



# Parks and Open Space

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## BOCC BUSINESS MEETING

Time/Date of Meeting: 11:00 a.m., Thursday, April 13, 2017  
Location: BOCC Hearing Room, 1325 Pearl Street, 3<sup>rd</sup> Floor, Boulder, CO

<b>TO:</b>	Board of County Commissioners
<b>FROM:</b>	Eric Lane, Director, Parks and Open Space Department Jeff Moline, Agricultural Resources Manager, Parks and Open Space
<b>RE:</b>	Transition Plan for Genetically-Engineered Crops on Boulder County Parks & Open Space Properties
<b>DATE:</b>	April 10, 2017

### Introduction

The Boulder County Parks and Open Space (BCPOS) Cropland Policy adopted on December 20, 2011, lays out the framework for realizing Boulder County's vision to be a leader in sustainable agriculture. Section 6.1 of the Cropland Policy approved the use of genetically engineered (GE) crops for a period of five years on agricultural lands leased from Boulder County with specific protocols. The approved GE crops are corn and sugar beets—both genetically engineered for glyphosate resistance—and corn, genetically engineered with Bt (*Bacillus thuringiensis*). Following a series of public hearings and meetings in February and March of 2016, the Board of County Commissioners (BOCC) directed BCPOS staff to develop a transition plan for phasing out the use of herbicide-resistant GE corn and sugar beets on county-owned agricultural lands within a time frame of three to seven years.

### Discussion

At the commissioners' November 30, 2016, public hearing, staff presented a draft of the GE Transition Plan. After extensive public comment on the issue, the board provided their perspectives on the plan as well. They expressed that the plan should include additional provisions:

1. an annual check-in on the progress toward a phase-out
2. an assessment of the financial risk of the plan to tenants
3. phasing out neonicotinoid pesticides
4. support for a local sustainable agricultural research facility
5. that the agricultural research include comparisons of a variety of production methods including GE technology
6. research on carbon sequestration which would also involve the Sustainability Office
7. the ability of the county to consider genetically engineered crops with traits that do not rely on the use of pesticides.

With a vote of two to one (Commissioner Cindy Domenico dissenting) the BOCC approved the draft GE Transition Plan and the Cropland Policy amendment necessary to implement the plan and asked to staff to return to a business meeting with final documents.

**BOCC Action Requested**

Approve the revised GE Transition Plan with requested amendments along with the enabling amendment to the Cropland Policy.

**Attachments**

1. Transition Policy for Phasing Out Genetically-Engineered Crops and Neonicotinoids on Boulder County Parks and Open Space Properties
2. Revised Section 6 of Cropland Policy incorporating Transition Policy as Appendix 13

# Transition Policy for Phasing Out Genetically-Engineered Crops and Neonicotinoids on Boulder County Parks and Open Space Properties

## **Background**

On March 17, 2016, the Board of County Commissioners (BOCC) instructed Boulder County Parks and Open Space (BCPOS) staff to develop a plan that would phase out the use of genetically-engineered (GE) crops on the county's open space properties. The BOCC also explained their concerns about pesticide use (e.g., neonicotinoids) as well as their support for research opportunities into sustainable agriculture. Following that policy direction, BCPOS staff met with the farm tenants that would be most affected by this change. After input from tenants and other stakeholders, staff developed a draft transition policy to eliminate glyphosate-resistant corn and sugar beet crops on county property while minimizing the impact on our lessees whose livelihoods are connected with the agricultural stewardship of these lands.

Over the course of the summer, staff studied a variety of ways to make this transition. First, we looked at requiring gradual annual reductions in GE crops over three-, five-, and seven-year time frames. Part of the complication with requiring immediate reductions is that it affects the tenants differently depending on where they are in their crop rotations. And, perhaps most importantly for the lessees, fixed reduction targets—albeit gradually phased in—could have dramatic effects on income and the viability of business investments they have made to their operations. This is particularly true of sugar beets. Sugar beets, which are only available commercially as seeds in their GE form, require specialized equipment and membership in a cooperative—both significant investments. Sugar beets are one of the most dependable and profitable crops for farmers in this region and provide some tenants with as close to a guaranteed income as possible given the vagaries of agricultural commodities and markets.

