

LARIMER COUNTY



ENVIRONMENTAL AND SCIENCE ADVISORY BOARD



2019 Annual Report



January 2020

Board of County Commissioners:

This annual report outlines the Environmental and Science Advisory Board's activities in 2019 and sets our general goals and direction for 2020.

Important topics of discussion included the County's Comprehensive Plan, and the update of its environmental responsibility policy. The Board also continued to participate in discussions on air quality and ozone non-attainment, climate change impacts and planning, and the Halligan Reservoir expansion project.

Additional information about the Advisory Board, including full minutes for its meetings, is available on the County's website at:

<https://www.larimer.org/boards/environmental-and-science-advisory-board>.

We would like to acknowledge County staff for their continued help and commitment to sound environmental management. In 2019, representatives from the Departments of Health and Environment, and Community Development and Planning attended meetings to assist and inform members of the Advisory Board.

We hope that the feedback we provided was useful for the County. Please feel free to contact me or any of our members if you would like to discuss specific issues in greater detail.

A handwritten signature in blue ink, appearing to read 'Jim Gerek', with a stylized flourish at the end.

Jim Gerek, Chair for 2019

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2019 ANNUAL REPORT OF THE LARIMER COUNTY ENVIRONMENTAL AND SCIENCE ADVISORY BOARD

January 2020

I. INTRODUCTION

The Larimer County Commissioners established the Environmental Advisory Board in 1993. The Board consists of up to 12 at-large members, appointed by the County Commissioners. The name of the board was changed to the Environmental and Science Advisory Board (ESAB) in 2013.

The primary role of the Board is to advise the Board of County Commissioners and appropriate County departments on environmental and science-related issues that affect Larimer County. Items considered by the ESAB come from the Commissioners, staff, citizens and our own members.

The Advisory Board typically meets on the second Tuesday of each month and on an as-needed basis for special work sessions. The first agenda item of each meeting is devoted to hearing public comments about environmental issues. The list of invited guest speakers that attended the ESAB meetings in 2019 is presented in Section V of this report.

Important topics and actions considered by the Advisory Board are noted in Section II. Section III outlines the status of issues related to its recommendations. The actual written correspondence provided by the Board is included in the Appendix.

The ESAB uses an issue index to keep track of the various issues that the board monitors and addresses. This index is updated on a monthly basis.

John Kefalas served as the County Commissioner Liaison to the Environmental and Science Advisory Board for 2019 and Shelley Bayard de Volo, from the Engineering Department, remained as the staff facilitator throughout 2019.

II. DISCUSSION TOPICS IN 2019

MONTH	TOPICS (Issue number)
January	<ul style="list-style-type: none">• Zoonosis Annual Update (Issue Index 18.03)<ul style="list-style-type: none">○ Jessica Royer, Environmental Health Specialist, Larimer County Health and Environment• Syringe Disposal (11.02) and Opioid Abuse<ul style="list-style-type: none">○ Katie O'Donnell, Public Information Officer, Larimer County Health and Environment <p>UPDATES</p> <ul style="list-style-type: none">• Wasteshed – answers to questions from last meeting
February	<ul style="list-style-type: none">• CANCELLED
March	<ul style="list-style-type: none">• Ozone and air quality update. Monitoring network, the NCAR study (9.02)<ul style="list-style-type: none">○ Gordon Pierce, Technical Services Program Manager, CDPHE Air Pollution Control Division○ Joint meeting with the Fort Collins Air Quality Advisory Board <p>UPDATES</p> <ul style="list-style-type: none">• New member interviews update• Q1 meeting with Commissioner Kefalas• Team member selections – County Strategic Plan G3:05 - Environmental Responsibility Policy• Committee selection for 2019 Environmental Stewardship Awards
April	<ul style="list-style-type: none">• Climate Change (19.02)<ul style="list-style-type: none">○ Katrina Winborn-Miller and Kirk Longstein• Discuss and finalize Environmental Stewardship Awards nominations, draft recommendations for BoCC (8.01)<ul style="list-style-type: none">○ Daniel Beveridge, Ally Little and Kirk Longstein• Small Cell Towers (5G)<ul style="list-style-type: none">○ George Rinker <p>UPDATES</p> <ul style="list-style-type: none">• Draft Charter - Oil/Gas Regulations Task Force• Larimer County Comprehensive Plan• Boards & Commissions Periodic Review

May	<ul style="list-style-type: none"> • Halligan Reservoir Expansion (6.02) <ul style="list-style-type: none"> ◦ Donnie Dustin, Water Resources Manager, City of Fort Collins • Larimer County Comprehensive Plan (1.01) <ul style="list-style-type: none"> ◦ Matt Lafferty, Principal Planner, Larimer County and Jeremy Call, Logan-Simpson Consulting <p><i>UPDATES</i></p> <ul style="list-style-type: none"> • Oil/Gas Regulations Task Force – application status • Climate Action/Resiliency update • Environmental Stewardship Awards • Boards and Commission Periodic Review – next steps
June	<ul style="list-style-type: none"> • Health Impacts with Climate Change (19.02) <ul style="list-style-type: none"> ◦ Karam Ahmad, MPH, Colorado Health Institute • Larimer County Comprehensive Plan(1.01) <ul style="list-style-type: none"> ◦ Jim Gerek <p><i>UPDATES</i></p> <ul style="list-style-type: none"> • 5G network Cell Towers • Environmental Stewardship Awards
July	<ul style="list-style-type: none"> • CANCELLED
August	<ul style="list-style-type: none"> • Annual Issue Index Review and Update (19.01) <ul style="list-style-type: none"> ◦ Jim Gerek <p><i>UPDATES</i></p> <ul style="list-style-type: none"> • Oil/Gas Taskforce Update • Climate Action Plan • Environmental Responsibility Policy • NISP IGA progress
September	<ul style="list-style-type: none"> • Climate Action Plan for the Eagle County Community (19.02) <ul style="list-style-type: none"> ◦ Adam Palmer, Eagle County's Sustainable Communities Director and John Gitchell, Environmental Manager <p><i>UPDATES</i></p> <ul style="list-style-type: none"> • Commissioner's Update • Oil/Gas Taskforce Update • Colorado Low Emission Automobile Regulation (CLEAR) – new rule for ZEV standards • Land Use Code – Online Survey and Tech Committee Volunteers • 5G communications – Wrap-up • Environmental Responsibility Policy

October

- Larimer County Climate Action Plan – review of GHG emissions inventory protocol(19.02)
 - Kirk Longstein, ESAB and Molly Saylor, City of Fort Collins
- New County Environmental Responsibility Policy – review (12.01)
 - Jim Gerek, Shelley Bayard de Volo

UPDATES

- Commissioner’s Update
- Oil/Gas Taskforce Update
- Land Use Code TAC Status
- Boards and Commissions Dinner - Reminder

November

- The Colorado Wood Utilization and Marketing Program (CoWood) (5.01)
 - Tim Reader, Wood Utilization & Marketing Program Specialist, Colorado State Forest Service
- Developing County Oil & Gas Regulations (10.07)
 - Ally Little, Chris Wood, Katrina Winborn-Miller

UPDATES

- Environmental Responsibility Policy Approved
- Halligan Reservoir – anticipated release of draft EIS
- New County Solid Waste Policy Council

December

- Halligan Reservoir Expansion draft EIS and City of Fort Collins Conceptual Mitigation Plan (6.02)
 - Michael Lee Jones
- 2019 Annual Report, 2020 Workplan, Election of 2020 officers
 - Jim Gerek

UPDATES

- Commissioner’s Update
 - Oil & Gas Task Force Status
 - NISP and 1041 permitting
-

III. STATUS OF ESAB RECOMMENDATIONS IN 2019

The table below outlines the formal recommendations made by the Advisory Board and provides a brief statement about the status of those recommendations. As an advisory board, the ESAB's written recommendations are submitted to the Board of County Commissioners or a requesting County department. The actual correspondence is shown in the Appendix.

