Public Comments Submitted on the Draft Transition Plan for Phasing Out GE Crops on Boulder County Open Space Properties

as of November 30, 2016

Draft Transition Plan Comments

This is a report showing comments submitted regarding the Draft Transition Plan for Phasing Out GE Crops on Boulder County Open Space Properties.

Entries **1**-**34** of **34**

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
1	John	Wiener	Comment on the Draft Transition Plan to Phase Out GE Crops on Boulder County Open Space John D. Wiener, J.D., Ph.D., 30 November 2016 (Not representing the University of Colorado) Ladies and Sirs: This comment is in addition to a previous comment submitted on this issue in October. I am writing because of a great deal of agreement among the agricultural folks whom I know from work in agricultural water/irrigation issues. In very short form, I wish to state a few points on the need for ASSISTED TRANSITION: we need to restore soil fertility and resilience, and the tenant farmers need to be assisted with the costs of transition. 1. SOIL RESTORATION. There is strong evidence that conventionally farmed soils (such as those used for GE corn and sugar beet) can be restored to high levels of fertility. But, this takes some years, often up to 7, of soil restoration farming, such as avoiding tillage when possible, minimizing soil disturbance, and use of “cocktails” of cover crops which prove themselves in the location. The literature on cover crops addresses these issues, and is rapidly expanding. 2. TRANSITION COSTS .There is strong evidence that yield reductions are very common in conversion from high-input conventional farming to low-input or only organic input farming. There are two important consequences. (A) The net income is likely to be significantly reduced during the period of soil restoration. This may account for the sad level of failures of start-up organic operations on Open Space. Transition is expensive and soil restoration may take longer than the time required for USDA Organic certification. (B) The net income after soil restoration may be significantly better than under conventional farming, but it may depend on suitable markets for more complex rotations than those typically used in Colorado conventional farming. 3. There is a literature on the market for low-input but not certified organics (Adams and Salois 2010 is an excellent analysis) and there is a very significant level of support for direct sales, for farm-to-school, and intermediated sales (e.g. a broker in Denver handling 80 restaurants’ links to small farming). Boulder in particular has shown a strong appetite for local low-input direct sales as well as school and CU support for locally grown food. Key references: Kindly note the change in findings between the Badgley et al. 2007 paper, the Seufert et al. 2012 paper, and Crowder and Reaganold 2015 paper. On profitability, see also McBride and others (3 items), and the Hamilton et al. from USDA ARS and associate research. 4. ECONOMIC VULNERABILITY. Transition to long-term viability for small agriculture is increasingly urgent; there are many reasons for this (see Wiener, 2016) including economic structures, and also overproduction of commodity crops (including corn) leading to gross revenues from crops lower than costs (see Schnitkey 2016a, 2016b). The problem for many farmers is being locked-in with equipment investments and knowledge of management that makes transition away from increasingly financially unsustainable crops. While there are major opportunities for increased financial resilience from changed farming systems, with decreasing net, financial risks are increasingly threatening. They are on a treadmill of producing more and more at almost any cost, to increase the bushels while the dollars per bushel continue to be erratic but frequently negative without crop insurance, and that goes down as the yield increases under present insurance terms (Schnitkey 2016a, 2016b). We need to protect soil (our public resource and all soils everywhere!) by supporting transition, through short-term losses, while farmers learn and convert to more resilient and financially viable farming systems. Presently, even those in Boulder County are facing increasing vulnerability in too many cases. The numbers of farms by size class and sales class show that small operations – even those where the family is supporting the farm or “horse properties”– have peaked (USDA National Agricultural Statistics Service; see “quick stats” for Colorado; cited in more detail in Wiener 2016). 4. THE SOIL IS AT SIGNIFICANT RISK. There is a compelling interest in phasing out GE and annual monoculture crops which include bare-ground during parts of the year (or even worse, bare-ground fallowing in rotations such as dryland wheat	**Nov 30, 2016** 9:21pm

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			before the emerging revival of cover crops). The frequency of high-intensity precipitation has already been observed to be increasing. Further, the proportion of high-intensity precipitation to total precipitation is also increasing. There is also already-observed increase in night as well as day temperatures. The impacts of these changes on soil microbiology are not at all adequately known (see Hamilton et al. Eds., 2015, Hillel and Rosenzweig, Eds, 2013). The Soil Science Society of America (2011) and others have issued a very sharp statement on the unknown risks of climate change. Fortunately for the length of this comment, excellent recent assessment has been provided by the USDA Climate Hubs for the vulnerability of agriculture to climate change, including the vulnerability of soils to extreme precipitation and changed seasonality. In particular, Boulder County may face not only flood risks per se (as we have so fiercely experienced), but also increased risk of rain-on-snow events and unusual and damaging sequences of freeze-thaw as shoulder season weather increases in variability. And, the shorter time of hard-freeze season, with very likely increased interruptions by warm conditions, also affects soil stability without good structure, limited disturbance, and good cover. Because Boulder County is on the very edge of the Southwest USDA region, see also the Northern Plains region (USDA Office of the Chief Economist). A short summary of observed changes and solid expectations is provided by the Colorado Water Institute (2016) of Colorado State University, in a special issue on “Climate Smart Agriculture”. A larger set of references on these issues is available in a presentation titled “Getting ATMs Right” (2016), by John Wiener, posted at www.colorado.edu/ibs/eb/wiener/. 5. WHAT SHOULD BE DONE. This is a recommendation for the transition. (A) If the Rodale contract can be modified, reduce the expenditure for some kinds of work and focus on the demonstration of conversion to low-input farming systems with high diversification and soil restoration. (B) Undertake field trials of alternative crops, including oil-seeds (winter canola and camelina), which have been well tested by Colorado Extension and the Agricultural Experiment Station. There are two keys to economic viability which Boulder County can make available. (1) The oil processing can be less intensive and the oil used as biodiesel, which has substantial benefits for engines as an additive or major component. The oil can be refined further and both have good value as food-grade. The essential capital investment is in crusher-impeller machinery which can be obtained at moderate cost. Boulder County should become part of a benefit co-operative to process and market the diesel, which is a safer investment than might appear at first, because Boulder County uses diesel, and there are strong markets for local food. (2) The co-product is a meal which is high-fiber, high-protein, and high-calorie. The ideal location for the processing equipment is therefore in a small feedlot where cattle, sheep, goats, and poultry can be fed the meal. When the operation is running, the manures can be composted for soil application, or even better – and who better than Boulder? – used in a small anaerobic digester to produce and capture methane. The methane can be used for heating (e.g. grain drying, space heating), cooling (gas-operated refrigerators for food storage, space cooling such as for a meat locker), and for engine power (more of the fleet). (3) The substantial water savings over corn occur at the time of peak outdoor urban use demands, and also demands for additional agricultural supply, and are therefore a valuable source of revenue to partially off-set the yield reductions for some crops on the soils in need of restoration, and the net revenue losses likely for some years (see Wiener 2016 for illustrations of canola for corn, and canola for alfalfa from the Bessemer Ditch). (C) The farmers transitioning should be charged lower rental, as part of our investment in improving our land, and should be engaged in an additional benefit co-operative to provide sequenced production of vegetables for institutional use. To avoid unfair competition with the established vegetable producers, the co-op should not be limited to transitioning operations. (D) The Open Space farms should all be gradually converted to leases which provide incentives for soil fertility, lowered inputs and disturbance, increased diversity of production, and use of cover crops or perennials, agroforestry practices, and other means of increasing the resilience of the agriculture and the farmers. The use of co-ops is recommended to enable risk management and collaboration on the investments needed for new crops and farm improvements. Significant innovation may be unreasonably risky for too many farmers, but there is great knowledge available for trials if the risks can be managed well. Note: a “benefit co-operative” is a form of co-op which is not legally subject to the requirement that seeking share-holder profit is the dominant requirement for	

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		the organization, so that other purposes can be pursued and so that take-over by buyers of shares seeking cash-out or changes in operation can be avoided. (See citations in Wiener 2016). Selected References: Adams, D.C. and M.J. Salois, 2010, Local Versus Organic: A Turn in Consumer Preferences and Willingness-To-Pay. Renewable Agriculture and Food Systems 25(4): 331-341. American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, 2011, Position Statement on Climate Change. Madison, WI: American Society of Agronomy et al.; https://www.agronomy.org/science-policy/issues/climate-change Badgley, C., and 7 others, 2007, Organic Agriculture and the Global Food Supply. Renewable Agriculture and Food Systems 22(2): 86-108. Baveye, P.C., D. Rangel, A.R. Jacobson, M. Laba, C. Darnautl, W. Otten, R. Radulovich, and F. A. O. Camargo, 2011, From Dust Bowl to Dust Bowl: Soils are Still Very Much a Frontier of Science. Soil Science Society of America Journal 75(6): 2037-2048. Colorado Water Institute, 2016, Special issue of Colorado Water: Climate Smart Agriculture (Vol. 33 No. 1). www.coopext.colostate.edu/comptrain/docs/ColoradoWater.pdf. Crowder, D.W. and J.P. Reganold, 2015, Financial Competitiveness of Organic Agriculture on a Global Scale. Proceedings of the National Academy of Sciences Early Edition. www.pnas.org/cgi/doi/10.1073/pnas.1423674112. Delate, K., C. Cambardella, C. Chase, A. Johanns, and R. Turnbull, 2013, The Long-Term Agroecological Research Experiment Supports Organic Yields, Soil Quality, and Economic Performance in Iowa. Plant Management Network, USDA Organic Farming Systems Research Conferences Proceedings. Published in journal Crop Management doi:10.1094/CM-2013-0429-02-RS. DiGiacomo, G., R.P. King, and D. Nordquist, 2015, Organic Transition: A Business Planner for Farmers, Ranchers and Food Entrepreneurs. Sustainable Agriculture Research And Education Program SARE Handbook No. 12. Washington, D.C.: US Department of Agriculture. Gadermaier, F., A. Berner, A. Fliessbach, J.F. Friedel and P. Mader, 2011, Impact of Reduced Tillage on Soil Organic Carbon and Nutrient Budgets Under Organic Farming. Renewable Agriculture and Food Systems 27(1): 68-80. Gattinger, A., A. Muller, M. Haeni, C. Skinner, A. Fliessbach, N. Buchmann, P. Mader, M. Stolze, P. Smith, N. E. Scialabba and U. Niggli, 2012, Enhanced Top Soil Carbon Stocks Under Organic Farming. Proceedings of the National Academy of Sciences (of the U.S.) 109(44): 18226-18231. Hamilton, S.K., J.E. Doll, and G.P. Robertson, Eds., 2015. The Ecology of Agricultural Landscapes: Long-Term Research on the Path to Sustainability. New York: Oxford University Press. Hillel, D. and C. Rosenzweig, Eds., 2013, Handbook on Climate Change and Agroecosystems, Vol. 2: Global and Regional Aspects and Implications. Joint Publication with the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America. London: Imperial College Press. McBride, W.D. and C. Taylor, 2015, Price Premiums Behind Organic Field Crop Profitability. Amber Waves, September 25, 2015. Washington, D.C.: U.S. Department of Agriculture. McBride, W.D., and C. Greene, 2015, Despite Profit Potential, Organic Field Crop Acreage Remains Low. Amber Waves, November 2, 2015. Washington D.C.: U.S. Department of Agriculture. McBride, W.D., C. Greene, L. Foreman and M. Ali, 2015. The Profit Potential of Certified Organic Field Crop Production. ERS Economic Research Report No. 188. Washington, D.C.: U.S. Department of Agriculture. www.ers.usda.gov/publications/err-economic-research-report/err-188. Reganold, J.P., 2013, Comparing Organic and Conventional Farming Systems: Metrics and Research Approaches. Online. Crop Management doi: 10.1094/CM-2013-0429-01-RS. Rogus, S., and C. Dimitri, 2015, Agriculture in Urban and Peri-Urban Areas in the United States: Highlights from the Census of Agriculture. Renewable Agriculture and Food Systems: suppl., Innovations and Trends in Sustainable Urban Agriculture 30(1): 64-78. Sayer, J., T. Sunderland, J. Ghazoul, J-L. Pfund, D. Sheil, E. Miejaard, M. Venter, A.K. Boedhihartono, M. Day, C. Garcia, C. van Oosten and L. Buck, 2012, Ten Principles for a Landscape Approach to Reconciling Agriculture, Conservation, and other Competing Land Uses. Proceedings of the National Academy of Sciences 110 (21): 8349-8356. Schnitkey, G. 2016a, “2017 Crop Budgets, 2016 Crop Returns, and 2016 Incomes." farmdoc daily (6):183, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, September 27, 2016. Permalink: http://farmdocdaily.illinois.edu/2016/09/2017-crop-budgets-2016-crop-returns-incomes.html Schnitkey, G., 2016b, “2016 Gross Revenue and Income Projections for Corn and Soybeans in Central Illinois." farmdoc daily (6):224, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, November 29, 2016. Permalink:	

