



# Land Use

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302 • Tel: 303.441.3930 • Fax: 303.441.4856  
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306 • [www.bouldercounty.org](http://www.bouldercounty.org)

## BOULDER COUNTY PLANNING COMMISSION

### AGENDA ITEM #5

July 18, 2012

Afternoon Session – 3:00 PM

Commissioners' Hearing Room, Third Floor  
Boulder County Courthouse, 1325 Pearl Street

**FROM:** Peter L. Fogg – Manager, Long Range Policy Team  
**RE:** Docket BCCP-12-0001: Amendments to Oil and Gas Policies  
Request for Planning Commission to adopt oil and gas exploration and development policy amendments for incorporation into the Geology Element of the Boulder County Comprehensive Plan (BCCP)  
*Action Requested: Adoption*  
Public testimony will be taken.

**SUMMARY** The Planning Commission conducted a public hearing on this docket June 18, 2012, taking public comment and providing direction to the Land Use staff for revisions to the first draft of policy changes for inclusion into the Boulder County Comprehensive Plan. After conferring with other county departments and consultants retained by the county to assist in this effort, a second draft has prepared incorporating a number of the comments and suggestions made on June 18<sup>th</sup>. Staff is requesting adoption of this draft by the Planning Commission.

**EXHIBITS**

- A: Draft #2 BCCP Oil and Gas Policy Amendments (mark-up)**
- B: Draft #2 BCCP Oil and Gas Policy Amendments (clean)**
- C: Revised Post- June 20, 2012 Partial Bibliography of Sources Used in Preparation of This Docket**
- D: Public Comments Received from June 21-July 9. (To view public comments received prior to June 21, please visit <http://www.bouldercounty.org/dept/landuse/pages/oilgas.aspx> and click on the Documents and Links tab.)**

**DRAFT #2 BCCP Oil and Gas Policy Amendments** Staff believes it is useful to briefly reiterate the relationship of comprehensive plan policies to regulations and other tools developed for implementing the BCCP. Policies are written to provide some focused guidance for drafting regulations, but they also should provide enough latitude in their

language so that implementation regulations, programs, or other initiatives can be tailored to meet desired outcomes, be reflective of staffing and other resource capabilities/capacities, and be responsive to legal constraints/opportunities.

**Attachment A** includes the June 20<sup>th</sup> first draft language with strikeouts and bolded text showing the deletions and additions made subsequent to that hearing. **Attachment B** is a clean version without the editing and is the one for which staff is seeking adoption. The following is a summary of the changes and additions made:

- **Page 1, 3<sup>rd</sup> paragraph** – after considering several options, the term “Best Management Practices” or BMPs has been replaced with “most effective performance technologies and practices”. This was done to avoid having the policies tied to one set of BMPs or another as they may be defined by different interests or agencies, which could restrict by implication or authority what Boulder County’s interests and intentions are when considering impact mitigation systems and procedures. “Other Best Management Practices” are referenced as one source of information that can be looked at and analyzed, but not the sole source.
- **Page 1, OBJECTIVE** – this has been rewritten in response to the concerns of some members of the public that too much emphasis was being placed on the county’s obligation to permit oil and gas exploration and development, making it the preeminent county responsibility over that of protecting public health, safety, welfare and the environment.
- **Policy GE 4.01** – revised primarily to include reference to “most effective performance technologies and practices” and to note that there are legal constraints on the county’s authority in regulating oil and gas activities imposed by state and federal laws.
- **Policy GE 4.02** – revised to include reference to “most effective performance technologies and practices” with some expanded identification of county interests in impacts pertaining to surface and subsurface water and air quality.
- **Policy GE 4.03** – revised to remove the reference to and definition of BMPs, consolidation of the first seven bullets into one that accommodates those seven, adding language in selected bullets to describe those items more specifically, and the addition of a bullet (page 4, second one) to address sharing facilities in oil and gas exploration and development as requested by Planning Commission.
- **Policy GE 4.04** - NEW policy to be more specific in articulating county’s position toward addressing methane emission issues and concerns,
- **Policy GE 4.05** – NEW policy elaborating on the sharing of infrastructure and facilities as a county interest, identified earlier in Policy GE 4.03.
- **Policy GE 4.06** – revisions to provide more detail about provision of information and cooperation with emergency responders per direction from Planning Commission.
- **Policy GE 4.07** - revisions to cover both surface use agreements and leasing arrangements for exploration and development, and to add that the county will “appropriately assist” landowners in seeking expert advice, per Planning Commission direction.
- **Policy GE 4.08** – minor text revisions for greater clarity and to add in writing 4.08 e) which was verbally described to Planning Commission at their June 20<sup>th</sup> hearing.
- **Policy GE 4.09** – NEW policy regarding applicants’ responsibility for engagement with the public and stakeholders early in the permitting process.

- **ADDITIONAL AMENDMENT RECOMMENDATIONS** (page 5) – minor cleaning up of existing BCCP oil and gas policies.

**NEXT STEPS** Adoption of the policy amendments by Planning Commission will be followed by staff presenting them to the Board of County Commissioners for their acknowledgement and acceptance at a public hearing. Adoption will also enable staff to begin work on drafting revisions to the Land Use Code for implementing the new policies. A schedule of steps, hearings, and opportunities for public participation (in addition to less formal correspondence via E-Mail, letters, telephone conversations, etc.) will be prepared and made available.

**RECOMMENDATION** Staff recommends that the Planning Commission ADOPT BCCP-12-001 Oil and Gas Policy Amendments.

## DRAFT: BCCP Oil and Gas Policy Amendments

### REVISIONS: POST-PLANNING COMMISSION JUNE 20, 2012

### Oil and Gas Exploration and Development

The Boulder County Comprehensive Plan's Geology Element is amended to incorporate the following policies. These policies are consistent with the goals of the BCCP, the various Elements and maps that make up the body of the Plan – in particular the Transportation, Environmental Resources, Agriculture, Open Space and Sustainability Elements - **the** Boulder County Commissioners' Resolution 2005 – 137 Adopting a Sustainable Energy Path for Boulder County, and the authority granted counties under the County Planning Act (CRS 30-28-101 *et seq*) and Local Government Land Use Enabling Act (CRS 29-20-101 *et seq*). They are to be applied to the fullest extent allowable under current Colorado law.

The terms “oil and gas exploration and development” as used in the following policies **are is** synonymous **with** and encompasses all on and off-site activities related to oil and gas exploration, extraction, development, infrastructure, site closure, reclamation and transportation.

The term “**most effective performance technologies and practices**” as used in the following policies **refers to** the application of proven and emerging techniques, technologies **or other Best Management Practices** used in conducting oil and gas **exploration and development** activities which avoid, **neutralize, exclude,** eliminate, mitigate or minimize adverse on and off- site impacts to public health and the environment, landowners, and natural resources, and which may reduce conflicts between the goals and policies of the BCCP, potentially impacted landowners, and the oil and gas industry. ~~As BMPs are identified developed, tested and confirmed, they~~ **These technologies and practices** should be **required or strongly recommended** employed at every level and stage of oil and gas exploration and development.