Issue	Principal ESAB Actions and Recommendations	Status
County Comprehensive Plan	Rich Conant participated with the Stakeholder Group, representing the ESAB. The full ESAB also reviewed the final public draft of the Plan and individual members provided a range of comments through the County's online public commenting system. The full ESAB provided written comment supporting accurate use of statistics and clearer presentation of data.	Multiple comments provided by the ESAB were incorporated into the final Plan. Comments are presented in the Appendix.
County Oil and Gas Land Use Regulations	Richard Alper participated as a voting member on the Oil and Gas Task Force, and he coordinated input with ESAB members Ally Little, Chris Wood and Katrina Winborn-Miller. Richard and Ally both provided comments on the draft regulations.	ESAB comments were received by Planning staff and are currently under consideration. Comments are presented in the Appendix.

IV. ONGOING COMMITTEE WORK

Issue	Principal ESAB Activities	Active ESAB members
Strategic Plan Goal 3: Objective 5 Environmental Responsibility Policy	Participates on the staff-level objective team and provides guidance on policy development, and development of a departmental implementation strategy	Jim Gerek and Kirk Longstein
Climate Smart Larimer County: Recommendations for Future Action	Participates on the staff-level team. Is developing the County-wide greenhouse gas inventory and assisting with strategy and development of the plan.	Kirk Longstein and Katrina Winborn-Miller

V. ENVIRONMENTAL STEWARDSHIP AWARDS

Each year, the Environmental & Science Advisory Board and the Board of County Commissioners recognize significant environmental efforts of county residents, businesses, organizations and/or agencies by awarding the Larimer County Environmental Stewardship Awards. These Environmental Stewardship Awards were first issued by Larimer County in 1995.

The board looks for individual or group activities that are innovative and proactive, and that demonstrate exceptional effort and concern for the stewardship of the environment. Projects can be either completed one-time efforts, or ongoing activities. Both types are judged on their degree of difficulty and the results they achieve. Each year the Environmental and Science Advisory Board solicits nominations, reviews them and makes recommendations for the awards to the Board of County Commissioners.

In 2019, the ESAB reviewed seven nominations, of which three provided good examples of the important activities local citizens are engaged in to protect and improve our environment. The recommended projects produced positive environmental results locally and provided good examples of what others can do. These three were recommended to the BoCC for consideration of the award and were ultimately presented with Stewardship Awards at a public ceremony by the BoCC. The 2019 awardees were:

1. The Village Thrift Shop

The Village Thrift Shop of Estes Park receives used household goods as donations. The store's mission is to recycle all the goods they receive either through re-selling or through proper disposal with recycling programs – nothing goes to the landfill as “trash”.

Thrift Shop employees also educate their community of the importance of diverting usable goods from the landfill and of recycling. All the proceeds from the shop's sales of donated goods go back to the community as grants to local non-profit organizations - in 2018, they donated over \$180,000 to 51 different groups!

2. Shambhala Mountain Center

The Shambhala Mountain Center (SMC) lies in the mountain community of Red Feather Lakes. Like many properties in that area, it is heavily timbered which makes it susceptible to high-severity wildfires. To increase the resiliency of their property, the SMC collaborated with several land stewardship organizations to reduce forest fuels by thinning 118 acres of dense forest. The SMC property lies adjacent to other large-scale fuels reduction efforts, so their project increases the overall footprint and efficacy of those previous efforts.

The SMC's landscape-scale treatment has resulted in significant environmental stewardship, which reduces wildfire risk, improves wildlife habitat, protects clean water resources, improves forest health and community protection. Their project serves as an important

example of effective land stewardship, which greatly contributes to the resiliency of the Red Feather Lakes mountain community.

Land stewardship agencies that participated in the project

- Fort Collins Conservation District
- Natural Resources Conservation Service
- Colorado State Forest Service
- Morgan Timber Products.

3. Laura Tyler – Fort Collins Conservation District

Laura Tyler saw the need to divert a common agricultural waste product - baling twine - from the Colorado landfills. In partnership with Waste-Not Recycling (Johnstown) and the Fort Collins Conservation District, Laura started the Twine Recycling Program, which collects baling twine from drop-off points across the County (e.g., Jax Ranch and Home). The program then recycles it into pellets using a pelletizer purchased with a CDPHE grant. Those pellets are then sold as a source material for manufacturing new plastic-based goods. To date over 13,000 miles (68 million feet) of twine have been recycled, mostly from Northern Colorado. Laura works with many youth groups like Future Farmers of America and 4-H groups who assist with the twine collection and learn about the benefits of the recycling program.

Baling twine is a hazard when left in the environment. Birds collect it and incorporate it into their nests, where the young and adults are at risk of entanglement. Livestock and wildlife eat the twine, which can lead to death. In some cases, twine is piled and burned leading to air pollution. When it's left on the ground to degrade, or ground up with hay, it becomes micro-plastics that pollute our soil or waterways. Removing it from the environment, diverting it from landfills and recycling it is a great example of a long-term sustainable solution for improving the environment.

VI. INVITED SPEAKERS AND GUESTS FOR MONTHLY MEETINGS

MONTH	PERSON	SPEAKER'S TOPIC
January	Jessica Royer, Environmental Health Specialist, Larimer County Health and Environment. Katie O'Donnell, Public Information Officer, Larimer County Health and Environment	Zoonosis, opioids and syringe disposal
February	Cancelled	
March	Gordon Pierce, Technical Services Program Manager, CDPHE Air Pollution Control Division Fort Collins Air Quality Advisory Board	Ozone and air quality update
April	No Guests	
May	Donnie Dustin, Water Resources Manager, City of Fort Collins Matt Lafferty, Principal Planner, Larimer County and Jeremy Call, Logan-Simpson Consulting	Halligan Reservoir Expansion County Comprehensive Plan
June	Karam Ahmad, MPH, Colorado Health Institute	Health Impacts of Climate Change
July	Cancelled	
August	No Guests	
September	Adam Palmer, Eagle County's Sustainable Communities Director and John Gitchell, Environmental Manager	Climate Action Plan for the Eagle County Community
October	No Guests	
November	Tim Reader, Wood Utilization & Marketing Program Specialist, Colorado State Forest Service	The Colorado Wood Utilization and Marketing Program (CoWood)
December	No Guests	

VII. ENVIRONMENTAL AND SCIENCE ADVISORY BOARD MEMBERS

Board Member	Status
Richard Alper	Active
Daniel Beveridge	Active
Richard Conant	Active
Jim Gerek	Active
Michael Lee Jones	Active
Allyson Little	Active
Kirk Longstein	Active
Evelyn King	Active
David Lehman	Active
George Rinker	Active
Katrina Winborn-Miller	Active
Christopher Wood	Appointed March 2019

Note: This list includes all Advisory Board members who served during the year. At any given time, the Board consists of a maximum of twelve members.

VIII. YEAR 2020 WORKPLAN

This workplan provides information about the general direction the Environmental and Science Advisory Board considers taking in 2020. Because conditions or priorities in the County can change, a considerable degree of flexibility needs to be maintained.

