



**CITY OF BOULDER
CITY COUNCIL AGENDA ITEM**

MEETING DATE: September 4, 2018

AGENDA TITLE

Third reading and consideration of a motion to adopt Ordinance 8264 submitting to the registered electors of the City of Boulder at the municipal coordinated election to be held on Tuesday, November 6, 2018, the question of authorizing the city council to impose an oil and gas pollution tax at the rate of up to \$6.90 per barrel of oil and up to \$0.88 per thousand cubic feet of natural gas for oil or gas extracted within the Boulder city limits and expenditure of the full tax proceeds and any related earnings notwithstanding any state revenue or expenditure limitation; setting forth the ballot title; specifying the form of the ballot and other election procedures; and setting forth related details.

PRESENTERS

Jane S. Brautigam, City Manager
Tom Carr, City Attorney
Mary Ann Weideman, Deputy City Manager
Cheryl Pattelli, Chief Financial Officer
Jim Robertson, Director, Community Planning and Sustainability
Kendra Tupper, Chief Sustainability & Resilience Officer

EXECUTIVE SUMMARY

Oil and gas extraction imposes significant environmental, public safety, health and infrastructure costs on a community. Communities generally use general tax revenue to address these impacts. This agenda item asks council to consider a ballot measure that would impose a pollution tax on oil and gas operations in the City of Boulder. There are

currently no active wells in the city. Approval of this measure would allow a pollution tax to be in place if oil and gas operations come to the city.

STAFF RECOMMENDATION

Suggested Motion Language

Staff requests council consideration of this matter and action in the form of the following motion:

Motion to adopt on third reading Ordinance 8264 submitting to the registered electors of the City of Boulder at the municipal coordinated election to be held on Tuesday, November 6, 2018, the question of authorizing the city council to impose an oil and gas pollution tax at the rate of up to \$6.90 per barrel of oil and up to \$0.88 per thousand cubic feet of natural gas for oil or gas extracted within the Boulder city limits and expenditure of the full tax proceeds and any related earnings notwithstanding any state revenue or expenditure limitation; setting forth the ballot title; specifying the form of the ballot and other election procedures; and setting forth related details.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- **Economic:** Oil and gas extraction activities can impose a significant burden on a community. If such operations occur in Boulder, the proposed tax will help to offset the impacts on the community.
- **Environmental:** As is discussed in more detail below, oil and gas operations can have a significant detrimental effect on the environment. The proposed tax would provide funding to address and mitigate those effects.
- **Social:** Oil and gas operations can affect the health and viability of a community. The proposed tax would provide funding to address and mitigate those effects.

OTHER IMPACTS

- **Fiscal:** None.
- **Staff Time:** The staff time needed to complete the background work for ballot issues will be completed with existing staff resources.

BACKGROUND

The city council recently extended the moratorium on the acceptance of applications under the open space oil and gas rules on use review applications for new “mining industries” under the land use code. Still, there is considerable concern in the community about potential oil and gas development within the city limits. Additionally, there are significant environmental and human health costs that result from oil and gas development, which are typically borne by local municipalities or individual community

members. This proposed ballot measure would place a new tax on oil and gas developers to cover the projected costs of these environmental and health impacts.

Assigning an appropriate monetary value for these externalities will balance economic versus environmental and social interest and represent a portion of the true societal costs of oil and gas development. In the best-case scenario, there would be no oil and gas development within city limits, so no revenue would be collected from this tax. But if oil and gas development does take place, those profiting from these activities would pay a share of the societal costs.

While other local jurisdictions are also considering a similar tax¹, staff has only found one example of a local municipality taxing this industry to cover the societal costs associated with oil and gas development. In 2013, Boulder County adopted an Oil and Gas Road Deterioration and Roadway Safety Fee, which is designed to recoup the incremental costs to the County transportation system resulting from the impacts of oil and gas development.² The County's fee is assessed per well and per well pad:

- Roadway Deterioration Impact Fee: \$17,300 per well
- Roadway Deterioration Impact Fee: \$700 per well pad
- Roadway Safety Impact Fee: \$17,300 per well
- Cost of Project Delay (Poor Road) Impact Fee: \$8,600 per well
- Cost of Project Delay (Road Safety) Impact Fee: \$8,000 per well

Local governments do, of course, impose other taxes on oil and gas development, including sales, construction use and property taxes. While these taxes pay the cost of existing government services, they would not cover the additional impacts created by oil and gas development.