**OBJECTIVE:** Boulder County's ~~primary~~ **foremost** responsibility is **to protect public health, safety, welfare and the environment from potential adverse impacts that may be caused by or result from oil and gas exploration and development, and to minimize potential land use conflicts between oil and gas activities and current or planned land uses. In addition, as established by Colorado law, the county also** recognizes the existence of mineral estate property rights within its unincorporated area and its **charge** to allow those owners to explore and develop these resources **in a responsible manner. It is therefore the county's objective to address and manage oil and gas exploration and development in the unincorporated areas in ways that acknowledge this context, utilize the following policies, and employ other goals and policies of the Boulder County Comprehensive Plan as appropriate.**

**Policy GE 4.01:** Boulder County is dedicated to promoting, requiring and implementing practices that adhere to principles of sustainability for the ~~purpose of protecting the public's health, safety and welfare~~ **benefit and well-being of current and future residents** as well as the air, water and ecosystems on which all life depends. To **those ends,** it is county policy to pursue the following steps regarding the exploration and development of oil and gas resources:

- a) ~~For all activities associated with~~ Where oil and gas exploration and development as is regulated by the **federal and/or state government alone,** ~~both currently and in the future,~~ **advocate for**

strongly encourage the ~~use of Best Management Practices~~ **most effective performance technologies and practices**;

- b) For oil and gas exploration and development activities in areas of shared ~~state/county~~ regulatory authority, provide direction, leadership and support for incorporating the **most effective performance technologies and practices** ~~by reference Best Management Practices~~ into the applicable jurisdiction's ~~codes, rules and~~ regulations ; and
- c) For ~~reviewing and permitting those~~ oil and gas exploration and development activities ~~that are~~ subject **primarily or solely** to the county's jurisdiction, establish and maintain a comprehensive planning basis for amending, revising and updating the Land Use Code as well as the full array of regulatory tools and procedures **legally** available to the county, including the ~~incorporation use~~ of **most effective performance technologies and practices** ~~Best Management Practices~~ and cooperative agreements as they are identified **and found to be consistent with the Objective of these policies.**

**Policy GE 4.02:** Areas where the county has an interest in assuring **that the most effective performance technologies and practices are applied** ~~the avoidance, neutralization, minimization and /or mitigation of significant short-term or long term on and off-site impacts associated with oil and gas exploration and development~~ include, but may not be limited to:

- a) Transportation impacts on roads and their users
- b) County open space lands and conservation easements
- c) Impacts on and consumption of environmental resources, including
  - Wildlife **and wildlife**/plant habitat
  - Wetlands
  - Riparian areas
  - Surface and subsurface water use – **sources, volumes, and methods of delivery, consumptive vs. non-consumptive use**
  - Air ~~and water~~ quality – **greenhouse gas emissions, ozone precursors, and toxic air pollutants affecting local residents, visitors and users of nearby public facilities in particular as well as climate change in general**
  - Water quality
  - Soil quality and productive integrity
- d) Geologic hazards
- e) Wildfire mitigation
- f) Storm water, drainage and erosion controls
- g) Solid and liquid wastes management
- h) Noise, lighting and odor controls
- i) Land reclamation
- j) Agricultural land preservation
- k) Irrigation ditches, drain tiles, laterals, ponds and other water resource systems associated with agricultural operations
- l) Fencing, both temporary and replacement
- m) Noxious weed control
- n) Floodplain and floodways
- o) Visual impacts and preservation of scenic views
- p) Access roads/facilities removal upon well completion **closures/abandonment**
- q) Historic/archeological/cultural protection
- r) Emergency response planning and capabilities

- s) Adjacent landowner concerns
- t) Other areas of public health, safety and welfare as they may be identified

**Policy GE 4.03:** Best Management Practices (BMPs) are the application of proven and emerging techniques and technologies used in conducting oil and gas activities which avoid, eliminate, mitigate or minimize adverse on and off-site impacts to public health and the environment, landowners, and natural resources, and which may reduce conflicts between the goals and policies of the BCCP, potentially impacted landowners, and the oil and gas industry. As BMPs are developed, tested and confirmed, they should be employed at every level and stage of oil and gas exploration and development. BMPs may include but are not limited to: **Measures the county will look for in assessing whether an application for oil and gas exploration and development is adhering to most effective performance technologies and practices will include, but not be limited to, the following:**

- ~~use of waterless and/or green hydraulic fracturing systems;~~
- ~~green and reduced emissions well completions;~~
- ~~use of closed-loop drilling and containment systems;~~
- ~~minimization or elimination of all exposed surface impoundments for storing of fluids and wastewater used in and produced by exploration and development activities;~~
- ~~use of vented gas capture systems;~~
- ~~use of liquids flowback capture, recycling and reuse systems to reduce or eliminate the need for open/exposed surface liquids impoundments or pits;~~
- ~~use of heavy duty flowback units (separators) to minimize flaring and odors;~~
- **use of closed loop (“green completion”) systems for the containment and/or recycling of drilling and completion fluids;**
- **use of emissions controls, prevention, and capture/co-benefits producing systems to minimize or eliminate the release of volatile organic compounds, hazardous air pollutants, and greenhouse gases;**
- ~~air quality controls including volatile organic compounds (VOC) emissions monitoring for at wellheads, condensate tanks, pipelines, compressor stations and other potential gaseous emissions sources;~~
- use of electric motors or muffled internal combustion engines in pumping and production operations;
- extensions of setbacks from adjacent land uses, water bodies, water courses, riparian areas and other important environmental resources as determined on a case-by-case and site-by-site basis;
- extensions of setbacks to achieve public health, **safety and welfare** objectives as determined on a case-by-case and site-by-site basis;
- submittal of comprehensive drilling and phasing plans for oil and gas holdings within and adjacent to Boulder County;
- comprehensive groundwater quality and level monitoring
- preparation of plugged and abandoned well integrity surveys within 0.25 miles of proposed new well sites **(or “within the perimeter of the mineral estate to be developed”?)** to identify those wells that were improperly plugged or where plugs have failed over time;
- use of temporary, removable, low-impact “laydown” roads **or similar methods** for access to sites from local, county, state and/or federal roads;
- ~~dark sky lighting and noise reduction measures;~~
- **odor, dust and noise reduction/suppression measures;**

- complete reclamation and restoration of all disturbed areas, including roads, to their pre-exploration and development conditions;
- **sharing of transportation, drilling, production and access facilities among operators to minimize duplication of activities and potential impacts;**
- use of existing easements and infrastructure where appropriate and allowed by easement holders for **the above and below ground surface and subsurface** infrastructure necessary for drilling, extraction, **production and transmission** operations.

**Policy GE 4.04** In addition to the county's expressed interest in minimizing/eliminating methane and other gaseous emissions from oil and gas development into the atmosphere as noted in Policy 4.03, the county strongly supports all efforts at all levels to further study and ultimately reduce or eliminate methane emissions due to oil and gas operations whether through legislative, regulatory, voluntary or other means.

**Policy GE 4.05** Where legally feasible, the county shall consider requiring operators to use and share existing infrastructure, to minimize installation of new facilities, and to avoid additional disturbance to lands to the greatest extent possible in order to forgo introducing significant new land use impacts to the environment, landowners and natural resources.

**Policy GE 4.06:** Applicants for oil and gas **exploration and development** operators are strongly encouraged to **shall** provide the Boulder Office of Emergency Management **and all potentially affected emergency response agencies** with **as-built facilities** maps **in a format suitable for input into the county's GIS system** depicting the locations, sizes, and depths below grade of all oil and gas gathering and transmissions lines and associated facilities **equipment, surface facilities and their functions, as well as transportation routes to and from exploration and development sites**, for emergency response and management purposes in case of an incident or accident involving the transmission infrastructure **or transportation** presenting an immediate or potential hazard to **the public health, safety and welfare and environment.**

**4.06.01** Operators shall cooperate with local emergency response agencies in planning and conducting on-site emergency preparedness exercises that simulate industrial incidents and accidents that may, in the opinion of the emergency response agencies, take place on site.