Overall: The ESAB strives to inform, and be informed about, County government-related policies, decisions, issues and actions that have environmental implications. To that end the ESAB will:

1. Serve as an informational resource that provides science-based recommendations to the Board of County Commissioners and County departments, points out areas of uncertainty and suggests appropriate ways to address them;
2. Identify environmental and science-based issues and opportunities for the consideration of the County Commissioners so that the BoCC can be proactive in their responsibilities to the environment. To that end, the ESAB will solicit from its membership ideas with respect to current environmental issues, and develop a consensus of the most relevant topics to be forwarded to the BoCC;
3. Develop and maintain an attitude of trust and respect among the ESAB, the Commissioners, County departments and other boards and commissions;
4. Foster a cooperative working relationship with local and state organizations who are connected to topics the ESAB considers as part of their Issue Index; and
5. Provide updates on current environmental topics in order to enhance the common knowledge base of its members.

Response to Referrals or Requests:

1. Respond in a timely manner to issues raised by the Board of County Commissioners, County departments and ESAB members; and
2. Facilitate the response to citizen comments received by the Advisory Board in cooperation with the Board of County Commissioners and appropriate County departments.

Current Environmental Topics:

1. Consider the regional implications of important environmental issues and consider ways to address those issues across local jurisdictional boundaries. Examples of current issues include planning for ozone air quality compliance, enhancement of forest and watershed health, and mitigating impacts of hydraulic fracturing in oil/gas development;
2. Monitor important water issues including watershed planning and significant proposed

water projects. The Northern Integrated Supply Project (NISP), the Halligan Reservoir and Milton-Seaman Reservoir expansion projects are examples of current water issues;

3. Monitor solid waste management issues such as landfill operations, recycling and hazardous waste disposal. Follow the Solid Waste Policy Council as it develops facilities and policies for the next 10-50 years
4. Monitor the status of conventional, renewable and alternative energy development and, as requested, consult with County departments and the BoCC regarding potential environmental implications. Wind energy, solar energy, and oil and gas development are current topics of interest;
5. Consider important natural or ecological impacts associated with large-scale events such as wildfire, floods, droughts, climate change and biological events (i.e., emerald ash borer, pine bark beetle). Promote the incorporation of resiliency, mitigation, and recovery into planning and emergency management of such large-scale events; and
6. Participate in creating and revising major County policies and plans, including 2020 revisions to the County's Land Use Code and a new Climate Smart Larimer County: Recommendations for Future Action. Also, support implementing the County's revised Environmental Responsibility Policy as part of the County's 2019-2023 Strategic Plan.

Stewardship Awards:

1. Coordinate the County's annual Environmental Stewardship Awards in partnership with the Board of County Commissioners.

Communications and Process:

1. Maintain open communications with the County Commissioner liaison assigned to the ESAB in order to facilitate dialogue about environmental concerns or issues identified by either the BoCC or the Advisory Board;
2. Use the Commissioners' Work Sessions and Administrative Matters meetings, as appropriate, for communication on important environmental and science issues as they arise;
3. Provide knowledgeable ESAB members, as requested, to participate with *ad hoc* County Task Forces and Stakeholder Groups addressing topics with environmental and/or science implications.
4. Continue the practice of assigning interested ESAB members monitoring tasks for select environmental issues, and then providing periodic updates to the full Advisory Board.

APPENDIX: WRITTEN CORRESPONDENCE

These documents were prepared by the Environmental and Science Advisory Board as part of their activities in 2019.

- June 4th, 2019. Comments on the County's Comprehensive Plan. Email and spreadsheet of detailed comments provided through the online portal for public comments.
- June 13th, 2019. Comments on Data Handling//Presentation in Draft Comprehensive Plan. Memo to Commissioner Kefalas and Principal Planner Matt Lafferty.
- November 2nd, 2019. Larimer County draft oil and gas regulations. Comments were made with using track changes on the Word document. Those comments were provided to Principal Planner Matt Lafferty.



Shelley Bayard de Volo <bayardsh@co.larimer.co.us>

Larimer Comp Plan - ESAB Comments

Mitch Hendrick <MHendrick@logansimpson.com>

Tue, Jun 4, 2019 at 10:18 AM

To: "bayardsh@co.larimer.co.us" <bayardsh@co.larimer.co.us>

Cc: Jennifer Gardner <JGardner@logansimpson.com>, Miriam McGilvray <MMcGilvray@logansimpson.com>, Jeremy Call <JCall@logansimpson.com>

Shelley,

Please see the attached spreadsheet containing ESAB member comments on the Larimer Comprehensive Plan.

If you anticipate additional comments from ESAB members, I can send those at a later date.

Thank you,

Mitch Hendrick

Mitch Hendrick

Planner

Logan Simpson

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ESAB Public Draft Comments.xlsx

17K

Draft Plan Public Comments (ESAB)

ID	Date posted	User name	Type	Comment	Page
108	05/21/2019 - 9:42am	Ally Little	Question	and that citizens can expect reliable, affordable energy in Larimer County.	36
109	05/21/2019 - 9:43am	Ally Little	Suggestion	Specify how often "regularly" is	37
110	05/21/2019 - 9:49am	Ally Little	Suggestion	I recommend specifically mentioning adding more public transportation options and bike paths between communities in the county	42
111	05/21/2019 - 9:56am	Ally Little	Suggestion	Not just drinking water sources- also need to protect water for biological species	43
112	05/21/2019 - 9:59am	Ally Little	Suggestion	"Encourage energy efficient commercial buildings and residential homes that include site design features..."	49
113	05/21/2019 - 10:03am	Ally Little	Typo	use commas, not semicolons	47
114	05/21/2019 - 10:04am	Ally Little	Suggestion	delete "and consolidation". not sure that is important.	47
115	05/21/2019 - 11:24am	Shelley Bayard de Volo	Suggestion	consider "preserving". "Maintaining" sounds very controlling and utilitarian.	9
116	05/21/2019 - 11:26am	Shelley Bayard de Volo	Suggestion	add "2008" great recession	9

ID	Date posted	User name	Type	Comment	Page
117	05/21/2019 - 11:29am	Shelley Bayard de Volo	Suggestion	needs definition = properties zoned in residential only?	10
118	05/21/2019 - 12:12pm	Shelley Bayard de Volo	Suggestion	This sentence needs work. What local governance? What community, Larimer County? That occurs where? I think you need a previous sentence setting this statement up.	14
119	05/21/2019 - 12:14pm	Shelley Bayard de Volo	Suggestion	Through Chapter 3's Policy Framework	14
120	05/21/2019 - 12:17pm	Shelley Bayard de Volo	Suggestion	would be nice to have a more up to date data set that includes the last 5 years.	15
121	05/21/2019 - 12:40pm	Shelley Bayard de Volo	Suggestion	Not a fan of "... an issue with the public" language. Try ".... is often a controversial and contentious issue."	18
122	05/21/2019 - 12:43pm	Shelley Bayard de Volo	Suggestion	No mention here of protecting water quality and quantity	19
123	05/21/2019 - 12:46pm	Shelley Bayard de Volo	Suggestion	put "residents" up to the beginning of the sentence - "Conflicts between residents and industrial uses....."	19
136	05/23/2019 - 11:18am	Shelley Bayard de Volo	Typo	"where"	39
137	05/23/2019 - 12:21pm	Shelley Bayard de Volo	Typo	remove "and"	43
138	05/23/2019 - 12:52pm	Shelley Bayard de Volo	Question	what does this mean? "Barriers to entry" entry to where?	44