In the case of corn, the situation is different. Unlike sugar beets, there is a readily available substitute non-GE crop. A tenant can more easily make a switch from GE corn to conventional corn (or transition to organic) and would likely continue to use some of the same equipment. However, staff recognizes that these switches are not without impacts and could result in added inputs, more costs, and decreased yields. With these crop differences in mind, staff worked to develop a general transition policy that addresses the situation from a broad perspective, taking advantage of the unique circumstances of each lease, each crop, and the existing rotation protocols in the Cropland Policy.

## **Adopted Policy**

Boulder County's goal is to reduce, and ultimately eliminate, the current use of GE crops (Bt corn and glyphosate-resistant corn and sugar beets) on county open space in a way that is understandable and fair for affected tenants. To do so, the county will implement a dual strategy that phases out GE corn and sugar beet crops based on the differences described above between these crops:

1. GE corn will be allowed in rotations for the next three years (beginning in 2017), resulting in a complete phase out by the end of 2019 at the latest.
2. GE sugar beets will be allowed in rotations for the next five years (beginning in 2017), resulting in a complete phase out by the end of 2021 at the latest.

This dual strategy will result in a dramatic reduction in GE crop use in the near term since corn generally represents 70% of the total GE acreage, accounting for approximately 1,200 acres annually on average. Furthermore, the longer time for beet conversion gives tenants added time to utilize investments associated with them.

The other elements of the strategy to reduce and eliminate the use of GE crops on county properties focus on limiting their use to the tenants and leases that have used them in the recent past. This policy:

- confines the use of GE crops to tenants that have used them in the last two years (2015 and 2016) as these are the farmers with the added experience of their use within the context of the county's current Cropland Policy and are deriving an important function and income from them.
- caps the planting of GE corn and sugar beets on these "GE leases" at a maximum acreage-per-crop based on the average acreage planted over the last four years (the planting timeframe since the Cropland Policy was approved in late 2011); and
- limits plantings of either GE crop to a maximum of two times total per field according to the existing protocols of the Cropland Policy.

Limiting GE crop use to the leased areas that have had GE crops on them within the last two years will also aid our efforts to monitor and track GE crop use and be a fair method for allocating GE crop acreage.

While these guidelines will help direct the elimination of GE crops from county open space lands, existing provisions within the Cropland Policy that permit BCPOS to review and approve/deny new GE crops remain in place. BCPOS and the BOCC remain open to consideration of GE crops (other than pesticide-resistant ones) in the future, especially pertaining to drought resistance.

Furthermore, the BOCC remains concerned about the continued use of pesticides, particularly neonicotinoids, and will continue to seek ways to reduce their use on county open space beyond the reduction accomplished by phasing out current GE crops. Consequently, the transition away from GE crops will be accompanied by a phase-out of neonicotinoid use on county property over the next 5 years.

To implement the GE transition effectively, this policy includes several additional components to protect the viability of agriculture in Boulder County during and after its implementation:

1. Assist tenants with GE leases. While the transition policy lays out specific guidelines for curtailing GE crop planting over the next 3-5 years that will apply uniformly to all tenants, each tenant's situation is unique. Consequently, BCPOS staff will work with each tenant to determine the financial implications of this transition (e.g., farm viability, lender support, crop loss, etc.) and identify a variety of tools and incentives to help minimize the potential economic impact and make tenants whole. This effort includes, but may not be limited to, assisting in the development of new farm operating plans that are GE-free, identifying and promoting training opportunities and best management practices, and developing incentives for GE crop acreage reductions that occur before deadlines. Also, if tenants choose not to renew leases that have had GE crops within the last two years, BCPOS will work to purchase irrigation equipment that should stay on county agricultural properties.