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			http://farmdocdaily.illinois.edu/2016/11/2016-gross-revenue-income-projections-central-il.html Seufert, V., N. Ramankutty, and J.A. Foley, 2012, Comparing the Yields of Organic and Conventional Agriculture. Nature 485 (7397): 229-232 [plus methods page]. U.S. Department of Agriculture, Office of the Chief Economist, Climate Hubs Assessments: https://www.climatehubs.oce.usda.gov/content/regional-vulnerability-assessments. This provides access to all of the assessments. Wiener, John D., 2016, "Getting ATMs Right", an essay in powerpoint ™ organized for ease of use; posted at www.colorado.edu/ibs/eb/wiener/ which also offers additional presentations from assorted professional meetings and other materials.	
2	John	Dillman	To the BOCC, I am John Dillman, Regional Sales Manager for Betaseed, Inc. Betaseed Inc. is the largest sugar beet seed company in North America. We do not have any non-GE sugar beet seed and are not forecasting a production of non-GE sugar beet seed for the Colorado market. Sincerely, John Dillman Regional Sales Manager Betaseed, Inc.	**Nov 30, 2016** 2:51pm
3	Marcia	Rickey	Dear Commissioners, I do not support the decision to transition from transgenic crops. Transgenic crops have been approved by three federal agencies (the EPA, the FDA and the USDA). BCPOS's 2011 Cropland Policy also contained additional mitigation measures such tracking which fields were planted with transgenic versus conventional and crop rotation to prevent herbicide resistance. Transgenic crops are safe, sustainable, and science-based and should be part of BCPOS's agriculture allowed uses. However, the issue now is given that the commissioners approved the transition, how should that be done? The current plan does not have enough detail for the BCPOS tenant farmers to plan for the transition. I recommend that commissioners delay approving the transition plan until: • BCPOS conducts a farmer transition impacts survey. A survey could be mailed to each tenant, asking questions such as: o Will the transition away from transgenic crops affect your water use? If so how and by how much, please be specific and show your methods for estimating changes in water usage. o Will the transition away from transgenic crops affect your herbicide use? If so how and by how much, please be specific and show your methods. o Will the transition away from transgenic crops affect your fuel use? If so how and by how much, please be specific and show your methods. BCPOS could summarize the results of the survey including county-wide farmer-estimated changes in water, herbicide, and fuel. These results could be presented to the commissioners and the public. • A study is conducted on the economic impacts for the farmers and citizens of Boulder County of the transition. The results could be presented to the commissioners and the public. • The commissioners provide detailed written answers to the farmer's submitted questions. • The commissioners detail for the public for what the estimated $450,000 per year for the Pennsylvania Rodale Institute will be used. Thank you, Marcia Rickey, Boulder	**Nov 30, 2016** 7:45am
4	Erik	Johnson	I can well understand why the farmers leasing POS ag land do not want to be told how to run their businesses. However, landowners regularly place restrictions on the activities conducted by renters of their land - see any residential lease. So I believe the opinion of Boulder County citizens should be respected, and the POS land should be transitioned away from GE crops and toward alternative food and fiber crops. Here is a list of alternative crops and products that could be profitably grown on Boulder County agriculture parcels. Heritage wheat – in demand by artisan bakers. Conventional wheat. Heritage varieties of corn. Oil crops – including corn, soy, hemp, sunflower, rapeseed, borage, flax, and wheat germ. Beans including garbanzos and pintos. Malting barley. Hemp for fiber. Animal grazing including pastured poultry. Organic feed and silage. These alternative crops will require changes in equipment, inputs, storage, processing, transportation, and marketing. Farmers will need support from the public to make these changes. But all these crops and others are being grown in similar soil and climates up and down the front range and plains. Please continue your plans to transition our POS ag land.	**Nov 30, 2016** 7:33am

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5	Cathern	Smith	I support the phase-out of GMOs as promptly as possible. The use of pesticides, including glycophosphate, has consequences for the health of the entire ecosystem, including soil, waterways, beneficial insects, and humans. Recognizing this, many European countries have already banned its use. Also, GMO seed is available from a small number of corporations and it's use supports an agricultural system which is antithetical to local control. Please phase-out GMO in the next growing season if possible. Thank you.	**Nov 30, 2016** 7:10am
6	Louise	Brooke	I live in Boulder County and I ask that you represent me, my family and friends, coworkers and many acquaintances by requiring that no GMO crops or glysophate be used on open space crops in the county. Thank you.	**Nov 30, 2016** 6:29am
7	Barbara	Weirich	Under item #3, please note that most soil tests were designed between 40-60 years ago, which viewed the soil as a mixture of chemicals rather than a community of beneficial organisms. Under item #4, I want to mention the Farming Systems Trial (its 30th year was in 2011) and it has had many partnerships with the USDA. The trial has only been for corn and soybeans. Over the 30 years the results are a resounding endorsement for organic, especially during drought years. My information is from the book, The Soil Will Save Us, author, Kristin Ohlson.	**Nov 29, 2016** 3:10pm
8	Dale	Durland	Please proceed with the Draft Transition Plan without further delay. The research has been presented to the Commissioners at multiple public hearings over the years. Legitimate SCIENTIFIC concerns regarding the environmental and public health impacts of GM0s have been presented. Requests for more "research" is a tactic intended to prevent the transition from ever being accomplished. I support the plan to involve the highly regarded Rodale Institute which has 30 years of experience comparing agricultural systems. I believe their assistance will benefit everyone. To be clear, FAIR is not a local grassroots organization. I was present in Longmont at the hearing before the previous County Commissioners when boxes of hats with the FAIR logo were delivered. Local farmers looked at each other and said "What is FAIR?" They had no knowledge of any such organization. I believe special interests created the acronym to deceive the public and preserve their profits. I don't think FAIR has a legitimate place in this discussion. During the last election, I was tempted to vote for a candidate for Commissioner whose positions on subdivision repaving and and the Twin Lakes Development would have directly benefited me. Instead, I supported Elise Jones and Deb Gardener because I believe eliminating GMOs from our public lands is such an important issue. Lets get on with it.	**Nov 29, 2016** 12:37pm
9	Terry	Mast	I wish to indicate my strong support of the GE/GMO crop phase-out on Boulder County lands. As an adult student of nutrition therapy and a future therapist for individuals suffering chronic diseases using the power of natural foods, I speak for our bodies' need for unadulterated, whole foods with biochemically identifiable proteins and amino acids (not altered) for health and healing. Our ability to provide non-GMO corn within Boulder County, for example, would be a win-win and set a brilliant example for what is possible. As with sources of soy, finding regional, sustainable, unadulterated corn products is nearly impossible. I would be so proud if our county lands could be a source of these important food products. My thanks for your efforts toward this end.	**Nov 28, 2016** 11:06pm

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
10	Mark	Hotchkiss	Dear Commissioners Domenico, Gardner, and Jones: I am a forty year Boulder County resident, CU graduate, and engineer who has written to you before concerning your embarrassing decision to move forward on a plan banning GMOs from Boulder County rented land. I find it unbelievable that in a city and community that boasts a record of Nobel laureates, space, biological, and medical awards, programs and people with truly scientific minds, you would continue to push for such a completely scientifically baseless and ignorant policy. Again, this is really insane. I again ask you why? Why are you doing this? What reason based in science, history, experience, and clear thinking, brought you to take this abusive land use action which will greatly impact the farmers, landowners, and me as a taxpayer and citizen? This meaningless gesture to fearful people only reinforces their fears, and has implications outside of our community. It promotes "junk science" and that costs lives in the long run. Like farmers in Africa whose dictators hear that GMOs are "evil" and prohibit their use that can quadruple their yields. You can't be allowed to explain it with a simpleton explanation like "We thought DDT was safe at one point", as Linday Diamond reported in her opinion in The Camera: http://www.dailycamera.com/guest-opinions/ci_30596437/lindsay-diamond-boulder-county-need s-science-literate-leadership Are you kidding? We already know that being in the sun is not safe yet you surely take that risk and walk outside everyday. And that measure of risk is at far worse than eating GMO corn or sugar beets. You aren't fooling anyone with such tired answers. You are continuing to embarrass our community with the stereotypical 1960's hippy policies that I grew up with that have no basis in science, while feigning to be members of a scientific community. You make fools of us all by your junk science fears. We've already been ridiculed on the editorial pages of The Wall Street Journal for this foolishness. And The Denver Post. Go ahead with your expensive and destructive plan. You will damage this county economically, politically, and teach our children to be afraid of everything. Good luck with that. You have to have seen this video before, you should. You should probably know the guy who is speaking. https://www.youtube.com/watch?v=1ecT2CaL7NA You still have time to correct this ridiculous course of action. You still can't explain your motivations. Mark Hotchkiss 7291 Brockway Drive	**Nov 23, 2016** 12:21pm
11	Susan	Pfretzschner	Round Up Ready GMO crops are contaminating our soils and killing our bees. I applaud the plan to phase out GMO crops on Boulder County owned land, but would like the process to be accelerated. The poisons from GMO crops stay in the soil for 7 years or longer, negatively affecting unsuspecting bees, birds and other wildlife, not to mention humans who work the fields or ingest the food products. Please take a strong stance for our children.	**Nov 21, 2016** 9:49pm