ID	Date posted	User name	Type	Comment	Page
160	05/23/2019 - 3:44pm	Shelley Bayard de Volo	Typo	remove space	45
161	05/23/2019 - 3:45pm	Shelley Bayard de Volo	Suggestion	not a fan of the word "decent", what does that really mean?	45
162	05/23/2019 - 3:54pm	Shelley Bayard de Volo	Suggestion	yes! ties with the night sky concept and would like to see new development use lighting that projects downward.	46
164	05/29/2019 - 3:37pm	Shelley Bayard de Volo	Suggestion	I would like to see Larimer County's facilities set the example on this	49
165	05/29/2019 - 3:41pm	Shelley Bayard de Volo	Suggestion	yes - this sentence needs to be re-worked...perhaps "Acknowledge impacts associated with development of mineral and natural resources, and use fact-based data to inform decision making"	49
166	05/29/2019 - 3:54pm	Shelley Bayard de Volo	Question	yes what development? - that associated with parks and open space? or all developmei	50
167	05/29/2019 - 3:56pm	Shelley Bayard de Volo	Typo	remove "review development proposals" - redundant with start of the sentence	50
168	05/29/2019 - 3:57pm	Shelley Bayard de Volo	Question	land conservation developments? or all developments?	50
169	05/29/2019 - 4:03pm	Shelley Bayard de Volo	Suggestion	buffers can come in many shapes and forms - a row of trees can be a buffer in some cases, but not others. Do you mean a setback? an actual distance away from the resource? You could say "...development setbacks, which buffer against impacts to....."	50
170	05/29/2019 - 4:05pm	Shelley Bayard de Volo		Yes!!!!!!!	50

ID	Date posted	User name	Type	Comment	Page
171	05/29/2019 - 4:12pm	Shelley Bayard de Volo	Suggestion	Could be more specific here by stating "...for soil and water conservation, which promote healthy and sustainable agricultural lands"	52
172	05/29/2019 - 4:25pm	Shelley Bayard de Volo	Suggestion	Need something here that speaks to encouraging use of permanent water quality control features designed to remove pollutants associated with the site. e.g., e.coli, nutrients, pesticides, etc.	53
173	05/29/2019 - 4:32pm	Shelley Bayard de Volo	Suggestion	The County does, and has to, comply with State and Federal regulations when it comes to approving land development. I like that this makes it a matter of fact. I would argue to keep as is.	53
174	05/29/2019 - 4:33pm	Shelley Bayard de Volo	Suggestion	...maintains a hazard mitigation plan long-term...	53
180	05/30/2019 - 8:07pm	David Lehman	Suggestion	Figure 1 assumes that population growth of 6K/year will inevitably continue to 2025. It might be helpful to convey some uncertainty, e.g., 2-3 trajectories with different population growths/year. The plan could offer analyses of the implications of slower growth trajectories. At some future date, growth will be restricted by limitations of available water.	9
181	05/30/2019 - 8:08pm	David Lehman	Suggestion	After preserving natural resources . . . : The plan should not gloss over the inherent conflict between "preserving natural resources for future generations" and continued growth at the rate Larimer County has experienced since 2006.	9
182	05/30/2019 - 8:09pm	David Lehman	Suggestion	"self-sustaining" is non-sensical, bordering on fantasy in this context. Every community survives by providing good/services to a larger community, e.g., Colorado, while receiving support from outside sources.	14
183	05/30/2019 - 8:12pm	David Lehman	Question	The text and graphics are inconsistent. Does the City Population make up a larger % in 2016 than in 2010, or a smaller%?	14
184	05/30/2019 - 8:14pm	David Lehman	Question	As presented the variation year to year appears nearly random. The slope of the trendline would add significant meaning to this figure. Are data available on the number of acres burned, which might provide more compelling evidence for a problem that requires mitigation?	15

ID	Date posted	User name	Type	Comment	Page
185	05/30/2019 - 8:16pm	David Lehman	Suggestion	This reads like an ideological attack on "regulations." The real conflict issues is between "economic development (growth)" and "preserving rural uses." Citing the adverse impact of a specific regulation might be more helpful for future planning.	16
186	05/30/2019 - 8:17pm	David Lehman	Suggestion	The "Economy Snapshot" seems to be a bland, broad generalization. It would be improved by addressing issues such as the high rate of non-resident owners, and the impact of increasing commuter distances.	16
187	05/30/2019 - 8:19pm	David Lehman	Question	Figure 7 is unnecessarily complex. Does having 10 shades of population density which are virtually indistinguishable add to the point being made? It might help to combine groups to a max of three groups.	17
188	05/30/2019 - 8:29pm	David Lehman	Question	Maintaining 16 utility provider bureaucracies is expensive and inefficient. At what point does the added cost push the County to encourage, maybe even pressure, some of these provider units to merge?	18
189	05/30/2019 - 9:03pm	David Lehman	Suggestion	Kudos for acknowledging that pursuing "development" for the next 10 years just as it has occurred for the last 10 years will be UNMANAGEABLE! "A unified vision and goals for the future" (See page 9 (3)) should be bolder than calling for "re-evaluating . . . regulations, etc." It seems like this would be an appropriate place to propose a population growth target of 1.2%/year (~75% of the current 1.6%/year). Putting a goal down on paper would add focus to discussion which are often nebulous and of little value.	19
190	05/30/2019 - 9:07pm	David Lehman	Typo	A comma may be more appropriate than a semi-colon here.	22
191	05/31/2019 - 11:19am	David Lehman	Answer	Microwave radiation is not ionizing radiation. Whether "microwave radiation from wireless facilities harms ecosystems" is a research question.	50
192	05/31/2019 - 1:51pm	Katrina Winborn-Miller		This sentence was difficult for me to read and completely understand. What is an unbuilt residential entitlement, exactly? Going on to the next sentence...I do not know if this is a good assumption, or a poor one, etc. Very confused.	10

ID	Date posted	User name	Type	Comment	Page
193	05/31/2019 - 11:11pm	George RInker	Suggestion	Every nice photo like this should be identified, as in "Xxxx Peaks at sunset, looking west from Yyy, October, ZZZZ (photo by Who Took It)"	1
194	06/01/2019 - 2:59pm	Katrina Winborn-Miller	Suggestion	Don't understand the phrase "and other harmful particulate emission levels." Particulate matter is a criteria pollutant under the Clean Air Act, & all criteria pollutants are implied by this sentence, particularly because criteria pollutants have been assigned federal standards in the Clean Air Act. This phrase seems extraneous, suggest to delete it. If some specific type of particulate emissions are suggested by the phrase, then it should be clearly called out.	43
195	06/01/2019 - 3:08pm	Katrina Winborn-Miller	Suggestion	This last sentence sounds great, but seems unnecessary because all criteria pollutants and hazardous air pollutants, as specified by the Clean Air Act and CO state regulations, have been determined to cause adverse health and/or environmental impacts (visibility being one of those impacts, for some pollutants, and climate change being another one of the impacts, for some pollutants.) The statement implies that some stationary and mobile source emissions do not cause adverse health or environmental impacts. Suggest a rewrite of this entire item 2.7.	43
199	06/03/2019 - 7:09am	Katrina Winborn-Miller	Question	There is no category selected for this item.	212
200	06/03/2019 - 7:10am	Katrina Winborn-Miller	Question	There is no category selected for this item.	212
201	06/03/2019 - 7:13am	Katrina Winborn-Miller	Typo	There is no category selected for this item.	214
202	06/03/2019 - 7:31am	Katrina Winborn-Miller	Suggestion	This is an important point/example to make with the county's boards and commissions following the finalization of the new plan. The boards and commissions have been involved in this process as the new plan is developed, and a short discussion of 'what now' with the boards and commissions could be useful & help attain the goal of successfully implementing the plan.	71