**Policy GE 4.07:** The county will encourage and appropriately assist landowners in seeking expert advice for negotiating surface use agreements or in negotiating leasing arrangements for oil and gas exploration and development. ~~The county will encourage and assist landowners to seek in seeking expert advice in for negotiating surface use agreements with the oil and gas industry prior to signing leasing arrangements for oil and gas exploration and development.~~

**Policy GE 4.08:** Achieving the county's **Objective** regarding oil and gas activities requires not only a thorough review of local regulations but also communication and cooperation between the county, other levels of government and organizations involved in the oil and gas industry and in the study of oil and gas development and exploration. To this end the county ~~will~~ **has** appointed a Local Governmental Designee pursuant to Rule 214 of the Colorado Oil and Gas Conservation Commission. In addition, the county is committed to working with ~~and/or lobbying other groups,~~ **stakeholders, regulators and interested parties** to:

- a) Identify and address deficiencies in regulating detrimental land use and surface impacts as well as environmental and health impacts;

- b) Continue review of studies, data and other information to ensure regulations and implementation measures are presently addressing or need revising to incorporate the most contemporary research on impacts and technological advances;
- c) Monitor state and federal legislation and policies, to be followed when deemed necessary by lobbying, letters of support and advocacy, and dissemination of information to enhance local protection for land use, surface impacts, public health and the environment;
- d) Investigate the feasibility and utility of entering into memoranda of understanding (MOUs), intergovernmental agreements (IGAs) or other accords with industry, the state, and other public or private sector interests where the outcome will help facilitate the implementation of these policies; and
- e) **Consider addressing impacts of oil and gas development by acquiring and retiring mineral estates interests on a willing seller-willing buyer basis where appropriate.**

**Policy GE 4.09 Where legally feasible, the county will require that applicants for oil and gas exploration and development directly engage with local communities, residents and other stakeholders at each phase of a development plan, starting prior to exploration, in order to provide sufficient opportunity for comment on plans, operations and performance, listen to concerns, and respond appropriately and promptly.**

---

## **ADDITIONAL AMENDMENT RECOMMENDATIONS**

**\* Retain Policy GE 2.06, Geology Element, with the following revision:**

**GE 2.06 The county shall regulate the exploration for, development of, and production of ~~petroleum,~~ natural gas, and geothermal resources as well as all accessory activities related thereto, to the extent permitted by state statutes.**

**\* Retain, Policy AG 2.01 *et seq*, Agricultural Element, with the following revision:**

**Infrastructure Development & ~~Oil and Gas Operations~~ on Agricultural Land**

**AG 2.01** The county shall discourage the placement of new utility infrastructure upon agricultural lands. The county supports using existing easements or other public rights-of-way to minimize the impacts to agriculturally productive land.

- **AG 2.01.01** If a thorough analysis of alternatives concludes that routing/siting of facilities is necessary on or across agricultural lands, all construction activities will be located and performed so as to minimize disturbance to agricultural resources.
- **AG 2.01.02** If the infrastructure location is determined necessary, infrastructure construction activities across agricultural lands should not occur during the growing season.
- **AG 2.01.03** Any agricultural lands and water resource systems disturbed by infrastructure construction shall be restored to their former productivity.

## **Fracking Not New**

The first use of hydraulic fracturing was in 1947, though the fracking technique which made the shale gas extraction economical was first used in 1997 in the [Barnett Shale](#) in Texas.<sup>[1][2][3]</sup> The energy from the injection of a highly-pressurized [fracking fluid](#) creates new channels in the rock which can increase the extraction rates and ultimate recovery of [fossil fuels](#).

## **Well Types**

A distinction can be made between [conventional or low-volume hydraulic fracturing](#) used to stimulate high-permeability reservoirs to frac a single well, and [unconventional or high-volume hydraulic fracturing](#), used in the completion of tight gas and shale gas wells as unconventional wells are deeper and require higher pressures than conventional vertical wells.<sup>[38]</sup> In addition to hydraulic fracturing of vertical wells, it is also performed in horizontal wells. When done in already highly-permeable reservoirs such as sandstone-based wells, the technique is known as "well stimulation".<sup>[25]</sup>

[Horizontal drilling](#) involves wellbores where the terminal drillhole is completed as a 'lateral' that extends parallel with the rock layer containing the substance to be extracted. For example, laterals extend 1,500 to 5,000 feet (460 to 1,500 m) in the Barnett Shale basin in Texas, and up to 10,000 feet (3,000 m) in the [Bakken formation](#) in North Dakota. In contrast, a vertical well only accesses the thickness of the rock layer, typically 50–300 feet (15–91 m). Horizontal drilling also reduces surface disruptions as fewer wells are required to access a given volume of reservoir rock. Drilling usually induces damage to the pore space at the wellbore wall, reducing the permeability at and near the wellbore. This reduces flow into the borehole from the surrounding rock formation, and partially seals off the borehole from the surrounding rock. Hydraulic fracturing can be used to restore permeability.<sup>[39]</sup>

## **Water, Truck Trips, Surface Area, Length of Operations**

Water – horizontal fraced well = 2.5 million gallons+ (low = 1 million; high = 5 million)

Truck Trips (2 rigs, 8 wells) = 5,850 – 11, 040 from pad development to completion

730 per year for life of well (15 – 30 years)

Boulder County @1,800 wells = 3.3 million trips+ from development to closure

Surface Area Per Rig – horizontal = 5-10 acres; vertical = 2-5 acres

Length of Operations (development to closure) = 15-40 years

Costs v. Production horizontal = 2-3x vertical but 2-7x production ratio

Est. Recoverable Resources from Wattenberg Field = 5.2 trillion cu. ft.; (has produced 2+ trillion cu.ft)

*The mission of the Colorado Oil and Gas Conservation Commission (COGCC) is to foster the responsible development of Colorado's oil and gas natural resources.*

*Responsible development results in:*

- *The efficient exploration and production of oil and gas resources in a manner consistent with the protection of public health, safety and welfare*
- *The prevention of waste*
- *The protection of mineral owners' correlative rights*
- *The prevention and mitigation of adverse environmental impacts*

*The COGCC seeks to serve, solicit participation from, and maintain working relationships with all those having an interest in Colorado's oil and gas natural resources.*

**FROM LESLIE LACY:**

Note that the definition of “BMPs” in **COGCC’s regulations** is pretty weak:

“BEST MANAGEMENT PRACTICES (BMPs) are practices that are designed to prevent or reduce impacts caused by oil and gas operations to air, water, soil, or biological resources, and to minimize adverse impacts to public health, safety and welfare, including the environment and wildlife resources.”

BMPs are supposed to be the same thing as “state of the art” mitigation measures (see link below to **Intermountain Oil and Gas BMP Project** by CU Law School’s Natural Resources Law Center):

“BMPs are state-of-the-art mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development is conducted in an environmentally responsible manner.”

**BLM’s website** states that:

“Best management practices (BMPs) are state-of-the-art mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development is conducted in an environmentally responsible manner. BMPs protect wildlife, air quality, and landscapes as we work to develop vitally needed domestic energy sources.”

## DRAFT: BCCP Oil and Gas Policy Amendments

### REVISIONS: POST-PLANNING COMMISSION JUNE 20, 2012

### Oil and Gas Exploration and Development

The Boulder County Comprehensive Plan’s Geology Element is amended to incorporate the following policies. These policies are consistent with the goals of the BCCP, the various Elements and maps that make up the body of the Plan – in particular the Transportation, Environmental Resources, Agriculture, Open Space and Sustainability Elements - the Boulder County Commissioners’ Resolution 2005 – 137 Adopting a Sustainable Energy Path for Boulder County, and the authority granted counties under the County Planning Act (CRS 30-28-101 *et seq*) and Local Government Land Use Enabling Act (CRS 29-20-101 *et seq*). They are to be applied to the fullest extent allowable under current Colorado law.

The terms “oil and gas exploration and development” as used in the following policies ~~are~~ **is** synonymous with and encompasses all on and off-site activities related to oil and gas exploration, extraction, development, infrastructure, site closure, reclamation and transportation.

The term “most effective performance technologies and practices” as used in the following policies refers to the application of proven and emerging techniques, technologies or other Best Management Practices used in conducting oil and gas exploration and development which avoid, neutralize, exclude, eliminate, mitigate or minimize adverse on and off- site impacts to public health and the environment, landowners, and natural resources, and which may reduce conflicts between the goals and policies of the BCCP, potentially impacted landowners, and the oil and gas industry. These technologies and practices should be required or strongly recommended at every level and stage of oil and gas exploration and development.