Colorado's severance tax was enacted in 1977. Taxes are collected by the Department of Revenue. The tax is imposed on the production or extraction of metallic minerals, molybdenum, oil and gas, oil shale, and coal, but it currently ranks among the lowest in the country because the state provides an ad valorem tax credit and has a generous stripper well exemption.³ Further, a 2016 Colorado Supreme Court decision allowed for even more tax deductions for the oil and gas industry.⁴ At a high level, Colorado imposes the following severances taxes:

¹ Lafayette, CO is actively considering this as a 2018 ballot measure. Broomfield and Longmont are following these efforts closely for future consideration.

² Boulder County Staff Report on the Impact Fee Study, May 16, 2013:

<https://assets.bouldercounty.org/wp-content/uploads/2017/04/dc-12-0003-staff-report-to-bocc-20130516.pdf>

³ Memo from Colorado Legislative Council Staff, January 12, 2018, "Effective Severance Tax Rates on Oil and Gas": https://leg.colorado.gov/sites/default/files/interested_persons_memo_on_severance_taxes.pdf

⁴ "BP wins severance tax deduction in Colorado Supreme court ruling", May 10, 2016, The Denver Post. <https://www.denverpost.com/2016/05/10/bp-wins-severance-tax-deduction-in-colorado-supreme-court-ruling/>

- Two to five percent based on gross income for oil, gas, carbon dioxide and coalbed methane.
- Four percent of gross proceeds on production exceeding 15,000 tons per day for oil shale.
- When accounting for the ad valorem tax credit and stripper well exemptions, oil and gas developers pay only about 0.3 percent in effective severance tax.⁵

More detail on Colorado severance tax rates and use can be found here:

<https://leg.colorado.gov/agencies/legislative-council-staff/severance-tax>

Cost of Environmental and Human Health Impacts

Future monetary costs of the vast environmental and human health impacts related to local oil and gas development are extremely difficult to quantify. The potential impacts are summarized in the table below.

DAMAGE TO NATURAL RESOURCES	<ul style="list-style-type: none"> • Threats to rivers and streams • Habitat loss and fragmentation • Contribution to global warming – on the extraction side, this is caused primarily from methane leaks in fracking operations, and leaks at natural gas storage and processing facilities.⁶ • Freshwater consumption
DRINKING WATER CONTAMINATION	<ul style="list-style-type: none"> • Surface and groundwater contamination and cleanup • Water treatment costs
BROADER ECONOMIC IMPACTS	<ul style="list-style-type: none"> • Value of residents' homes at risk • Farms in jeopardy • Tax impacts to economic sectors that are unique to the area and oppose these activities (i.e. agritourism, outdoor recreation, and residential and agricultural property taxes)
HEALTH PROBLEMS	<ul style="list-style-type: none"> • Worker injury, illness and death from fires, toxic chemicals, spills, silicosis, etc. • Increased cases of asthma and other respiratory illnesses from the emission of volatile organic compounds (VOCs) including known and potential carcinogens • Increased risk of cancer⁷ • Increased chance of high risk pregnancy and premature babies when living near extraction sites

⁵ Colorado Department of Revenue, U.S. Energy Information Administration:

https://leg.colorado.gov/sites/default/files/interested_persons_memo_on_severance_taxes.pdf

⁶ The U.S. Environmental Protection Agency states that methane has a comparative impact 25 times greater than carbon pollution over a 100-year period.

⁷ A 2018 Colorado School of Public Health study concluded that people who live within 500 feet of a well in Colorado may experience a lifetime excess cancer risk eight times higher than EPA's upper acceptable levels.