ID	Date posted	User name	Type	Comment	Page
203	06/03/2019 - 7:32am	Katrina Winborn-Miller	Suggestion	This is an important point/example to make with the county's boards and commissions following the finalization of the new plan. The boards and commissions have been involved in this process as the new plan is developed, and a short discussion of 'what now' with the boards and commissions could be useful & help attain the goal of successfully implementing the plan.	71
204	06/03/2019 - 7:33am	Katrina Winborn-Miller	Suggestion	Re: Annual Reports, the boards and commissions might be interested to get annual updates on implementation of the plan and a brief review of the Annual Reports. Suggest to check with the Boards on this, and if possible, get on the Boards' calendars each year for a review.	71
205	06/03/2019 - 7:35am	Katrina Winborn-Miller	Question	Please ignore the suggestion at the end of this sentence that ends with the word "Reports" --it is a repeat of a comment made on the other side of this page, and was inadvertently placed here. I cannot find a way to delete this extraneous copy of the comment.	71



Shelley Bayard de Volo <bayardsh@co.larimer.co.us>

Comments on Data Handling/Presentation in Draft Comprehensive Plan

Jim Gerek <jmgerek@frontiernet.net>

Thu, Jun 13, 2019 at 4:28 PM

Reply-To: Jim Gerek <jmgerek@frontiernet.net>

To: John Kefalas <jkefalas@larimer.org>, mlafferty@larimer.org

Cc: Shelley Bayard de Volo <bayardsh@co.larimer.co.us>, David Lehman <david.lehman@ucdenver.edu>, ellisik@larimer.org

John and Matt:

At its June 11 meeting the ESAB authorized some final comments on the County's Draft Comp Plan, particularly on how data is handled and presented. Please see the attachment for the full memo.

Any questions, please feel free to contact me.

Jim Gerek

Chair - Larimer County ESAB



Comp Plan Comments - Final.pdf

755K

MEMORANDUM

TO: Commissioner John Kefalas
Mr. Matt Lafferty, Principal Planner

FROM: Jim Gerek, ESAB Chair

DATE: June 13, 2019

RE: Comments on Data Handling/Presentation in Draft Comprehensive Plan

The Larimer County Environmental and Science Advisory Board (ESAB) has been following the development of the new Larimer County Comprehensive Plan (Comp Plan) since the beginning of the project several years ago. We appreciate the opportunity to have had several of our members participate on Stakeholder Groups. And as a Board we have provided extensive comments on previous drafts on several occasions.

After Jeremy Call's presentation to the ESAB on May 14 regarding the final draft of the Comp Plan, our members took a final look – primarily focusing on Chapter 3 and Appendix F. As requested, our members and staff liaison put their individual comments directly into the on-line draft document by the indicated end-of-comment deadline of May 31. There were approximately 56 individual comments provided. These range from support for certain concepts; to proposing clearer wording; to questioning what is intended; to fixing grammar or punctuation; to proposing additional concepts; etc. We trust that each of these 56 comments will be considered during the Plan's final editing phase.

At its regular monthly meeting on June 11 the ESAB members reviewed a prioritized listing of key individual comments provided by its members and staff publicly in the open comment period. The individuals providing these comments have been trained in the scientific method and are familiar with technical publications used to document theses and key findings. After discussion and consideration the Board passed a resolution encouraging more careful and appropriate use of data, graphs, charts and statistics in the final approved Comp Plan. The resolution also authorized this letter of comment on behalf of the ESAB.





When creating a document, two questions are often asked: Why is the data being presented? and, What is the reader expected to take away from the data? It is also important that the data presentation be clear and unambiguous. The source of the data and any graphical presentations should also be cited as to its creator and date. And if a chart or graph is worthy of inclusion, it should be referenced somewhere in the narrative text.

As examples of the opportunities for the clearer use and presentation of data in the draft Comp Plan, we offer these representative situations:

- In the Foundation Chapter on page 8, Figure 4 purports to show the Population Change in Incorporated vs Unincorporated Larimer County. The summary descriptor associated with this figure indicates “City populations have grown faster than unincorporated areas. This trend is expected to continue.” Meanwhile the data represented in the figure seems to show that the percent of County population in unincorporated areas has increased from 20% in 2010 to 22% in 2016. The text and graphics are inconsistent. And it makes the reader wonder what the future trend will actually be. No source of the data is noted so it is difficult for the reader to check the real facts.
- In the Foundation Chapter on page 9, Figure 6 brings in a chart from another publication that attempts to illustrate the number of wildfires in the County over a 33-year period ending in 2013. Since annual fire data is readily available we are particularly concerned that the chart does not include the 2014-2018 data. We are also concerned that the chart includes data from two differing fire reporting protocols. Discounting the different pre-1986 data, ESAB readers do not discern any clear trend in the data – perhaps a calculated trend line overlay might be useful. Since the annual number of fires is a discontinuous data set, the data would probably be more accurately depicted in a bar chart. We also believe that rather than the “number” of fires, a chart of the number of acres burned might provide more compelling evidence for a problem that requires mitigation. We recognize that changes to a chart extracted from another reference document are not appropriate, but this is likely important enough to warrant a new, more current, and clearer data representation in the Comp Plan.
- In the Foundations Chapter on page 11, Figure 7 purports to show Community Facilities across the County as they relate to Population Centers. This map figure seems to try to overuse the data by arbitrarily breaking County population density into 10 (actually 11 – including ‘<21 people per square mile’) buckets depicted by different shading/colors on the page. At the scale this figure is provided it is extremely difficult to identify the difference between many of the higher population density locations. It might help the



presentation to combine population density buckets down to a maximum of three groupings. This would most likely preserve the intent of the map figure, while providing a clearer and “less busy” presentation. The source of this figure should also be noted in the final Comp Plan.

The ESAB believes that a document as important and long-lasting as the Comp Plan deserves to be based on clear and compelling data and statistics. Visual depictions of the data can make for an appealing presentation but must be presented accurately and thoughtfully. We urge you to ensure this is the case not only for these examples, but all other graphics throughout the document, before it is finalized by the Planning Commission.

The ESAB appreciates the opportunity to provide these comments and hopes that they are useful in providing an improved County work product. Should you have any questions or concerns about this letter, please feel free to contact me.

Cc: Ms. Lesli Ellis, Director – Community Development Department

Forwarded Message -----

From: Richard Alper <richard@confluencecollaboration.org>
To: Matthew Lafferty <laffermn@co.larimer.co.us>; Katrina Winborn-Miller <katalice@gmail.com>; Allyson Little <allyson.c.little@gmail.com>; Christopher Wood <chriswood@gmail.com>
Cc: sbayard@larimer.org <sbayard@larimer.org>; jmgerek@frontiernet.net <jmgerek@frontiernet.net>
Sent: Saturday, November 2, 2019, 3:46:55 PM MDT
Subject: Submitting ESAB oil and gas work group comments to Matt L.

Hello Matt,

Per our conversation on Wednesday evening, last evening (Nov 1) I met the ESAB task group to discuss the 10/30 draft regs.

Chris, Katrina Ally and I went over major points raised by the task force on Wednesday and capturing their comments on the 10/30 draft regulation.