**OBJECTIVE:** Boulder County’s foremost responsibility is to protect public health, safety, welfare and the environment from potential adverse impacts that may be caused by or result from oil and gas exploration and development, and to minimize potential land use conflicts between oil and gas activities and current or planned land uses. In addition, as established by Colorado law, the county also recognizes the existence of mineral estate property rights within its unincorporated area and its charge to allow those owners to explore and develop these resources in a responsible manner. It is therefore the county’s objective to address and manage oil and gas exploration and development in the unincorporated areas in ways that acknowledge this context, utilize the following policies, and employ other goals and policies of the Boulder County Comprehensive Plan as appropriate.

**Policy GE 4.01:** Boulder County is dedicated to promoting, requiring and implementing practices that adhere to principles of sustainability for the benefit and well-being of current and future residents as well as the air, water and ecosystems on which all life depends. To those ends, it is county policy to pursue the following steps regarding the exploration and development of oil and gas resources:

- a) Where oil and gas exploration and development is regulated by the federal and/or state government alone, advocate for the use of most effective performance technologies and practices;

- b) For oil and gas exploration and development activities in areas of shared regulatory authority, provide direction, leadership and support for incorporating the most effective performance technologies and practices into the applicable jurisdiction's rules and regulations ; and
- c) For those oil and gas exploration and development activities subject primarily or solely to the county's jurisdiction, establish and maintain a comprehensive planning basis for amending, revising and updating the Land Use Code as well as the full array of regulatory tools and procedures legally available to the county, including the use of most effective performance technologies and practices and cooperative agreements as they are identified and found to be consistent with the Objective of these policies.

**Policy GE 4.02:** Areas where the county has an interest in assuring that the most effective performance technologies and practices are applied include, but may not be limited to:

- a) Transportation impacts on roads and their users
- b) County open space lands and conservation easements
- c) Impacts on and consumption of environmental resources, including
  - Wildlife and wildlife/plant habitat
  - Wetlands
  - Riparian areas
  - Surface and subsurface water use – sources, volumes, and consumptive vs. non-consumptive use
  - Air quality – greenhouse gas emissions, ozone precursors, and toxic air pollutants affecting local residents, visitors and users of nearby public facilities in particular as well as climate change in general
  - Water quality
  - Soil quality and productive integrity
- d) Geologic hazards
- e) Wildfire mitigation
- f) Storm water, drainage and erosion controls
- g) Solid and liquid wastes management
- h) Noise, lighting and odor controls
- i) Land reclamation
- j) Agricultural land preservation
- k) Irrigation ditches, drain tiles, laterals, ponds and other water resource systems associated with agricultural operations
- l) Fencing, both temporary and replacement
- m) Noxious weed control
- n) Floodplain and floodways
- o) Visual impacts and preservation of scenic views
- p) Access roads/facilities removal upon well closures/abandonment
- q) Historic/archeological/cultural protection
- r) Emergency response planning and capabilities
- s) Adjacent landowner concerns
- t) Other areas of public health, safety and welfare as they may be identified

**Policy GE 4.03:** Measures the county will look for in assessing whether an application for oil and gas exploration and development is adhering to most effective performance technologies and practices will include, but not be limited to, the following:

- use of closed loop (“green completion”) systems for the containment and/or recycling of drilling and completion fluids;
- use of emissions controls, prevention, and capture/co-benefits producing systems to minimize or eliminate the release of volatile organic compounds, hazardous air pollutants, and greenhouse gases;
- air quality monitoring at wellheads, condensate tanks, pipelines, compressor stations and other potential gaseous emissions sources;
- use of electric motors or muffled internal combustion engines in pumping and production operations;
- extensions of setbacks from adjacent land uses, water bodies, water courses, riparian areas and other important environmental resources as determined on a case-by-case and site-by-site basis;
- extensions of setbacks to achieve public health, safety and welfare objectives as determined on a case-by-case and site-by-site basis;
- submittal of comprehensive drilling and phasing plans for oil and gas holdings within and adjacent to Boulder County;
- comprehensive groundwater quality and level monitoring
- preparation of plugged and abandoned well integrity surveys within 0.25 miles of proposed new well sites (or “within the perimeter of the mineral estate to be developed”?) to identify those wells that were improperly plugged or where plugs have failed over time;
- use of temporary, removable, low-impact “laydown” roads or similar methods for access to sites from local, county, state and/or federal roads;
- dark sky lighting measures;
- odor, dust and noise reduction/suppression measures;
- complete reclamation and restoration of all disturbed areas, including roads, to their pre-exploration and development conditions;
- sharing of transportation, drilling, production and access facilities among operators to minimize duplication of activities and potential impacts;
- use of existing easements and infrastructure where appropriate and allowed by easement holders for the surface and subsurface infrastructure necessary for drilling, extraction, production and transmission operations.

**Policy GE 4.04** In addition to the county’s expressed interest in minimizing/eliminating methane and other gaseous emissions from oil and gas development into the atmosphere as noted in Policy 4.03, the county strongly supports all efforts at all levels to further study and ultimately reduce or eliminate methane emissions due to oil and gas operations whether through legislative, regulatory, voluntary or other means.

**Policy GE 4.05** Where legally feasible, the county shall consider requiring operators to use and share existing infrastructure, to minimize installation of new facilities, and to avoid additional disturbance to lands to the greatest extent possible in order to forgo introducing significant new land use impacts to the environment, landowners and natural resources.

**Policy GE 4.06:** Applicants for oil and gas exploration and development shall provide the Boulder Office of Emergency Management and all potentially affected emergency response agencies with as-built facilities maps in a format suitable for input into the county’s GIS system depicting the locations, sizes, and depths below grade of all oil and gas gathering and transmissions lines and associated equipment, surface facilities and their functions, as well as transportation routes to and from exploration and

development sites, for emergency response and management purposes in case of an incident or accident involving transmission or transportation presenting an immediate or potential hazard to the public and environment.

**4.06.01** Operators shall cooperate with local emergency response agencies in planning and conducting on-site emergency preparedness exercises that simulate industrial incidents and accidents that may, in the opinion of the emergency response agencies, take place on site.

**Policy GE 4.07:** The county will encourage and appropriately assist landowners in seeking expert advice for negotiating surface use agreements or in negotiating leasing arrangements for oil and gas exploration and development.

**Policy GE 4.08:** Achieving the county's Objective regarding oil and gas activities requires not only a thorough review of local regulations but also communication and cooperation between the county, other levels of government and organizations involved in the oil and gas industry and in the study of oil and gas development and exploration. To this end the county has appointed a Local Governmental Designee pursuant to Rule 214 of the Colorado Oil and Gas Conservation Commission. In addition, the county is committed to working with stakeholders, regulators and interested parties to:

- a) Identify and address deficiencies in regulating detrimental land use and surface impacts as well as environmental and health impacts;
- b) Continue review of studies, data and other information to ensure regulations and implementation measures are presently addressing or need revising to incorporate the most contemporary research on impacts and technological advances;
- c) Monitor state and federal legislation and policies, to be followed when deemed necessary by lobbying, letters of support and advocacy, and dissemination of information to enhance local protection for land use, surface impacts, public health and the environment;
- d) Investigate the feasibility and utility of entering into memoranda of understanding (MOUs), intergovernmental agreements (IGAs) or other accords with industry, the state, and other public or private sector interests where the outcome will help facilitate the implementation of these policies; and
- e) Consider addressing impacts of oil and gas development by acquiring and retiring mineral estates interests on a willing seller-willing buyer basis where appropriate.

**Policy GE 4.09** Where legally feasible, the county will require that applicants for oil and gas exploration and development directly engage with local communities, residents and other stakeholders at each phase of a development plan, starting prior to exploration, in order to provide sufficient opportunity for comment on plans, operations and performance, listen to concerns, and respond appropriately and promptly.

## **ADDITIONAL AMENDMENT RECOMMENDATIONS**

GE 2.06 The county shall regulate the exploration for, development of, and production of geothermal resources as well as all accessory activities related thereto, to the extent permitted by state statutes.

### **Infrastructure Development on Agricultural Land**

AG 2.01 The county shall discourage the placement of new utility infrastructure upon agricultural lands. The county supports using existing easements or other public rights-of-way to minimize the impacts to agriculturally productive land.

