# Town of Colden

## Agricultural and Farmland Protection Plan

# Appendix

**July 2023**

**Adopted January 4, 2024**

COLDEN
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# Appendix A
Public Participation

Appendix A Includes:

- Comprehensive Plan and AFPP Public Outreach Information Sheet

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# Town of Colden...
# Planning for Tomorrow Today!


## Town of Colden Comprehensive Plan Update and Agriculture and Farmland Protection Plan

The Town of Colden is updating the 1993 Comprehensive Plan and also developing a dedicated Agriculture and Farmland Protection Plan to guide the community through the next 10-12 years. To effectively develop these plans, the Town wants to hear from YOU – residents, farmers, & local business owners.

## The Town will be holding a public kickoff/ informational meeting on:
## DECEMBER 1ST, 6:30-8PM @ Colden Fire Hall
***(8448 Gutekunst Road)***

A dedicated project page is linked from the Town website which will include details on the public meeting. We are inviting Colden residents, business owners and farmers join us to find out more and share your insights!

***Colden Comprehensive Plan***: The Town of Colden is updating our old 1993 Master Plan to develop a new/refreshed Comprehensive Plan vision for the next 8-10 years. We invite you to take part in two brief surveys (5-10 minutes).

What is the direction of the Colden community over the next 8-10 years? Do we want to grow? Conserve & protect lands & resources? What are our opportunities and our shortfalls? A Comprehensive Plan is the means to provide this guidance based on community input with the development of a future vision along with goals and action items to achieve it. The Town's existing plan is from 1993 – and some things have changed since then! We need your feedback!

***Colden Agriculture & Farmland Protection Plan:*** Colden had changes with respect to Agriculture and Farmland issues. Farming and agriculture are essential elements for open space preservation and maintaining a balanced community, as well as enhancing the local economy. Colden is developing our first Agriculture and Farmland Protection Plan to supplement our existing "Right to Farm" local law. Information gathering for this needs your input to build on comments provided by residents at a Public Information meeting held in December 2021. The team would like to better define what "farming" presently means in Colden, and where it's heading. Is it raising crops, keeping animals of any type (including horses), cattle farms, growing herbs, vegetables, or similar things in gardens on your property, keeping bees, raising chickens for eggs, forestry, timber harvesting, tree farms, raising Christmas trees, or other similar activities *of any size or scale*, and where do these activities occur? Hobby farms, family gardens, and any size Agricultural activity is of interest for our planning. Please assist with your feedback on this important topic.

## ***Colden Landowners and Residents, You Can Help***:

We want to hear from Colden residents and landowners, and invite you to take part in two brief surveys giving your feedback; 5-10 minutes of your time to help your community over the next 10 years… not a bad trade off! Landowners and Residents can assist both of these projects by ***filling out the paper survey forms included with this Colden Spring 2022 newsletter***, ***or better yet by doing the same identical surveys via the online method***. The online survey also allows adding relevant information to a companion map helping us identify types and extent of agricultural in Colden.

***Colden Residents, More Information Available Online:*** The project website is: https://jsteinbach26.wixsite.com/coldenplan/community-involvement. While you're online, feel free to check out the rest of the site to learn more.

The two surveys will be open for at least 5 weeks duration from the date of the Newsletter mailing. We ask that any mailed survey forms be submitted as soon as possible since there is going to be more manual work to assemble the data for analysis.

**The QR Code below will take you to the online information for the two Plans. Thank you!**

**December 1, 2021 - Comments for Agriculture from the Public Information Meeting:**

A Public Information Meeting for the Colden Comprehensive Plan Update and the Colden Farming and Agricultural Protection Plan was held on December 1, 2021. A breakout take that focused on farming and agriculture in the community generated the following discussion.

While the Town historically has been a dairy farming community, that no longer seems to be the case. With dairy on the decline, other agricultural uses have emerged. When asked about the different agricultural entities, residents pointed to several diverse operations, ranging from commodity crops, to forestry, to livestock operations and more. Agriculture in the town is versatile, and a desire was expressed to have a comprehensive definition and understanding of agriculture.

A few residents and farmers expressed concerns regarding balancing residential and agricultural uses, citing the need for harmonious land use and concerns related to potential road damage by heavy vehicle use and manure. Further, it was noted that neighbor relations may benefit from education on agriculture and local foods, and from direct discussions between residents and farmers.

Many residents agreed that they support and encourage the production of local foods and expressed an interest in community supported agriculture (CSA). Some expressed a desire in developing community gardens as an opportunity for some to learn about agriculture and grow their own foods. The farmer's market was noted as a community asset, but it was acknowledged that there is competition between other local farmer's markets, including the one in East Aurora. There was some interest expressed in having agritourism opportunities located in the Town.

A few land-use concerns related to agricultural practices were mentioned. For one, it was mentioned that with further residential development, agricultural parcels may be at risk of becoming landlocked. The segmentation of agricultural lands for the use of residential development was also cited as a concern. Conversion pressures related to the development of renewable energy facilities was noted as an emerging pressure. Generally, it was agreed that farmland should be preserved and protected.

Summarized comments from break out group discussions:

- Protect farmland
- Accessibility issues with agricultural lands located behind residential uses
- Agriculture support entities are located outside of the Town's boundaries (Springville/Arcade)
- Balance residential and agricultural uses

- Challenges related to timber harvesting
- Concerns around renewable energy projects/pressures
- Concerns regarding agricultural uses and road damage
- Concerns regarding competition of other community farmer's markets: strengthen local market
- Concerns about utility companies use of chemicals and interference with agricultural operations/wells
- Definition of farming is needed
- Education needed on agriculture and local foods
- Encourage and support agriculture
- Encourage community supported agricultural uses (CSAs)
- Encourage/expand community gardens
- Farming is constrained by topography
- Few roadside stands (want more)
- Increase agricultural tourism
- Need representative picture of agriculture
- No dairy farming anymore
- Only way to preserve farmland is through conservation easements and purchase of development rights
- Welcome incoming farmers
- Residential/agriculture conflicts exist
- Segmentation/subdivision of agricultural lands for residential uses

# *Town of Colden*
# *Agricultural and Farmland Protection Plan*

The Town of Colden has received a grant from the NYS Department of Agriculture and Markets to prepare an Agricultural and Farmland Protection Plan, which is being developed by a team of professional planners hired by the Town. Farming and agriculture are essential elements for open space preservation and maintaining a balanced tax base, as well as enhancing the local economy. As part of the information gathering process for this plan, and to build on the comments provided by residents at a Public Information meeting that was held in December 2021, the project team would like to better define what "farming" actually is in Colden. Is it raising crops, keeping animals of any type (including horses), growing herbs, vegetables, or similar things in gardens on your property, keeping bees, raising chickens for eggs, timber harvesting or tree farms, or other similar activities of <u>any</u> size or scale, and where do these activities occur?

Residents can assist with this effort by completing an online survey and adding relevant information to a companion map to help us identify the types and extent of agricultural activity in Colden. The survey can be found at **https://bit.ly/coldenplans** or by scanning the QR code below.

Please note that <u>*any* information you provide in the online survey or on the map is *strictly confidential*</u> and will only be used by the Project Team – it will <u>*not*</u> be disclosed to the Town or any other entity. Hence, the source of the information that shows up on the map will be anonymous. Your willingness to participate in this effort will provide us with information that will help paint a picture of farming and agriculture in the Town and help us more effectively develop goals and recommendations for the future. If you have any questions about this effort or would like to learn more about this project, feel free to contact Wendy Salvati at **<u>wsalvati@wwsplanning.com</u>**.



CPL ARCHITECTURE ENGINEERING PLANNING CPLteam.com

WWS Planning

**Public Input Survey on Agriculture**

Whether you are an active farmer, or a resident who eats food, agriculture impacts us all! Take this survey to help us learn about agriculture and farming in the community.

1. Are you a…
   - ☐ Town resident?
   - ☐ Resident of a neighboring town? (Boston, Aurora, Concord, Sardinia, Holland)
   - ☐ Neither

2. Are you aware that the Town is preparing the Agricultural and Farmland Protection Plan?

3. Do you conduct any agricultural or farming activities of any size or scale? (For example: vegetable gardens, growing flowers or herbs, keeping bees or chickens, other small-scale activities, etc.)
   ☐ Yes ☐ No

4. If you answered yes, what agricultural or farming activities do you participate in?

5. Are you aware of any agricultural activities in Colden? (This could include local farms, nurseries, tree harvesting, etc. of any size or scale.)
   ☐ Yes ☐ No

6. If you answered yes, what are you aware of and where are they located?

7. Do you visit any farmers' markets?

☐ Yes ☐ No

8. If you answered yes, where and how often?

9. What do you feel is the biggest threat to existing open land and farms in the Town? Where is this occurring?

10. Do you think the Town should help protect existing agricultural uses and activities?

○ Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

11. If you indicated that you agree, how can the Town help protect agriculture uses and activities?

12. In the future, would you like to see more agriculture and farming activities in Colden?

○ Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

13. If you indicated that you agree, what agricultural and farming activities would you like to see? (For example: U-pick operations, ag-tourism opportunities, recreational agricultural activities, etc.)

14. Do you think of farming and agriculture as a way to preserve open space in the Town?

○ Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

15. Do you feel that the Town is restrictive in what property owners can do in terms of agricultural activities?

○ Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

16. If you indicated that you agree, how is the Town restrictive?

17. Would you like to have more opportunities to purchase local farm products?

○ Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

18. What can the Town do to further agriculture?

19. Do you have any other thoughts you would like to share?

***20.*** **Please write your name, your residence street address (NOT your mailing address), town, and zip code below, provide your email address and sign the survey.**
***{note: If you have Colden vacant land without a street address number, then give land's location in Colden, along with your mailing address.}***

Name: _____

Full Street Address: _____

Town & Zip Code: _____

*If Vacant Colden Land Give Location:* _____

_____

Your Email Address: _____

Signature: _____

**Thank you for completing our survey! Please return this to the Colden Town Clerk or place in the lobby DropBox, or mail to the address below:**

***Town of Colden Planning Board***

***PO Box 335***

***8812 State Road***

***Colden, NY 14033***

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ENGINEERING
PLANNING
CPLteam.com

# MEMORANDUM

TO: Wendy Salvati, Justin Steinbach

FROM: Melissa Keller

DATE: July 15, 2022

RE: Town of Colden Farmland Protection Plan Survey Summary

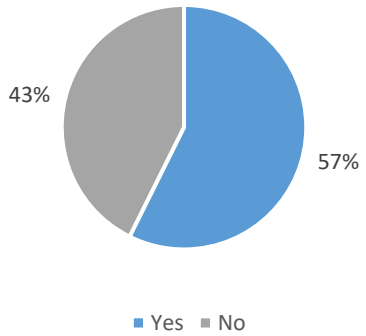
As the Town of Colden develops its first farmland protection plan, a survey tool was created to solicit input from the community. The survey consisted of both open ended and multiple-choice questions to help understand the Town's agricultural makeup, perceptions of agriculture in the community, and opportunities to build upon.

The survey was administered through a website dedicated to the planning effort and through a hardcopy version offered in the Town's newsletter. The survey was advertised through the Town's website, newsletter, and social media platforms. The survey was open for approximately five weeks and received about 68 responses during this time. Of the responses, 34 were received via hard copy, and 34 responses were received through the online platform. Online responses required certain questions be answered in order to submit the survey. Hard copy responses were made to conform to the online questionnaire. The planning team analyzed and summarized these responses.

Complementary to this survey, a digital mapping tool was also used to help identify where agricultural activities and supports exist – both within and outside of the Town's boundaries. Members of the public were asked to indicate what agricultural activities and support services they knew of on this digital map. This information can be found on the Agriculture and Farming Activities Map (cplteam.mysocialpinpoint.com/coldenplan2021).

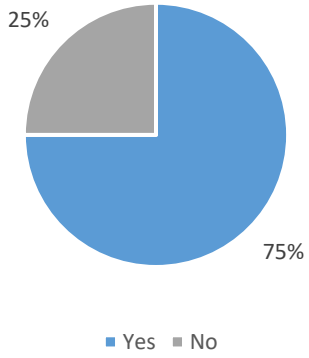
**Summarization of Responses**

1. *Are you aware that the Town is preparing the Agricultural and Farmland Protection Plan?*




Most respondents (57%) indicated that they were aware of the Town's efforts to develop an Agricultural and Farmland Protection Plan. Some said they found out about the plan through the Town's newsletter, and a few expressed support for the planning effort.

2. *Do you conduct any agricultural or farming activities of any size or scale?*



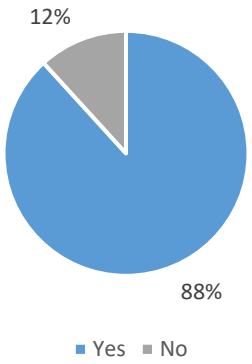

Participants were encouraged respond no matter the size or scale of their operation, and were offered examples such as vegetable gardens, growing flowers or herbs, keeping bees or chickens, other small-scale activities, etc. About 75% of respondents indicated that do they in agricultural or farming activities.

3. *What agricultural or farming activities do you participate in?*


Those that indicated that they conduct farming and/or agricultural activities were asked for additional details. While responses varied in their specificity and descriptions, many indicated that they grow vegetables and flowers. Some specifically indicated that they cultivate these for personal or small-scale use, while others did not indicate size or scale. A few respondents indicated that they have chickens, others specified if their chickens are egg laying hens or broilers. A couple of the responses indicated plans for agricultural activities in the future, some indicated that they are considering chickens, exploring bee keeping, or thinking of having small animals in the future.

A few respondents indicated efforts of a larger scale. One wrote that they grow corn, beets, and oats on a large farm plot. Another mentioned that they lease land to a larger farm, and another indicated that they grow field crops.

4. *Are you aware of any agricultural activities in Colden?*




Beyond agricultural pursuits residents conduct themselves, we asked respondents to share what they knew about other agricultural activities in Colden. They were prompted to think about local farms, nurseries, tree harvesting activities, etc. of any size or scale. Almost all of the respondents (88%) knew of some agricultural activities, with only a few responding that they were not aware of any.

5. *What are you aware of and where are they located?*


Responses to this question varied in detail, with some responses giving precise locations of agricultural operations and support businesses, and others sharing general agricultural activities they have seen around the Town. The graphic above illustrates the variety in activities mentioned, with no emphasis on the number of times an activity was mentioned.