Attached is my best effort to summarize their views.

After they have had a chance to review the 10/30 draft and these comments, each of them may **separately submit comments thru Shelley to you**. I would ask that Shelley combine such comments before sending submitting them to you.

Without knowing your time frame for barring further comments, I have asked Chris, Katrina and Ally, should they chose to submit additional comments, to do so **by 5:00pm this Wednesday November 6**. If you wish to shorten or extend this time limit, please let us know.

As a member of this task force, we would be glad to contribute to reviewing a final draft in the July or March time frame which are part of Option 1 or Option 2 as explained by Lesli Ellis. As a member of the ESAB, I am comfortable to say that should you decide to request comments from the ESAB on a final draft of oil and gas regs, we would surely be glad to cooperate, given our knowledge and experience about the topic.

Many thanks Matt.

Richard

Richard S. Alper

richard@confluencecollaboration.org

(240) 475 7776

2 Attachments



*Here are changes suggested by the work group from the **ESAB**.*

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*Note: This will be a new Section in the Larimer County Land Use Code. This is a preliminary outline of draft oil and gas regulations and is not all inclusive. **NEED TO NUMBER THE PAGES***

Commented [RA1]:

To keep the Task Force Committee discussion on track, please focus comments to the intent and purpose of the standards and avoid refrain from making small edits.

17.0. – OIL AND GAS FACILITIES

17.1. – Intent and Purpose.

- A. **Intent and Purpose:** The Intent and purpose of this section is to establish and administer necessary and reasonable regulations for *oil and gas drilling and production* in a manner that protects and promotes the health, safety, and general welfare of the residents and environment of the County. To the extent practicable these regulations will require applications for oil and gas operations to demonstrate how adverse impacts will be mitigated to achieve a minimal negative impact on the environment, wildlife and residents of the County. *perhaps a sentence to acknowledge the rights of surface owners and referencing the relevant section of the CO constitution may be in order.*
- B. **Authority:** Pursuant to the authority granted to the County in C.R.S. 29-20-104(1) the review of such applications may include, without limitation: *It was suggested that in a county 1041 process the applicant has to propose 3 sites for an oil gas facility. Industry personnel may be familiar with the need to evaluate three sites under 1041 so it might work for them here.*
1. Land Use,
 2. Location and siting of oil and gas facilities,
 3. Impacts to public facilities and services,
 4. Water quality and source, noise, vibration, odor, light, dust, air emissions and air quality, land disturbance, reclamation procedures, cultural resources, emergency preparedness, and coordination with first responders, security and traffic and transportation impacts,
 5. Financial securities, indemnification and insurance as appropriate to ensure compliance with the requirements of Larimer County, and
 6. All other nuisance-type effects of oil and gas development.
- C. **Applicability:** These regulations shall be applicable to all oil and gas drilling and production activity commenced on any property in Larimer County, after the date of _____, regardless of what zoning district the property is situated in.
- D. **Severability:** If any sections, clause, provision, or portion of these regulations should be found to be unconstitutional or otherwise invalid by a court of competent jurisdiction, the remainder of the regulations in the section shall not be affected thereby and is hereby declared to be necessary for the public health, safety and welfare.

17.2. – Required Process and Permits

- A. Required Process:
- a. Oil and gas drilling and production activities in Larimer County shall require Special Review approval (Section 4.5). *Should we state when the approval must be obtained, i.e. prior to submittal to Colorado Oil and Gas Commission (COGCC)???* *Adapt and*

conform the special review approval so it is relevant to the particulars of the oil and gas industry vs other applications of the special review process. In addition to B below, is there something about the practices and time frames of oil and gas fracking which might suggest different timing notice and process requirements within section 4.5.3? Application of this to ag should be a test pilot project. Not clear it makes sense. . We were advised that the state requires concurrent processing of state and county permits. If true that would seem to respond to this question.

B. Supplemental Review Criteria for Oil and Gas Facilities:

- a. In addition to the Special Review criteria found in Section 4.5.3 of this Code, each oil and gas facility shall be approved only if it meets the following criteria:
 - i. It complies all the requirements of this Section 17.
 - ii. Reasonable and necessary mitigation steps have been taken to protect the public health, safety, and welfare and environment
 - iii. The exception from the special review process where an administrative decision is made in lieu of special review needs clear standards specifying the scope of administrative review, what shall be produced by the applicant and what standards will be applied to a decision upon administrative review. Perhaps a small simpler project request does not require all the submittals outlined in 17.5

C. Permits required: in the reg or in an information sheet there should be an explanation of where this land use approval special process fits in the development process of a fracking facility. This Section C seems to suggest that each of these is required before or after (unclear) the approval of the special review, presumably before.

- a. Access permits
- b. Building permits as required for structures
- c. Development Construction permit
- d. All federal, state and local permits for oil and gas operations

17.3. – Standards Required for all Oil and Gas Facilities

A. General:

1. All applicants are responsible for compliance with applicable federal, state and local laws and regulations for the operation of Oil & Gas facilities.
2. Oil and Gas facilities should be located to minimize impacts on agricultural operations.

B. Air Quality:

1. The use? shall comply with existing federal and state laws and regulations applicable to its operations and emission sources as well as any future laws and regulations adopted by the Colorado Air Quality Control Commission (AQCC).
2. Air contaminant emission sources shall apply for and comply with the permit and control provisions prescribed by the Colorado APCD C.R.S. tit.25, Art. 7 (C.R.S. § 25- 7-101 et seq.) and the rules and regulations promulgated by the AQCC all applicable emission sources.
3. Environmental Protection Agency (EPA) Reduced Emission Completions shall be used for all completions and well workovers following hydraulic fracturing, unless the application demonstrates that it is economically infeasible or impractical to utilize such a system.
4. Closed loop, pitless drilling, completion systems without permanent on-site storage tanks must be utilized for containment and/or recycling of all drilling, completion, and

flowback fluids, unless the application demonstrates that it is economically infeasible or impractical to utilize such a system. All emissions shall be routed to and controlled by a flare or combustor operated with at least 98% destruction removal efficiency.

5. Oil and Gas facilities shall be equipped with electric-powered engines for motors, compressors, drilling and production equipment, and pumping systems, unless it is demonstrated by the application materials the utilization of such equipment is not economically feasible or practical.
6. During construction and exploration, the applicant shall demonstrate that the site, including traffic and construction equipment, complies with all AQCC standards.
7. Oil and gas operators shall respond to air quality action day advisories posted by the CDPHE for the front range area by implementing air reduction measures, which should include:
 - a. Minimizing vehicle traffic and engine idling;
 - b. Reduced truck and worker traffic;
 - c. Delay vehicle refueling;
 - d. Suspend or delay use of fossil fuel powered ancillary equipment;
 - e. Postpone construction or maintenance activities; and
 - f. Postpone will maintenance and liquid unloading activities that would result in emission to the atmosphere.

With respect to Sections C and D below the group wanted to know what the County will do with the reports and information obtained. Would it be used for case by case enforcement, to discover trends in spills and how they are responded to? To consider amendments to these regs?

C. Leak Detection and Repair: It is unclear whether independent third party testing will be required. This would be in the reg vs the county leasing or purchasing testing equipment which would appear in the reg as a requirement for County-led testing. This should be run by CDPHE clarity and coordination with their practice and process. Does this suggest we need to be stricter than the State? Does this suggest there are certain types of facilities that the state does not inspect, test regulate that by this the County seeks to regulate?