- AG 2.01.01 If a thorough analysis of alternatives concludes that routing/siting of facilities is necessary on or across agricultural lands, all construction activities will be located and performed so as to minimize disturbance to agricultural resources.
- AG 2.01.02 If the infrastructure location is determined necessary, infrastructure construction activities across agricultural lands should not occur during the growing season.
- AG 2.01.03 Any agricultural lands and water resource systems disturbed by infrastructure construction shall be restored to their former productivity.

## ATTACHMENT

### **BCCP-12-0001: Partial Bibliography (Updated July 10, 2012)**

- Boulder County Oil and Gas Information Page  
<http://www.bouldercounty.org/dept/landuse/pages/oilgas.aspx>
- New York Times series “Drilling Down”.  
[http://www.nytimes.com/interactive/us/DRILLING\\_DOWN\\_SERIES.html](http://www.nytimes.com/interactive/us/DRILLING_DOWN_SERIES.html)
- Ground Water Protection Council and the Interstate Oil and Gas Compact Commission.  
<http://fracfocus.org/>
- Colorado Oil and Gas Conservation Commission  
[http://cogcc.state.co.us/RR\\_Docs\\_new/Rules\\_new2.html](http://cogcc.state.co.us/RR_Docs_new/Rules_new2.html)
- American Petroleum Institute – Overview of Industry Guidance/Best Practices on Hydraulic Fracturing (HF) 2012. Available at [www.api.org](http://www.api.org)
- Earthworks <http://www.earthworksaction.org/>
- Mesa, Gunnison, Routt, Pitkin, Garfield, Douglas, La Plata, Rio Blanco, Elbert, Arapahoe, Douglas Counties Comprehensive Plans and addenda
- Santa Fe County, NM General Plan: Oil and Gas Element. November, 2008.
- CU Natural Resources Law Center - Intermountain Oil and Gas BMP Project (*several topical areas related to oil and gas – this is but one of them*)  
[http://www.oilandgasbmps.org/laws/colorado\\_localgovt\\_law.php](http://www.oilandgasbmps.org/laws/colorado_localgovt_law.php)
- Texas A&M Environmentally Friendly Drilling Project - Low Impact Access Roads Demonstration (Pecos Research Test Center) 2008 – 2011.
- Encana In The News/Encana Corporation
- Colorado Dept. of Natural Resources – Colorado Geological Survey “Rock Talk”. Volume 13, No 1. Spring 2011. Colorado’s New Boom – the Niobrara
- Pipeline Safety Trust – Landowner’s Guide To Pipelines
- Scientific American – “How Can We Cope with the Dirty Water from Fracking?” May 25, 2012
- Oil and Gas Investment Bulletin – December 13, 2011; February 24, 2012; May 17, 2012
- Coloradobiz Magazine – 2012 Oil & Gas Insert
- Massachusetts Institute of Technology Energy Initiative – The Future of Natural Gas June, 2011 (an MIT Interdisciplinary Study)
- National Ground Water Association – Hydraulic Fracturing: Meeting the Nation’s Energy Needs While Protecting Groundwater Resources Position Paper November, 2011.
- Colorado Water and Energy Research Center, CU-Boulder.
- America’s Natural Gas Alliance <http://www.anga.us/> ; <http://anga.us/critical-issues/national-voices-for-natural-gas>
- US Department of the Interior, Bureau of Land Management - Best Management Practices.  
[http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html)
- US Department of the Interior, Bureau of Land Management – Air Resource Best Management Practices Updated May 9, 2011.  
[http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS\\_REALTY\\_AND\\_RESOURCE\\_PROTECTION/\\_bmps.Par.60203.File.dat/WO1\\_Air%20Resource\\_BMP\\_Slideshow%2005-09-2011.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_bmps.Par.60203.File.dat/WO1_Air%20Resource_BMP_Slideshow%2005-09-2011.pdf)
- US Energy Information Administration – Emissions of Greenhouse Gases in the United States 2009 March, 2011. <ftp://ftp.eia.doe.gov/environment/057309.pdf>

- US Environmental Protection Agency – Natural Gas STAR Program (partnership addressing technologies and practices to improve operational efficiencies and reduce methane emissions). <http://www.epa.gov/gasstar/>
- US Department of Energy, Office of Fossil Fuels, National Energy Technology Laboratory – Modern Shale Gas Development in the United States: A Primer April, 2009. [http://www.netl.doe.gov/technologies/oil-gas/publications/epereports/shale\\_gas\\_primer\\_2009.pdf](http://www.netl.doe.gov/technologies/oil-gas/publications/epereports/shale_gas_primer_2009.pdf)
- The Natural Gas Supply Association – <http://www.naturalgas.org> . Six information papers can be found on this homepage: “Natural Gas and the Environment”, “Background”, “Overview of Natural Gas”, “Resources”, “Natural Gas-From Wellhead to Burner Tip”, and “Processing”.
- International Energy Agency – Golden Rules for a Golden Age of Gas. World Energy Outlook Special Report on Unconventional Gas. May 29, 2012. <http://www.worldenergyoutlook.org/goldenrules/>
- Western Resource Advocates – Fracking Our Future: Measuring Water & Community Impacts from Hydraulic Fracturing June, 2012. <http://www.westernresourceadvocates.org/frackwater/>
- US Department of Energy, Secretary of Energy Advisory Board – “Shale Production Subcommittee Second Ninety Day Report”. November 18, 2011. (The Shale Gas Subcommittee of the Secretary of Energy Advisory Board is charged with identifying measures that can be taken to reduce the environmental impact and to help assure the safety of shale gas production. In this report the Subcommittee focuses on implementation of the twenty recommendations presented in its Ninety-day report). [http://www.shalegas.energy.gov/resources/111811\\_final\\_report.pdf](http://www.shalegas.energy.gov/resources/111811_final_report.pdf)

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** fracking in Boulder County  
**Date:** Thursday, June 21, 2012 11:41:08 AM

---

To the planning commission members:

Thank you for continuing to work on this issue, hopefully in the interest of citizens, and not in the interest of industry.

May I refer you to this easy-to-read article in the July/August Sierra Club magazine, as an informative overview...?

<http://www.sierraclub.org/sierra/201207/pennsylvania-fracking-shale-gas-199.aspx>

More importantly, please see <http://www.sierraclub.org/sierra/201207/pennsylvania-fracking-shale-gas-200-sidebar.aspx> and I include one of the comments on this article, with which I strongly agree:

[Mary Sweeney](#) · Top Commenter. " While I appreciate the Sierra Club's improved policy on fracking, I am still deeply disappointed that the Club is not calling for a ban on fracking for shale gas and oil.

It is stated above that the Club believes that fracking should not take place "...near drinking water supplies or around schools, state forests, national forests, and national parks." How about fracking that takes place next door to homes, without the permission of the homeowners? Is that okay? How about fleets of fracking trucks that are run through residential neighborhoods? Is that okay? How about frack sand that is mined in states where fracking isn't even occurring? Is that okay? And when the Club refers to "water supplies," does that include private water wells? Because if it does, then that would pretty much preclude fracking in many of the areas where it is currently occurring or is under consideration. And what does "near" mean? A thousand feet, 2000 feet, a mile? Note that even if only "safe" fracking fluid ingredients were used, contamination from naturally occurring substances (e.g. radium) could still occur. At the current time, I don't think anyone truly knows what a "safe" distance would be. And what about the fact that over time, even a good cement job in a wellbore will break down, potentially causing aquifer contamination?

Fracking has a very, very large and harmful footprint not only in space, but also in time, because it has both short- and long-term effects. ALL of that footprint should be considered, not just bits and pieces.

Please, Sierra Club, call for a ban!"

Boulder County is not alone in this fight to protect and preserve our incredible natural resources - we may not presently have the power to ban fracking all together (I presume because the State can overrule us), but there are ways to get it done. The tide will turn, and we should be in the groundswell, if not leading the way. I am very interested in learning more about the idea that was mentioned in yesterday's meeting regarding the County or City purchasing mineral rights, much in the way we have purchased open space for our Green Belt.