2. Support agriculture in Boulder County. Another feature of this policy is to continue and expand delivery of programs that support agricultural viability in Boulder County by providing transitioning tenants with alternative agricultural opportunities. Specifically, staff will continue to research and develop value-added products and new markets, deliver county capital improvement programs for irrigation infrastructure and other facility improvements, and offer organic incentives by staffing an organic weed crew, reducing rent during organic transitions, and introducing a new staff position to assist with organic certification.
3. Enhance data collection and monitoring. During the hearings on this topic earlier in 2016, some of the public expressed concerns that the county wasn't capturing or sharing important agricultural land and resource information. Since the adoption of the Cropland Policy in 2011, BCPOS staff has tracked acreage in GE and organic cropping systems as well as detailed revenue and costs for crop share leases. BCPOS has also monitored key natural resource characteristics on farm properties, including soil health and fertility, water quality/quantity, and the presence of pollinators and pesticide residues. However, the department recognizes that this program can be improved upon and be more effective by engaging additional technical review and support. We are committed to thoroughly reviewing our existing data collection and monitoring efforts and adopting new metrics and protocols that will capture and deliver more relevant information to both tenants and the public.
4. Launch a new sustainable agriculture research initiative. Staff proposed creating the Boulder County Sustainable Agriculture Research and Innovation Initiative to explore key questions to help sustain Boulder County agriculture and advance our goal to be a national leader in sustainable agriculture. Research will investigate questions related to local agricultural production (including GE crops) that balances environmental sensitivity (e.g., carbon sequestration, water conservation, decreased pesticide use, etc.) with farm economics. BCPOS and CSU Extension in Boulder County will develop and coordinate this research initiative in close cooperation with a variety of partner agencies (including Boulder County's Sustainability Office), organizations, and stakeholders in a collaborative and transparent manner. This project is envisioned to include research and demonstration plots that can be used to inform local agricultural practices to increase their sustainability metrics and economic viability, and explore new crop opportunities. While BCPOS is positioned to provide land/water resources and limited staff time to support this initiative, Boulder County will release an RFP that solicits institutional partners that can effectively collaborate with the county to launch and advance this ambitious research initiative.
5. Annual Public Hearing and Review of Transition Policy progress. Beginning in January 2018, BCPOS will produce an annual report on its progress to implement the GE Transition Policy. A public hearing will be scheduled with the BOCC for review of the report and of the progress of the transition policy to date. This review will include updates on the existing acreage totals in GE crops; any changes to leases with GE crops; most recent environmental and soil health monitoring data; progress of the Research Initiative; county, tenant, and stakeholder efforts to support agriculture; and an economic summary of the "state of agriculture" within BCPOS. Based upon each review, the BOCC may choose to make adjustments to the Transition Policy.

## **Conclusion**

Staff views this policy as the starting point in the transition away from GE crops. Our immediate focus will be on implementing this policy in the most just and fair manner possible. We will work diligently with affected tenants in hopes that they remain our trusted stewards of these lands and continue our agricultural heritage in this county. BCPOS staff believes that there is broad community support for our agricultural program. Staff and our tenants understand the critical importance of conserving soil and water resources. Indeed, a number of our tenants come from families that have farmed in this area for generations and have conserved their lands permanently through conservation easements. We also appreciate the interest the citizens of Boulder County take in public land agriculture and their concern for its impacts on natural resources. This transition policy acknowledges all of these perspectives and continues our efforts to keep agriculture sustainable in Boulder County.

## 6. Agricultural Inputs

Agriculture has an impact on the air, land, and water. Sustainable agriculture includes efforts to reduce extractive and destructive processes. Different types of agriculture use different techniques for maintaining a balance of practices to sustain the air, land, and water. The policies below attempt to address these different techniques while making it clear that Boulder County Parks and Open Space is committed to sustainable agriculture.

### 6.1. Genetically Engineered Crops

Crops have been selectively bred and manipulated for thousands of years. With the advent of new technologies, corporations and universities are using advanced techniques for inserting and altering genetic codes to create commercially viable plants that address continued issues in agriculture such as pest control and drought tolerance. Controversies have sprung up around the techniques, practices, and consequences of this technology. However, commercially available seeds and treatments are reviewed, tested, and approved by the Environmental Protection Agency, the U.S. Department of Agriculture, and the Food and Drug Administration.

Boulder County Parks and Open Space believes that sustainable agriculture for Boulder County must be founded upon the idea of long term viability.

In light of ongoing controversy over the public health, environmental, and socio-economic impacts of genetically engineered (GE) crops, Boulder County will, in general, only allow the planting of GE crops on County Open Space cropland when the likely, demonstrable benefits from the planting of a federally-approved GE crop will surpass the known and potential risks associated with adoption of the GE technology.