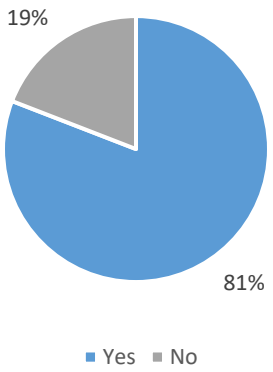
Where precise locations were given, these activities were added to the digital mapping tool and can be found on the Agriculture and Farming Activities Map. Other locations were less specific and spoken of generally. These responses are listed below:

- Beef and dairy production on South Hill Road

- Hereford farm on Center Street
- Fruit grown on Lower East Hill Road
- Alpacas on Lower East Hill Road
- Timber harvesting off of South Hill Road
- Maple production on South Hill Road
- Christmas tree farm on Center Street
- Tree farms/tree management areas: two on Bleinstein Road, one on Center Street where Blanchard Road ends
- Cut flower farm on Falls Road
- Farms on Center Street
- Farms along Route 240
- Logging occurring on private properties
- Corn on Center Street
- Farming on Crump Road

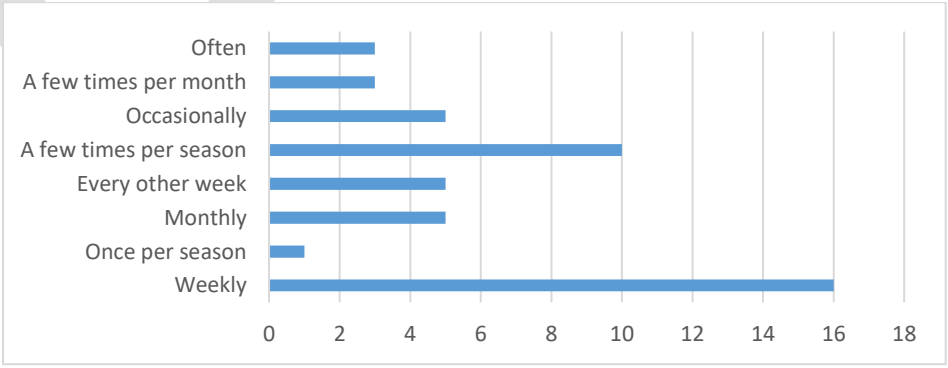
A few respondents simply answered that agricultural activities occur all throughout Town, some mentioning that the number of activities would be too many to list.

6. *Do you visit any local farmers markets?*



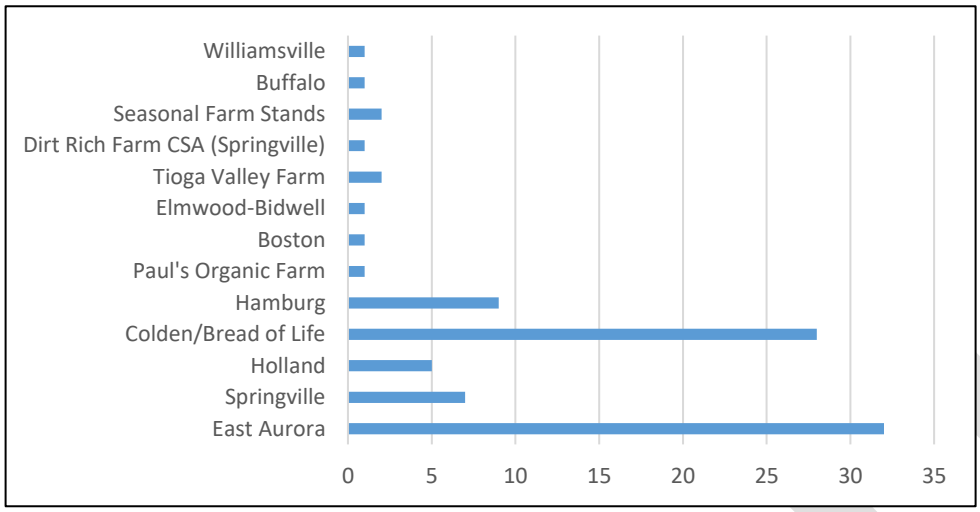

The majority of respondents (81%) indicated that they do visit a local farmer's market.

7. *How often and where?*




If respondents indicated that they visit a farmers' market, they were further prompt to indicate the

frequency of their visits. Responses varied in detail, but many indicated that they visit a market on a weekly basis. Others indicated that they may visit a market a few times a season, and some noted that they don't visit on a regimented basis.




Participants were also asked to indicate which markets they visit. Many indicated that they visit more than one market. The East Aurora farmers' market was mentioned most frequently (32 respondents), with the Colden/Bread of Life market closely following (28 respondents). One respondent mentioned that they are a vendor at the East Aurora market.

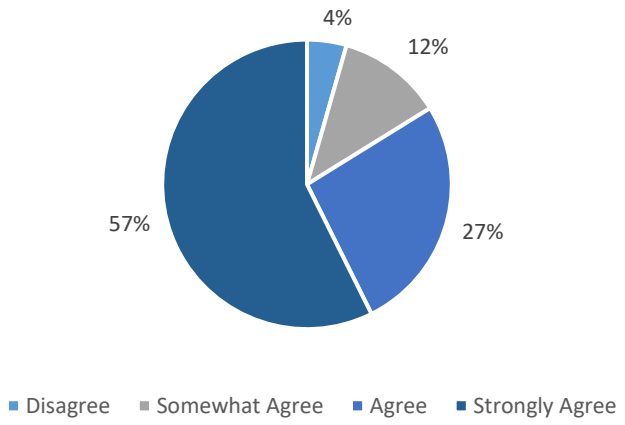
8. *What do you feel is the biggest threat to existing open land and farms in the Town? Where is this occurring?*


When asked to think on threats to existing open land and farmland, many of the responses indicated residential development as a threat. This was stated generally, but some expanded their answers to reflect on the impacts residential development has on accessibility to farmland (ex. creating housing in the front and leaving agricultural sections or parcels inaccessible), the availability of farmland, and the impact additional housing could have on the culture of the Town in general. In most cases, specific locations were not mentioned, but some pointed to developments on Center Street, Hayes Hollow Road, Irish Road, Partridge Road, Lower East Hill Road, Crump Road, and Boston-Colden Road.

While residential development was the most frequently mentioned threat, other forms of development were also noted. Specifically, commercial development and energy development were mentioned. Solar and wind developments were of concerns, but residents also shared concerns regarding oil and gas developments. A few mentioned development in general as a concern, without providing additional detail.

A few respondents commented on the economic viability of farming – some citing high taxes as a burden and threat, others noting that other avenues of employment are more profitable. One participant mentioned land use restrictions as a threat but did not provide example of such.

9. *Do you think the Town should help protect existing agricultural uses and activities?*



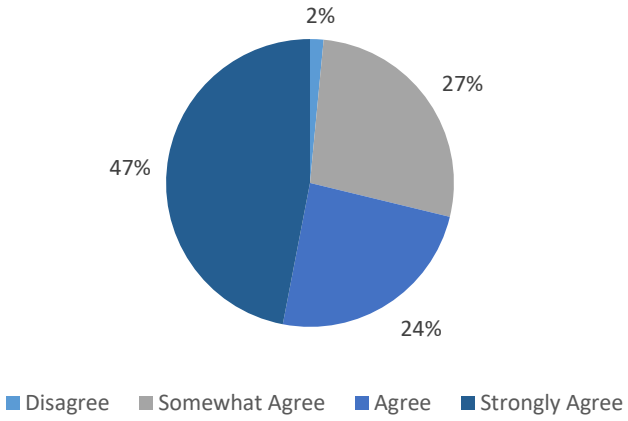

Most participants agreed that the Town should help to protect agriculture, with 57% of respondents indicating that they strongly agree and 27% indicating that they agree.

10. *How can the Town help protect agriculture uses and activities?*

If respondents indicated that the Town should help to protect agricultural uses and activities, they were further prompted to share how the Town could achieve this. Responses varied greatly, with many focusing on regulations and zoning to control development. Some specifically indicated that zoning should protect agriculture, and other suggested that development should be controlled in a way to minimize any impacts to agriculture. A few emphasized the need to enforce regulations and the need to do so consistently.

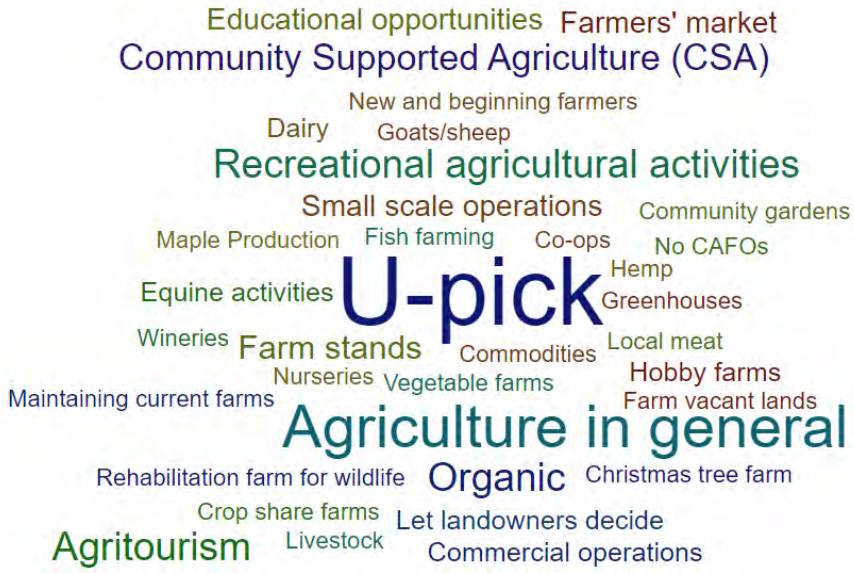
Many responses suggested actions related to promoting agriculture. Some specifically mentioned promoting agritourism and, specifically, the farmers' market. Others generally mentioned that agriculture should be promoted in Town, with some saying that Colden should be promoted as an agriculturally friendly area for new farmers.

11. *In the future, would you like to see more agriculture and farming activities in Colden?*




Responses indicate that residents are supportive of agricultural efforts and would like to see agricultural activities taking place in Town, with 47% of respondents indicating that they strongly agree and 24% indicating they agree.

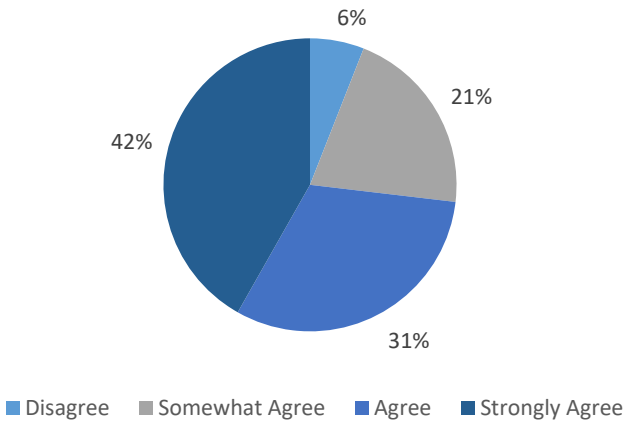
12. *What agricultural and farming activities would you like to see?*



If respondents indicated that they would like to see more agriculture and farming activities, they were further prompted to share what they would like to see. Examples were given, such as u-pick, agritourism opportunities, and recreational agricultural activities.

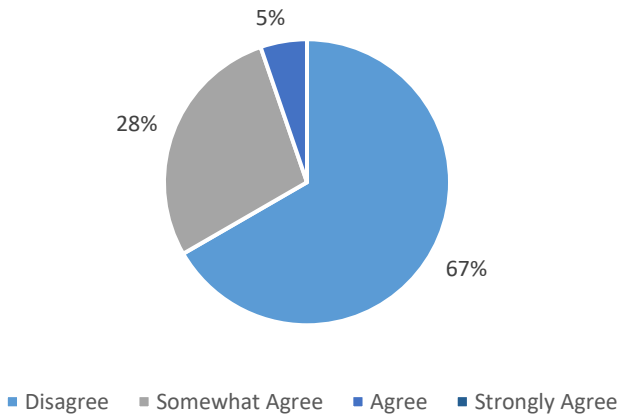
Many respondents indicated that they would like to see agritourism activities, some specifically mentioning u-pick operations, recreational activities (such as farm trails and walks), and wineries. Several mentioned interest in being able to buy local produce through a CSA program or farm stand and a few expressed a desire to buy local organic products.

13. *Do you think of farming and agriculture as a way to preserve open space in the Town?*



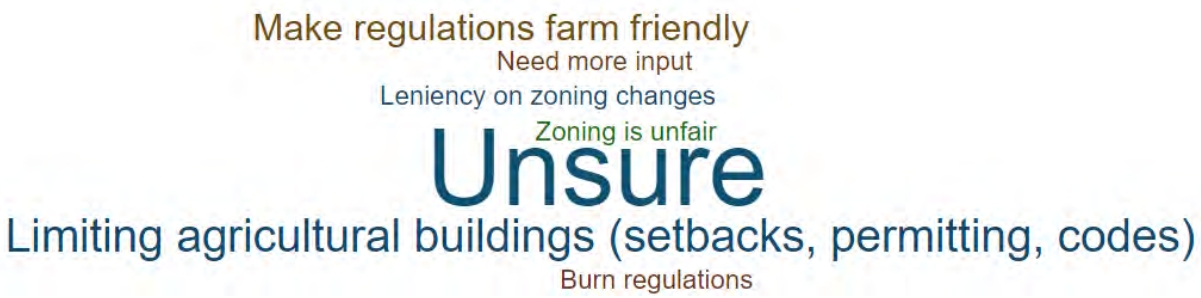

Most respondents indicated that they think of farming and agriculture as a way to preserve open space within the Town, with 42% indicating that they strongly agree and 31% indicating that they agree.

14. *Do you feel that the Town is restrictive in what property owners can do in terms of agricultural activities?*




The majority of respondents (67%) disagreed when asked if the Town was restrictive in what property owners can do in terms of agricultural activities.

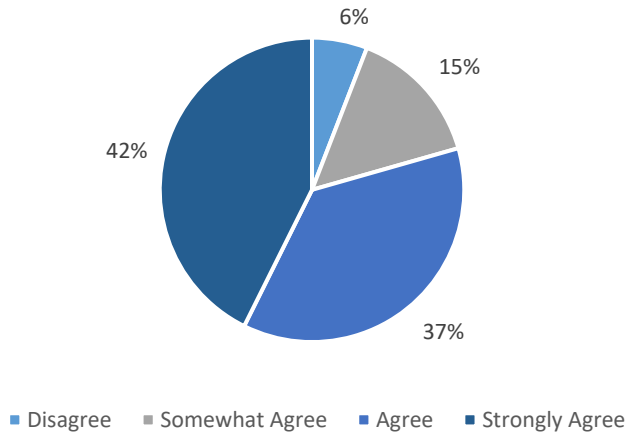
*15. How is the Town restrictive in terms of agricultural activities?*




The respondents that indicated that the feel the Town is restrictive of agricultural uses were prompted to give additional information. Despite their agreeance, many indicated that they were unsure – some indicating that they would have selected a "no opinion" option had there been one.