1. Oil and gas facilities shall at a minimum conduct semi-annual leak detection and repair (LDAR) inspections using modern leak detection technologies and equipment. One of the Semi-annual LDAR inspections shall include a five-day notice to the County Local Government Designee (LGD and County Health Department inviting them to observe, at their discretion, the inspection.
2. Verified leaks to an oil and gas facility shall be reported to the County LGD and County Health Department within 24 hours of the discovered leak.
3. All verified leaks shall be repaired within 72 hours, unless technically or operationally infeasible.
4. Equipment leaks that pose an imminent hazard to persons, property, wildlife or the environment shall be shut down and not allowed to operate until the operator has provided evidence that the leak has been repaired.

D. Spills and Releases: With respect to Sections C above and D, there needs to be a definition of what constitutes a leak and a spill. Assuming there is something about in the State regs that comes thru 17.10 below on definitions, it needs to be clear whether the county definitions of leak and spill is more strict than or equal to the state definition of leak and spill in their regs. Consideration should be given as to Whether to incorporate the State definition into this reg for eases of enforcement and reference.

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1. Any spill or release at an oil and gas facility, including those reportable to the COGCC, shall be immediately reported, **no later than 24 hours** after the event, to the following local emergency response authorities in Larimer County:
 - a. Larimer County Sheriff
 - b. Larimer County Department of Health and Environment
 - c. Larimer County Local emergency Planning Committee
 - d. Larimer County Oil and Gas LGD
 - e. Local Municipal Police Department if within one mile of a city or town
 - f. Local Fire Department
2. All spills or releases shall be cleaned up to the satisfaction of the local emergency response authorities, listed in item 1 above. Remediation of spills or releases reportable to the COGCC may be deferred to the COGCC and CDPHE.
[is there such a thing as minimal or de minimize spills that do not require reporting or require reporting and fixing over a longer period? Vs major spills?](#)

E. Well Liquids Unloading:

1. Best management practices, including artificial lift, automated plunger lifts and at least 90% emissions when utilizing combustion to control venting shall be employed at all facilities.
2. Approved manual unloading shall require on-site supervision of the uploading process.

F. Noise:

1. A three-day (one day being a weekend day) baseline noise analysis from all receptors within 350 feet of the proposed use, or the property line, whichever is closest to the proposed oil and gas facility, shall be provided.
2. Predicted decibel levels shall be provided for various phases of development, as measured 350 feet from the site of operation/noise source (per COGCC) or at the property line of the adjacent land use, whichever is greatest. The type of land use of the surrounding area shall be determined by the County taking into consideration any applicable zoning of other local land use designation.
3. Proposed mitigation measures demonstrating that the oil and gas operations at any well site, production facility, or gas facility shall comply with the following maximum permissible noise levels appropriate for the zoning designation by the County:
4. Decibel levels shall meet the identified level for the appropriate activity and adjacent land use. Decibels shall be measured at 350 feet from the site of operation/noise source (per COGCC) or at the property line of the adjacent land use, whichever is greatest. The type of land use of the surrounding area shall be determined by the County taking into consideration any applicable zoning or other local land use designation.
5. Oil and gas operations at any well site, production facility, or gas facility shall comply with the following maximum permissible noise levels appropriate for the zoning designation by the County:

<u>ZONE</u>	<u>7:00 am to next 7:00 pm</u>	<u>7:00 pm to next 7:00 am</u>
Residential/Agricultural/Rural	55 db(A)	50 db(A)
Commercial	60 db(A)	55 db(A)
Light Industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)

In the hours between 7:00 a.m. and the next 7:00 p.m., the noise levels permitted above may be increased by ten db(A) for a period of not to exceed fifteen minutes in any one-hour period.

Construction projects (pipeline or facility construction/installation) shall be subject to the maximum permissible noise levels specified for industrial zones for the period within which construction is to be completed pursuant to any applicable construction permit issued by proper authority or, if no time limitation is imposed, for a reasonable period of time for completion of project.

G. Odors:

1. Oil and gas operations shall be in compliance with the Department of Public Health and Environment, Air Quality Control Commission, Regulation No. 2 Odor Emission, 5 C.C.R. 1001-4, Regulation No. 3 (5 C.C.R. 1001-5), and Regulation No. 7 Section XVII.B.1 (a-c) and Section XII.
2. Operations shall prevent odors from oil and gas facilities from affecting the health and welfare of the public during development activities including drilling, fracking, and flowback to the extent reasonably possible
3. A system shall be established for immediate response to odor complaints that includes options for ceasing operations, notification of affected residents, and temporary relocation of residents until the source of the odor is identified and resolved.
4. We encourage the Operator to communicate the schedule/timing of well completions activities to residents, which could allow for voluntary shutting of windows and air intakes or temporary relocation.

H. Dust:

1. Best management practices for the mitigation of dust associated with on-site and traffic activities shall be employed at the facility.
2. Produced water and other process fluids shall not be used for dust suppression.
3. Safety Data Sheets (SDS) shall be provided with the application for any proposed chemical based dust suppressants
4. Water only, unless otherwise approved by the County Health and Engineering Department, will be used for dust suppression activities within 300 feet of the ordinary high-water mark of any body of water.

I. Access:

1. Private access drives shall conform to the Local Low Volume cross section found in the Larimer County Rural Area Road Standards, and shall include the following:
 - a. The first 50 feet of access drive from the edge of pavement of the adjacent road will be paved and the remaining portions of the access drive shall be composed of a minimum of 6 inches of compacted Class 5 road base.
 - b. The access drive entrance shall include returns with a 30-foot radius.
 - c. The access drive shall be treated with Magnesium Chloride during the entire construction phase, and any time there after when the level of use exceeds 200 vehicle trips per day.
 - d. A mud and debris tracking pad shall be located at the end of the paved portion of the access drive.

J. Chemical Handling:

1. Prior to any hydraulic fracturing activity, the operator shall provide the County with a copy on the chemical disclosure registry form provided to the COGCC pursuant to the COGCC's "Hydraulic Fracturing Chemical Disclosure"..
2. Drilling and completion chemicals shall be removed from the site within sixty days of the drilling completion.
3. The following toxic, including orally toxic chemicals shall not be added to the hydraulic fracturing fluid:
 - a. Benzene
 - b. Lead
 - c. Mercury
 - d. Arsenic
 - e. Cadmium
 - f. Chromium
 - g. Ethylbenzene
 - h. Xylene
 - i. 1,3,5-trimethylbenzene
 - j. 1,4-dioxane
 - k. 1-butanol
 - l. 2-butoxyethanol
 - m. N,N-dimethylformamide
 - n. 2-ethylhexanol
 - o. 2-mercaptoethanol
 - p. Benzene, 1, 1'-oxybis-,tetrapropylene derivatives, sulfonated, sodium salts
 - q. Butyl glycidyl ether
 - r. Polysorbate 80
 - s. Quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides
 - t. Bis hexamethylene triamine penta methylene phosphonic acid
 - u. Diethylenetriamine penta
 - v. FD&C blue no 1.
 - w. Tetrakis (triethanolaminate) zirconium (IV) (TTZ)

w.4. It was felt the safety data sheet would be a more positive reliable indicator than a list of prohibited chemicals. This list is not realistic as to fracking fluids since it prohibits benzene, lead and mercury. This list should not be extended to apply to flow back produced fluids since the owner operator has little or no control over what percolates up or volatilizes from the subsurface or surface. Perhaps this list should be about requiring less toxic alternatives.