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12	Lauren	Richardson	I would like to voice my support of the direction this plan took during the last Open House. I just reviewed the notes from that meeting and the Transition Plan and am impressed by how far this conversation has come since it started years ago. I used to attend the original Cropland Policy discussions and found them divisive and stressful to say the least. Now your organizations have come around to considering a path forward that takes into account using our resources for partnered research and a hope for measured transition for our agricultural land. I hope moving forward you recognize the valuable opportunity in partnering a Land Grant university (CSU) and an institute that is practiced in this kind of research (Rodale). Viewing others comments I can see the tendency toward worrying that one organization or the other would not be neutral enough, but that is the beauty of the partnership! I also appreciate the perspective that there should be a period of research, specific to our climate, before transition is attempted or required. I believe a 5 year period would be a significant enough window for researchers to be able to show their outcomes and at that point encourage or insist upon transition. I must say I'm not too keen on the requirement being that the current land managers transition from GE Corn or Beets, back to what they remember as "conventional" ways of growing those same crops. That seems like a somewhat crazy step in the wrong direction and not to address any of what the tax-payers or farmers want to accomplish. I think the best way to determine the correct alternatives are through creative research. I also am not sure the partnership should stop at CSU/Rodale. I believe there are other entities that would enter into this partnership that have experience with farming in the west. Consider reaching out to others, such as Western State Colorado University's Environmental Management program, The Nature Conservancy, NRCS. There are some great minds out there - get them all in the room! Thank you for your time and energy and I'll see ya on Thursday for the next round of reviews.	**Nov 12, 2016** 1:24pm
13	Abby	Levene	The Parks and Open Space Dept. has made it clear that its mission is to promote sustainable agriculture, both from environmental and climate change perspectives. Does the transition plan's move away from GMOs fit into that mission? And if not, why was this plan created?	**Oct 24, 2016** 10:02pm
14	Mark	Guttridge	The plan is well thought out, there were a couple points worth raising: 1) No mention of neo-nics seed treatments and their phase out. Given the mounting evidence of using proper nutrition to prevent pests and disease damage to plants, the idea of treating seeds with neo-nics is more commonly thought of as a violation of IPM principles, and that practice should be phased out of open space properties sooner rather than later. We heard at the GMO hearings that neo-nic can be made available. 2) I'm concerned that farmers of all sizes are in a difficult position right now financially, government policies have marginalized farmers of all sizes and the same policies and practices are taught by CSU, Extension, and promoted by Open Space for many years. Just bringing in Rodale isn't going to solve the problem on its own, the transition plan should engage other stake holders like CU, Boulder County Farmers Market, local non-profits. Research should occur on current farms, so that farmers are engaged in the process. Extension and Rodale can serve as advisors but giving them money to run their own demonstration plots delays the benefits to our farmers. Investment should be primarily in those transitioning farmers that show cooperation in early adoption and hosting research sites.	**Oct 24, 2016** 4:59pm

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15	Mary	Mulry	Dear Commissioners, Frankly, as a concerned and active citizen on this topic and a member of the Food Systems Advisory Council, I was shocked that after 6 months of work by the County staff, the public was presented with a three page document with a shocking lack of detail and an incredibly long timeline for the transition. We elected you, Deb Gardner and Elise Jones on the platform to transition out of GMOs on Open Space land in 2012. Now you are asking the public to wait until 2020 and 2022 to remove GMOs form Open Space lands. That is eight and ten years to remove corn and sugar beets respectively. That means for the next 8-10 years, we will be: using neonics on public lands; we will be spraying unnecessary amounts of glyphosate on public lands; we will be delaying the transition of these lands to organic production; and we will be shirking our responsibility to build soils and improve the sustainability of these lands. The public has weighed in many times and now you want us to go to three public hearings to comment on a transition plan that we have spent hours of time providing research and input on and hours of time testifying, only to see that none of the public input (with the exception of increased monitoring) was addressed in this transition. We are talking about less than 2000 acres which should have already should have been transitioned given the amount of time we have talked about it. There are other crops that can be used instead of GMO crops in transition and we all know that. The farmers are farming a public resource and we want that resource to be farmed without GMOs. We have sent that message multiple times. I support the research initiative with Rodale and CSU scientists like Dr Gene Kelly who are working on progressive projects. We must listen to those working on cutting edge initiatives and not those in the biotech industry's pocket, which is all we have heard from before from CSU. There are progressive and organic initiatives and those scientists should be consulted by a progressive and leading US county such as Boulder. I have no interest in seeing the tenants removed from these lands, but we need to provide truly sustainable alternatives and not those drummed up by the biotech industry. We need organic and regenerative agriculture that does not poison our Open Space with neonics and glyphosate, but builds soil tilth for the future. I support enhanced data collection and monitoring to assist the County in managing these lands to their highest and best use. We have a 25000 acre county farm and we need to start managing it for maximum productivity, economic return and sustainability. We must not leave it solely to the tenants to decide what they are going to grow. I recommend that you ask farmers to transition out of conventional corn and sugar beets immediately with the 2017 crop year. The farmers need to diversify their holdings and grow crops with better rates of return than the commodity crops they are growing. The prices for organic corn are 3-4 times conventional corn and even nonGMO corn is selling at a premium. Sugarbeets are selling for $40 to $45 per TON or about $1.4 cents per pound which is the price they received back in 2007 before the recession. Processed sugar beet prices are $0.15 BELOW the price of processed cane due to the consumer rejection of GMOs. Costco is buying farmland because they can't find enough farmers willing to supply organic produce to them. We all know there are other alternatives to these GMO commodities. Please commissioners, use your leadership and vision to move these farmers off their dependency on a failing technology sooner rather than later. As a committed member of the public, I implore you to reject this timeline as far to long. I think Elon Musk will fly people to Mars before this plan timeline is up. Sincerely, Mary C. Mulry Ph.D. CFS 12855 N 66th Street Longmont CO 80503 foodwiseone@gmail.com 303 6413685	**Oct 24, 2016** 4:57pm

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16	Richard	Miller	my comments are very specific to the plan and the BCC decision. It has been proven that the BCC had already made up their minds about banning GMO crops on BCPOS the day they were elected. Emails obtained through The freedom of information act verify that Elise Jones and Deb Gardner had committed to serving their environmental activist constituents at the expense of BCPOS farm tenants, the land which they own and control, the environment, and the residents of Boulder County for their own political gain. Their public hearings were nothing but a political dog and pony show to try to appear to masquerade their actions and intentions. They bullied their staff to produce a whitepaper document to back up their position. When that didn't work they refused to release the documents supporting the continued use of GMO technology. When it was obtained they had omitted sections of the report that had been generated and refused to take the recommendation of POSAC, their appointed advisory board, to continue the use of GMO technology. Asking for continued public and tenant input is a insult to the intelligence of the people that they serve. The only transition plan should be for Elise Jones and Deb Gardner is gracefully resign and apologize to the residents of Boulder County for their poor decisions and bad behavior during their terms in office. GMO technology was developed to reduce pesticide use, conserve our natural resources, and help protect the stewards of the land. Gardner has now backtracked and said she isn't opposed to GMO technology publically but is opposed to increased pesticide use caused by the GMO technology. That statement alone should disqualify her from holding her elected office. It displays the lack of understanding of the science and safety record behind the technology or a desperate attempt to duck and dodge the issue. Embracing GMO drought resistant corn requires no additional pesticides, it saves precious water. Either way, shame on you Deb, thanks a lot for not caring about the integrity or consequences of the disastrous decision you made. We all know you do what Elise tells you to do. Why don't you try thinking for yourself on an occasional basis and make decisions to benefit the voters that elected you.	**Oct 24, 2016** 4:57pm

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
17	Virginia	Schultz	http://imgur.com/gallery/N4cUA Created by Imgur user Fejetlenfej , a geographer and GIS analyst with a 'lifelong passion for beautiful maps,' it highlights the massive expanse of river basins across the country – in particular, those which feed the Mississippi River, in pink. ~Your air is my air ~ Our soil our bones and our food ~ And water our life-blood~ -VS WHEREAS: You/we have an obligation to not just care about the output and the uses of land, but the input and all users in and on the land: composers of sunlight to decomposers, fungi to flies, grasses to grazers, microbes to mites, predators to prey, trees to transient users. And, in nature there is no waste. WHEREAS: Monitoring/restoring the soil is specifically called for in the Cropland Policy (and the cannon of history). It is therefore, imperative that the on-going, long-term living health of the soil biome must be primary in all decisions. Furthermore, as there is no need in a natural system to use neonicotinoids or GE seeds their use on publically-held Boulder County land should all be phased out within a maximum two-year timeframe. (These "remedies" are only in response to the injuries caused by a diseased and dying ecological and economic systems.) Further contamination of neighboring crops, continuing ecosystem damage and subsequent economic dependencies add to the urgency of this transition. WHEREAS: The Boulder County Open Space is co-owned and all residents are the stewards; POS is empowered to make decisions on behalf of the entire system. I urge you to look at the map of our water systems above and embrace a broader picture of the importance of your deliberations and to embrace this opportunity to move toward regeneration of an ecosystem. Now you can move away from basing your decision on the extraction from or property of the few. You are the ones to give voice to the truly voiceless and are at a moment in time when deep changes can be made and deep damage repaired. WHEREAS: Our collective disrespect for land/soil is seen in our misuse of food and the subsequent grotesque amount of food waste. POS has an opportunity to start here with agricultural lands under its stewardship to restore the balance in the soil and reconnect us to our most fundamental experience of nature – the eating of food. The seeds you are planting for a High Plains Food & Land Systems Innovation & Research Cooperative is the perfect way to make a genuine investment in our future and in knowing that we are eating soil/water/air/sunlight in the gift of food from plants and animals. What we do here matters... Respectfully submitted in the land of the Arapaho, Cheyenne, Ute and others before, Virginia Schultz map published at: http://www.dailymail.co.uk/sciencetech/article-3860062/The-veins-America-Stunning-map-shows-river-basin-US.html#ixzz4Nq9DaG1T By Cheyenne Macdonald and Mark Prigg For Dailymail.com Published: 12:23 EST, 21 October 2016 | Updated: 12:46 EST, 21 October 2016	**Oct 24, 2016** 4:54pm
18	Ron	Robl	ALL GE crops should not be banned. There are advantages to some GE. And banning ALL is a shortsighted approach. Microbes are the workhorses in soil. Banning the use of GE will increase soil tillage. Increase tillage decreases microbe numbers. You are doing exactly the opposite of what you should be doing to improve the soil. Also more irrigation will be required and more fuel used. The implementation plan nothing more than war on the tenants. How can they continue with higher costs, lower production and in the case of beets a total loss on an income source? How much is this costing the taxpayer? Lower rents, higher subsidies, more staff, more experimenting, etc.	**Oct 24, 2016** 3:56pm
19	Peter	Newton	I am glad to see that the draft Transition Plan includes a plan to conduct research on how best to conduct sustainable agriculture in Boulder County. However, it would seem prudent to: a) conduct this research, b) assess the evidence base for the sustainability of the proposed alternative farming system, and c) publicly publish this research and assessment, before any transition away from the current system begins. As proposed, the Transition Plan will move farmers away from a functional farming system into a new system without an adequate understanding of whether it is agronomically and economically viable in this local context. Best wishes, Peter Newton, Assistant Professor, Environmental Studies Program, CU Boulder	**Oct 24, 2016** 3:21pm