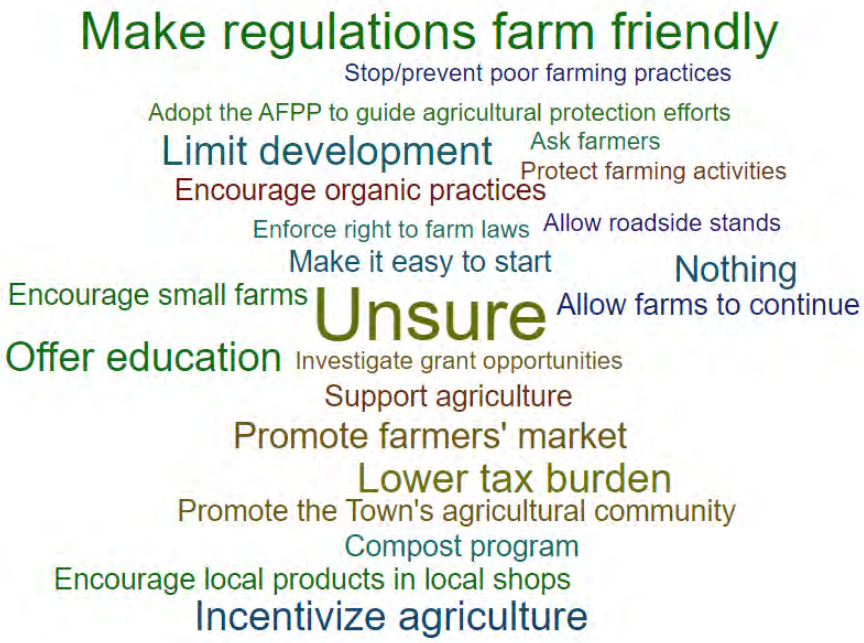
Those that did respond mainly focused on regulations and zoning, some specifically mentioning issues with setbacks and permitting. Some indicated that code enforcement is not evenly enforced throughout the Town.

*16. Would you like to have more opportunities to purchase local farm products?*




Many respondents indicated that they would like the opportunity to purchase more local farm products, with 42% of respondents indicating that they strongly agreed and 37% indicating that they agreed.

*17. What can the Town do to further agriculture?*




Respondents were asked to give their thoughts on what the Town could do to further agriculture. While many indicated that they were unsure of what the Town could do, those that did comment gave diverse and unique responses.

A number of responses focused on making regulations "farm friendly" (easy to understand, removing burdensome restrictions). Some spoke broadly on limiting development and preventing it from encroaching onto open space and farmland.

Respondents also suggested offering education. Some suggested holding educational sessions for residents on composting and home gardens, while others suggested focusing on best agricultural practices and providing education for farmers (current and new/beginning). Some indicated a desire to have agricultural education program within the local schools. A few indicated that education is necessary to create a mutual understanding between residents and agricultural producers on the benefits and impacts they have on one another.

Some respondents suggested incentivizing agriculture and farming. A few provided specific examples, such as providing tax relief for those engaging in agricultural activities or limiting taxes.

A fair number of respondents also commented on the local farmers' market. Some expressed their satisfaction with the market, while others commented on the opportunity for its expansion and growth. Competition among farmers' markets in the area was noted, and some expressed a desire for expanded hours, offerings and possibly an alternative location

*18. Do you have any other thoughts you would like to share?*

Respondents were asked to provide additional thoughts to cover anything not specifically addressed in the survey. The responses received are summarized below:

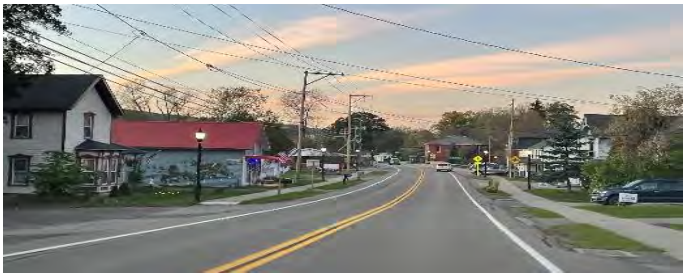
- Don't restrict farmers from using their land for other purposes
- Need full scale farmers' market (2 responses)
- Keep Colden as is (2 responses)
- Enforce regulations evenhandedly
- Use existing resources to benefit the Town
- Remain a small town
- Support agriculture
- Extend public water (2 responses)
- Reduce use of pesticides
- Requirements for building permits are overreaching and intrusive
- Keep Colden a well kept secret
- Need a place to drop off yard waste
- Extend public sewer
- Use Cornell Cooperative Extension as resource
- Concerned with environmental impacts
- Would like to see more organic farms
- Focus on environmental conservation
- Be open and transparent
- Increase minimum housing lot size
- Allow accessory dwelling units (homeownership, tourism)

*Town of Colden*

# COMPREHENSIVE PLAN UPDATE & FARMLAND PROTECTION PLAN


### *Be a part of Colden's future!*

Join us for our second public meeting to learn about the Town's Comprehensive Plan update and the Farmland Protection Plan. See what we've heard from the community so far and let us know what thoughts you have!



# PUBLIC MEETING/WORKSHOP

## September 27, 2022

## 6:00 PM – 8:00 PM

COLDEN FIRE HALL

8448 GUTEKUNST ROAD

COLDEN, NY 14033

**For more information visit:**
https://jsteinbach26.wixsite.com/coldenplan

ARCHITECTURE
ENGINEERING
PLANNING
CPLteam.com

# MEMORANDUM

| | |
|---|---|
| TO: | Town of Colden Planning Board |
| FROM: | CPL |
| DATE: | October 11, 2022 |
| RE: | Town of Colden Comprehensive Plan and Agriculture and Farmland Protection Plan: Public Meeting 2 |

On September 27, 2022, the Town of Colden held a second public meeting for the update of the Town's comprehensive/master plan and for the development of the agricultural and farmland protection plan. The Town advertised the meeting through several different means, including direct mailings to landowners; advertisement on the Town's website, postings on a separate website dedicated to the planning projects; and through social media posts. Members of the community were invited to hear a brief presentation on the planning process and were asked to provide their input on the proposed vision statement, core values, and goals. Participants were further prompted to give insight into their thoughts for future land uses in the Town. Attendees were divided into three groups, each lead by a facilitator from the planning team (CPL & WWS Planning). Approximately 60 people were in attendance.

**Response Summarization**

In each of the three groups, community members were prompted to give feedback on the proposed core values and goals. Below is a listing of the topics discussed within each group and the takeaways:

*Diamond Group*

- Predatory animals (coyote, mink, bobcat, etc.) are a concern for agricultural ventures.
- There is a desire to have more *Right to Farm* signs posted at the Town entrances.
- Realtors should be educated on *Right to Farm* laws.
- Utility companies are using pesticides on leased lands. This causes concern for soil contamination and water quality.
- There is a desire to see more local agricultural workshops held. Potential topics discussed included hobby farming and conservation easements.
- Form an agriculture citizens group that can develop a "clearing house" of information and resources to be posted on the Town's website.
- Development in the hamlet is constrained by small, narrow lots.

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- There isn't any space or infrastructure for new development in the hamlet.
- There is limited population to support activities/businesses.
- Better promotion of activities and services, such as the senior center, could help.
- Community members would like to see the senior center utilized more.
- Love the hamlet, and Town, the way it is – no need for change.
- There are no vacancies in the hamlet, all buildings are used for either commercial or residential uses.
- Design standards could help the hamlet retain its rural character.
- Trail development could include interpretive signage for birding.
- Hiking/cross country skiing could be developed alongside of the disc golf course coming to the Town's Park.
- Senior housing could be developed in the form of in-law apartments and/or elder cottages.
- Colden Elementary School could be rehabilitated for senior housing, priority is to house seniors that are citizens of Colden.
- Residential development could be explored near Kissing Bridge.

*Circle Group*

- Don't want to be like East Aurora.
- Keep Colden as it is.
- Colden is simple and quaint. Community members want to retain old-fashioned feel.
- The small community and beautiful landscapes are a draw to the Town.
- Residents do not want to see subdivisions or new roads.
- Any growth should be slow and incremental. Single family homes are preferred over other residential developments.
- Commercial growth should be contained to where it is currently located. Keep it condensed and contained – no leapfrog development.
- In line with keeping the commercial areas contained, community members expressed a desire to have a location where you could park your car and walk to all of the businesses.
- Glenwood area used to have more businesses, but that is no longer the case. Community members reminisced about old businesses but did not foresee similar businesses returning.
- Discourage industrial growth and development that would negatively impact the picturesque landscape of the Town.
- There was support for senior housing in the form of accessory dwelling units and development styles that would allow and encourage seniors to remain in the area. Senior living in the form of apartments was discouraged.
- Community would like to see senior center utilized more and additional programming/services for seniors.
- There was a strong desire to encourage and promote ways to bring the community together and build social connections within the community.

- Expressed appreciation for community events, such as festivals and music in the park. Encouraged having gathering spaces where community members can come together, like the former Colden Kitchen.
- Create resources to help new and beginning farmers, and farmers looking to expand their operations.
- Develop a local directory of farms and businesses that sell to the public.
- Design standards might be too prescriptive, but beautification efforts in the hamlet can help enhance curb appeal.
- Flooding is a concern for some residents already. Future development should be carefully considered to avoid negative impacts to waterway courses and levels.
- Community members shared mixed feelings about trail development, some encouraging trails and connectivity while others were concerned about trail maintenance. Some expressed concerns that trail development might be counter to the Town's rural character.
- Recognized that in order for local businesses to survive, they must attract customers from inside and outside the Town. Community members support having small, local businesses.

*Square Group*

- Do not want to see high density development.
- Accessory dwelling units are acceptable but should be allowed on larger sites.
- Height limits should be considered to keep to the Town's character.
- Patio homes may be an avenue to address senior housing needs.
- Design guidelines for commercial areas will help to keep the rural character and feel.
- Public parking is needed in the hamlet of Colden. Alternatively, providing shuttles during special events might help alleviate parking needs.
- Encourage agriculture and businesses but keep consistent with the character of the area.
- Continue to support Community Supported Agriculture (CSA) models.
- The Town has adequate park and trail facilities, more could be developed but the Town is not lacking.
- Water quality and quantity are issues that should be addressed.
- Community members support hobby and small-scale farms. These should be encouraged and expanded.

In each of the groups, community members were prompted to indicate whether they agreed with the core values and goals proposed for each plan. Consistent with previous public meetings and the earlier public outreach survey, residents and landowners agreed with the values and goals presented.

Building off of the responses received in the survey, conversations provided additional detail on the community's desire for future land use. In the survey, senior housing was indicated as a priority

for some. Further discussion within the groups maintained a consistent desire to see small scale development to meet the needs of an aging community, such as accessory dwelling units, patio homes, and modifications to keep seniors in their own homes. Senior living facilities were also discussed but encouraged to be of a smaller scale and retain the rural nature of the community.

In relation to commercial development, the hamlet of Colden was discussed as the Town's primary business area. Each group emphasized the desire to retain small, local businesses and ensure that the area continues to reflect the rural, traditional nature of the Town. When discussing potential growth, residents noted the physical and infrastructure constraints to growth within this area and noted a lack of parking availability. Any future growth was encouraged to take place and be contained within in existing commercial areas.

When discussing agriculture within the Town, community members consistently expressed their support for farming at any scale. As seen in past outreach efforts, residents and landowners expressed interest in workshops and educational efforts geared toward learning about agricultural topics. Participants expressed a desire to support local agricultural businesses but noted that they are not necessarily aware of what farms are selling to the public. Promotion and encouragement of agricultural enterprises was consistently noted.

# Town of Colden
# Agricultural and Farmland Protection Plan
# Stakeholders' Meeting Summary

**Date of Meeting:** March 28, 2023

**Meeting Time**: 6:30 PM

**Meeting Location:** Colden Fire Hall

This meeting was held with local residents who have a stakeholder interest in farming and agriculture in the Town to continue public outreach efforts for the Agricultural and Farmland Protection Plan (AFPP). Approximately 12 people attended, including three members of the Agriculture and Farmland Planning Committee, two of which are landowners involved in active agriculture and whose parcels are located in Southeast Agricultural District #15 (sign in sheet attached). The purpose of this meeting was to allow local stakeholders an opportunity to learn more about the preliminary draft AFPP and offer their comments on the plan.

Walt Kammer (Chairman of the Agriculture and Farmland Planning Committee) opened the meeting and provided a brief background on the Town's planning efforts to date for the Comprehensive Plan update and the preparation of the AFPP. He also explained that the project was funded through a grant that was received from the NYS Department of Agriculture and Markets (NYSAGM). He said that a link to a PDF of the AFPP was emailed to a number of stakeholders in hopes that they would attend this meeting and also review the plan. He said that he would try and get paper copies of the plan for anyone in attendance who might prefer that to the digital file.

Walt introduced Wendy Salvati from WWS Planning who gave a presentation to familiar the attendees with the purpose of the AFPP and the efforts that have been undertaken that have led to this meeting (presentation slides attached).

Wendy provided those in attendance with small copies of the Local Agricultural Resources and Agricultural Assets and Resources maps from the preliminary draft AFPP (large format paper copies of these maps were posted for citizen review prior to and after the meeting). She explained that the AFPP is a community driven effort that is being overseen by members of the Planning Board, Town Board, and a few others who comprise the Agriculture and Farmland Planning Committee. Wendy noted that the AFPP is currently in a preliminary draft form and will be finalized after comments are received from the attendees (stakeholders) and gathered at a third public meeting that is scheduled for late April 2023. She spoke about the various sections of the plan and what they offer, including:

- An introduction and discussion of the public input process.
- An inventory of current conditions in Colden (demographics, natural resources, public infrastructure); a section that focuses more specifically on agriculture and agricultural resources in the Town (soils, agricultural districts, support services, etc.).
- An overview of various information and resources to help existing and new farmers in the community.

- An analysis of the data collected from research and public input, an analysis of strengths, weaknesses, opportunities, and threats to farming in Colden, and a farm friendly analysis of Town regulations.
- A summary of the data and development of a "vision map" that illustrates areas for agricultural protection (which is essentially most of the Town), and a listing of goals and recommendations.