	<ul style="list-style-type: none"> • Stress, sleep issues, and high blood pressure caused from noise from the drilling itself, the gas compressors, and other heavy machinery
PUBLIC INFRASTRUCTURE AND SERVICES	<ul style="list-style-type: none"> • Road and bridge damage • Increased demand for water • Cleanup of orphaned wells • Emergency response needs • Social dislocation and social service costs • Earthquakes from wastewater injection
PUBLIC SAFETY	<ul style="list-style-type: none"> • Response to fires and explosions

A 2018 report by Dr. Paul Chinowsky, founder of Resilient Analytics, estimated that the City of Boulder would incur up to \$36 million in costs between now and 2050, dealing with the impacts from climate change. However, these costs do NOT include any human health impacts.

According to the Environmental Protection Agency, the social costs of carbon and methane (assuming a three percent discount rate) are summarized in the table below. These costs quantify the impact that these emissions have on health, well-being, and quality of life in terms of dollars.

Social Cost of Carbon (\$/metric ton of CO_{2e})	Social Cost of Methane (\$/metric ton CH₄)
2015: \$36	2015: \$1,000
2050: \$69	2050: \$2,500
Average: \$52.75	Average: \$1,725

Combining the social cost of carbon with the estimate of carbon dioxide equivalents (CO_{2e}) per barrel of oil, yields estimates of the social costs by volume extracted. However, CO_{2e} only covers the impacts of global warming – it does not include the costs to society from things like oil spills, fires, explosions, water contamination, increased cancer risk, increased respiratory ailments, etc. Staff assumes that these unaccounted impacts would at least double the social cost for oil.

The social cost of methane *does* cover most of the societal impacts from methane leaks and emissions, and also reflects the higher global warming potential compared to CO₂.

Social Costs per Barrel of Oil	Social Costs per Mcf (thousand cubic feet) of Natural Gas
<i>Global Warming Equivalent</i> 0.43 metric tons CO ₂ /barrel ⁸	0.02 metric ton CH ₄ /Mcf ¹⁰

⁸ EPA Greenhouse Gases Equivalencies Calculator - Calculations and References:

<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

¹⁰ The average methane emissions natural gas production, processing, transmission, storage, and distribution from the U.S. Department of Energy.

<i>Partial Social Cost (using average cost)</i> \$23/Barrel of oil* * Only includes global warming impacts <i>Social Cost (Partial Social Cost doubled)⁹</i> \$46/Barrel	<i>Social Cost (using average cost)</i> \$35/Mcf of natural gas** ** Another study estimated costs between \$5-\$25/Mcf for only the air quality impacts from shale gas extraction in Pennsylvania. ¹¹
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Proposed Tax Rate

The social cost of these fossil fuels is particularly significant when considering the sale price for these fuels. If the city were to set the tax rate at the true social cost, it would be 40 percent and 480 percent of the sale price of oil and natural gas respectively. With that in mind, staff proposes a much lower rate, which represents only 15 percent and 2.5 percent of the social cost of these fuels. The scaling factors were chosen such that the proposed tax rate is roughly 12 percent of the sale price. Because the social cost of natural gas is higher relative to its sale price, it has a lower scaling factor.

	Oil	Natural Gas
<i>Sale Price</i>	\$58/barrel	\$7/Mcf
<i>Social Cost</i>	\$46/barrel	\$35/Mcf
<i>Scaling Factor</i>	15%	2.5%
<i>Proposed Tax Rate</i>	\$6.90	\$0.88

Because this is a tax, and not an impact fee, state law does not require the rate to directly correspond to the impact. Staff calculated the societal cost to show that the cost of the impacts is much higher than the proposed tax rate – but the tax rate itself was chosen to be a reasonable percentage of each fuels’ sale price.

Use of Funds

Staff proposes that any funds generated from this tax be dedicated to the costs created by oil and gas extraction operations with any remainder going to the general fund.

ATTACHMENTS

Attachment A – Proposed Ordinance 8264

⁹ To account for the fact that CO_{2e} only covers the impacts of global warming – it does not include the costs to society from things like oil spills, fires, explosions, water contamination, increased cancer risk, increased respiratory ailments, etc. Staff assumes that these unaccounted impacts would at least double the social cost for oil.