Respectfully,

--

Ginger Ikeda

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @%\$ cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Water and fracking  
**Date:** Friday, June 22, 2012 9:15:22 AM

---

To the planning commission:

Please heed this report <http://www.propublica.org/article/injection-wells-the-poison-beneath-us>

Thank you for your consideration.

--

Ginger Ikeda

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @%\$ cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Tricia Olson](#)  
**To:** [Lanning, Meredith](#); [Boulder County Board of Commissioners](#); [Fogg, Peter](#)  
**Subject:** Comments re Docket BCCP-012-001: Amendments to Oil and Gas Policies  
**Date:** Friday, June 22, 2012 5:16:22 AM

---

Re: June 20, 2012 Planning Commission agenda item #7, Docket BCCP-012-001: Amendments to Oil and Gas Policies

Dear Boulder County Planning Commission, Boulder County staff, and County Commissioners,

On the issue of hydraulic fracturing, the entire county is in a difficult position, those of you in a decision-making capacity and those of us who will live with the result. Although I have concerns with the proposed oil and gas amendments to the Boulder County Comprehensive Plan, I appreciate the hard work put in by our dedicated county staff and the careful consideration of options by the County Commissioners and the Planning Commission.

It is my belief that there are enough inherent dangers involved with hydraulic fracturing that we should employ the precautionary principle and ban it. These heavy industrial operations are incompatible with both our BCCP and the visions most of us have for Boulder County. However, understanding that there are complications, I submit the following concerns with the document presented to the Planning Commission on June 20th:

### General Concerns

1. My concerns start with the objective on page 7. This paragraph goes farther than it should, setting a tone for the rest of the document and making a supposed "responsibility" to allow mineral estate property owners to develop oil and gas resources *equal* to a responsibility to protect "public health, safety, welfare, and the environment." First, it is unnecessary and undesirable to write any responsibility to allow oil and gas exploration and development into our Comprehensive Plan, making it Boulder County policy even if state law should change. Second, we strive to be a "safe, healthy and environmentally responsible county" (as in the County Commissioners' Vision Statement); that should be a much higher priority than mineral development.

2. It should be recognized that fracked well operations as projected are not and cannot be consistent with the BCCP Guiding Principles, particularly #2, #4, and #5. The environmental footprint will be greater, the rural landscape significantly altered,

and environmental resources will not be fully protected.

3. Similarly, fracked well operations are not consistent with many of the goals specified in the BCCP's Design of the Region. Farm land will be lost. Natural resources will not be managed in a manner which is consistent with sound conservation practices and ecological principles. Overall environmental degradation will not be reduced, and the development of oil and gas will place undue burdens on the communities that lie above the Wattenberg Field.

4. On page 4 of the document submitted to the Planning Commission, a mandate to reclaim and restore agricultural lands is mentioned, but otherwise the language is weaker throughout the document. There are too many instances of "should," "strongly encourage," "discourage," and "support." Protection of the health, safety and welfare of our county should be mandated. Restoration is important, and so is prevention.

### Best Management Practices

5. These proposals rely heavily on the encouragement of Best Management Practices as mentioned in GE 4.01 and GE 4.03. Many BMPs have been written by the oil and gas industry, designed to make the process more efficient, productive and profitable. They are not all "proven" (as stated) to "avoid, eliminate, mitigate or minimize on and off-site impacts." Examples include:

a. An example mentioned in Policy GE 4.03 is waterless fracturing. While water use is certainly a major problem with fracked operations, waterless fracturing involves a propane gel, with the resultant increased risk for explosions. Considering the fact that multi-well pads may be as close as 150-350 feet from dwellings, and that the setback figures were based on possible explosions of a well using 1990's technology, this is dangerous and would not adequately "avoid, eliminate, mitigate or minimize" impacts.

b. Another example mentioned in Policy GE 4.03 is the use of plugged and abandoned well integrity surveys within .25 miles of proposed new well sites. Do we know where all old well sites are in Boulder County? Considering that the reach of a horizontally drilled well can be a mile or more, .25 miles is inadequate, thus not offering enough protection from well "communication" and the possibility of explosions or migration pathways to aquifers and the surface.

c. "Laydown" roads are mentioned as a BMP, but are there BMPs that will address other negative environmental impacts of the truck traffic? These could include the items mentioned in the BCCP: "air pollution, green house gas emissions, noise pollution, water pollution, land and wildlife habitat fragmentation, land disturbance, and resource consumption." Also included should be erosion and sedimentation caused by trucks.

d. The list of BMPs includes complete reclamation and restoration of all disturbed areas, including roads, to their pre-exploration and development conditions. In the case of stream contamination or aquifer migration, is this even possible? Is there "adequate" compensation?

e. Many BMPs address monitoring air quality or groundwater. It should be noted, however, that monitoring alone does not prevent the harm. Unless significant action is taken, mere monitoring will not prevent anything from happening again.

### Legal Issues

6. There are reports that the COGCC does not verify mineral rights ownership. If that is the case, there should be required verification of mineral rights ownership. Payment of Ad Valorem taxes by mineral rights owners should be verified.

7. Enforcement is not addressed, nor is the subject of inspections which are, of course, required for enforcement.

8. The same basic standards used for other industries should be used for oil and gas operations.

### Economic Issues

9. Will there be sufficient financial bonds and other forms of financial security to restore both agricultural and county lands? Again, what about financial remuneration for lands that cannot be restored?

10. There is no mention of compensation for surface owners and others harmed by this industrial process. Health impacts, spills and the proximity to these operations will impact the bottom line for those living nearby. These impacts include harm to livestock, property values, the ability to sell property and, in some cases, insurance and mortgage contracts.

11. Has any consideration been given to the economic impact of transient workers or the housing needs/requirements on-site?

12. Tourism and agriculture are important to our county. Thus, the result of poorer air quality and visible wells scattered across the county may affect our economy. I don't know if this could be addressed in terms of compensation or zoning.

### Air Quality

13. Air is a major concern. There are reports that there is not currently much available storage capacity for natural gas, thus resulting in additional flaring. We live at high altitude and have already had attainment issues. Can air quality non-attainment be used to force standards for flaring and any activities that would cause additional ozone production?

14. Are there BMPs that will address dust and windblown contamination?

Water Use

15. The proposed amendments do not address the quantity of water used in fracking, estimated by the Western Resource Advocates to be 4 million gallons per frack job in the Niobrara formation + perhaps 600,000 gallons for the drilling operation. The transport of all this water should be addressed.

16. County entities should not be willing or able to sell water for oil and gas operations.

17. Water is more precious than oil, and the county should not provide or enable pipelines for additional delivery of water that would be used in oil and gas operations.

-

Hazardous Material, Contamination and other Safety Issues

18. A new study predicts that frack fluid can migrate to aquifers faster than previously thought. The migration of this fluid under drought conditions should be studied and addressed.

19. The transportation of hazardous materials is a concern that should be addressed. Can limits be made on the size and number of trucks? Are there standards for trucks handling hazardous materials? Can the routes they travel be specified?

20. The hazards of silica sand and worker safety should be addressed.

21. Most construction operations within the county require building permits. Oil and gas operations should have to adhere to any applicable building codes.

22. If requirements for hazardous material do not address faulty well casings (faulty construction, routine operation and vibrations, or expansion and contraction due to temperature), potential storm runoff, pipelines, the potential for spills involving trucks, pit or tank leakage and corrosion, and waste disposal, then they aren't good enough!

23. Emergency planning and funds to address responder equipment and training in the event of spills, fires, explosions, and other incidents should be addressed. The county should not be expected to absorb these costs for gas and oil operations.

24. Livestock and wildlife must be protected from coming into contact with spills, produced water, and other hazards.

25. Wells cannot be fracked indefinitely, and the resource will run out. In the event a site cannot be or is not "restored," the county should be prepared to consider abandoned fracked well sites as hazardous waste sites.