She noted that an executive summary and an implementation matrix are forthcoming as the final sections of the AFPP.

Wendy explained that the planning process for the AFPP and Comprehensive Plan update included an extensive public outreach component. This includes a public information meeting in December 2021, a project website, and use of a Town-wide survey questionnaire that was linked to an online mapping tool. This survey and map enabled the collection of a variety of information about agriculture in the Town. The survey was active for about 6 weeks in the spring of 2022 and there were 116 responses. All the information collected was mapped and the survey results and map were vetted at a second public meeting that was held in September 2022. This meeting provided an opportunity to gather additional information for the map.

Wendy said that the information gathered from the public, in combination with data gathered through research, were analyzed and a set of three goals were developed to drive the plan. She presented the goals and discussed findings associated with each. She explained that the goals will be achieved through the implementation of a number of recommendations that were assigned for each.

Wendy discussed the next steps in the planning process for the AFPP:

- Gather comments from Stakeholders.
- Hold a third and final public outreach meeting in April.
- Plan to be reviewed by the NYSAGM.
- Plan to be accepted by the Agriculture and Farmland Planning Committee.
- Plan to be reviewed and accepted by the Town Board.
- Review and approval by the Erie County Agricultural and Farmland Protection Board.
- The Town Board holds Public Hearing (last opportunity to comment on the plan) and adopts the AFPP.
- Final approval by the NYSAGM.

Wendy stated that she is aware that some of the stakeholders who were present have not reviewed the plan yet, but asked if there were any questions. There were a few questions related to the information noted on the Local Agricultural Resources Map. Paul Cohn said that there is a significant need for workforce laborers in Town. He said that it is difficult to undertake larger-scale activities without such labor. He noted that he cannot get younger people to work on his lands; he has spoken with folks at BOCES and Erie County Cornell Cooperative Extension, but they could not provide sufficient assistance. He said that he would gladly mentor people or help establish a mentorship program to help educate youth in an effort to increase the number of available workers and make farming more attractive to these individuals. It was mentioned that the remaining farming communities in Erie County compete for laborers with other counties, such as Wyoming or Livingston County, where farming is far more widespread. Overall, however, the number of farm laborers had sharply declined.

Discussed ensued on various avenues for providing education and training, such as 4-H programs and the Future Farmers of American program that is taught in the Springville-Griffith school district. In general, there is a need for more hands-on training programs at the high school level and at community colleges to provide education on agriculture. It was noted that 376 kids participate in 4-H, but most are in farming communities such as Marilla or Eden. Most of the other school districts have dropped this type of instruction. Fred Thurnherr said that Colden historically had a large number of small working farms, and extensive areas were cleared for farming. However, the topography and soils in Colden were constraints and farming activity declined over the years. The large amount of wooded area in the Town is testament to the loss of farming activity.

Wendy said that she would appreciate it if those in attendance could take the time to review the AFPP and provide any comments to Walt. She asked if this could be done by the next Public Meeting for the AFPP and Comprehensive Plan update, which will be held at the Colden Fire Hall on Tuesday, April 25, 2023.

Meeting adjourned at 7:45 pm.

Respectfully Submitted,

*Wendy Weber Salvati*

# Appendix B
Town of Colden Land Use Regulations

Appendix B Includes:

- Chapter 108.Zoning - Article IX. AG Agricultural District

- Chapter 46. Farming

- Chapter 106. Wind Energy Conversion Systems

- Chapter 107. Solar Energy Conversions Systems

- Chapter 92. Subdivision of Land

- Chapter 108. Zoning - Article XVII. Supplemental Cluster Housing and Townhouse Regulations

# Chapter 108. Zoning

## Article IX. AG Agricultural District

### § 108-36. Permitted uses and structures.

Permitted uses and structures for the AG Agricultural District shall be as follows:

A. Principal uses and structures.

(1) Single-family dwelling.

(2) Church or other places of worship or religious education, parish house, convent, rectory or parsonage.

(3) Fire station.

(4) Public library or public museum.

(5) Elementary or secondary school or college accredited by the New York State Department of Education.

(6) Preschool, nursery school or day nursery, subject to side yard requirements for other principal buildings.

(7) Golf course of at least nine holes, miniature golf course and/or practice driving range, including accessory buildings, structures and uses which are necessary for or customary to such operations; provided, further, that no buildings or structures shall be less than 100 feet from any street line, road line or any other lot in an R or AG District.
[Amended 8-14-1997 by L.L. No. 6-1997]

(8) Bed-and-breakfast establishments.

(9) Cluster housing, including townhouses, subject to the provisions for cluster housing and townhouses as stipulated in the appropriate article of this chapter[1] and subject to a site plan approved by the Town Board.
[1] *Editor's Note: See Art.* ***XVII*** *of this chapter.*

(10) Two-family dwellings.

(11) Two single-family dwellings on a single lot of at least six acres, provided that all buildings are located so as to permit future division of the property into separate lots with minimum area and yard regulations as stipulated for single-family usage.

(12) Agricultural, floricultural and horticultural pursuits, including but not limited to general farms, greenhouses, plant nurseries, truck gardens, dairy husbandry, animal husbandry and the raising of bees, poultry and livestock, together with all customary buildings and other structures necessary for the production and storage of the products of such pursuits, provided that no buildings, pens and runways for the confinement of livestock or poultry and no manure or other dust-producing substances shall be stored within 100 feet of any lot line.

(13) Forest farming, including tree farming.

(14) Veterinarian or small animal hospital; provided however, that no buildings, pens or runways for the confinement of animals and no manure or other odor- or dust-producing substances shall be within 100 feet of any lot line.

(15) Group home for developmentally disadvantaged, unrelated persons, not to exceed accommodations for eight such persons, subject to side yard requirements for other principal buildings.

(16) Nursing, custodial or convalescent home subject to side yard requirements for other principal buildings. Penal institutions are excluded.

(17) Cemeteries.[2]

[2] *Editor's Note: Former Subsection A(17), allowing private wildlife reservations or conservation projects as a permitted use, was repealed 5-9-2002 by L.L. No. 1-2002. See now Subsection **A(22)(i)**. This local law also redesignated former Subsection A(18) through (24) as A(17) through (23), respectively.*

(18) Institution of a religious, charitable or philanthropic nature.

(19) Nonprofit private club, including a club swimming pool and/or tennis parks, catering exclusively to members and guests.

(20) Construction and contracting business, such as but not limited to builder, electrician, plumber, landscaping and general contractor; office operation and covered storage on premises for up to 10 motor/fuel-driven construction related pieces of equipment of more than 20 horsepower. A minimum lot size of six acres is required.

(21) Shops for custom work, such as but not limited to cabinetmaking, carpentry, electrical and mechanical trades, plumbing, printing, shoe repair and tailoring, provided that no more than five persons are employed in such shop and only light machines and hand tools are used in connection therewith and no operation is so conducted as to be noxious or offensive. Shops not meeting these conditions will require a special use permit.

(22) The following uses by special use permit authorized by the Town Board, subject to Article **XXII** of this chapter relating to the issuance of special use permits:

(a) Telecommunications facilities, which shall be governed by the provisions of Chapter **96**.
[Amended 11-6-1997 by L.L. No. 8-1997]

(b) Dog kennels.

(c) Private airport.

(d) Two or more single-family dwellings for use of the owner thereof or rented to others.

(e) Picnic grounds or grove for which a fee or rental is charged for the use of the premises, excluding all amusement devices other than customary playground apparatus.

(f) Junkyards shall be a minimum of 50 acres with no portion thereof less than 250 feet from any lot line and further subject to Chapter **67**, Junkyards, of the Code of the Town of Colden as now existing or hereafter amended.
[Amended 5-9-2002 by L.L. No. 1-2002]

(g) Windmill with the base thereof no less than 100 feet from any property line or a distance equal to the height of the windmill, whichever is greater.

(h) Public events.
[Added 8-14-1997 by L.L. No. 6-1997]

(i) Private wildlife reservations or conservation projects, including the customary buildings and structures therefor.
[Added 5-9-2002 by L.L. No. 1-2002]

(23) The following uses and structures subject to Article **XXV**, Amendments, and based on a site plan approved by the Town Board:

(a) Ski center or resort on a minimum of 100 acres, with no portion thereof less than 100 feet from any lot line.

(b) Campground or recreational vehicle park on a minimum of 50 acres with no portion thereof less than 100 feet from any property line and no less than 10 campsites occupied or maintained for occupancy.
[Amended 7-9-2009 by L.L. No. 3-2009

(c) Commercial horseback riding stables with trails on a minimum of 30 acres, with no portion thereof less than 100 feet from any lot line.

B. Accessory uses and structures.

(1) Accessory uses permitted and as regulated in the R-2 District.

(2) Accessory uses and structures customarily incidental to permitted principal uses.

(3) Refreshment stand dispensing food and beverages incidental to the operation of a commercial picnic grove.

(4) Roadside stand or building for the sale and display of agricultural products grown on the premises. Any roadside stand or building used for the sale or display of such products shall contain not more than 600 square feet of floor area and shall be set back at least 20 feet from the right-of-way.

(5) Satellite antennas measuring one meter or less in diameter. Such antennas shall require the issuance of a building permit. All such satellite antennas shall be located to the rear of the front building line of the principal building and, if located in a side yard area, shall conform to side yard requirements.
[Added 11-6-1997 by L.L. No. 8-1997]

(6) Solar energy conversion systems 25kW or less via unified solar permit.
[Added 2-8-2018 by L.L. No. 2-2018]

C. The following uses by special use permit authorized by the Town Board, subject to Article **XXII** of this chapter relating to the issuance of special use permits:
[Added 3-12-2009 by L.L. No. 2-2009]

(1) Private wind energy conversion systems.

(2) Solar energy conversion systems greater than 25kW via special use permit.
[Added 2-8-2018 by L.L. No. 2-2018]

(3) Solar energy conversion systems 25kW or less via special use permit.
[Added 2-8-2018 by L.L. No. 2-2018]

## § 108-37. Minimum habitable floor area of dwelling.

Minimum habitable floor area shall be:

A. For single-family: 960 square feet.

B. For two-family dwelling: 1,600 square feet total; 800 square feet for each dwelling unit.

## § 108-38. Maximum height of buildings.

The maximum height of buildings shall be as specified in this section:

A. Dwellings: 2 1/2 stories not to exceed 35 feet.

B. Farm buildings: no limit.

C. Other principal buildings: as regulated by yard requirements.

D. Clubs: not to exceed 35 feet.

E. Accessory buildings: not to exceed 25 feet.

## § 108-39. Minimum lot size.

The minimum lot size shall be as specified in this section:

A. Lot area.

(1) One hundred twenty-five thousand square feet (approximately three acres).

(2) Two-family dwelling or two single-family dwellings on a single lot: six acres.

B. Lot width at building line shall be 250 feet.

## § 108-40. Required yards.

The minimum required yards and other open spaces shall be as specified in this section:

A. Front yard: 50 feet minimum requirement for setback from the edge of a right-of-way.
[Amended 5-9-2002 by L.L. No. 1-2002]

B. Side yards: two required.

(1) For dwellings: 15 feet.

(2) Other principal buildings: Each side yard shall equal 30 feet for a single-story principal building and 45 feet for a two-story principal building.

C. Rear yard. No rear yard shall have a depth of less than 50 feet measured from the main building or 15 feet measured from an accessory building.
[Amended 5-9-2002 by L.L. No. 1-2002]

## § 108-41. Off-street parking regulations.

For applicable off-street parking requirements, see the appropriate article of this chapter.[1]

[1] *Editor's Note: See Art. XI, Off-Street Parking.*

## § 108-42. Sign regulations.

For applicable sign regulations, see the appropriate article of this chapter.[1]

[1] *Editor's Note: See Art. XIII, Signs.*

# § 108-43. Supplemental regulations.

For applicable supplemental regulations pertaining to use, height, area or open space, see the appropriate articles of this chapter.[1]

[1] *Editor's Note: See Arts. XIV through XVI of this chapter.*

# Chapter 46. Farming

[HISTORY: Adopted by the Town Board of the Town of Colden as indicated in article histories. Amendments noted where applicable.]

**GENERAL REFERENCES**
Environmental quality review — See Ch. **43.**
AG Agricultural District — See Ch. **108**, Art. **IX.**

# Article I. Right to Farm

[Adopted 6-12-2008 by L.L. No. 1-2008[1]]

[1] *Editor's Note: The provisions of this local law were originally adopted as Ch. 90 but were renumbered in order to maintain the alphabetical sequence of the Code.*

## § 46-1. Definitions.

A. As used in this article, the following terms shall have the meanings indicated:

**AGRICULTURAL PRACTICES**
All activities conducted by a farmer on a farm to produce agricultural products and which are inherent and necessary to the operation of a farm and the on-farm production, processing, and marketing of agricultural products, including, but not limited to, the collection, transportation, distribution, storage, and land application of animal wastes; storage, transportation, and use of equipment for tillage, planting, harvesting, irrigation, fertilization, and pesticide application; storage and use of legally permitted fertilizers, limes, and pesticides, all in accordance with local, state and federal law and regulations and in accordance with manufacturers' instructions and warnings; storage, use, and application of animal feed and foodstuffs; construction and use of farm structures and facilities for the storage of animal wastes, farm equipment, pesticides, fertilizers, agricultural products, and livestock, for the sale of agricultural products, and for the use of farm labor, as permitted by local and state building codes and regulations; including the construction and maintenance of fences.

**AGRICULTURAL PRODUCTS**
Those products as defined in § 301(2) of Article 25-AA of the Agriculture and Markets Law.

**FARM**
The land, buildings, farm residential buildings, and machinery used in the production, whether for profit or otherwise, of agricultural products.

**FARMER**
Any person, organization, entity, association, partnership, or corporation engaged in the business of agriculture, for profit or otherwise, including the cultivation of land, the raising of crops, or the raising of livestock, poultry, fur-bearing animals, or fish, the harvesting of timber or the practicing of horticulture or apiculture.

**GENERALLY ACCEPTED AGRICULTURAL PRACTICES**

Those practices which are feasible, lawful, inherent, customary, necessary, reasonable, normal, safe, and typical to the industry or unique to the commodity as they pertain to the practices listed in § **46-1A** under the definition of "agricultural practices."

B. Unless specifically defined above, words or phrases used in this article shall be interpreted so as to give them meanings they have in common usage and to give this article its most reasonable application.