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
20	Terry	Parrish	Page 2 Item 2 "Support agriculture in Boulder County" says you will transition tenants with alternative agricultural opportunities, and research value-added products and new markets. The fastest growing and highest value product on the market today in Colorado specifically, is industrial hemp. Currently the Parks and Open Space position is that hemp production is not allowed on Open Space property. The concern appears to be that federal funds might be withheld or require repayment because of violation of federal law. The open space we lease was not purchased with federal funds, is not leased with federal funds, and no federal funds would be used in production of the industrial hemp. The feds have no reason to be involved or concerned. This plan is the right venue and time to change that. The policy will be reviewed by Staff, POSAC, the BOCC and constituents. "Industrial hemp" means the plant of the genus cannibis and any part of such plant, whether growing or not, with a delta-9 tetrahydrocannibinol concentration that does not exceed three-tenths percent on a dry weight basis. (Amendment 64 to the Colorado Constitution) The stuff won't get anybody high. The Colorado Department of Agriculture has staffed up with Cannibis professionals to assist producers, with methods to get seeds, and to advise. John Deere has dedicated an entire division to creating cannibis cultivation equipment. Industrial hemp was a huge business in the 1920's before it became illegal. It will be a lot larger in the future. Current rules hamstring farmers of leased farm land in Boulder County by eliminating one of the most value added crops available. I will attend the meeting on the 27th to answer questions. My phone number is 303-848-8469. Thank you. Terry Parrish Parrish Ranch Conservation Partnership, LLLP	**Oct 24, 2016** 2:02pm

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
21	Paul	Pfenninger	Parks and Open Space Staff and County Commissioners, The Beet Sugar Development Foundation is a non-profit research organization focused on supporting the United States beet sugar industry. We firmly disagree with your plan to phase out genetically modified sugar beets. There is extensive peer-reviewed literature demonstrating the reduced environmental impact of sugar beet production using genetically engineered crops versus conventionally grown beets. This reduction in environmental impact comes from improved plant health, improved yields and quality, reduced water consumption, reduced fossil fuel usage, use of safer chemicals less often and reduced carbon emissions. Parks and Open Space staff collected comparative data from the farmers raising crops in Boulder County. Their findings were identical to those of the peer-reviewed studies, showing use of genetically engineered crops is the most environmentally and economically sustainable practice in the county. It is unfortunate two county commissioners have elected to ignore all fact to follow an ideology. They supported this policy by saying they knew of better alternatives for all farmers to use on Open Space land that would be better for the environment and economically viable for the growers. These same two commissioners have now directed Parks and Open Space staff to develop a transition plan. However, this plan simply outlines the need to phase out GMOs and does nothing to outline what the better alternatives are which the farmers should be mandated to transition to. The commissioners must address the following before the plan is considered complete: • From the Parks and Open Space analysis, organic farming was found to be the most environmentally impactful farming method. Both commissioners opposed to GMOs said organic farming only looked bad because no till organic was not considered. How can the commissioners stand by preventing climate change while still allowing organic farmers to use environmentally impactful production methods? How will the transition plan be modified to contain a mandate for all organic farmers to use no-till practices when farming on Open Space? • There are no sugar beet seed companies that develop or sell conventional hybrids in the United States. How will the county ensure access to seed adapted for the environment of Boulder County? Our growers are contractually obligated to produce their shares of sugar beets or face stiff financial penalties. No transition plan is complete without ensuring access to conventional seed. • United States beet sugar companies have long held bans on importing seed from Europe (the only source of conventional seed). How will the county work with seed companies, federal agencies like APHIS and the Colorado Department of Ag to get appropriate permits for importation of treated seed which may also contain novel weed species not currently found in the United States? • If conventional seed were to become available, that seed would undoubtedly be missing several key native disease and pest traits. Our currently approved GMO hybrids contain these traits and therefore effectively defend themselves against pests and disease without the need for chemicals. It is highly likely the growers in Boulder County will need access to highly toxic chemicals to control pests. How will the county work with the federal government to get special use permits (section 18) so that the farmers will have a viable, harvestable crop? • Several key conventional herbicides are no longer registered or produced for sugar beets. How will the county ensure access to their chemicals? Who will be responsible for paying for costly registration fees? Who will do the training on appropriate PPE, handling and disposal for farmers who are no longer familiar with using these classes of chemicals or if regulations have changed? In closing, the plan as we see it is not complete. It is wrong to force the farmers to give up tools which make them the most sustainable farmers in the county without having a firm plan in place first which shows a viable, more sustainable alternative to transition to. The two county commissioners made big promises to the Boulder County community about better ways to farm. Nothing in this plan follows through on those promises. Until those alternatives are thoroughly vetted at the small and large scale, no phase out of GMOs should occur. The alternative is a major step backwards.	**Oct 24, 2016** 10:30am

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
22	Rebecca	Larson	The transition plan as written today is a farce. It only serves to demonstrate the two county commissioners behind this plan have no concept of farming or the complexity behind agriculture in the arid west. The plan as written today is not a transition plan, but rather a phase out plan solely targeted at conventional farmers. The plan clearly calls for a removal of GMOs, the most sustainable farming practice in the county today according to Parks and Open Space staff, but does nothing to mandate alternative practices for all farmers which will ultimately be better for the environment. Deb and Elise repeated said organic production is better than GMOs since it too can be no till. Where is the mandate for no till organic? It is not required for all Open Space land to be farmed organically (only 20% by 2020) so how can farmers raise conventional crops more sustainably than GMOs? This is not in the plan. The county commissioners who are committed to fighting climate change have shown with this plan that their commitment is in thought alone, not action. There are years of research and scale up studies which need to be done by credible research organizations in our environment to prove there is a viable alternative before any phase out should commence. As it stands today, this plan puts our community and our farmers are greater risk for no scientifically justifiable reason, just pandering to activist organizations and vested parties in the organic industry who wish to have better, cheaper access to forage their dairies. The county commissioners need to give serious thought to the following when it comes to the Western Sugar beet farmers in the county: 1) how will they access conventional seed?, 2) who will pay their fines and penalties due the cooperative if they can't access seed and produce their contractual shares?, 3) who will cover all the losses on the specialized equipment only able to be used on a beet crop?, 4) who will obtain registrations and production of long phased out conventional herbicides needed for sugar beets?, 5) who will manage the containment of possible weed beets introduced into the environment through seed imported from Europe?, 6) who will obtain section 18s for soil fumigants and insecticides which will be necessary for these ill adapted imported hybrids?, 7) sugar beets are not an open market, so who will work to get conventional hybrids tested and approved for sale in the Western Sugar market?, and 8) who will pay for pile losses for the cooperative as a whole brought about by introduction of ill adapted hybrids with more disease going into storage? These questions are just the tip of the iceberg as far as what needs serious consideration before a timeline for phase out can even be considered. To start the clock ticking now simply shows the commissioners are pandering to a vocal minority and know their claims made about better alternatives are all false. If they believed in their claims, those practices would all be included in the transition plan as a mandate. They have made this poor decision despite all the experts around them showing them the real and damaging implications of this decision. It is now time to hold their feet to the fire and hold them to following through on all their boastful claims; implement the mandate for no till organic.	**Oct 24, 2016** 9:24am
23	Denzel and Kathy	Henry	The proposed Cropland Policy will put irrigated farmers of Boulder County owned cropland at an extreme disadvantage. Our guess is it will end farming as it has been on Boulder County owned land in the past. We doubt sugar beet seed that is not genetically modified will be available and even if seed can be found the obnoxious mix of chemicals needed for very reasonable weed control won't be available. If seed and chemicals can be purchased, input costs will be much higher and yields will be much lower. We live in an area of very high weed pressure with long open irrigation ditches and prevailing west wind, and with the way irrigation water is delivered, small scale organic farming would be next to impossible. If the Cropland Policy is adopted, our future vision is a good number of acres of untended weeds instead of the well-tended fields we now have. Thank you.	**Oct 23, 2016** 5:26pm
24	Donald K	Davis	10/23/16 In above statement from 3/17/16 the Commissioners directed the BCOP staff to " to work with local farmers to develop a transition plan for phasing out the use of herbicide resistant GE corn and sugar beets...." From what I see here there's minimal farmer input in this draft "plan", just the staff. Further the opening statement of the draft plan indicates the staff has changed this directive to "staff was to develop a plan". Also, from reading the printed statement from the commissioners it appears the staff interpreted that differently than was stated. Within the statement from the commissioners is, "develop a transition plan for phasing out use of herbicide	**Oct 23, 2016** 3:44pm

	Name	Last	Comments on the Draft Transition Plan Note: comments..	Date Created
			resistant GE corn and sugar beets". The staff's draft says, "phase out of genetically engineered (GE) crops-specifically, glyphosate resistant corn and sugar beets". Which is right here? Are you interested in getting rid of engineered drought tolerance, insect and disease resistance, enhanced quality aspects to crops, other herbicide resistance and all other new technological advances or do you just want to ban use of glyphosate resistance technology? As an agricultural consultant, I've worked for many years with many of these producers and have helped them to develop sustainable cropping systems which work for them. Seems like you need to be listening to what they think is sustainable since it is their livelihood you're affecting. In addition, from the county's own data shows in general their sustainability has been to the county's benefit as well, both environmentally and economically. To that end I think the F.A.I.R suggested alternative transition plan would be a much better draft plan. Within the statement of the BCOP's draft transition plan there's wording directed to the fact that NO conventional (non-GE) beet seed is currently available for sugar beets grown in the area. There's little likelihood there will be even by 2021, though there's likely to be lots of new engineered technology by then. Therefore, this policy is essentially banning sugar beet production after 2021 on open space ground. Given this I think the draft plan should include a buy-out plan for beet producers should prognostications prove to be incorrect. Since beets are grown in a rotational cropping system, potential herbicide resistance issues are dealt with during the alternative cropping years anyway. Sugar beet production in the area does far more than just provide a sustainable dependable and profitable crop in rotation. Developing a very deep root system, often as deep as 20 feet, beets pull water and leached nutrients from the deeper soil profile minimizing issues associated with leached nitrogen, saturated sub soils and other sub soil issues. Drought and frost tolerances allow for production even during extreme climatic conditions. Salt tolerance allows for beet production in fields where alternative crops like dry beans and others wouldn't be successful. Being more of a cooler season crop, farmers in our area have a competitive advantage in growing beets, unlike many crops. In addition, sugar beet production reduced transportation and other costs compared to cane sugar and has provided jobs and careers for many local and regional people for over 100 years. GE beet production was adopted widely over the U.S. beet growing areas quickly because herbicide choices for beets have been and still are very limited. The major weed species most beet producers must control are closely related to beets therefore very close tolerances and timing is required for even partial control in conventional sugar beets. Hand labor needs would be greatly increased and many of the competitive and monetary advantages would be lost. Even today when producers are trying to find hand labor for minimal needs they can't find qualified workers at an economical price. Corn production, pest management and breeding cycles have benefited greatly with the use of genetic engineering and other technological advances. Improvements in yield and quality aspects of both grain corn and silage corn can be attributed to more complete weed and insect control and reductions in insect activity has helped to reduce disease problems like stalk rot and ear rot diseases. Even if the goal is to just eliminate glyphosate resistant corn and sugar beets, lost too will be all these other technologically advances like rootworm and corn borer resistant corn. Glyphosate and glufosinate marker genes are used to determine if these other pest resistant genes are in place where they're supposed to be and therefore, these other technological advances will be lost, too. Therefore, as part of the policy a method by which farmers are compensated for their yield and quality losses from the county due to this competitive disadvantage they'll incur. Having worked with several conventional (non-GE) corn fields during the past three years I have some experience to draw on as well as my previous thirty years of agronomic consulting prior to the introduction of GE crops. What little market there is for conventional (non-organic) corn versus genetically engineered corn is small and is easily taken up from other corn growing areas where corn matures earlier than corn in our area does. We have lots of pesticides we can use for conventional corn production, some of which are not favorable to sugar beets in the rotation. The expenses spent on these chemistries often equals or exceeds budgeted expenses compared to GE cropping system expenses and often the control is less than the GE cropping alternatives. Hybrid choices for conventional corn is limited, particularly among the major corn seed companies and the quality aspects from minor companies is questionable. Buyer expectations for conventional (non GE) products vary widely. There is	