26. Though there may not be much study on the issue, the integrity of our locally-produced food, particularly organic food, should be considered. Soil contamination, ozone, contaminated water, fragmented farmland, and the certification of organic

food are issues. Agriculture is important to Boulder County and very much a part of our BCCP.

Miscellaneous

27. Page 4 of the document mentioned "the promotion of natural gas as a 'clean,' more 'environmentally friendly' fossil fuel of significance contributing to a national energy strategy" and suggests that the BCCP should be revised to "capture these movements." The accuracy of those claims is being questioned, and any hint that we want to "capture these movements" should be removed.

28. The noise and the light involved in the drilling operation has an adverse impact on humans, livestock, and wildlife.

Thank you for your consideration.

Tricia Olson

7446 Park Pl

Boulder, CO 80301

(303) 530-7107

[olynmawr@msn.com](mailto:olynmawr@msn.com)

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Water is too precious and scarce to use it for fracking  
**Date:** Thursday, June 21, 2012 6:46:24 PM

---

To the planning commission:

Perhaps you heard this today <http://www.npr.org/templates/story/story.php?storyId=105334111>

Surely we must consider water usage in our (increasingly) drought-prone area.

Respectfully,

--

Ginger Ikeda

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @%\$ cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Detlev Helmig](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Boulder County Oil and Gas Development  
**Date:** Saturday, June 23, 2012 11:48:00 PM

---

Hello,

Over the past year I have been working extensively on air quality impacts of oil and gas operation in Colorado and Utah. From the evidence of the largely underestimated pollution from this activities and their detrimental impact on air quality I have become increasingly concerned about oil and gas operation in our home county.

I would like to encourage you to consult with me or many of my NOAA, NCAR, or CU Boulder colleagues who over the past year have conducted a tremendous amount of new research on gas and oil industry impacts on air quality and use this information in directing your recommendations or regulations concerning oil and gas operation.

Thank you,

Detlev Helmig, Ph.D.

Associate Research Professor

Institute of Arctic and Alpine Research (INSTAAR)

University of Colorado

1560 30th Street

Boulder, CO 80309-0450

U.S.A.

Tel: (303) 492-2509

Fax: (303) 492-6388

E-Mail: [detlev.helmig@colorado.edu](mailto:detlev.helmig@colorado.edu)

Atmospheric Research Lab Website: <http://instaar.colorado.edu/arl/>

INSTAAR Homepage: <http://instaar.colorado.edu/>

.

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Please don't frack our water  
**Date:** Wednesday, June 27, 2012 10:36:45 AM

---

An easy read, brings home an important point: finite water system.  
<http://www.popsci.com/science/article/2012-06/using-softer-approach-water-conservation>

Respectfully,

--

Ginger

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @\$% cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Please consider this information about fracking  
**Date:** Monday, June 25, 2012 11:43:12 PM

---

thank you...

<http://ecowatch.org/2012/new-jersey-state-assembly-votes-to-ban-fracking-wastewater/>

--

Ginger

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @\$% cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Sally Barrett-Page](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** We Are Opposed To Fracking In Boulder County!  
**Date:** Monday, June 25, 2012 8:53:27 AM

---

We Are Opposed To Fracking In Boulder County!

Sally and Ted Barrett-Page  
616 Pine Street  
Boulder, CO 80302

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Global warming: case against fracking  
**Date:** Friday, June 22, 2012 2:44:43 PM

---

Dear planning commission:

There is little doubt that we need to shift away from fossil fuel as an energy source. This new study reaffirms the claim.

<http://climate-connections.org/2012/06/22/california-sea-level-projected-to-rise-at-higher-rate-than-global-average/>

Let's be leaders, let's not kowtow to dinosaurs (pun intended).

Respectfully,

--

Ginger Ikeda

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @\$% cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Cliff Willmeng](#)  
**To:** [#LandUsePlanner](#)  
**Subject:** On Hydraulic Fracturing in Our Community  
**Date:** Saturday, June 30, 2012 9:37:22 PM

---

To The Land Use Planning Division:

My name is Cliff Willmeng and I am an RN and a resident of Lafayette, Colorado. I am writing to you to address the process of hydraulic fracturing that is currently being proposed in Boulder County. I am new to this topic, having moved here from Chicago about three years ago. Even so, no one informed me about the industrialization taking place here until earlier this month.

After weeks of research, it has become increasingly clear to me that the process of hydraulic fracturing is far more dangerous, unregulated, and questionable from both an economic and environmental standpoint, than I originally considered. It is clearly benefiting from a systemic degree of political corruption, and making certain individuals and corporations very wealthy at the expense of our communities and environment.

Among many of my concerns is that a large number of our community members have no idea of what this industrial process is, where it is currently taking place, and where it will begin once it is allowed in Boulder County. We owe it to our community to do something to make the topic one of broad consideration. The gas and oil industry are hoping to move their interests along before these discussions can happen, and with a potential 1800 new fracking wells in Boulder County, people need to be informed. This will affect our property values and the health of our families.

I understand that the State and Federal governments are the ultimate authority of this industrial process, as well, but it would be wrong for us to use this as an excuse not to defy the pollution of our air and water. Slavery was once legal and banning women from voting was at one time acceptable. I am glad we challenged both of those issues and won. Considering the enormous cost to our families and way of life, we should use every bit of our resources to inform and mobilize our community against this process, and keep it from happening in Lafayette and Boulder County.

I would like to see something on the Boulder County website that would help inform the public of this highly dangerous process, and begin a discussion of how to keep it from our community. I think it is the least we can offer. In addition, I believe that we should be providing help to the brave people in Longmont and Erie in their fight against fracking there. There are no air filters between our neighboring towns and

what is released into the air next to Red Hawk Elementary School will make its way here.

Thank you for taking the time on this issue. It is certainly not a pleasure to have to deal with this, and the process of fracking is already placing strain on our town. Its also not the most ideal circumstance to meet one's neighbors and local government. But it is truly the most pressing issue we have before us as a community and needs to be front and center of the public.

Sincerely,

Cliff Willmeng

Mary Willmeng

Sasha Willmeng (Age 3)

Charlie Willmeng (Age 2)

12 46 Doric Dr,

Lafayette CO 80026

(303) 478 - 6613

**From:** [Micharl Digrazia](#)  
**To:** [Boulder County Board of Commissioners](#)  
**Subject:** Ban Fracking Now  
**Date:** Thursday, June 21, 2012 6:40:46 AM

---

Dear Boulder County Commissioners,

I write to implore you to ban fracking in Boulder County. I feel strongly about this since I once worked in the oil exploration industry. The risk to polluting our precious and limited water supply is too high to consider ever where fracking is on private land.

Hydraulic fracturing (fracking) can contaminate our drinking water and harm our communities. Furthermore, the proposals to allow Boulder County Open Space to be fracked are inappropriate on land purchased with tax payer funds to be preserved for public recreation and the environment.

As your constituent, I urge you to impose a moratorium on fracking in Boulder County, so that you can investigate all options to place a permanent ban on fracking.

Micharl Digrazia  
1710 Turin Dr  
Longmont, CO 80503  
3037495666

**From:** [Lance Cayko](#)  
**To:** [Boulder County Board of Commissioners](#)  
**Subject:** Ban Fracking Now  
**Date:** Thursday, June 21, 2012 5:17:52 AM

---

Dear Boulder County Commissioners,

Hydraulic fracturing (fracking) can contaminate our drinking water and harm our communities. Furthermore, the proposals to allow Boulder County Open Space to be fracked are inappropriate on land purchased with tax payer funds to be preserved for public recreation and the environment.

As your constituent, I urge you to impose a moratorium on fracking in Boulder County, so that you can investigate all options to place a permanent ban on fracking.

Lance Cayko  
2540 Sunset Drive  
Longmont, CO 80501  
3037757406

**From:** [Brittany Betten](#)  
**To:** [Boulder County Board of Commissioners](#)  
**Subject:** Ban Fracking Now  
**Date:** Friday, June 22, 2012 6:26:24 PM

---

Dear Boulder County Commissioners,

I commend you for taking the right step forward and passing a six-month moratorium on hydraulic fracturing (fracking) in Boulder County. However, I urge you to use this time to move forward with a full fracking ban.