## § 46-2. Right-to-farm declaration.

A. Farmers, as well as those employed, retained, or otherwise authorized to act on behalf of farmers, may lawfully engage in agricultural practices within the Town of Colden at all such times and in all such locations as are reasonably necessary to conduct the business of agriculture. For any agricultural practice, in determining the reasonableness of the time, place, and methodology of such practice, due weight and consideration shall be given to both traditional customs and procedures in the farming industry as well as to advances resulting from increased knowledge and improved technologies.

B. Agricultural practices conducted on farmland shall not be found to be a public or private nuisance if such agricultural practices are:

(1) Reasonable and necessary to the particular farm or farm operation;

(2) Conducted in a manner which is not negligent or reckless;

(3) Conducted in conformity with generally accepted agricultural practices;

(4) Conducted in conformity with all local, state and federal laws and regulations;

(5) Conducted in a manner which does not constitute a threat to public health and safety or cause injury to health or safety of any person; and

(6) Conducted in a manner which does not unreasonably obstruct the free passage or use of navigable waters or public roadways.

C. Nothing in this article shall be construed to prohibit an aggrieved party from recovering damages for bodily injury or wrongful death.

## § 46-3. Severability.

If any part of this article is, for any reason, held to be unconstitutional or invalid, such decision shall not affect the remainder of this article.

## § 46-4. Notification of real estate buyers.

In order to promote harmony between farmers and their new neighbors, the Town of Colden requires landholders and/or their agents and assigns to provide notice to prospective purchasers and occupants as follows: "This property is within the Town of Colden. It is the policy of the Town to conserve, protect, and encourage the development of farm operations within its borders for the production of food and other products, and one should be aware of the inherent potential conditions associated with such purchases or residence. Such conditions may include, but are not limited to, noise, odors, fumes, dust, smoke, insects, operation of machinery during any hour, day or night, storage and disposal of plant and animal waste products, and the applications of chemical fertilizers, soil amendments, herbicides, and pesticides by ground or aerial spraying or other methods. Occupying land within the Town of Colden means that one should expect and accept such conditions as a normal and necessary aspect of living in such an area."

# § 46-5. Resolution of disputes.

Any issue of controversy that arises which cannot be resolved directly between the parties involved, and is not addressed by other laws or regulations, may be promptly and inexpensively resolved by referral to the Town of Colden Environmental Board for open hearing and recommendations. The Town of Colden Environmental Board will act as a grievance committee as a whole. Any controversy between the parties shall be submitted to the Town of Colden Environmental Board within 30 days of the occurrence and shall be placed on the agenda of the next nearest Town of Colden Environmental Board meeting date.

# Chapter 106. Wind Energy Conversion Systems

[HISTORY: Adopted by the Town Board of the Town of Colden as indicated in article histories. Amendments noted where applicable.]

**GENERAL REFERENCES**
Zoning — See Ch. **108.**

# Article I. Private-Use Systems

[Adopted 3-12-2009 by L.L. No. 1-2009]

## § 106-1. Legislative intent; purpose.

A. The Town of Colden finds and declares that wind energy is an abundant, renewable and nonpolluting resource of the Town and that its conversion to electricity will reduce our dependence on nonrenewable energy sources and decrease the air and water pollution that results from the use of conventional energy sources.

B. The Town of Colden further declares that the primary purpose of a proposed windmill will be to provide power for the principal and private use of the property whereon said windmill is to be located and shall not be for the generation of power for commercial purposes, although this provision shall not be interpreted to prohibit the sale of excess power generated from time to time from a windmill designed to meet the energy needs of private use.

## § 106-2. Permit requirements.

A. Special use permit. A special use permit is required in accordance with the provisions of Article **XXII** of Chapter **108**, Zoning.

B. Building permit. A building permit is required in accordance with the provisions of Article **XX** of Chapter **108**, Zoning.

## § 106-3. Site plan requirements; general specifications; applicable provisions.

A. A site plan must be submitted containing and describing the following:

(1) Property lines and physical dimensions of the site.

(2) Location and dimensions of existing structures on the site.

(3) Location and elevation of proposed windmill with description of tower.

(4) Location of all aboveground utility lines on site (e.g., electric, gas, communications, etc.).

B. The minimal lot size required for erection, construction or placement of a windmill on a property shall be five acres.

C. A minimum distance of 200 feet from boundaries or habitable buildings is required.

D. The wind energy conversion system must be equipped with both manual and automatic controls to limit the rotational speed of the blade to below the design limits of the rotor. The application must contain a statement certifying that the rotor and overspeed controls have been designed and fabricated for the proposed use in accordance with good engineering practices. This certification would normally be supplied by the manufacturer.

E. The requirements for the tower shall be subject to all applicable provisions of Chapter **96**, Telecommunications Facilities, of the Code of the Town of Colden.

## § 106-4. Documentation of noise levels.

A. Prior to the issuance of a building permit, the wind energy conversion system manufacturer shall provide sufficient data and documentation to establish that the wind energy conversion system will not produce noise levels in excess of those stipulated in the following table:

| Ambient Readings Without Windmill (decibels) | Maximum Permitted Reading With Windmill Operating (decibels) |
|---|---|
| 45 | 55.4 |
| 50 | 56.2 |
| 55 | 61.0 |
| 60 | 61.2 |
| 65 | 65.4 |

B. Decibel level readings shall be measured at the closest property line to the wind energy conversion system.

## § 106-5. Sound measurement reports; maintenance required; authority to abate.

A. After the wind energy conversion system has been approved and installed, sound measurements shall be performed to determine ambient and operating decibel levels. The sound level shall be measured on a sound level meter using the A-weighting network, with measurements being done by a professional normally engaged in this type of work. Such reports shall be filed with the Town Clerk by June 1 of each biennial year after construction.

B. If a wind energy conversion system is not maintained in an operational condition for a period of one year and poses a potential safety hazard as determined by the Town of Colden Code Enforcement Officer, the owner shall take expeditious action to remedy the situation. The Town of Colden reserves the authority to abate any hazardous situation and to pass the cost of such abatement on to the owner of the system. If the Town of Colden determines that the wind energy conversion system has been abandoned and poses a safety hazard, the system shall be removed within 45 days of written notice to the owner of the system.

## § 106-6. Complaint and investigation of electromagnetic interference and decibel levels.

A. Electromagnetic interference.

(1) The wind energy conversion system shall be operated such that no disruptive electromagnetic interference is caused. If it has been demonstrated to a Town Building and Zoning Inspector, or designated agent of the Town, that a wind energy conversion system is causing harmful interference, the operator shall promptly mitigate the harmful interference.

(2) Upon complaint of an abutter citing electromagnetic interference, an investigation shall be performed by an agent designated by the Town. The agent shall submit his findings to the Town Board for review and evaluation. After the review and evaluation of the report, the Town Board shall determine if the installation causes electromagnetic interference to any abutter. The cost for the report shall be paid for by the complainant unless the Town Board determines that there is electromagnetic interference with an abutter, in which case the wind energy conversion system owner shall pay the cost.

(3) If electromagnetic interference is caused by the installation of the wind energy conversion system, the installation shall be deemed a public nuisance in violation of this Subsection **A**. The violation shall be corrected within 90 days of the date of notification. If the electromagnetic interference cannot be remedied, the wind energy conversion system shall be removed or relocated.

B. Upon complaint of an abutter, ambient and maximum permitted decibel measurements shall be performed by an agent designated by the Town. The agent shall submit recorded sound measurements to the Town Board for review and evaluation. The cost shall be paid for by the complainant unless maximum permitted decibel readings have been exceeded, in which case the wind energy conversion system owner shall pay the cost.

## § 106-7. Private-use windmills.

Small private-use windmills available from retail outlets shall be considered personal-use machines. These machines are defined as those producing fewer than 5,000 watts and are less than 75 feet in total height. They will be subject to all the above requirements, with the exception of the following:

A. Minimum lot size of five acres.

B. Maintenance records.

C. Special use permit.

D. Setback. The required setback for a personal-use machine shall be 1 1/2 times the total structure height.

# Article II. Commercial Systems

[Adopted 5-13-2010 by L.L. No. 2-2010]

## § 106-8. Legislative intent; purpose.

A. The purpose of these regulations for utility-scale wind energy conversion systems (WECS) is to ensure that development of these facilities will have a minimal impact on adjacent properties and to protect the health, safety and welfare of residents of the Town.

B. The Town of Colden recognizes that wind energy is an abundant, renewable and nonpolluting energy resource of the Town and that its conversion to electricity will reduce dependence on nonrenewable energy resources and decrease air and water pollution that results from the use of conventional energy sources.

# § 106-9. Definitions.

As used in this article, the following terms shall have the meanings indicated:

**HEIGHT**

When referring to a tower or other structure, the height shall be measured from existing or natural grade, whichever is lower, to the highest point on the tower or other structure, including the base pad and any antennas. The height of a WECS shall be measured from such grade to the apex of the blade in the vertical position.

**SITE**

The physical location of a WECS, including the related tower and transmission equipment.

**SMALL-SCALE (NONCOMMERCIAL) WIND ENERGY CONVERSION SYSTEM**

A wind energy conversion system consisting of one wind turbine that is incidental and subordinate to another use on the same parcel and that supplies electrical power solely for on-site use, except that when a parcel on which a small-scale WECS is installed also receives electrical power supplied by a utility company, excess electrical power generated by the small-scale WECS and not presently needed for on-site use may be used by the utility company in exchange for a reduction in the cost of electrical power supplied by that company to the parcel for on-site use, as long as no net revenue is produced by such excess electrical power.

**SWEPT AREA**

The largest area of the WECS which extracts energy from the wind stream. In a conventional propeller-type WECS, there is a direct relationship between swept area and the rotor diameter.

**TOWER**

The support structure, including guyed, monopole and lattice types, upon which a wind turbine or other mechanical device is mounted.

**TOWER HEIGHT**

The height above grade of the uppermost fixed portion of the tower, excluding the length of any axial rotating turbine blades.

**UTILITY-SCALE (COMMERCIAL) WIND ENERGY CONVERSION SYSTEM**

A wind energy conversion system that is intended solely to generate electrical power for sale to the power grid.

**WIND ENERGY CONVERSION SYSTEM (WECS)**

Any mechanism designed for the purpose of converting wind energy into electrical energy. A WECS may include one or more wind turbines, towers, associated control or conversion electronics, transformers, and/or other maintenance or control facilities or other component used in the system. A WECS may be either a utility-scale wind energy conversion system or a small-scale wind energy conversion system.

**WIND ENERGY FACILITY**

Any wind energy conversion system or wind measurement tower, including a related infrastructure, electrical lines and substations, access roads and accessory structures.

**WIND ENERGY SYSTEM**

The equipment that converts and then stores or transfers energy from the wind into usable forms of energy and includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, turbine, vane, wire, substation, maintenance or control facilities or other component used in the system.

**WIND MEASUREMENT TOWER**

A tower used for the measurement of meteorological data such as temperature, wind speed and wind direction.

## § 106-10. Land use tables.

Land use tables referenced herein shall include utility-scale wind energy conversion systems in the AG District requiring a special use permit.

## § 106-11. Height regulations.

Height shall be in compliance with all fall-zone limitations set forth in Chapter **96**, Telecommunications Facilities.

## § 106-12. Application process.

A. Prior to construction of any utility-scale WECS, the project proponent shall first obtain special use permit and site plan approval from the Town of Colden Town Board and a building permit from the Town Building Inspector. A detailed host agreement must also be submitted.

B. Initial application materials. All applications for a utility-scale WECS shall include the following information:

(1) Name and address of the applicant.

(2) Evidence that the applicant is the owner of the property or has the written permission of the owner to make such an application.

(3) A site plan drawn in sufficient detail to show the following:

(a) Location of the tower(s) on the site and the tower height, including blades, rotor diameter and ground clearance.

(b) Utility lines, both above and below ground, within a radius equal to the proposed tower height, including the blades. Utility lines currently in place must be shown in the site plan.

(c) Property lot lines and the location and dimensions of all existing structures and uses on site within 1,000 feet of the wind energy conversion systems.

(d) Surrounding land use and all off-site structures within 1,000 feet or 2.25 times the tower height, whichever is greater, of the wind energy conversion systems.

(e) Description of the various structural components of the tower construction, including the base and footing.

(f) Existing topography.

(g) Proposed plan for grading and removal of natural vegetation.

(4) A utility-scale WECS shall be treated as a Type I action under the State Environmental Quality Review Act and shall require the use of a full environmental assessment form.

(5) Notification of application for WECS to neighbors residing within 2,500 feet of proposed location. Such notification must be made by certified mail or hand-delivered with the signature of the resident.

(6) Such additional information as may be reasonably required by the Town Engineer, Town Board and Planning Board for an adequate assessment of the proposed project.

C. Studies and information required prior to decision on the application. After a review of the environmental assessment form and the proposed project, the Town Board, with recommendation from the Planning Board, shall provide direction to the applicant on the methodology and parameters of the studies to be provided, below:

(1) Proposed plan for site restoration after construction, prepared according to New York State Department of Agriculture and Markets and New York State Department of Environmental Conservation guidelines.

(2) Plan for ingress and egress to the proposed project site, including:

(a) A description of the access route from the nearest state-, county-, and/or Town-maintained roads.

(b) Road surface material, stating the type and amount of surface cover.

(c) Width of a minimum of 30 feet and length of access route.

(d) Dust control procedures during construction and transportation.

(e) A road maintenance schedule or program.

(3) Detailed construction plan including but not limited to construction schedule; hours of operation; designation of heavy haul routes; a list of material equipment, and loads to be transported; identification of temporary facilities intended to be constructed; and contact representative in the field with name and phone number.

(4) Erosion and sediment control plan (a stormwater pollution prevention plan [SWPPP] will meet this requirement).

(5) Specific information on the type, size, height, rotor materia, rated power output, performance, safety, and noise characteristics of each utility-scale wind turbine model, tower, and electrical transmission equipment.

(6) Photographs and detailed drawings of each wind turbine model, including the tower and foundation.

(7) Visual assessment, including a detailed or photographic simulation showing the site fully developed with all proposed wind turbines and accessory structures. The Town Board, with recommendation from the Planning Board, shall determine which viewpoints the visual assessment shall include.

(8) Noise analysis. A noise analysis shall be furnished, which shall include the following:

(a) A description and map of the project's noise-producing features, including the range of noise levels expected, and the tonal and frequency characteristics expected. The noise report shall include low frequency, infrasound, pure tone, and repetitive/impulsive sound.

(b) A description and map of the noise-sensitive environment, including any sensitive noise receptors, i.e., residences, hospitals, libraries, schools, places of worship and similar facilities, within 1,000 feet or 2.25 times the height of the proposed facilities.