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K. Recycle, Reuse and Disposal of Fluids:

1. Drilling, completion flowback and produced fluids shall be recycled, unless technically infeasible.
2. Exploration and production waste may be temporarily stored in tanks while awaiting transport to licensed disposal or recycling sites.
3. Produced water shall be transported by pipeline unless economically or technically infeasible.

L. Water Bodies:

1. The applicant shall provide to the County documentation, as required by the COGCC, demonstrating how the COGCC water quality protection standards Are being complied with.
2. The Larimer County Health Department shall be provided with all water source tests, that are typically submitted to the COGCC or CDPHE.
3. Proposed oil and gas operations proposed with in a flood plain shall require review and approval of the Floodplain Permit prior to the Board of County Commissioners hearing for an oil and gas special review application.
4. Produced water disposal via wastewater injection wells shall not be allowed.

M. Visual:

1. The application shall demonstrate compliance with the visual and aesthetic rules of COGCC and the Larimer County regulations for landscaping, fencing and lighting for all phase of the development of the site.
2. All oil and gas facilities shall be painted with colors that are matched to or slightly darker than the surrounding landscape, and shall utilized paint with uniform, noncontracting, nonreflective color tones based upon the Munsell Soil Color Coding System.
3. The location of all outdoor lighting shall be designed to minimize off-site light spillage and glare.
4. Fencing shall for all the phases of an Oil and Gas facility development to ensure the security and visual aesthetics of the use.
5. Landscaping for screening and visual quality from off-site shall be required within 6 months from the time of well completion.
6. O&G facility applications, including access roads serving the facility, shall demonstrate how compliance with weed control requirements of the County Weed District and Forestry Services Department will be met.

N. Well Plugging and Abandonment:

1. Well abandonment and reclamation shall comply with the COGCC rules, and shall include the following:
 - a. Removal of all equipment from the well site,
 - b. Restoration of the site surface to the conditions of the site reclamation plan,
 - c. Notice to the County LGD of the commencement and completion of such activity, and
 - d. Coordinates for the location of the decommissioned well(s) shall be provided with the notice of the completion of well abandonment

O. Flammable Material:

1. The location of flammable materials on site shall conform to all COGCC safety standards and local fire codes.
2. A minimum 25-foot buffer, free of weeds and dried grasses, shall be required around anything flammable.

P. Waste Disposal:

1. Oil and gas facilities shall remain free of debris and excess materials during all phases of operation.
2. Burning of debris, trash or other flammable material is not allowed.

Q. Removal of Equipment:

1. There shall be no permanent storage of equipment on the site of an oil and gas facility.

R. When not in use, or no longer needed for on-site operations all equipment not being used on the site shall be removed.**Maintenance of Machinery:**

1. There shall be no maintenance of field equipment involving hazardous material within 300 feet of a water body.
2. Any fueling on-site shall occur over an impervious surface and shall not occur during storm events.

S. Flow Lines, Transfer Lines and Gathering Lines:

1. All off-site lines transporting process materials, production wastes, product and any other items used or generated by the facility shall be located to avoid existing or proposed residential, commercial, and industrial buildings; places of assembly, surface waterbodies and designated open spaces.
2. The location of pipelines shall be evaluated on a case by case basis, with determine locational factor being the size and type of pipeline being proposed.

T. Temporary Water Lines:

1. Temporary waterlines shall be used, unless technically infeasible.
2. Temporary waterlines shall be buried at all existing driveway and road crossing, or utilize existing culverts, if available.

U. Financial Assurance:

1. The operator must demonstrate the financial capability to reclaim all disturbed areas during each phase of the site development and following termination of the oil and gas operation on the site.
2. The operator must, for the life of the use, carry environmental liability insurance for gradual pollution events.

17.4.- Guidelines for Oil and Gas Developments

- A. Applications for oil and gas facilities are strongly encouraged to incorporate the following guidelines (best management practices). Where reasonably necessary the County may require some or all of the following guidelines depending on the location and characteristics of the proposed facility.
 1. To mitigate the adverse impacts of air emissions generated by oil and gas facilities, operatorsoperator are encouraged to:
 - a. use tankless production techniques,
 - b. use zero emission dehydrators,
 - c. use pressure-suitable separator and vapor recovery units,
 - d. use no-bleed continuous and intermittent pneumatic devices, or alternatives such as replacing natural gas with electric or instrument air, or by routing discharged emissions to closed loop-systems of processes,
 - e. use automated tank gauging,
 - f. eliminate all flaring except during emergencies or upset conditions, which shall be reported to the County (see std ____).
 2. To mitigate the adverse impacts of odor generated by oil and gas facilities, operatorsoperator are encouraged to:
 - a. Add odorants that are not a masking agent, to adding chillers to the mud systems,
 - b. Using filtration systems or additives to minimize odors from drilling and fracturing fluids except that the operator shall not mask odors by using masking fragrances,
 - c. Enclose shale shaker to contain fumes from exposed mud where safe and feasible,
 - d. Wipe down drill pipe each time drilling operation "trips" out of hole,

- e. Increasing additive concentration during peak hours provided additive does not create a separate odor. Additive must be used per manufacturer's recommended level,
 - f. Use minimum low odor Category III drilling fluid. This could include non-diesel based drilling muds including drilling muds that are low odor and do not contain benzene, toluene, ethylbenzene or xylene (BTEX), or
 - g. Apply 'green frac' methods, utilizing only sand and water as fracking materials or other 'green frac' materials agreed upon between the community and industry.
 - h. The Operator is encouraged to communicate the schedule/timing of well completions activities to residents, which could allow for voluntary shutting of windows and air intakes or temporary relocation.
3. To mitigate the impacts of multiple pipeline corridors, operatorsoperator are encouraged to consolidate and share pipeline easements and corridors, unless it is technically infeasible.

17.5. - Application Requirements [see comment above at 17.2 C regarding context/sequencing of this approval.](#)

- A. In addition to the submittal requirements necessary to demonstrate compliance with the applicable Sections of the Land Use Code, applications for oil and gas facilities shall also include, when relevant, the following: [should there be a chemicals handling plan regarding fracking fluids?? Is this subsumed in one of these plans or maps, possibly item g? If the SDS is submitted very early before a building permit or operating permit is issued, and before the contractor is hired to operate the constructed facility then the proposed listed of fracking fluids may change considerably from the early point of these submittals. Perhaps there should be a continuing duty to supplement at least as to fracking fluids.](#)
- a. A Site Inventory Map
 - b. A Safety Management Plan
 - c. A Containment and Spill Prevention Plan
 - d. A Noise Mitigation Plan
 - e. An Emergency Preparedness Plan
 - f. An Odor Mitigation Plan
 - g. A Hazardous Material Plan
 - h. A Dust Mitigation Plan.
 - i. A Site Security Plan.
 - j. A Production Water Supply Plan.
 - k. A Containment and Spill Plan.
 - l. A Waste Management Plan.
 - m. A Reclamation Plan
 - n. A Surface Use Agreement
 - o. A statement verifying the legal right to extract the mineral resources.

17.6. - Appeals

- A. Any decision made pursuant to this section may be appealed pursuant to Section 22 of the Larimer County Code.

17.7. - Enforcement and Inspection

- A. Applicants shall demonstrate compliance with the Larimer County Land Use Code, and with this Section. Failure to maintain compliance with the County approval of an oil and gas facility may result in the revocation of the approval pursuant to the procedures in Section 12 of the Land Use Code. The County retains the right to seek whatever remedy or redress is legally allowable.