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
			no “standard” of quality. I think it’s unrealistic to expect that the BCOP department would be developing competitive, fruitful and continuing markets for commodities. We have a growing dairy business in this area with many new dairies having been built or are building. This business requires high quality feed stuffs with specific traits. Worldwide pesticide chemistry "discovery" continues to decrease. Currently I'm aware of three companies with research programs to this end and in these situations the vast majority of research is directed to cereal grains, soybeans and cotton. Minor crops like sugar beets are screened but aren't considered as major funding crop systems. GE research and discovery, both private and public is up. Most new technology utilizes genes or systems found in other organisms, but only utilizing a component of the organism’s genetics, not the whole organism. Most of our latest chemical pesticidal discoveries in the last thirty years also have been based on pesticidal traits of existing organisms. In all cases multiple governmental agencies within the U.S. government oversee and regulate all these biological and chemistry based pesticides. Water is still our most limiting factor for production locally. Agricultural producers are at a competitive disadvantage to the urban needs for water. We don’t have sufficient storage water to do just whatever looks to be the best option, but rather have to spread out cropping based on an average supply that historically that farm is likely to receive. Already the BSOP allocates water and water resources with a priority to organic producers. Growing vegetable crops requires far more extensive water resources and a ready supply during longer times of the year than does less intensive conventional corn and beet production. Water is already tight for all here and in most of the state so to indicate all the BSOP producers could get into more intensive organic agriculture isn’t accurate. How can the ideas of sustainability along with economic help benefits be tied together in the same document? Is that sustainable? Promises of improved irrigation systems for "early compliance", reduced rent, a county weeding crew? Talk of adding staff and forming a Boulder County Ag Research Innovation Initiative I think sounds like, "we don't like what research says already so we're just going to start our own research program and make it say what we want it to say". IF you think more research is needed to go into things you're thinking about why not fund Colorado State University programs with grants to look into those things?? At least that way there’s an unbiased to the data generated, and no question of whether its unbiased or not. Kent Davis	
25	Mike	Lefevre	As commissioners, you ignore science backing the safety of GMO's You need to understand that GMO is not an added ingredient, but a breeding process. The new and improved hybrids of sugar beets and corn, has reduced the use of insecticides and herbicides dramatically. Because of these same hybrids, America will remain the worlds largest supplier of food. Boulder County is now wanting to step back 30 years. With the current input costs, and the much lower yields of non GMO crops, Boulder county farmers will not be sustainable. I urge you not to do away with modern technology and at the very least, no not quicken the pace you had already agreed to.	**Oct 23, 2016** 9:44am
26	Andrew	Staehelin	The Transition Plan to force open space farmers to abandon the planting of GM crops that is being pushed by Commissioners Jones and Gardner sets a terrible example for how to mismanage Open Space farm policies. The idea of first banning the planting of GM crops and then starting a search for alternative farming methods to mitigate the problems created by the ban constitutes a slap in the face of all Boulder County scientists who make a living carrying out world class research. These scientists know that you FIRST carry out research to find a solution to a given problem and only then do you propose policy changes to address the problem. If Commissioners Jones and Gardner want to bring in outside experts to improve farming methods on Open Space farmlands, it would make sense to distinguish the needs of organic and traditional farmers. Thus, to help the organic farmers improve their farming productivity and practices, having organic farming experts from the Rodale Institute advise them might be the right way to go. In contrast, the traditional farmers would benefit more from working with researchers from CSU, who know more about farming in Colorado than anybody else. The Rodale Institute experts have no proven expertise in traditional farming in semi-arid, high altitude environments such as in Colorado.	**Oct 20, 2016** 10:44am

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
27	John	Wiener, J.D., Ph.D.	Dear Commissioners and Staff: I wish to comment that I have recently posted a review of the pressures on small and medium scale agriculture in Colorado, and the need for assistance in transition to farming systems which are more likely to provide long-term viability. My review is called "Getting ATMs Right", and it is posted as a presentation on my website: www.colorado.edu/ibs/eb/wiener/ . The presentation is referenced with many citations to current literature or best available literature to my knowledge. The essential point is that we are very quickly losing farming on the best land and with the best water rights. The open space program is a treasure and part of the value is the farming knowledge and families who should be supported by their farms, rather than families supporting their farming with off-farm income. The best path to restoring that is transition toward diversified farming systems which are widely asserted to be more viable both economically as well as environmentally. But, the transition from conventional monocultures is not quick or easy, as shown by the frustrations of many efforts on open space land. The path recommended is outlined in the argument I have posted, and it is a chance for real progress. Boulder County is very important in leading climate adaptation and this is a chance to extend that initiative into open space. I would submit the presentation but it is not suitable for e-mailing due to size and use of speaker's notes for additional discussions and references. It should down-load easily. With sincere hope for your attention on these issues of how to support transition from GMOs and toward viability -- John D. Wiener (Research associate, Institute of Behavioral Science, University of Colorado; NOT representing any institution in these comments or the presentation.)	**Oct 17, 2016** 4:43pm
28	Ryan	Lynch	This is an embarrassing, anti-science, regressive policy and plan. Clearly city council and staff did not review the scientific literature and instead chose to bow to the organic foods industry's lobbying efforts and fear based public sentiment. Please educate yourself and have look at the substantial body of science that does not support your information-free and fear-based approach to genetically modified plants. For example the National Academy of Sciences (NAS) published a review you can find here: https://www.sciencebasedmedicine.org/national-academy-of-sciences-report-on-gmos/ "The NAS report adds to the growing list of comprehensive scientific reviews of GM technology finding that they are safe, good for farmers, and good for the environment when used as part of integrated pest management. The dire warnings of anti-GMO groups are not backed by evidence; in fact they are directly contradicted by the evidence. It is ironic that environmental groups oppose GM technology when the result of their opposition is to harm the environment. The clearest evidence relates to the health effects of GM technology and currently available GMOs. GMOs are safe for humans and animals. Hopefully the NAS report will help move the needle on public opinion, which is currently highly divergent from reality." It's sad that in a county like with such strong scientific and agricultural heritage, we are left wasting time fighting over, and loosing a battle, based on fear seeded by the greed of the organic foods industry. Instead of dealing with real environmental and conservation issues we are wasting resources implementing a position that is equivalent, in it's absence of scientific support, to that of the anti-vaccination movement. Dr. Ryan Lynch, Boulder	**Oct 17, 2016** 1:07pm

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
29	Ulla	Merz	Background: - successful grower/farmer for 20 years - Reputation of high quality crop - 35 acres under cultivation - Use sustainable growing practices, no pesticide, no herbicide, use compost and organic fertilizer The transition plan away from GMO crops is a draconian plan that destroys farm businesses and imposes a high business risk on farmers Alternative approaches are listed below, taking farming and farm business into account - reimburse farmers for equipment replacement costs that cannot be used going forward; even if the equipment is old, most farmers do not have the cash reserve to purchase new equipment - for each property determine commercially viable crop and develop business plan for establishing crop and period it takes to be profitable - engage CSU extension who have experience with successfully growing crops in Boulder county rather than establishing a new position in the Boulder County administration; much more cost effective. It takes decades to learn what it takes to grow something well - provide assistance to growers in establishing markets and developing sales channels for new crops - Hire and develop staff in the Boulder County administration to manage the properties that a returned by the growers to avoid weed establishment This is a minimum of 5 - 10 year plan and requires a substantial budget within Boulder County to pay for this transition If my business would have to follow the transition plan I would be forced out of business and loose all my investments which I think is not fair	**Oct 16, 2016** 10:35am
30	Kyle	Kress	To preface: I'm not a scientist--but I'm skeptical that the people that proposed the new Boulder County Cropland Policy, a plan for phasing out genetically-engineered herbicide-resistant crops on county-owned agricultural land, are either. There are over 2000 studies (https://www.geneticliteracyproject.org/2013/10/08/with-2000-global-studies-confirming-safety-gm-foods-among-most-analyzed-subject-in-science/) demonstrating that there is no risk to health from genetically-modified crops. At a fundamental level of genetics, whether mutations are brought on by natural selection, sexual selection, breeding or done in lab, all that is being done is reconfiguring the TCAGs of DNA. All of these things could happen 'naturally', but in a lab, the roll of the dice randomness can be better controlled. It's also incorrect to start with the premise that 'natural' is better than 'synthetic'. One of the most recent meta studies (https://www.nap.edu/catalog/23395/genetically-engineered-crops-experiences-and-prospects) has yet again shown that genetically-engineered crops pose no additional risk to health, and pose no additional threat to the environment, and while they do suggest more research into the weed-resistant seeds, they have not concluded that there's enough of evidence to show a threat at this time. So let's talk about the alternative--organic crops: the most common alternative, organic pesticide is copper sulfide. Copper sulfide has studies backing up a detrimental effect on humans (particularly kidneys) and wildlife (particularly birds and fish) (http://npic.orst.edu/factsheets/cuso4gen.html). Crops labeled "organic" can also be created using radiation mutagenesis using benezene--which according to the American cancer society (http://www.cancer.org/cancer/cancercauses/othercarcinogens/intheworkpl... is carcinogenic. If there's no strong current evidence for harm and the data for ill effects of herbicide-resistant crops is inconclusive at best, why ban these seeds if it costs more and still requires pesticides that could have poor effects? If we weigh in glyphosate--the pesticide that causes the most of fear (http://npic.orst.edu/factsheets/glyphogen.html)--we can see that it's far from prefect, but poses lower risk to wildlife and health. The agriculture industry's bust current technology is far from perfect, but this policy would be eliminating the possibility of future options and scientific breakthroughs that could be safer--and without a current safe alternative. The topic of genetic modification is often a moral argument, but I think we should make it a science-backed issue of the current evidence. While fears of monoculture and lack of biodiversity exist, these don't have a direct correlation with genetically-engineered herbicide crops--in which case this law is attacking the wrong problem while preventing future technological innovation.	**Oct 15, 2016** 8:27pm