(c) A survey and report prepared by a qualified professional that analyzes the preexisting ambient sound level (including seasonal variation), including but not limited to separate measurements of low frequency and A-weighted noise levels across a range of wind speeds (including near cut-in), turbulence measurements, distance from the turbines, location of sensitive receptors relative to wind direction, and analyses at affected sensitive noise receptors located within 1,500 feet of the turbine, as identified by the Town Board, with recommendation from the Planning Board.

(d) A description and map showing the potential noise impacts, including estimates of expected noise impacts from both construction and operation and estimates of expected

noise levels at sensitive receptor locations.

(e) A description of the project's proposed noise-control features, including specific measures proposed to protect workers and specific measures proposed to mitigate noise impacts for sensitive receptors consistent with the requirements of this article.

(f) Manufacturers' noise design and field testing data, both audible [dB(A)] and low frequency (deep bass vibration), for all proposed structures.

(9) A geotechnical report shall be furnished which shall at a minimum include the following:

(a) Soils and geologic characteristics of the site, based on on-site sampling and testing, to provide an assessment of the soil suitability for construction of the proposed WECS.

(b) Foundation design criteria for all proposed structures.

(c) Slope stability analysis.

(d) Grading criteria for ground preparation, cuts and fills, and soil compaction.

(10) An engineer's report, prepared by a professional engineer licensed in New York State, which provides information regarding the following potential risks. The results of the engineer's report shall be used to determine the adequacy of setbacks from the property line to mitigate any effects from potential ice throw, tower failure, or blade throw.

(a) Ice throw calculations: A report that calculates the maximum distance that ice from the turbine blades could be thrown and the potential risk assessment for inhabitants and structures. (The basis of the calculation and all assumptions must be disclosed.)

(b) Blade throw calculations: A report that calculates the maximum distance that pieces of the turbine blades could be thrown and the potential risk assessment for inhabitants and structures. (The basis of the calculation and all assumptions must be disclosed.)

(c) Catastrophic tower failure: A report from the turbine manufacturer stating the wind speed and conditions that the turbine is designed to withstand and the potential risk assessment for inhabitants and structures (including all assumptions).

(d) Certification by a registered New York State professional engineer that the tower's design is sufficient to withstand wind loading requirements for structures as established by the New York State Building Code.

(11) Lighting plan. The applicant shall submit a lighting plan that describes all lighting that will be required, including any lighting that may be required by the FAA. Such plan shall include, but is not limited to, the planned number and location of lights, light color, whether any such lights will be flashing, and mitigation measures planned to control the light so that it does not spill over onto neighboring, properties.

(12) Shadow flicker study. The applicant shall conduct a study on potential shadow flicker. The study shall identify locations where shadow flicker may be caused by the WECS and the expected durations of the flicker at these locations. The study shall identify areas where shadow flicker may interfere with residences and describe measures that shall be taken to eliminate or mitigate the problem.

(13) Study of potential impacts to birds and bats, using methodology approved by the New York State Department of Conservation or another agency acceptable to the Town Board, with recommendation from the Planning Board.

(14) Decommissioning and site restoration plan and decommissioning bond plan.

(15) FAA notification: A copy of written notification to the Federal Aviation Administration.

(16) Utility notification: Utility interconnection data and a copy of a written notification to the utility of the proposed interconnection.

(17) Notification to microwave communications link operators. An application that includes any wind turbine which is located within two miles of any microwave communications link shall be accompanied by a copy of a written notification to the operator of the link.

(18) Other information: Such additional information as may be reasonably required by the Town Engineer, Town Board and Planning Board for an adequate assessment of the proposed project.

(19) The Town Board, with recommendation from the Planning Board, may determine that not all of these application materials are necessary for a particular proposed project.

D. State Environmental Quality Review (SEQR). Pursuant to Section 617.13 of New York State Environmental Quality Review Regulations, the Town may hire consultants to assist the Planning Board in its review of the potential impacts of a proposed project and the assessment of impacts provided by the applicant. The Town will charge the applicant for the cost of such consultant to the extent allowed in Section 617.13.

## § 106-13. Criteria for approval.

The Town Board, with recommendation from the Planning Board, shall use the following criteria to evaluate all utility-scale wind energy conversion systems:

A. Setbacks. All utility-scale WECS shall comply with the following setbacks:

(1) All wind turbines and towers shall be set back from property lines a minimum of 1.5 times the height of the structure, including to the tip of the blade, excluding adjoining lot lines where both lots are part of the proposed project.

(2) All wind turbines and towers shall be set back a minimum of 2,500 feet from the boundaries of any R1 and/or R2 Zoning District.

(3) All wind turbines and towers shall be set back a minimum of 1,000 feet or 2.25 times the tower height, whichever is greater, from any residence that exists at the time that an application for a WECS is made to the Town. For purposes of this subsection, a residence shall be considered to be in existence if a building permit for such structure has been issued by the Town's Building Inspector, even if construction is not yet completed and the residence is not yet occupied.

(4) All wind turbines and towers shall be set back from all structures and buildings, other than residences, that are in existence at the time of the application, or for which a building permit has been issued, a minimum of 1.5 times the height of the tower, including to the tip of the blade. The Town Board, with recommendation from the Planning Board, may, at its discretion, exempt minor structures such as walls, fences, tool sheds and similar minor structures from this setback requirement.

(5) All wind turbines and towers shall be set back from any public road right-of-way a minimum of 1.5 times the height of the structure, including to the tip of the blade.

B. Noise. A utility-scale WECS shall not be approved unless the applicant demonstrates that the proposed project complies with the following noise requirements. In order to enable the Town Board, with recommendation from the Planning Board, to make this determination, the applicant shall submit the noise assessment required in § **106-12C(8)**.

(1) Audible noise standards:

(a) Audible noise due to wind turbine operations shall not exceed 45 dB(A) for more than five minutes out of any one-hour time period or exceed 50 dB(A) for any time period at the

boundary of the proposed project site.

(b) The sound level from the operation of a utility-scale WECS shall not increase by more than 3 dB(A) the nighttime or daytime ambient sound level at any sensitive noise receptors, i.e., residences, hospitals, libraries, schools, places of worship and similar facilities, within 2,500 feet of the turbine and/or at other sensitive receptor points that may be identified by the Town Board, with recommendation from the Planning Board.

(2) Low-frequency noise. A utility-scale wind energy facility shall not be operated so that impulsive sound below 20 Hz adversely affects the habitability or use of any dwelling unit, hospital, school, library, nursing home, or other sensitive noise receptor.

(3) Noise setbacks. The Town Board, with recommendation from the Planning Board, may impose a noise setback that exceeds the other setbacks set out in this section if it deems that such greater setbacks are necessary to protect the public health, safety and welfare of the community.

(4) Within one year of commencement of commercial operation, the project proponent shall submit a noise study of operational conditions to ensure that the project is in compliance with the standards of this section. The study shall be based on receptor points identified during the application review process. In addition to this noise study, the Town Board, with recommendation from the Planning Board, may require periodic additional noise studies.

C. Noise and setback easements. In the event that a utility-scale WECS does not meet a setback requirement or exceeds the noise criteria above, the Town Board, with recommendation from the Planning Board, may grant a waiver of the setback and/or noise criteria. except for the setback required in the following circumstances:

(1) Each application shall be accompanied by proof of service of notice of the requested permit upon all the landowners immediately adjacent to the subject premises extending 500 feet therefrom in all directions, stating that the noise and/or setback limitations contained in the Zoning Code may exceed the maximum limits otherwise allowed.

(2) In order to advise all subsequent owners of the burdened property, the consent, in the form required for an easement, shall have been recorded in the Erie County Clerk's office describing the benefited and burdened properties. Such easements shall be permanent and shall state that they may not be revoked without the consent of the Town Board, with recommendation from the Planning Board, which consent shall be granted upon either the completion of the decommissioning of the benefited WECS in accordance with this article or the acquisition of the burdened parcel by the owner of the benefited parcel or the WECS.

D. Interference with television, microwave and radio reception. The applicant must submit information that the proposed construction of the utility-scale WECS will not cause interference with microwave transmissions, cellular transmissions, residential television interference or radio reception of domestic or foreign signals. The applicant shall include specific measures proposed to prevent interference, a complaint procedure, and specific measures proposed to mitigate interference impacts.

E. Interference with aviation navigational systems.

(1) The applicant shall provide documentation that the proposed WECS will not cause interference with the operation of any aviation facility.

(2) The applicant shall provide documentation that the proposed WECS complies with all Federal Aviation Administration (FAA) regulations.

(3) Locking mechanisms to limit radar interference required. All utility-scale WECS shall include a locking mechanism which prevents the blades from rotating when not producing power, in order to limit airport radar interference. This provision does not apply while the WECS is "free-wheeling" during start-up and shut-down. The Town Board with recommendation from the Planning Board may modify or eliminate the requirement for a locking mechanism if sufficient

evidence is presented that no significant airport radar interference will be caused by the utility-scale WECS.

F. Safety and security requirements.

(1) Safety shutdown. Each wind turbine shall be equipped with both manual and automatic controls to limit the rotational speed of the blade within the design limits of the rotor. A manual electrical and/or overspeed shutdown disconnect switches shall be provided and clearly labeled on the wind turbine structure. No wind turbine shall be permitted that lacks an automatic braking, governing, or feathering system to prevent uncontrolled rotation, overspeeding and excessive pressure on the tower structure, rotor blades, and turbine components.

(2) Grounding. All structures shall be grounded according to applicable electrical codes.

(3) Wiring. All wiring between the wind turbines and the wind energy facility substation shall be placed underground unless the Town Board, with recommendation from the Planning Board, determines that this is not prudent or practicable due to site-specific constraints. The applicant is required to provide a site plan showing the locations of all overhead and underground electric utility lines, including substations for the project.

(4) Ground clearance. The blade tip of any wind turbine shall, at its lowest point, have ground clearance of not less than 30 feet.

(5) Climbability. Wind turbine towers shall not be climbable up to 25 feet above ground level.

(6) Access doors locked. All access doors to wind turbine towers and electrical equipment shall be lockable and shall remain locked at all times when operator personnel are not present.

(7) Signage. Appropriate warning signage shall be placed on wind turbine towers, electrical equipment, and wind energy facility entrances. Signage shall also include two twenty-four-hour emergency contact numbers to the owner of the wind turbine in accordance with local, state, and federal codes.

G. Ice throw. The Town Board, with recommendation from the Planning Board, shall determine the acceptable ice throw range based on the activities in the area, location and calculations of the ice throw.

H. Fire hazard protection. The applicant shall submit a fire control and prevention program that is appropriate and adequate for the proposed facility. The proposed program may include, but is not limited to, the following:

(1) Fireproof or fire resistant building materials.

(2) Buffers or fire retardant landscaping.

(3) Availability of water.

(4) An automatic fire-extinguishing system for all buildings or equipment enclosures of substantial size containing control panels, switching equipment, or transmission equipment, without regular human occupancy.

(5) Provision of training and firefighting equipment for local fire protection personnel and or other emergency responders.

I. Impact on wildlife species and habitat. Development and operation of a utility-scale wind energy facility shall not have a significant adverse impact on endangered or threatened fish, wildlife, or plant species or their critical habitats, or other significant habitats as identified in the Town of Colden Master Plan and/or the studies and plans of other regional agencies, based on criteria established by the federal or state regulatory agencies, as determined by the Town Board, with recommendation from the Planning Board, during SEQRA review. The impact of a utility-scale WECS on migratory birds and bats shall be evaluated and mitigated based on SEQRA findings.

J. Visual impact.

(1) No advertising sign or logo shall be placed or painted on any part of any utility-scale WECS.

(2) Wind turbines shall be painted a nonobtrusive (e.g., such as white, gray or beige) color that is nonreflective. In order to reduce any daytime lighting requirements by the FAA, the Town Board, with recommendation from the Planning Board, may require consultation with the FAA to determine an appropriate color for the structures.

(3) Where more than one wind turbine is proposed, the project shall use wind turbines whose appearance is similar throughout the project, to provide reasonable uniformity in terms of overall size, geometry and rotational speed.

(4) Unless required by the FAA or by the Town Board, with recommendation from the Planning Board, no lighting shall be installed on the WECS turbine or tower, except for ground-level security lighting.

K. Shadow flicker. The WECS shall be designed such that the project shall minimize shadow flicker onto adjacent existing residences. Mitigation measures, which may include landscaping, shall be incorporated into any special use permit approval. The required shadow flicker study shall identify areas where shadow flicker may interfere with residences and describe measures that shall be taken to eliminate or minimize the problem.

## § 106-14. Decommissioning and site restoration plan and bond.

A. The applicant shall submit a decommissioning and site restoration plan, including cost estimate, to the Town Board with recommendation from the Planning Board for its review and approval, prior to the approval of any special use permit. The restoration plan shall identify the specific properties it applies to and shall indicate removal of all buildings, structures, wind turbines, access roads and/or driveways and foundations to 3.5 feet below finish grade; road repair costs, if any; and all regrading and revegetation necessary to return the subject property to the condition existing prior to establishment of the utility-scale WECS. The restoration shall reflect the site-specific character, including topography, vegetation, drainage, and any unique environmental features. The plan shall include a certified estimate of the total cost (by element) of implementing the removal and site restoration plan. The decommissioning plan shall include information regarding the anticipated life of the project. Any variation from the submitted decommissioning plan must be approved by the Town Board, with recommendation from the Planning Board.

B. As a condition of special use permit approval, the Town Board, with recommendation from the Planning Board, shall require the project sponsor to execute and file with the Town Clerk a bond or other form of security acceptable to the Town Board and Town Attorney as to the form, content and manner of execution, in an amount sufficient to ensure the faithful performance of the removal of the tower, wind turbine, and other components of the WECS and the restoration of the site subsequent to such removal, in accordance with the approved decommissioning and site restoration plan.

C. The sufficiency of such bond shall be confirmed at least every five years by an analysis and report of the cost of removal and site restoration, such report to be prepared by a New-York-State-licensed engineer. The project sponsor/operator shall pay the cost of such report. If said analysis and report determines that the amount of the bond in force is insufficient to cover the removal, disposal and site restoration costs, the bond shall be increased to the amount necessary to cover such costs within 10 days of the applicant's receipt of such report. The report and increased amount of the bond shall be filed with the Town Clerk.

D. All bond requirements shall be fully funded before a building permit is issued.

E. The decommissioning and site restoration bond shall be in effect for the entire duration of the special use permit.

F. The applicant and his/her successors or assigns in interest shall maintain the required bond funds for the duration of the special use permit.

