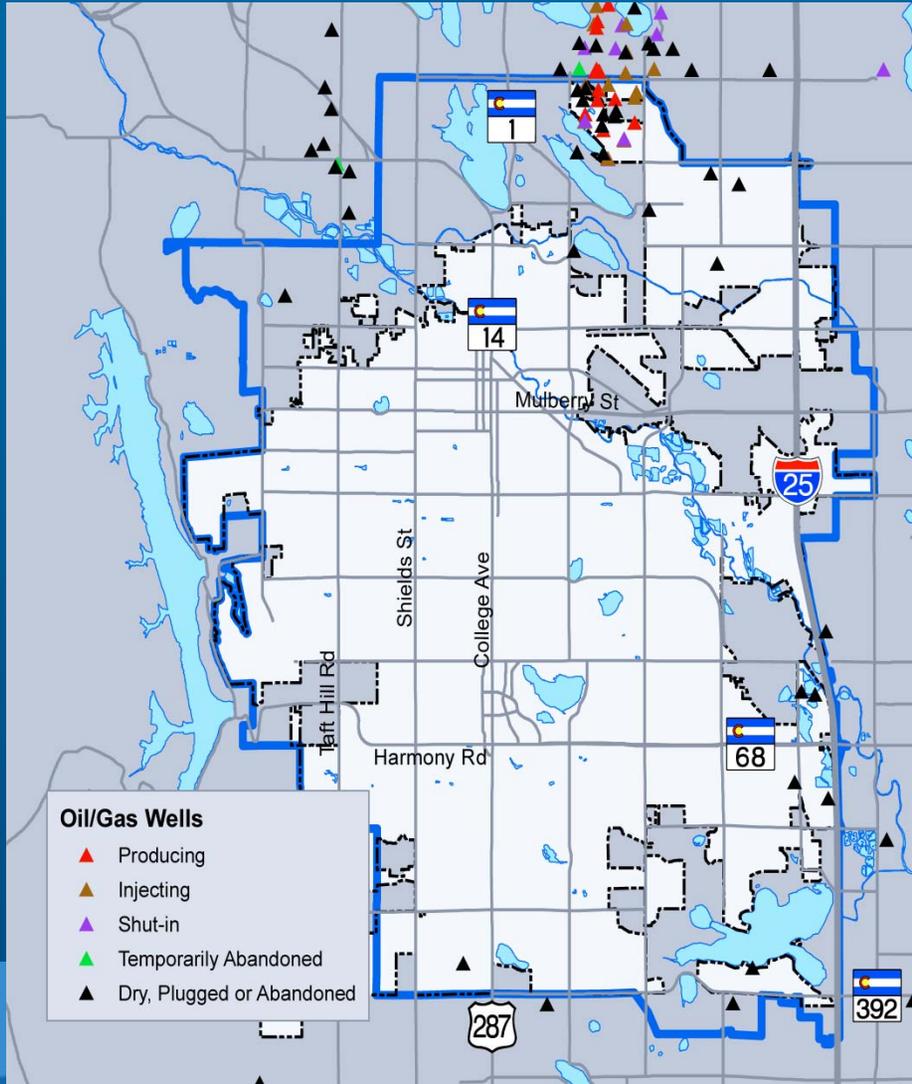
January 22, 2013 City Council Work Session

## Feedback Sought From City Council:

Should the Council authorize a ballot measure for the April 2, 2013 Municipal election asking voters to ban hydraulic fracturing treatment (fracking) in the City or on City-owned lands? If so:

- Should the measure be considered by Ordinance or Resolution?
- Should the question be adopted by Land Use or Municipal Code?
- Should it apply to storage, disposal of waste materials?

# Existing Wells in Fort Collins



# Why consider a ban?

## The Current Moratorium:

- Expires on July 31, 2013
- Limited to New Drilling
  - City limits
  - City-owned lands
- Does not prevent hydraulic fracturing from being used on existing wells

# What is Hydraulic Fracturing?

- Generally allows for more oil or gas recovery
- A treatment used by the oil and gas industry to stimulate oil and gas recovery by:
  - Injecting fluids, including chemicals, under pressure into the well
  - Designed to fracture geological formations
  - Enhance production of oil & gas
  - Commonly referred to as “fracking”

# Where Does Hydraulic Fracturing Occur?

- Nearly every new drilling process uses hydraulic fracturing to stimulate well production
- Can also be used to increase production after the well production reduces, application for the extraction of oil and gas products
- Some potential for application in the Fort Collins field