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
31	S. Victoria	Santamaria	I support the transition away from GE crops on Boulder County land, and am glad to see that the needs of the farmers affected are being carefully considered. The formation of an organic weed crew seems especially helpful here. I would also encourage County Commissioners to continue to investigate potentially bee-harming pesticides in use on county land, as I believe was referred to in the first paragraph of the draft, and consider requiring pesticides to be Bee-Safe. Bees create 1/3 of the world's food, and we cannot survive without healthy bees.	**Oct 14, 2016** 5:37pm
32	Steve	Hoge	You should allow ANY crops which are legal to be grown on Open Space land leased from the County. That maximizes the value of the leases, which are being held for the benefit of the citizens. While the POLITICS of GMOs are clear (nobody wants to support Monsanto's egregious and dubiously legal licensing terms) and SCIENCE is anything but - there is no reliable scientific evidence that there is any nutritional, biological or medical issues with GMO seeds per se. That said, the County should ban the use of the PESTICIDES commonly associated with GMO crops (i.e., glyphosates, aka RoundUp) and allow GMO crops to be grown if farmers want to do that without the application of glyphosates. The county should NOT be wading into the politics or science of GMOs, but they SHOULD be protecting citizens, neighboring crops and the underlying agricultural resources from glyphosate application.	**Oct 14, 2016** 11:41am
33	Nicole	Speer	I am very concerned that so many changes are being asked of the agricultural community and so many resources are being devoted to transitioning away from genetically engineered crops on the basis of ideology rather than science. There is no valid, reputable scientific evidence that GE crops are harmful to humans or animals. They are very likely the only things that will save us from the catastrophic effects climate change will have on our agricultural supply in the coming decades. In one of the best educated cities in the country, I am flabbergasted that we would require this magnitude of change for our agricultural community members when the science simply does not merit spending valuable resources on what is essentially a way for the natural and organic food industry to make more money. What a better use of resources it would be to spend time and resources identifying crops and agricultural strategies that will do well in our rapidly changing climate! I implore you to spend some time learning about the science behind GMOs, rather than basing these costly and resource-intensive decisions on well-intentioned but erroneous ideology. The Genetic Literacy Project is an excellent resource on these issues: www.geneticliteracyproject.org	**Oct 13, 2016** 9:24pm

	Name	Last	Comments on the Draft Transition Plan Note: comments...	Date Created
34	Michael	Kirschbaum	The background portion of the plan provides no explanation as to why GE crops must be eliminated, other than stating that the BOCC requested it. There is also a mention that the BOCC is concerned about pesticide use on Open Space land. Are GE crops bad or harmful? Are pesticides bad, and are they causing harm or damage? Will phasing out GE plants actually reduce the overall use of pesticides, or just the use of glyphosate? Is glyphosate bad, and more importantly is it worse than other pesticides that may be required when using "sustainable" agriculture? Will the use of all pesticides be banned eventually? What actually qualifies as a pesticide and are there good pesticides vs bad pesticides (is a natural pesticide better than a synthetic pesticide)? I can understand how people may feel that a company selling magic seeds that require a magic elixir to grow may seem suspect. However, a governmental entity proposing a plan that will definitely cause harm to some should justify such actions with concrete data. I am not for or against any of this, but clearly this plan is going to cause harm to at least some farmers and will surely come at a price tag for taxpayers (what will implementation cost the county?). It may also provide benefit to some farmers that utilize different methods. However, as it reads in this draft it seems very much like a "feel good" measure. What the public needs to know is if there will be an actual, measurable benefit to balance out the harm that this plan will cause, and how will that benefit be analyzed in the future to know that the ban on GE plants has accomplished said benefit. Will cessation of GE plants/glyophosate use make the land more productive? Shall it enhance the fertility of the soil? Will it produce tastier sugarbeets and corn, or will it help to save bees? Why are we going to do this and where is the science here? In summary, I think this draft should include some actual science discussing why this needs to be done and how the benefits of this plan will actually be measured in the future. My suggestion would be to shelve this transition plan until there is a better understanding of what will be gained by implementing it; component 3 of the draft plan discusses data collection and monitoring, but data without analysis is just noise and about as useful as seeing Jesus on a piece of toast. I think just stating that the BOCC asked us to do it is not enough of a background. Note: Admittedly I have read this draft out of context and am probably missing out on a much larger debate. I guess my main point is that if you are going to include a "Background" section, it must be much more robust. Otherwise, just eliminate the background section and say that the plan has been formulated at the request of the BOCC.	**Oct 13, 2016** 8:33pm

From: Elizabeth Black [mailto:elizabeth@elizabethblackart.com]
Sent: Saturday, November 19, 2016 9:03 AM
To: Jones, Elise; Gardner, Deb; Domenico, Cindy; Frye, Renata;
Cc: Lane, Eric; Moline, Jeffrey; McCracken, Vanessa
Subject: GMO Phase-out Plan

To POSAC and the County Commissioners; Deb Gardner, Elise Jones, Cindy Domenico

During the election debate sponsored by FAIR, both Deb Gardner and Elise Jones said "I**t's NOT GMO's per se that I have a problem with, but instead neonicotinoid seed treatment and/or the use of glyphosate on Open Space lands that I am most concerned about."** Please note that the BCPOS GMO phase out plan does absolutely NOTHING about either neonicotinoids or glyphosate. In fact, **if this plan is approved, it is very likely that the use of those two chemicals will actually increase.** There will be other devastating costs as well if you proceed with the GMO phase out.

How can that be? Let's look at implications of the 4 options for GMO farmers if you phase out GMO's.
Option 1. GMO farmers decide to return to conventional farming practices on BCPOS. The County's own studies show that if this happens, there will be more insecticides used on fields, with more impact on pollinators and more toxicity for workers and the public. Farmers will revert to using more and stronger pre-emergent herbicides to control weeds. There will be more plowing and cultivation of fields for weed control, with more soil erosion, more soil compaction, more CO_2 volatizing from soils, and increased greenhouse gas diesel emissions. Soil health will suffer, and there will be less soil organic matter and lower soil moisture content, with worse drought outcomes and lower yields. With higher input costs and lower yields, more farmers will fail or sell out and move, and lease payments to BCPOS will fall.
Option 2. GMO farmers decide to decrease crop diversity and plant, for example, only wheat/barley on BCPOS. If this happens, farmers will face more market risk with fewer options for profitable crops. Boulder wheat is low in protein and sells at a discount. Farmers will lose USDA crop subsidies which they currently receive. More farmers will fail financially or sell and move. BCPOS income from lease payments will fall, causing less support for organic growers and farm infrastructure improvements. Without robust crop rotation, soils will become depleted and plant diseases will increase, causing more insecticide use.
Option 3. GMO farmers decide to sell and move out of Boulder County. If this happens, Boulder County will lose the people who know how to farm large tracts of land, keep our agricultural water system running and fill our Farm/Soil Boards. Farm equipment suitable for large tracts will disappear. Private farmland and agricultural water will be gobbled up by Erie, Fredrick, Longmont and Lafayette, or turned into gentrified "farm-ettes", slashing local food production. Since pesticide use per acre is higher in suburbs than on farms, pollinators and people will be negatively impacted.
Option 4. GMO farmers decide to convert to organic crops on BCPOS lands. If this happens, farmers will face more market risk as there is currently only zero or one buyer for organic sugar beets, corn and grains on the Front Range. Organic farmers experience more crop loss from insects, with higher input costs, all while facing unreliable markets. BCPOS is already experiencing very high rates of organic farm failure. Yields will fall and more farmers will fail or sell and move out of the County. BCPOS income from lease payments will fall, causing less support for organic growers and farm infrastructure improvements. The County's own studies show that organic growers plow and cultivate fields more for weed control, causing more soil erosion, more soil compaction, more CO_2 volatizing from soils, and increased greenhouse gas diesel emissions. Soil health will suffer, and there will be less soil organic matter and lower soil moisture content, with worse drought outcomes and lower yields.

I know you believe in a magic pathway to avoid the costs outlined above. Somewhere, somehow, there probably is that magic pathway. However, agricultural research is slow, and realistically it is going to take a very long time to find that pathway: 10+ years, not the 3-5 years which are in this plan. I ask that you please:

1. Acknowledge that **currently the costs of phasing out GMO's are far greater than the benefits**, especially since you have said, "I do not have a problem with GMO's per se".
2. Acknowledge that **even though you have the goal of phasing out GMO's, you do not currently know the pathway to get there**.
3. Keep looking for that magic pathway. **Fund robust farm research projects as currently proposed, and reward innovation in the farming community**.

I know this is hard, given all the recent uproar. Thank you for your consideration,
Elizabeth Black

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Climate Wise-Guy says:

From: Elizabeth Black [mailto:elizabeth@elizabethblackart.com]
Sent: Thursday, October 27, 2016 12:49 PM
To: Boulder County Agriculture
Subject: Comments on Draft Transition PlanDear

To POSAC: I'll try to keep this short and sweet as you are undoubtedly getting lots of comments:

1. Doing more research for Front Range options is excellent, as our unique climate and growing challenges mean techniques which work other places may not work here. But research takes lots of time. **Please be sure to give our researchers and farmers enough TIME to figure out alternative cropping systems; realistically 10 YEARS.**

2. The current transition plan of 3 years for corn, 5 years for beets, is putting the cart WAY before the horse. You need to know where you are headed before you make a plan on how to get there. We have no clue right now as to what can replace GMO corn and beet systems. We need those answers first, before we decide on a timeline on how to get there. **Please give yourself adequate time to find the replacement growing systems before you map out a timeline about how to transition to them.**

3. This thing is much bigger than just GMO's, pesticides/herbicides, and organic cropping systems. Climate change, water supplies, economic viability, soil health and carbon sequestration should also be included. Studies of alternate cropping systems must look at the whole system and not just items of political uproar. Studies should also compare various existing cropping systems (organic, GMO, conventional, etc.) across a broad range of parameters. **Please broaden the scope of the transition plan to include climate change, water supplies, economic viability, soil health and carbon sequestration, and all kinds of cropping systems.**

4. Please remember that we cannot afford to lose any of our farmers. If our farmers decide to sell out and move elsewhere, that means that their lands will likely be swallowed up by a growing Erie, Lafayette, Longmont, or "farmettes", and taken out of agricultural production. Yes, the BCPOS lands will stay open, but what about the privately owned farm land? It will not stay agricultural with land prices what they are in Boulder. **Please do not approve a plan that will drive our farmers out of Boulder County.**

Thanks very much, Elizabeth Black

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Climate Wise-Guy says:

From: Paul Schlagel [mailto:paul@schlagelfarms.com]
Sent: Monday, October 24, 2016 3:19 PM
To: Frye, Renata
Cc: liscohorse@aol.com; Paul Schlagel
Subject: FAIR's Questions on Plan

Renata,
Could you please forward this to the members of POSAC?