## § 106-15. Road bond.

A. Construction of a WECS poses potential risks because of the large size of construction and transport (delivery) vehicles and their impact on traffic safety and their physical impact on local roads. Construction and delivery vehicles shall use traffic routes established as part of the application review process. Factors in establishing such corridors shall include minimizing traffic impacts from construction and delivery vehicles; minimizing WECS-related traffic during times of school bus activity; minimizing wear and tear on local roads; and minimizing impacts on local business operations. Permit conditions may limit WECS-related traffic to specified routes and include a plan for disseminating traffic route information to the public.

B. The applicant is responsible for remediation of damage to public roads caused by WECS-related traffic, after completion of the installation of the WECS. To ensure that this remediation occurs, prior to the issuance of a building permit, the project sponsor shall post a public improvement bond in an amount, as determined by the Town Board, Highway Superintendent and Town Engineer, sufficient to repair any damage that occurs to Town roads during the construction phase of the project and up to six months following the construction phase. The Town Attorney shall approve the form of the bond.

C. In the event that any post-construction maintenance or replacement of components, which could affect Town roads, is necessary, the project owner/operator shall notify the Town and a new bond for any potential damage to Town roads shall be posted.

## § 106-16. Certification.

The applicant shall provide the following certifications:

A. Certification of structural components. The foundation, tower, and compatibility of the tower with the rotor and rotor-related equipment shall be certified in writing by a structural engineer registered in New York. The engineer shall certify compliance with good engineering practices and compliance with the appropriate provisions of the Building Code that have been adopted in New York State. This shall be provided prior to the issuance of the special use permit.

B. Certification of post-construction. After completion of construction of the WECS, the applicant shall provide a post-construction certification from a licensed professional engineer registered in New York State that the project complies with applicable codes and industry practices and has been completed according to the design plans. This certification shall be provided to the Building Inspector and Town Engineer and shall be maintained in a permanent file.

C. Certification of electrical system. The electrical system shall be certified in writing by an electrical engineer registered in New York. The engineer shall certify compliance with good engineering practices and with the appropriate provisions of the Electric Code that have been adopted by New York State. This shall be provided prior to the issuance of the special use permit.

D. Certification of rotor overspeed control. The rotor overspeed control system shall be certified in writing by a mechanical engineer registered in New York State. The engineer shall certify compliance with good engineering practices. This shall be provided prior to the issuance of the special use permit.

E. Certification of seismic design the applicant shall provide post-construction certification from a licensed professional engineer registered in New York State that the design and construction protects against anticipated seismic hazards.

## § 106-17. Liability insurance.

A. Prior to the issuance of a building permit, the project sponsor shall provide proof, in the form of a duplicate insurance policy or a certificate issued by an insurance company, that liability insurance has been obtained to cover damage or injury which might result from failure of the tower, turbine or other component of the WECS. Such policy shall provide coverage of not less than $5,000,000 and shall name the Town of Colden as co-insured. The sponsor shall provide the Town annually with proof of continuing coverage in compliance with this requirement.

B. Liability insurance shall be carried for the life of the project, through decommissioning. Proof of liability insurance shall be filed annually with the Town Clerk. Such policy shall provide coverage of not less than $5,000,000 and shall name the Town of Colden as co-insured. The sponsor shall provide the Town annually with proof of continuing coverage in compliance with this requirement.

## § 106-18. Transfer of ownership.

A. If the ownership of the WECS facility changes, the new owner shall present proof to the Town Clerk that all the required bonds and insurance policies remain in full force and effect. The new owner shall provide a written statement that he/she is aware of the conditions and requirements of the special use permit, which continue to govern the operation of the facility.

B. In order to ensure compliance with this provision, the person/company to whom the special use permit is originally issued, and subsequent owners, shall provide notification to the Town Clerk 90 days prior to the change of ownership.

## § 106-19. Inspections.

Unless waived by the Town Board, with recommendation from the Planning Board, wind turbines or towers over 150 feet in height shall be inspected by a New-York-State-licensed professional engineer, who has been approved by the Town, annually or at any other time, upon a determination by the Town's Building Inspector and Town Engineer that the wind turbine, tower or pole may have sustained structural damage. A copy of the inspection report shall be submitted to the Town's Building Inspector. Any fee or expense associated with this inspection shall be borne entirely by the permit holder.

## § 106-20. Permit revocation.

A. A WECS shall be maintained in operational condition at all times, subject to reasonable maintenance and repair outages. Operational condition includes meeting all noise requirements, all other standards and requirements of this article and other permit conditions.

B. Should a WECS become inoperative, or should any part of the WECS be damaged or become unsafe or should a WECS violate a permit condition, or violate a standard or requirement of this article, the owner/operator shall remedy the situation within 90 days after written notice from the Code Enforcement Officer. The Code Enforcement Officer or Town Board may extend this period by another ninety-day period, for a total period not to exceed 180 days.

C. Upon notice from the Code Enforcement Officer or Town Board that the WECS is not repaired or made operational or brought into permit compliance after said notice pursuant to § **106-20B** above, the Town Board shall hold a public hearing at which both the public and the owner/operator are given the opportunity to be heard and present evidence, including a plan to come into compliance. Following the close of the public hearing, the Town Board may either:

   (1) Order compliance within a stated timeframe; or

(2) Revoke the special use permit and order removal of the WECS within 90 days and site remediation pursuant to the approved decommissioning and site restoration plan.

## § 106-21. Decommissioning of WECS.

A. Nonfunctional and/or inoperative WECS.

(1) If any utility-scale WECS remains nonfunctional or inoperative for a continuous period of one year, the permittee shall remove the WECS at his/her own expense and restore the site, in accordance with the approved decommissioning and site restoration plan. A utility-scale WECS shall be deemed nonfunctional and/or inoperative if it has not generated power within the preceding twelve months.

(2) The Code Enforcement Officer requires that the applicant submit documentation quarterly reporting the power output generated by each WECS.

B. Use of decommissioning bond.

(1) Any nonfunctional or inoperative WECS, or any WECS for which the special use permit has been revoked, shall be removed from the site and the site restored in accordance with the approved decommissioning and site restoration plan within 90 days of the date on which the facility becomes nonfunctional or inoperative, as defined above, or of the revocation of the special use permit.

(2) If removal of the WECS is required and the applicant, permittee or successor fails to remove the WECS and restore the site in accordance with the approved decommissioning and site restoration plan, the Town Board may contract for such removal and restoration and pay for the removal and restoration from the posted decommissioning and site restoration bond.

(3) If the bond is not sufficient, the Town shall charge the permit holder for the costs over and above the amount of the bond.

(4) If bond funds are used in reference to § **106-21B**, the original bond amount must be restored within 90 days.

## § 106-22. Fees; costs.

All fees shall be determined by the Town Board. Nothing in this article shall be read as limiting the ability of the Town to enter into host community agreements with any applicant to compensate the Town for expenses or impacts on the community. The Town shall require any applicant to enter into an escrow agreement to pay the engineering and legal costs of any application review, including the review required by SEQRA.

## § 106-23. Planning Board action.

A. The Planning Board may recommend to the Town Board to grant the special use permit, deny the special use permit, or grant the special use permit with written stated conditions. Denial of the special use permit shall be by written decision based upon substantial evidence submitted to the Board. Upon issuance of the special use permit, the applicant shall obtain a building permit for each tower.

B. Prior to issuing a special use permit for a utility-scale WECS, the Planning Board shall make all of the following findings:

(1) The proposed utility-scale WECS project is consistent with the Town of Colden Code.

(2) The proposed utility-scale WECS project will not unreasonably interfere with the orderly land use and development plans of the Town of Colden.

(3) The benefits to the applicant and the public of the proposed utility-scale WECS project will exceed any burdens to the Town and residents therein.

(4) The proposed utility-scale WECS project will not be detrimental to the public health, safety or welfare of the community.

(5) The proposed utility-scale WECS project complies with all required provision of the Town's Zoning Ordinance, or will comply with those requirements based on conditions that may be attached to any approval, unless variances have been properly granted by the Town of Colden Zoning Board of Appeals.

## § 106-24. Amendments to approval.

Any changes or alterations to the WECS after approval of the special use permit and site plan shall require amendment to the special use permit. Such amendment shall be subject to all the requirements of this article.

## § 106-25. Effect on state property tax exemption.

The Town of Colden reserves the right by local law to provide that no exemption pursuant to the provisions of New York State Real Property Tax Law (RPTL) § 487 shall be applicable within its jurisdiction.

# Chapter 107. Solar Energy Conversion Systems

[HISTORY: Adopted by the Town Board of the Town of Colden 11-30-2017 by L.L. No. 2-2017. Amendments noted where applicable.]

# Article I. General Provisions

## § 107-1. Purpose.

The Town finds that restrictions of regulations in regard to the use of land within the Town for solar power projects or private solar projects are appropriate to properly address community impact, concerns or issues in a manner in which is meaningful and consistent with the Comprehensive Plan of the Town.

## § 107-2. Findings.

The Town Board of the Town of Colden makes the following findings:

A. The Town Board of the Town of Colden recognizes that solar energy is a clean, readily available and renewable energy source and the Town of Colden intends to accommodate the use of solar systems. The Town of Colden also desires to adopt zoning provisions that advance and protect the health, safety, and welfare of the community, and "to make provision for, so far as conditions may permit, the accommodation of solar energy systems and equipment and access to sunlight necessary therefor."

B. This chapter is adopted to advance and protect the public health, safety, and welfare of the Town of Colden, including:

   (1) Taking advantage of a safe, abundant, renewable, and nonpolluting energy resource;

   (2) Decreasing the cost of energy to the owners of commercial and residential properties, including single-family houses; and

   (3) Increasing employment and business development in the region by furthering the installation of solar energy systems.

C. However, the Town Board finds a need to properly site solar energy systems within the boundaries of the Town of Colden to protect residential, business areas and other land uses, to preserve the overall beauty, nature and character of the Town of Colden, to promote the effective and efficient use of solar energy resources, and to protect the health, safety and general welfare of the citizens of the Town of Colden.

D. Prior to the adoption of this article, no specific procedures existed to address the siting of solar energy systems. Accordingly, the Town Board finds that the promulgation of this article is necessary to direct the location and construction of these systems.

E. Solar energy systems need to be regulated for removal when no longer utilized.

# § 107-3. Definitions.

The following definitions shall apply to this chapter:

**APPLICANT**

The person or entity filing an application and seeking an approval under this article; the owner of a solar energy system or a proposed solar energy system project; the operator of solar energy system or a proposed solar energy system project; any person acting on behalf of an applicant, solar energy system or proposed solar energy system. Whenever the term "applicant," "owner," or "operator" is used in this chapter, said term shall include any person acting as an applicant, owner or operator.

**BUILDING-INTEGRATED PHOTOVOLTAIC SYSTEM**

A combination of photovoltaic building components integrated into any building envelope system such as vertical facades including glass and other facade material, semitransparent skylight systems, roofing materials, photovoltaic roofing coverings and shingles, photovoltaic awnings, and shading over windows.

**BUILDING-MOUNTED SOLAR ENERGY SYSTEMS**

A solar energy system that is affixed to the side(s) of a building either directly or by means of support structures or other mounting devices, but not including those mounted to the roof or top surface of a building. Said system is designed and intended to generate energy primarily for on-site consumption.

**COLDEN UNIFIED SOLAR PERMIT**

This is the adopted Colden Unified Solar Permit (USP), form, instructions, and online guidance which is promulgated by NYSERDA and/or other New York State agencies, and provides for the expedited permitting process for certain classes of private solar energy systems which are 25kW or less in capacity. The Colden USP allows for private roof-mounted and ground-mounted designs.

**GROUND-MOUNTED SOLAR ENERGY SYSTEM**

A solar energy system that is affixed to the ground either directly or by support structures or other mounting devices. Said system is an accessory structure, designed and intended to generate electricity primarily for on-site consumption.

**MICRO SOLAR ENERGY SYSTEM**

A small consumer-grade solar photovoltaic system which is available for sale to the general public at normal retail outlet sources which is installed for private use and which has a total output of 1,000 watts or less nameplate rating. This class of solar equipment must be for dedicated on-site purposes and not connected to the utility grid or interconnected with the utility power. An example of this system would be a solar array, and perhaps a battery, to power low-voltage driveway or garden lighting, a pond pump, and other similar standalone uses.

**NET ENERGY METERING**

Use of a net energy meter to measure the net amount of electricity supplied to the premises equipped with a solar energy system less the electricity provided by the solar energy system to the electric corporation (NYSEG for the case of Colden). Net metering shall be in accordance with the New York Public Service Law § 66-j. Net energy metering for a private solar energy system is allowed and permitted as long as the excess energy produced falls within the 110% of historical demand for the lot on which the private solar energy system is installed.

**QUALIFIED SOLAR INSTALLER**

A person or organization who has the skills and knowledge related to the construction and operation of solar energy systems and installation and who has received safety training on the hazards involved. Persons who are on the list of eligible photovoltaic installers maintained by the New York State Energy Research and Development Authority (NYSERDA) shall be deemed to be

qualified solar installers for the purposes of this definition. Persons who are not on the NYSERDA list of eligible installers may be deemed to be qualified solar installers if the Colden Code Enforcement Officer or the Colden Town Board determines such persons have training to perform the installation safely. Such training shall include the proper use of precautionary techniques and personal protective equipment as well as the skills and techniques necessary to distinguish exposed energized parts or other parts of electrical equipment on the site and to determine the nominal voltage of exposed live parts.

**ROOFTOP-MOUNTED SOLAR ENERGY SYSTEM**

Any solar energy system that is affixed to the roof of any legally permitted building or structure and wholly contained within the limits of the roof surface. Said system is designed and intended to generate electricity solely for use on said lot, potentially for multiple tenants, through a distribution system that is not available to the general public.

**SOLAR EASEMENT**

A right, whether or not stated in the form of restriction, easement, covenant, or conditions in any deed, will, or other instrument executed by or on behalf of any owner of land or solar skyspace for the purpose of ensuring adequate exposure of a solar energy system as defined herein. This is an agreement between cooperating individual landowners and does not involve, or include, the Town of Colden. Further, the Town shall not be responsible for enforcement of any solar easement agreements.

**SOLAR ENERGY EQUIPMENT**

Electrical energy storage devices such as batteries, material, hardware, inverters, or other electrical equipment and conduit of photovoltaic devices associated with the production of electrical energy under any provision of this chapter.