## Why are people concerned?

- Chemicals used in the fracturing process may cause groundwater contamination.
- The fracturing process requires high pressure injection that may lead to well casing failures
- The fracturing process produces significantly more wastewater than conventional drilling methods
- More research is needed to determine the impacts of fracturing

## Can it happen here?

- Oil and gas exploration is limited to 14.45% of the total geographical area of the City; the rest of the city limits are exempted by setback requirement under COGCC rules
  - Proposed rules reduce area to 10.67%
- Mostly the northeast quadrant of the city limits
- City-owned lands, especially Natural Areas (absent a moratorium or ban) may be subject to drilling and the treatment of hydraulic fracturing

# 85.55% City Limits excluded from Drilling

## Oil/Gas Wells

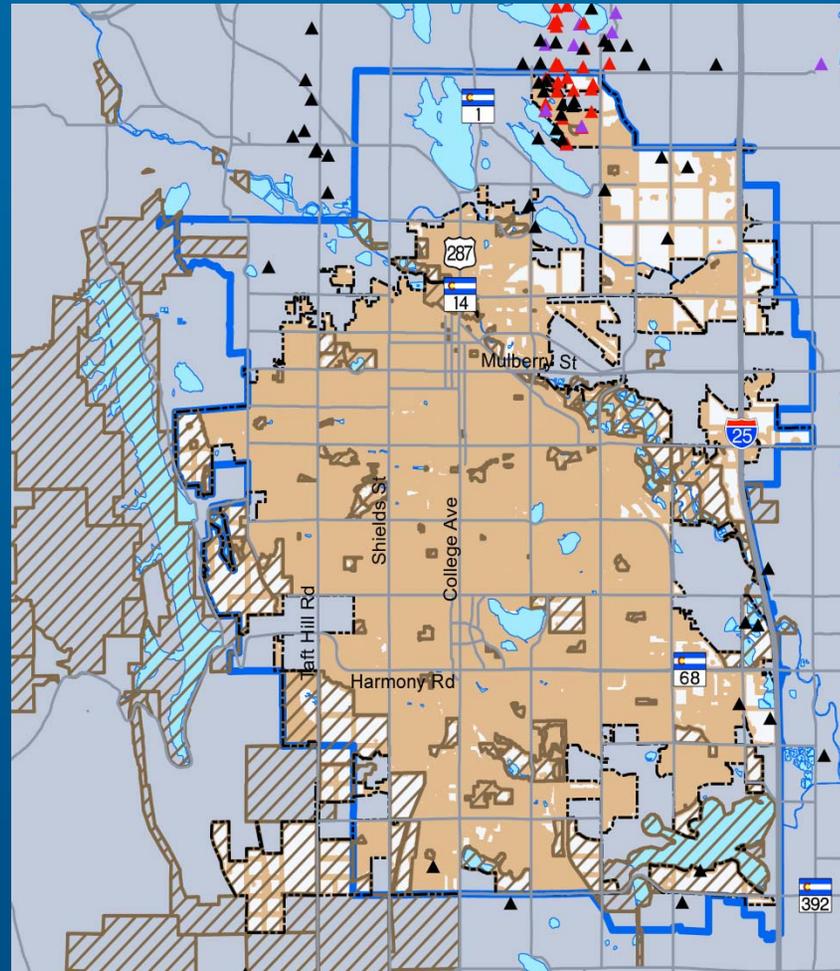
▲ Active

▲ Shut-in

▲ Inactive

■ Current Statewide Setbacks (150-350 ft)

▨ Parks/Natural Areas/Open Spaces



# Consequences of a Ban

- Likely No New Drilling
- Impact to Local Operator
  - Fort Collins Field
- Potential For Lawsuit
- Loss of Revenues

# Methods for a Ballot Measure

- Council Could Amend the City Charter or City Code
- Adopt by Ordinance or Resolution
  - February 5th & 19th or 19th only for resolution
- Suggested Method
  - Municipal Code
  - Health and Environmental
  - Include Storage of Materials and Waste Products

# Council Feedback?

Should the Council direct staff to draft a ballot measure for the April 2, 2013 Municipal election asking voters to ban hydraulic fracturing in the City or on City-owned lands? If so:

- Should the measure be considered by Ordinance or Resolution?
- Should the question be adopted by Land Use or Municipal Code?
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