Boulder County shall consider the following potential impacts of a GE crop, as well as specific trait claims, in making its determination regarding whether the expected benefits exceed the costs and credibly verified scientifically-documented risks associated with planting the GE crop. Proposals shall be evaluated based on the applicable criteria that best relate to the specific trait claim made by the manufacturer. Decisions shall be made by the BOCC with input from POS staff and consultation with appropriate representatives from the University of Colorado (CU), Colorado State University (CSU), CSU Extension, tenant representatives, and other agricultural organizations and stakeholders.

- 6.1.1. **Integrated Pest Management and Resistance Management:** The GE technology shall be compatible with the core principles of Integrated Pest Management, which include an emphasis on pest prevention, diversification in the tools used to control pests, avoiding excessive reliance on any single tool, and attacking pests at their most vulnerable points in their lifecycle.
- 6.1.2. **Pesticide Resistance:** The GE cultivar shall allow farmers to significantly reduce the impacts of pesticides on non-target organisms and people, water and soil quality, or biodiversity either through a shift to reduced-risk pesticides or a reduction in pesticide use on a per acre basis (or both).

- 6.1.3. **Conservation:** The GE technology shall be compatible with core principles of Best Management Practices promoting soil conservation, water quality, and water conservation.
- 6.1.4. **Yield and Quality Management:** The GE technology shall substantially increase crop yield or crop quality, and/or profitability compared to best available genetics and production systems for the area.
- 6.1.5. **Human Nutrition:** The novel traits in the GE crop shall substantially enhance the nutritional quality and content of the harvested crop, so that any finished product containing the crop or ingredient qualify for FDA labeling requirements of “High,” “Rich in,” or “Provides.” (Current FDA regulations specify 20% or more.)
- 6.1.6. **Allergens and Toxicity:** The engineered crop shall substantially reduce the levels of known or expected human allergens or toxins, and the label associated with the crop, or foods containing the crop, identify the allergen whose levels have been reduced, the degree of reduction, and state that the crop was genetically engineered.

Approval of any GE crop shall be granted for five years at a time. For all GE crops approved for use, Boulder County shall develop a monitoring system in cooperation with farmers, CSU, and other partner agencies to determine whether the GE technology is consistently delivering the anticipated and claimed benefits and whether any unanticipated adverse impacts have occurred.

In 2016, five years following the approval of the 2011 Cropland Policy and several GE crop traits, the county held a series of public meetings concerning the continued use of genetically engineered crops on county-owned open space. During the process, the Board of County Commissioners expressed concerns about the long-term viability and sustainability of GE cropping systems designed to incorporate or rely on pesticide use. Citing broad environmental and food system impacts related to the pesticides required by GE crops, as well as policy concerns about the GE agricultural system, the BOCC voted to phase-out their use, as well as neonicotinoid pesticides, on open space within five years at a November 30, 2016 public meeting. However, the BOCC did acknowledge that some potential GE traits that do not contain a reliance on pesticides, such as drought resistance, could be considered in the future per the GE crop approval process in Section 6.1 of the Cropland Policy. During this five year period (2017-2021), the use of GE corn and sugar beet crops and neonicotinoids on open space will be governed by the Transition Policy that was approved at the November meeting. The approved Transition Policy is incorporated in this Cropland Policy as Appendix 13. During the transition period, farming operations with GE crops will continue to comply with the Gene Flow, Notification, and Resistance Management protocols established in the original policy below.

Any approval of genetically engineered crops or organisms on Boulder County Open Space land must address gene flow, notification, and resistance management. Genetically engineered crops must be approved for use by the Federal government and shall not be approved for planting on Open Space land

for a minimum of three years after approval for use by the Federal government. This will allow experts and policy-makers to assess possible impacts.

**Gene Flow:** Protocols surrounding gene flow are instituted in order to minimize opportunities for the intermingling of GE and non-GE genetics. Procedures will vary based on how the organism under consideration reproduces. Common practices with respect to plants currently approved by the USDA include removing bolts and planting non-GE buffers. If the Department approves a particular genetically engineered organism for Open Space properties, protocols for minimizing gene flow must be included.