POSAC members –

Please remember that this document does not constitute FAIR's official feedback to the transition plan draft. We are sending questions that we would like to see answered before we have enough information to actually give feedback.

Thank you,
Paul Schlagel

The farmers of FAIR do not agree with the decision to mandate a transition away from Bt/Roundup Ready corn & Roundup Ready sugarbeets on county land, as we recognize that both local data and global scientific consensus support the sustainability of precision agriculture methods. In addition, there has been no acknowledgement by the County that researchers continue to develop new GE crops (such as drought-resistant corn) that are aimed at agriculture efficiencies and climate change. A wholesale ban on GE crops is counter to the Cropland Policy goal of being a leader in sustainable agriculture, and the larger farms in Boulder County open space are very limited in what crops can be planted successfully with our climate and water availability. The effect of this plan will be to require large commodity farms to drastically increase their carbon footprint with increased fossil fuel use and a decrease in carbon sequestration because of increased tillage and soil disruption.

However, if a change is to be considered, it is vital for the health of our county's land that the transition be evidence-based and dependent on the demonstrated viability of proposed options in Boulder County's specific climate. Farmers are the original environmentalists, and we take our commitment as stewards of the land seriously. It is not logical or fair for the County to ask us to farm less sustainably than we are now -- and that is the assured outcome if we are forced to give up the technologies we are using now, guided only by the skeletal framework currently laid out in the Draft Transition Plan.

Before the farmers can give thorough and thoughtful feedback on the County's draft plan there are several questions that the County must answer. Please amend the Draft Transition Plan to include answers to the questions below, and we will then have sufficient information to provide our response.

As the questions below demonstrate, caring for our open space agricultural land in a comprehensive way is complicated. This is why FAIR has made it clear in the past that we believe the Transition Plan should span at least 7 years, which is a position we still hold. However, if the County insists on a 3/5 year Transition Plan, FAIR strongly suggests that a "Transition Plan Advisory Group" be created to work collaboratively with Parks & Open Space staff and the County Attorney to fully address the complex issues inherent in a plan of this nature. Only once the Advisory Group's work is complete can the Transition Plan be finalized and the 3/5 year transition begin.

1. **<u>"Transition To" is Undefined</u>**
    - **a.** During the public hearing (2/29/16) and the commissioners' discussion (3/17/16) bountiful claims were made about alternative farming techniques (no-till organic, regenerative agriculture) that are supposedly superior to farming using GE crops. **Is there any Colorado relevant data to suggest that these alternative techniques can be successfully utilized in Boulder County's unique farming environment?**
    - **b.** Since we know that there is no available data on these techniques being used in Boulder County, **what do you expect the farmers to transition "to" when they can no longer use GE crops?**
    - **c. Where are the mandates to implement these alternative techniques (no-till organic, regenerative agriculture)? Will organic (and non-certified organic) farmers also be required to utilize these alternative techniques?** Without requiring these new standards by all farmers, the carbon footprint of agriculture and its contribution to global warming by the community will rise dramatically -- carbon emissions will be 8 times higher, water usage will grow 3 fold, and fuel consumption will at least double.
    - d. It has been reported that the County's organic farmers experience a high rate of failure ("80% failure rate dogs county's $1 million organic farm program," Daily Camera 3/12/16). Without debating the specific numbers used in the Camera's reporting, the general concept that organic farmers experience significant challenges (resulting in an unfortunately high failure rate) is consistent with our knowledge of other farming operations in the County. **Why does the County want to impede the method of farming that is successful in an apparent attempt to direct more farmers toward organic methods, when current organic farmers are experiencing such a high rate of failure?**
    - **e. This "transition plan" should be considered incomplete until a thoroughly vetted and more sustainable (economically and environmentally) alternative is spelled out to which all farmers -- conventional and organic -- must conform.**

2. **<u>Research</u>**
    - a. The BOCC has expressed their support for increased research into sustainable agriculture. **Why then is there insistence on creating a short, hard timeline for elimination of GE crops before research trials are being developed and completed to discover how those cropping systems compare with others?** The "White Paper" generated by staff and CSU Extension affirms that GE cropping systems are more efficient and sustainable than other common cropping methods. Further on-the-ground trials (on small and large plots) could confirm or refute that initial analysis before a ban on GE crops is enacted.
    - b. **Will the "Boulder County Ag Research Innovation Initiative" include research evaluating GE crops on various sustainability metrics?** If the goal is truly to find the method of farming in Boulder County that is objectively most sustainable, then all technologies must be evaluated.

c. **By what metrics has Rodale Institute, an eastern U.S., private non-profit, non-accredited research entity been identified as the potential partner in developing the Transition Plan? Who else has been asked?**
d. **Is the County prepared to require that all research and analysis by Rodale of County farming practices be completely transparent and subject to the Colorado Open Records Act?**
e. **Who is going to carry the financial load for the research? And where is the land for the research that would most replicate average conditions for all the POS ag lands that will be transitioned out of GE crops?**
f. **How will the experiment station trials be tested for scalability?** Many small scale studies show promising results in agriculture, but are nearly impossible to implement at commercial scale. A prime example of this is much of Rodale's small plot work which even after 30 years of trials has never been successfully reproduced by outside accredited organizations or adopted widely commercially. **What is the county's plan to take small plot work and do 60+ acre scalability studies before enforcing/encouraging adoption by the local farmers?**

3. **<u>Consequences of Giving Up GE Crops -- Corn</u>**
   a. Fields where GE corn has been in rotation for years are relatively "clean." That condition will erode and input costs will increase with the increase in types and quantities of pesticides that will be needed to control insects and weeds on conventional (non-GE) corn. **How is this increase in inputs, which is mentioned as a consequence in the draft transition plan, in line with the supposed goal of increasing "sustainable agriculture?"**
   b. **Are there sales/storage facilities nearby where conventional corn can be separated from the GE corn that farmers will still grow on private and leased lands?**
   c. **Are the farmers going to be compensated for the extra time and expense they are going to have to go through to thoroughly clean all their equipment each time they move from private GE fields to the county conventional ones? Who from the county is going to be available in a timely manner to oversee those operations and ensure compliance?**
   d. Non-GE corn requires more frequent pesticide application compared to GE corn. Increases in the frequency of pesticide application will escalate the phone calls to the county and/or farmer by concerned neighbors. **Will the county stand by the needs of the farmers? How is the certain increase in pesticide use with non-GE corn consistent with the stated goal of increasing "sustainable agriculture?"**
   e. The Bt trait in corn is expressed ubiquitously, therefore it protects the entire plant through its entire lifecycle. **How will the county assist the corn farmers in obtaining and modifying the equipment they currently have to help them apply insecticides which will now be necessary for early season control, control of root pests, stalk**

pests, and later ear pests? How will the county work with obtaining section 18 permits for inputs which will now need to be used on open space?

4. **<u>Consequences of Giving Up GE Crops -- Sugar Beets</u>**
    - **a.** Sugar beet farmers have a contractual obligation to produce their acreage share of sugar beets on an annual basis. No seed company selling sugar beet seed in the U.S. has conventional seed that is produced in the U.S. **What role will Boulder County play in securing federal importation permits for treated seed from Europe, the only source of conventional sugar beet seed?**
    - **b.** After deregulation and widespread adoption of the genetically engineered sugar beets, the pesticide manufacturers discontinued registration and production on several key herbicides necessary for conventional sugar beet production. **What role will Boulder County play in supporting registration costs/paperwork and work with chemical companies to encourage new productions of these retired active ingredients?**
    - **c.** The United States has effectively avoided the presence of invasive weed beets by mandating that all sugar beet seed planted in the U.S. be produced in the U.S. That will no longer be possible when our growers will not be able to plant glyphosate-tolerant sugar beets. **What measures will the county put in place to assist the farmers in scouting, removing, and destroying these new weed species introduced in the seed source? How do you envision partnering with APHIS and neighboring counties in order to ensure containment?**
    - **d.** It takes 10-12 years to develop a new hybrid for a production area. No one has bred conventional sugar beets for our market for over a decade. We have the most aggressive approval criteria of any sugar beet cooperative in the United States, mandating 7 native tolerances in every hybrid. This minimizes the amount of pesticides used in the field and has totally eliminated the use of many products. The biggest risk with a ban on GE sugar beets will be a loss of nematode tolerance. **How will the county work to obtain section 18 pesticide special use permits for soil fumigants that will need to be reintroduced into the market? How will the county assist the farmers in modifying equipment to allow them to begin applying additional insecticides?**
    - **e.** **Has County Parks and Open Space communicated with the Colorado Department of Agriculture and the U.S. Department of Agriculture concerning the importation of non-GMO sugar beet seeds from Europe?** Please produce any communication and the responses.
    - f. **If sugar beets are eliminated from the allowable crops, or if no seed company agrees to sell conventional seed, how will the county compensate the sugar beet growers who must pay out for unfulfilled shares?**
    - **g.** **Will the county pay for all nuisance dust complaints coming from open space with the changes to cultural practices?**

5. **Pesticides**
    a. Depending on which herbicides are available and the field conditions when spraying is optimal, farmers may have to cultivate more frequently to control weeds. This will result in more fuel costs, more carbon released, and more water loss. **How will the farmers be compensated for the increased fuel costs? How is the increase in carbon release and water loss consistent with the stated goal of increasing "sustainable agriculture?"**
    b. All farmers are going to need to use more toxic pesticides without access to GE seeds. **How will the county assist in training handlers on new personal protective equipment requirements, handling cautions and disposal regulations they are currently unfamiliar with and which may have changed since they adopted GE technology?**
    c. **What information has County Parks and Open Space developed with respect to pesticides and herbicides for non-GMO sugar beet seeds from Europe? Has NRCS approved such uses?**
    d. **Will the county next move for a ban on all pesticides, once it is clear that non-GE crops require an increase in pesticide use compared to GE crops? Will the pesticide ban apply to organic farmers, too (who currently utilize several pesticides during crop production)?**

6. **Legal Concerns**
    a. Parks and Open Space leases ("Leases") contain the following provisions:

> "Tenant shall manage the Leased Premises consistent with a Soil and Water Conservation Plan as prepared and approved by the Longmont Conservation district, or their successors, in cooperation with the Natural Resource Conservation Service, hereinafter referred to as 'NRCS', which Plan shall be current during each Lease period. Tenant shall file and certify acreage with the Boulder County Consolidated Farm Service Agency, and maintain and submit production, fertilizer and chemical application records as required by the federal government, or as required hereunder. Tenant shall be held responsible and accountable for any degradation to the land and/or ecological integrity of the area as a result of failure to adhere to any of the requirements under the terms of the Soil and Water Conservation Plan. Such failure by Tenant shall be grounds for termination of the Lease."
>
> "Tenant shall also assist Landlord in developing an annual, written agricultural management plan and an annual, written integrated weed management plan prior to each growing season. As the growing season progresses, the plans may be modified as conditions, such as weather, vary. Tenant agrees to implement management according to these plans, and to any modifications made to the plans by the Landlord."