¹¹ Aviva Litovitz *et al* 2013 *Environ. Res. Lett.* **8** 014017

ORDINANCE 8264

AN ORDINANCE SUBMITTING TO THE REGISTERED ELECTORS OF THE CITY OF BOULDER AT THE MUNICIPAL COORDINATED ELECTION TO BE HELD ON TUESDAY, NOVEMBER 6, 2018, THE QUESTION OF AUTHORIZING THE CITY COUNCIL TO IMPOSE AN OIL AND GAS POLLUTION TAX AT THE RATE OF UP TO \$6.90 PER BARREL OF OIL AND UP TO \$0.88 PER THOUSAND CUBIC FEET OF NATURAL GAS FOR OIL OR GAS EXTRACTED WITH THE BOULDER CITY LIMITS AND EXPENDITURE OF THE FULL TAX PROCEEDS AND ANY RELATED EARNINGS NOTWITHSTANDING ANY STATE REVENUE OR EXPENDITURE LIMITATION; SETTING FORTH THE BALLOT TITLE; SPECIFYING THE FORM OF THE BALLOT AND OTHER ELECTION PROCEDURES; AND SETTING FORTH RELATED DETAILS.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BOULDER, COLORADO:

Section 1. A municipal coordinated election will be held in the city of Boulder, county of Boulder and state of Colorado, on Tuesday, November 6, 2018.

Section 2. The official ballot shall contain the following ballot title, which shall also be the designation and submission clause for the issue:

Ballot Question No. ____

Imposition of an Oil and Gas Pollution Tax

SHALL CITY OF BOULDER TAXES BE INCREASED \$0 IN 2019 AND BY WHATEVER AMOUNTS ARE GENERATED ANNUALLY THEREAFTER THROUGH THE IMPOSITION OF AN OIL AND GAS POLLUTION TAX AT THE RATE OF UP TO \$6.90 PER BARREL OF OIL AND UP TO \$0.88 PER THOUSAND CUBIC FEET OF NATURAL GAS FOR OIL OR GAS EXTRACTED WITH THE BOULDER CITY LIMITS COMMENCING JANUARY 1, 2019, AND SHALL REVENUE FROM THE TAX BE USED TO FUND COSTS ASSOCIATED WITH OIL AND GAS EXTRACTION IN THE CITY OF

BOULDER AND WITH THE REMAINDER USED BY THE
GENERAL FUND AND SHALL ALL EARNINGS THEREON
(REGARDLESS OF AMOUNT) CONSTITUTE A VOTER
APPROVED REVENUE CHANGE, AND AN EXCEPTION TO
THE REVENUE AND SPENDING LIMITS OF ARTICLE X,
SECTION 20 OF THE COLORADO CONSTITUTION?

FOR THE MEASURE ____ AGAINST THE MEASURE ____

Section 3. If this ballot measure is approved by the voters, the City Council may adopt
any necessary amendments to the Boulder Revised Code to implement this change.

Section 4. If any section, paragraph, clause, or provision of this ordinance shall for any
reason be held to be invalid or unenforceable, such decision shall not affect any of the remaining
provisions of this ordinance. The tax established by this measure is intended to be authorized
under any lawful means of taxation, including license taxation pursuant to city of Boulder
Charter Section 122.

Section 5. This ordinance is necessary to protect the public health, safety, and welfare of
the residents of the city, and covers matters of local concern.

Section 6. The city council deems it appropriate that this ordinance be published by title
only and orders that copies of this ordinance be made available in the office of the city clerk for
public inspection and acquisition.

1 INTRODUCTION, READ ON FIRST READING, AND ORDERED PUBLISHED BY
2 TITLE ONLY, this 7th day of August 2018.

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Suzanne Jones
Mayor

Attest:

Lynnette Beck
City Clerk

READ ON SECOND READING, PASSED, this 21st day of August 2018.

Suzanne Jones
Mayor

Attest:

Lynnette Beck
City Clerk

READ ON THIRD READING, PASSED AND ADOPTED, this 4th day of September
2018.

Suzanne Jones
Mayor

Attest:

Lynnette Beck
City Clerk