**Notification** is currently part of the protocols for genetically engineered corn planted on Open Space. As with gene flow, protocols for proposed genetically engineered organisms will vary. Notification protocols shall protect neighbors from the possibility of gene flow and encourage communication to help with resistance management.

**Resistance management** addresses concerns regarding the development of pests resistant to pesticides. Resistance can be managed in a number of ways and protocols may call for additional resistance management techniques. To prevent development of weed resistance to glyphosate, BCPOS growers are required to rotate to a non-Roundup Ready cropping system in the year following a Roundup Ready crop. If this is not possible and Roundup Ready cropping is done in two consecutive years then a field must stay out of Roundup Ready cropping system for two years before returning to a Roundup Ready crop.

Resistance management protocols will also be required for Bt corn. Boulder County reserves the right to require best management practices as indicated by Bt resistance management studies.

## 6.2. Pest Management

Managing pests whether animal, plant, fungus, or other is a constant battle for farmers in Boulder County. Tools for managing pests vary by farmer, crop, and area. However, clear state and federal guidelines dictate application practices and precautions. Boulder County reserves the right to impose additional protocols to protect farmers, neighbors, plants, and/or animals.

- 6.2.1. Sustainable pest management is recognized as an integral part of agriculture operations. Boulder County supports the safe and controlled management of pests on Boulder County Property to protect the environment, neighbors and users.
- 6.2.2. Boulder County shall manage pests through a Strategic Integrated Pest Management Program that protects the environment, neighbors, and users (**Appendix 7: Strategic Integrated Pest Management** and **Appendix 9: Pesticide Application Protocols**).
- 6.2.3. Boulder County Ag tenants shall use any legal method for pest control allowed under State and Federal Law and in compliance with Boulder County's Strategic IPM Guidelines and Cropland Policy. Boulder County Parks and Open Space reserves the right to restrict specific pesticides and/or application practices. Boulder County Ag tenants shall reduce pesticide usage over time with the goal of minimizing the use, volume, and toxicity of these pesticides.

- 6.2.4. Any pesticide application on Open Space Agricultural Lands shall be completed in compliance with the Agricultural Division's application protocols.
- 6.2.5. Signage shall be posted on any fee-owned county properties along trails where pesticide spraying will take place adjacent to trails. Signage will be posted prior to pesticide spraying. The signage will include the spray date (or range of dates), type of pesticide being sprayed, and trail closures if necessary.
- 6.2.6. Boulder County recognizes that in addition to offering sustainability, pest management with several integrated tactics often results in better environmental stewardship. All tenants shall be strongly encouraged to coordinate multiple complementary approaches of pest management to avoid excessive reliance on a single tactic, practice, genetic trait, or pesticide thus extending the length of time over which practices are effective.
- 6.2.7. Boulder County shall implement monitoring and reporting regimes to evaluate pesticide usage on Open Space Agricultural properties with the goal of reducing pesticide use, volume, and toxicity.
- 6.2.8. Boulder County shall work collaboratively with producers, technical advisors, and researchers to determine the best and most effective tools for managing pests on Open Space Agricultural properties.
- 6.2.9. Agricultural tenants shall be provided, and comply, with clear expectations of Strategic Integrated Pest Management goals.

### **6.3. Soil Fertility and Amendments**

Soil fertility is integral to sustainable agriculture. Boulder County supports efforts to maintain and improve soil fertility.

- 6.3.1. Maintain relationships with partner agencies, organizations, and consultants that provide guidance to farmers. Provide access to these agencies, organizations, and consultants; and encourage farmers to seek innovative solutions to sustainable practice and soil fertility issues.
- 6.3.2. Boulder County encourages farmers to implement practices that improve and/or maintain fertility over the long term while maintaining economic and environmental goals.
- 6.3.3. Boulder County shall implement monitoring regimes to ensure that practices and policies are stabilizing and improving soil fertility.
- 6.3.4. Boulder County shall assure compliance with all Federal, State, and local health department requirements, as well as implement all Parks and Open Space requirements

for the use of biosolids on Boulder County lands. (Appendix 8: Biosolids Standard Operating Procedures)