Fracking can contaminate our drinking water and harm our communities. Furthermore, the proposals to allow Boulder County open space to be fracked are inappropriate on land purchased with taxpayer funds to be preserved for public recreation and the environment.

As your constituent, I urge you to impose a moratorium on fracking in Boulder County, so that you can investigate all options to place a permanent ban on fracking.

Brittany Betten  
P.O. Box 263  
Lafayette, CO 80026

**From:** [Hans Gethoffer](#)  
**To:** [Boulder County Board of Commissioners](#)  
**Subject:** Ban Fracking Now  
**Date:** Sunday, June 24, 2012 11:20:48 PM

---

Dear Boulder County Commissioners,

Hydraulic fracturing (fracking) can contaminate our drinking water and harm our communities. Furthermore, the proposals to allow Boulder County Open Space to be fracked are inappropriate on land purchased with tax payer funds to be preserved for public recreation and the environment.

As your constituent, I urge you to impose a moratorium on fracking in Boulder County, so that you can investigate all options to place a permanent ban on fracking.

Hans Gethoffer  
2718 Linden Drive  
Boulder, CO 80304  
303-449-7182

**From:** [mary\\_chorba](#)  
**To:** [Boulder County Board of Commissioners](#)  
**Subject:** Open Letter to Boulder County Commissioners about fracking  
**Date:** Thursday, July 05, 2012 3:18:49 PM

---

Hello,

My name is Mary Willmeng and I am a resident of Lafayette, CO. My family and I have lived in Lafayette for close to three years and in Colorado for close to four. We moved here from Chicago because we were seeking a safe, affordable place to raise our family while living a nearby the beauty and peace of the Rocky Mountains. We love living here and feel lucky to have found this place.

Unfortunately, we have become aware of something that could compromise the quality of our lives here. We have become aware of the growth of the industrial practice of hydraulic fracturing or "fracking" that is occurring in the neighboring town of Erie and will be making it's way into Lafayette and Boulder county.

Everything that I have seen and read about fracking indicates this is not a process that should be performed in close proximity to any residential neighborhoods. The practice is a threat to the safety of our drinking water through ground water contamination and pollutes our air. Fracking also uses a tremendous amount of water and renders that water unusable due to the toxic chemicals used in the process. It is very disturbing to think about this happening to this place we have come to know and love.

One of the most disturbing things about this is how little the public has been informed about it happening here in Boulder County. I know there is a moratorium on fracking in Boulder County through February 2013. I would say that it is imperative that there be some sort of public forum on fracking that would provide some education and public debate on the issue. If this highly toxic process is going to be performed within feet of our homes, we have the right to understand what it is and we should have the right to be a part of the decision-making process.

As citizens of the state of Colorado and the United States of America, I believe we have the right to choose on the issue of fracking and I believe we have the right to make an informed decision. We should be able to choose the health and safety of our families, our environment, and ourselves over corporate profit and governmental power. As people who are there to represent the interests of the citizens, I hope you would agree. If you are able to uphold your vision statement, I know that you are.

Boulder County Commissioner Vision Statement (excerpt)

- We are a safe, healthy and environmentally responsible county. Our stewardship honors our past and sustains and improves the quality of life for present and future generations.
- We value and provide opportunities for citizens to actively participate in partnerships that enhance and enrich government services.

I appreciate your time and look forward to your reply.  
Thank you so much,

Mary K Willmeng

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Important development w/ re: to fracking  
**Date:** Monday, July 02, 2012 10:52:15 AM

---

Dear planning commission,  
Please take this into consideration: North Carolina Governor's position - proceed very cautiously (if at all) <http://www.reuters.com/article/2012/07/02/usa-northcarolina-fracking-idUSL2E8I200520120702>

thank you,

--

Ginger

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @%\$ cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** For your perusal, info on fracking  
**Date:** Monday, July 02, 2012 9:26:03 AM

---

To the planning committee:

<http://digital.olivesoftware.com/Olive/ODE/DenverPost/LandingPage/LandingPage.aspx?href=VERQLzIwMTIvMDcvMDE.&pageno=Ng..&entity=QXIwMDYwNw..&view=ZW50aXR5>

Granted, this is not a technical piece of information, but it does say something....

Thank you,

--

Ginger

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @\$% cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** Water and fracking are inextricably related  
**Date:** Tuesday, July 03, 2012 10:55:19 AM

---

Dear planning committee,

This short story, in case you missed it, may be of interest. It's on KGNU's Tuesday Morning Magazine, 12 minutes in. <http://www.kgnu.org/morningmag>

And here's the source material, I believe:

[http://landandwaterusa.com/issues\\_water/2012\\_water/6-9WeldFarmers.htm](http://landandwaterusa.com/issues_water/2012_water/6-9WeldFarmers.htm) and  
[http://www.timescall.com/news/longmont-local-news/ci\\_20809436/newstip](http://www.timescall.com/news/longmont-local-news/ci_20809436/newstip)

It's interesting that there seems to be water for hundreds of fracking wells in Weld County, though I don't know whether all of it is being trucked in (at crazy carbon expense and toll on the environment, local citizenry, and our roads), or whether it's coming from the ground water. With Gov. Hickenlooper being pro-fracking, I wonder about his motivation to withhold ground water from agriculture. I could be entirely off base with this, as I am not fully informed on the sources of fracking water, but unless someone can investigate and file a report to clear things up, I would imagine I'm not the only person to have questions and be somewhat suspect.

In your deliberations, I continue to hope that you will give serious thought to preserving and protecting our precious water. Once contaminated with fracking chemicals, the water is not even usable as gray water.

Thank you,

--

Ginger

SHARE THE ROAD :)

Riders: Be Bright and Be Seen; Rules of the Road

Drivers: Put down the @%\$ cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"

Dr. Seuss

**From:** [Ginger Ikeda](#)  
**To:** [Lanning, Meredith](#)  
**Subject:** We must not frack Boulder County  
**Date:** Friday, July 06, 2012 10:02:15 AM

---

Dear planning committee,

Here's a six minute video from New York... You'll probably find yourself singing along in parts :)

<http://video.nytimes.com/video/2012/07/05/opinion/10000001648803/songs-against-drilling.html>

--  
Ginger

SHARE THE ROAD :)  
Riders: Be Bright and Be Seen; Rules of the Road  
Drivers: Put down the @%\$ cell phone and Save a Life; 3 Feet Between; Pass <15 mph above bike's speed. THANKS!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not!"  
Dr. Seuss

**From:** [Merrily Mazza](#)  
**To:** [Boulder County Board of Commissioners](#)  
**Subject:** hydraulic fracturing in Boulder County  
**Date:** Sunday, July 08, 2012 7:34:30 PM

---

Dear Commissioners,

I'm a newcomer to Colorado and recently retired after a long career in the textbook publishing industry. I bought a home in Lafayette and moved here from Chicago to be near my young grandchildren. The area is lovely and what I thought would be a perfect place for my grandchildren to grow up. Lately, I've read a great deal about the issue of hydraulic fracturing, and I attended a meeting of the Erie Rising group. This issue is extremely alarming to me as a brand new homeowner in Lafayette and as concerned grandmother. I've driven by the well being constructed just yards from Redhawk Elementary School in Erie. Considering the known chemicals involved in this process—and the ones considered a trade secret—I'm appalled! This toxic industrial operation is being allowed in close proximity to homes, schools, and vulnerable children. I understand there are plans to expand this drilling in Boulder County. Count me as someone wholeheartedly opposed. Yes, I'm concerned about the value of my home but more so about my own and my grandchildren's health. The more people know, the more voices you'll hear. This issue needs to be publicized to the citizens of Lafayette and Boulder County, and groups are forming to do just that. I'll be participating in them. I hope you share my concern about fracturing's effects on Colorado, Boulder County, and our own community and citizens.

Merrily Mazza

581 Wild Ridge Lane

Lafayette, CO 80026

720 556-1286