"Tenant shall take all measures necessary to prevent pollutants from entering storm drains or watercourses. For the purpose of eliminating stormwater pollution, Tenant shall implement effective Best Management Practices (BMPs). BMPs include general good housekeeping practices, appropriate scheduling of activities, operational practices, maintenance procedures and other measures to prevent the discharge of pollutants directly or indirectly to the storm drain system. These BMPs shall be maintained for the duration of the Tenant's lease. Tenant shall also be responsible for proper disposal of all waste materials, including wastes generated by the implement of BMPs."

"Tenant shall comply with all of the terms set forth in the current protocols for genetically modified crops to be grown on Boulder County Parks and Open Space. Current copies of the protocols will be kept on file with the County's Agricultural Operations office and are available for inspection and copying during normal business hours."

Has County parks and Open Space communicated with the Natural Resource Conservation Service ("NRCS") and CSU Extension Services with respect to the proposed Transition Plan? What responses have been received?

b. The Leases and extensions were entered into by the Tenants based upon "current protocols" for the growing of genetically modified crops. **What is the legal basis for imposing the terms and conditions of the Transition Plan on current Leases, particularly those with longer term leases?**
c. **Since Leases were based upon plans submitted by lessees, including crop rotation plans, what is the legal basis for imposing modifications to submitted plans accepted and approved by the NRCS?**
d. Current Leases require lessees to operate in accordance with Best Management Practices (BMPs). **Since no BMPs exist for non-GMO sugar beets, how does County Parks and Open Space propose to regulate?**
e. Current County Parks and Open Space Leases require the physical residency of tenant farmers in Paragraph 11. **How does County Parks and Open Space intend to approve the activists' calls to bring in outside "professional farmers" to farm the subject land? How can County Parks and Open Space agree to allow a non-resident foreign corporation or its agents and affiliates to farm Open Space land, particularly for non-food production?**
f. The County proposes to use Rodale Institute to consult with respect to the Transition Plan. **Has the County issued a public RFP to accredited research institutions to provide such services? How has the County complied with public procurement requirements, particularly since the County proposes to spend approximately $500,000 of public funds per year for Rodale consultation? Even if private sources**

provide private money for Rodale's consultation services, what is the legal basis for circumventing the procurement process or a public review of the contract terms? Is this a qualified sole source contract and on what basis?

g. The Transition Plan outlines significant public resources for organic and noncertified organic growers on Open Space lands. **What is the County's legal analysis of the impact of the Colorado Constitution's gift clause on such public subsidies?**

h. Since the County is acting pursuant to its administrative capacity and powers, isn't the County subject to common law contract principles of good faith and fair dealing?

i. The Colorado Constitution prohibits a public entity from taking or damaging private property, including leaseholds, without payment of just compensation. **Has the County evaluated the impact of this Constitutional requirement?**

7. <u>Finances</u>

a. The Colorado Constitution prohibits takings or damaging regulatory actions without fair compensation. **Since implementation of the Transition Plan will render the existing leaseholds without value, has the County engaged an appraiser to develop a fair market value as compensation for this regulatory taking?** Please identify the appraiser and provide the valuation numbers.

b. The Transition Plan contemplates some reimbursement for water infrastructure purchases by lessees at the request of the County. **Does this include any and all fines and penalties imposed by NRCS pursuant to EQUIP grants? What other machinery and equipment costs and investments will be compensated for?**

c. Depending on commodity prices, the historical POS revenue from the county ag. farms has been in the range of $1 – 1.5 million annually. That sum will likely be reduced because of greater input costs w/out GE's, possible elimination of the sugar beet crop, and having no comparable value crop to replace the beets. The county has also offered reduced rents for organic transitions. **With less income, will the county be looking at reducing its risk with the cost-share program in favor of cash rent?**

d. The county has also offered reduced rents for organic transitions and claimed they would deliver capital improvement programs for irrigation infrastructure and other facility improvements, the last items often dependent on annual BOCC approvals. The POS Dept. has depended on the farm revenue to pay the annual ditch company assessments (now exceeding $400k/year), crop share costs, and on-farm improvements including fences and irrigation efficiencies. Rental prices are based on the prevailing market rates. **Where is the money going to come from to make up for any shortfalls in revenue to operate the program?**

e. There are existing and recently re-signed leases that were signed with expectations that the farmers would decide the best rotation for crops and how long it would take to recover their investments in the property. **How will these be handled?**

f. **Are there repayment provisions in EQUIP grants if the farmers lose their leases on the properties where the projects were approved?**

g. With the current level of subsidies already going to the organic farms, and still a failure rate of 19 out of 24 leases in the last 5 years, **how far is the county prepared to go as a landlord before you hire numerous employees to farm under your direction? Alternately, will you go the corporate farm route and put the properties out on the block with an annual contract and you decide who and what will be grown?**

h. The County has suggested there will be a buy-back of irrigation equipment if tenants with GE crops choose early to not renew. **Is that an across-the-board commitment or is the County going to pick and choose which units you may buy?**

i. The Transition Plan shows an increase in Parks & Open Space staffing demands including staff time to support the Transition Plan, research & development in value-added products and markets, helping with organic certification (and possibly paying the costs?), enhancing data collection, and increasing the size of the weed crew to work on organic properties. Given that the existing staff is stretched to the limit already, they have acknowledged that they have been unable to do the level of data collection promised in the 2011 Crop Land Policy recommendations, and new FTE's are near impossible to get through the county budget process, **what is the plan to accomplish these tasks? Who will be doing the monitoring of soil health, water quality into and off the farms, air quality, GE pollen drift from neighboring private lands, pollinator health, and who will keep track of all the data? Will the data be transparent and subject to CORA?**

j. The successful commodity farmers (using GE technology) are currently responsible for a significant amount of the income the County receives from its ag lands. The loss of income from the commodity farmers that would result from this transition plan would represent an additional cost to the County. **How does the County plan to justify the expense to taxpayers that will result from the loss of income and the significant costs of implementing a Transition Plan?**

8. **<u>Water Resources</u>**

a. Will the county obtain and donate water shares to all the growers moving away from GE crops to accommodate their excess water needs? How will the county obtain those shares? How will they be disseminated among the growers?

b. While the first water diversions from streams were filed on in 1859, it did not take long for the farmers in Boulder County to realize that the snow melt runoff in the spring was insufficient to irrigate crops for a full growing season. With most creek flows being over-appropriated within 15 years of the first decrees, farmers and mutual ditch companies turned to wells, constructing storage reservoirs, developing transbasin diversions and seeking supplemental water supplies. **All additional water brought into the mix must still fit within the prior appropriation doctrine which is the foundation of Colorado Water Law.**

c. Boulder County owns shares in over 80 ditch & irrigation companies spanning the width of the county. These shares include direct flow rights as well as rights in storage reservoirs. They also own shares of supplemental water including the Farmers Reservoir & Irrigation Company (FRICO) shares and Northern Water Big Thompson units. All of these water rights were purchased as part of the package when the farms were bought. Big T water attached to specific farms was sometimes left out of the deal because of the price of shares at the time. With that backdrop, the general sense is that county-owned farms are water short. If 3 acre-feet of water/acre of ground is defined as fully irrigated, at best the county land has about 1.5 ac ft/acre available on average of combined direct flow and storage rights. As a general rule the county has tried to keep all the water purchased with a farm on that farm. However, depending on the needs of crops being planted the farmers may seek additional rental water for the season to make up the difference or they will configure their crop varieties to ensure there is adequate late season water to irrigate the most valuable crops. **Since one of the desired outcomes of the Transition Plan by the BOCC and the public seems to be for more vegetable production, which needs consistently available full irrigation supplies throughout the season, where is the additional water going to come from?** Ditch companies do not allow you to move your shares out of the defined service area of the ditch company but Big T water has more flexibility and allows it to be transferred to any properties that are included within the larger service area of Northern Water. **Will the county be moving this water around to various farms to selectively satisfy the high need-high value crops at the expense of other tenants? Will the county be acquiring additional water supplies?**

d. The ditch & irrigation delivery systems serve multiple shareholders along the length of the ditch. Water can only be delivered to shareholders when the ditch is in priority. Technically one is entitled to a pro-rata share of the water available depending on the number of shares one owns. However, there has been a history of farmers looking out for each other and making sure each gets at least some of the water available. However, the prior appropriation system and ditch delivery systems are not designed to have constantly available water supplies that vegetable growers want throughout the season. To help with the problem the county has constructed holding ponds with electric pumps connected to drip systems on the small acreage farms to make water more readily available. Supplies have to be conserved since one does not know if/when more water will become available and if the ditch rider is even able to get it to the farm because of shrink losses in the ditch. Holding water for more than 72 hours without a storage right also pushes a water rights issue. **If the concept promoted by the BOCC is moving away from GMO's to more organic food production, is the county going to be constructing more holding ponds (at $65,000 apiece) to serve the vegetable farms? Is the county willing to referee the tension that already exists between the conventional farmers of private lands who are shareholders in the ditch supplies**

and the county tenants who will be demanding more water for their specialty crops?

9. **Defining Terms/Phrases**
    a. The term "sustainable agriculture" is used throughout the Transition Plan. **How is the county defining that term?** When the Cropland Policy was developed, sustainable was meant to include an analysis of the three-legged stool of environmental, economic, and social issues. In the "White Paper," the BOCC redacted the social section. **Does that imply it also does not apply to any definition of "sustainable agriculture" in the Transition Plan?**
    b. In a couple of areas of the Transition Plan, the phrase "viability of agriculture in Boulder County" is used. **What exactly does that mean?** Is it just tilling the soil to keep down weeds; does it mean farming for merely the aesthetics of preserving some rural portrait of the countryside that city dwellers want; does it mean converting cropland to pollinator habitat and honey bee colonies; does it mean keeping the land in agriculture use whether or not it is subsidized; or does it mean a farmer works the land so s/he can actually make money off the livestock or crops grown there?
    c. The conclusion of the Transition Plan draft makes a statement that it "continues our efforts to keep agriculture sustainable in Boulder County." That would suggest that agriculture is already sustainable in this county under the current cropping systems in place. **So why not continue with what is working and proven instead of throwing that all out in favor of forcing a transition to something else that is unknown or unproven to work in this area?**
    d. A significant amount of focus is being placed on farmers using GE cropping systems, with a determination to force them to farm "more sustainably." **What kind of attention will be paid to the sustainability practices of the County's organic and non-certified organic farmers? How will their pesticide use, water conservation, soil quality, carbon sequestration, etc be evaluated?**