**SOLAR ENERGY SYSTEM**

An electrical generating system composed of a combination of both solar panels and solar energy equipment.

**SOLAR PANEL**

A photovoltaic device capable of collecting and converting solar energy into electrical energy. A solar panel consists of many solar/photovoltaic modules and a group of solar panels connected together is called a solar array. All of these devices, and combinations of these devices, are regulated by this local law.

**SOLAR SKYSPACE**

The space between a solar energy system panel and the sun which must remain unobstructed such that on any given clear day of the year, not more than 10% of the collectable solar insolation shall be blocked. The issuance of any permit by the Town of Colden does not constitute, or imply, any solar skyspace rights, and the Town shall not be responsible for ensuring impermissible obstruction to the solar skyspace as a result of uses or development performed in accordance with Town Code.

**USP**

The abbreviation for the Colden Unified Solar Permit process, form, instructions, and implementation of the united solar permit process in the Town. Forms and details are available from the Colden Town Clerk and online at the Town's web site.

**UTILITY-SCALE SOLAR ENERGY SYSTEM**

(Also known as "large-scale solar energy system" or "solar farm," for example.) Any solar energy system that is ground-mounted and, when taken as a whole on a lot, is designed and intended to supply energy mainly into a utility grid for sale to the general public. This produced energy is also known as energy for "off-site sale or consumption."

## § 107-4. Solar energy system categories and permitting authority.

A. For purposes in the Town of Colden, the following categories of solar energy systems are considered and the general permitting characteristics are indicated below, further defined by sections of the Zoning Chapter **108** for use within the Town, including setbacks and other restrictions on solar energy system placement, operation, orientation, and other factors as defined elsewhere in the Code.

(1) Colden classifies the systems as private or utility-scale, and defines specific cases which differ in permitting methods as listed in the overview below. Further:

(a) The Colden Unified Solar Permit (USP) was adopted for limited private roof- and ground-mounted systems having capacity of 25kW or smaller in July 2017 by Town Board resolution.

(b) The Colden building permit is required in accordance with the provisions of Article **XXII** of Chapter **108**, Zoning.

(c) The Colden special use permit is required in accordance with the provisions of Article **XX** of Chapter **108**, Zoning, as well as the specific provisions of this solar energy system Chapter **107** as defined herein.

B. The purpose of the overview below is to give the applicant with a high level look at the varied cases for solar energy systems in the Town of Colden. The variations in this overview will make the review of the specific zoning and permitting details clearer. The summary is:

(1) Micro solar energy systems: This category, as defined, is considered incidental to the permitting process and is allowed in all zoning districts as long as the installation location is consistent with the placement for accessory structures and accessory use, and complies with all setbacks for the underlying zoning district. These systems, as defined, are standalone low-voltage systems available from retail stores and similar outlets. No formal permitting is necessary for these consumer systems, but coordination with the Colden Code Enforcement Officer with respect to placement on the parcel, consistent with zoning setbacks, is required.

(2) Private rooftop-mounted solar energy systems of 25kW or less capacity: This category, as defined, is permitted in all zoning districts, and will be processed using the Colden Unified Solar Permit (USP) process for installations which are deemed as eligible according to the Town of Colden's adopted USP application process. Installations which do not qualify as eligible under the rules of the USP process will be processed via a special use permit and building permit.

(3) Private rooftop-mounted solar energy systems greater than 25kW capacity: This category is permitted in all zoning districts and does not qualify as eligible under Colden's Unified Solar Permit rules. These installations will be processed via a special use permit and building permit procedure and are subject to zoning restrictions, and other factors which may be required as conditions of the special use permit approval.

(4) Private ground-mounted solar energy systems of 25kW or less capacity: This category, as defined, is permitted in all zoning districts and will be processed using the Colden Unified Solar Permit (USP) process for all installations which are deemed as eligible according to the Town of Colden's adopted USP application process. Installations which, for any reason, do not qualify as eligible under the rules of the USP process will be processed via a special use permit and building permit procedure, and are subject to zoning restrictions as to placement, and other factors which may be required as conditions of the special use permit approval, for example, as indicated in Subsection **B(5)** below.

(5) Private ground-mounted solar energy systems greater than 25kW capacity: This category is permitted only in Colden's Agricultural (Ag) and Commercial (C) Zoning Districts, and do not qualify as eligible under the Colden's Unified Solar Permit rules. Therefore these installations will be processed via the special use permit and building permit procedure and are subject to zoning restrictions as to placement, and other factors which may be required as conditions of the special use permit approval.

(6) Utility-scale solar energy system of any capacity: This category is permitted only in Colden's Agricultural and Commercial Zoning Districts, subject to conditions and zoning restrictions, and allowed only via an approved special use permit and subsequent building permit, with conditions and inspections as determined and defined by the Zoning and the Colden Code Enforcement Officer. Any special use permit approval may include other factors as determined by the Town Board as conditions of the permit approval.

(7) Building-mounted solar energy systems of any capacity: This category is permitted in all zoning districts and will be processed in accordance with a special use permit and building permit process. They do not qualify as eligible under Colden's Unified Solar Permit procedures.

(8) Building-integrated solar energy systems of any capacity: This category is permitted in Colden in all zoning districts but since they are highly integrated in nature, and related to the initial construction of buildings, they will be processed in accordance with Colden's building permitting procedures and New York State law; however, since the integration of these systems into the design of the building is structural in nature, the applicant must supply suitable design documents and drawings certified and sealed by a New York State professional engineer (PE) or a New York State registered architect (RA) as part of the building permit process. Normal building permit reviews, approvals, inspections and all required electrical inspections shall apply.

## § 107-5. Use districts.

Use districts where allowed. Subject to the provisions of this article, solar energy systems shall be allowed as follows:

A. Rooftop-mounted, building-mounted, and building-integrated solar energy systems are permitted in all zoning districts in the Town. For the case of rooftop-mounted systems, permitting rules are based upon capacity. Any rooftop system greater than 25kW capacity will require a special use permit.

B. Ground-mounted solar energy systems of 25kW capacity or less, subject to permitting rules, are allowed as accessory structures in all zoning districts of the Town subject to the restrictions of Zoning[1] and this chapter.
[1] *See Ch. **108**, Zoning.*

C. Ground-mounted solar energy systems greater than 25kW capacity are permitted as accessory structures in Agricultural (Ag) and Commercial (C) Zoning Districts of the Town subject to the restrictions of Zoning and this chapter and require a special use permit.

D. Utility-scale solar energy systems are only permitted in Agricultural (Ag) and Commercial (C) Zoning Districts upon approval of a special use permit and building permit and subject to placement and other restrictions as defined by this chapter and Zoning.[2]
[2] *See Ch. **108**, Zoning.*

E. Any inconsistent provisions of the Zoning Law[3] which purport to or may be interpreted to allow solar energy systems in other districts are hereby superseded.
[3] *See Ch. **108**, Zoning.*

F. The provisions of this article apply to solar electricity generation. Direct or indirect solar water heating systems are not covered by these regulations.

## § 107-6. General regulations.

General regulations. The placement, construction, and major modification of all solar energy systems within the boundaries of the Town of Colden shall be permitted only as follows:

A. All proposed solar energy systems are required to follow at least the minimum standards set forth by the New York State Building Codes and all specifications for such systems must be accompanied by a set of drawings stamped by a New York State-certified engineer or registered architect and code review checklist.

B. All solar energy systems (except small standalone consumer systems with a capacity of 1,000 watts or less) are required to obtain a permit from the Town of Colden Building Department.

C. All permitted solar energy systems are required to be installed by a qualified solar installer.

D. Ground-mounted and roof-mounted solar energy systems capable of producing 25kW of energy or less require a permit from the Town of Colden Building Department and in some cases, based upon eligibility, may qualify for processing under Colden's Unified Solar Permitting (USP) process and building permit procedures. If the system does not qualify for processing by the USP method, then a special use permit and building permit is required. The Colden Code Enforcement Officer should be consulted during initial planning of an installation of this category and a review of all USP forms and guidance should be done prior to submittal of any permitting by the applicant.

E. Ground-mounted and roof-mounted solar energy systems capable of producing more than 25 kW of energy are not eligible for consideration via the Colden Unified Solar Permit (USP) process and will require the approval of a special use permit and conditions, and also require site plan approval from the Town Board, as well as an approved building permit from the Colden Code Enforcement Officer.

F. Building-mounted solar energy systems, regardless of capacity, will require a special use permit and building permit from the Town of Colden Building Department.

G. Utility-scale solar energy systems (and all ground-mounted solar energy systems over 25 kW) shall be subject to all provisions of this article and permitted only in the approved zoning districts. [Agricultural (Ag) and Commercial (C) only]. These systems shall require approval of a special use permit and also site plan approval from the Colden Town Board, and an approved building permit from Colden's Code Enforcement Officer. The New York State SEQRA process is needed for these systems as required by law.

H. Solar energy systems, unless part of a utility-scale solar energy system, shall be permitted only to provide power for use by owners, lessees, tenants, residents or other occupants of the premises/parcel on which they are erected, but nothing contained in this provision shall be construed to prohibit sale of excess power, from time to time, through a net metering arrangement in accordance with New York Public Service Law § 66-j.

I. Nothing in this article shall be interpreted as to limit the applicant's implementation of net energy metering in conjunction with suitable approvals and coordination with the applicable local electrical utility engineering departments; applicant shall retain utility approvals for file and for Code Enforcement Officer review, if determined necessary by the Town of Colden as related to Public Service Law § 66-j or applicable state of federal statute.

J. All solar energy systems existing on the effective date of this article shall be allowed to continue usage as they presently exist. Routine maintenance (including replacement with a new system of like construction and size) shall be permitted on such existing systems. New construction other than routine maintenance shall comply with all the requirements of this chapter.

K. No solar energy system shall hereafter be used, erected, moved, reconstructed, changed or altered except in conformity with these regulations.

L. Permits by an applicant may include technology, innovations, or methods not specifically defined by this solar energy system article. For those cases, the solar energy system's permitting shall be processed via the special use permit procedure as defined by this article.

M. The Town of Colden reserves the right, by local laws, to provide that no exemption pursuant to the provisions of New York State Real Property Tax Law (RPTL) § 487 shall be applicable within its jurisdiction.

N. Any applications (including variance applications) pending for solar energy systems on the effective date of this article shall be subject to the provisions of this article.

O. This article shall take precedence over any inconsistent provisions of the Zoning Law of the Town of Colden.[1]

[1] *See Ch.* ***108****, Zoning.*

P. This article shall not apply to any lot owned by a municipality.

## § 107-7. General criteria.

A. Rooftop-mounted solar energy systems shall meet the maximum height requirements of the underlying zoning district. All proposed installations must be accompanied with a set of drawings stamped by a New York State-licensed engineer or registered architect verifying the structural integrity of the building and a New York State Code Compliance checklist. Further, for the cases of a pitched roof and flat roof, the following conditions shall be enforced:

(1) Pitched roof: solar energy panels shall not be more than three feet higher than the finished roof to which they are mounted.

(2) Flat roof: the maximum height of a solar energy panel at its highest pitch shall be no more than eight feet above the parapet wall.

B. Building-mounted solar energy systems (non-rooftop) shall not be more than 18 inches from the building wall and in no instance shall any part of the system extend beyond the eave line or top of a parapet wall. All proposed installations must be accompanied by a set of drawings sealed by a New York State-licensed professional engineer or registered architect, verifying the structural integrity of the building and with the New York State Code Compliance checklist. The approval of any building-mounted systems shall be by the special use permit and building permit method as they are not eligible for consideration under Colden's Unified Solar Permit method regardless of capacity of the system.

C. Building-integrated solar energy systems shall be designed and sealed by a New York State professional engineer (PE) or registered architect (RA) and will be reviewed under the building permit process as applicable, by the Colden Code Enforcement Officer. This category is not eligible for Colden's Unified Solar Permit process. These systems are considered structural in nature and need complete design approval by a New York State PE or RA as noted.

D. Private ground-mounted solar energy systems shall be subject to the following requirements:

(1) The location of said solar energy system shall be placed no closer than two times the standard setback requirements for an accessory building/structure of the zoning district in which it is located.

(2) The location of said solar energy system shall be only located in the side or rear yard; no ground-mounted solar energy system shall be permitted in front yards.

(3) The height of said solar energy system shall not exceed 15 feet when oriented at maximum tilt.

(4) The total surface area of said solar energy system on a lot shall not exceed 800 square feet per acre in R1, R2, R-RB.

(5) The total surface area of a non-utility-scale solar energy system on a lot situated in Agriculture (Ag) or Commercial (C) Use District shall not exceed 5% of the total square footage of the entire lot.

(6) The minimum lot size allowed for a utility-scale solar energy system shall be 15 acres.

(7) The total surface area of a utility-scale solar energy system situated in an Agricultural (Ag) Use District, on a lot which is greater than 15 acres, is determined by the size of the parcel, as indicated below:

(a) For parcels greater than 15 acres and less than 50 acres, a utility-scale solar energy system shall not exceed 40% of the total square footage of the entire lot.

(b) For parcels 50 acres or greater, a utility-scale solar energy system shall not exceed 30% of the total square footage of the entire lot.

(8) The total surface area of a utility-scale solar energy system, on a lot which is greater than 15 acres, situated in a Commercial (C) Use District, shall not exceed 10% of the total square footage of the entire lot.

E. Site plan requirements for ground-mounted solar energy systems. If site plan approval is required by this article for a ground-mounted solar energy system, or if a site plan is requested by the Code Enforcement Officer, for any ground-mounted solar energy system, the applicant shall be required to submit a site plan in accordance with the Town of Colden's site plan requirements and also drawn in sufficient detail as set forth below:

(1) Plans and drawings of the solar energy system installation signed by a New York State-certified professional engineer or registered architect showing the proposal layout of the solar energy system along with a description of all components, existing vegetation, any proposed clearing and grading of the lot involved, any stormwater or erosion disturbances, and utility lines, both above and below ground, on the site and adjacent to the site; and clearly showing the direction of surface water flow from the site.

(2) Property lot lines and the location and dimensions of all existing structures and uses within 500 feet of the solar panels.

(3) Any proposed fencing and/or screening for said project.

(4) Any such additional information as may be required by the Town's professional engineer or consultant, the Town Planning Board, the Town Board, the Town Attorney, the Code Enforcement Officer, or other Town entity.

(5) A public hearing on said site plan may be waived by the Town Board.

F. Solar storage batteries. When solar storage batteries are included as part of any solar energy system, they shall be placed in a secure container or enclosure meeting the requirements of the New York State Building Code.

G. All solar energy systems shall adhere to all applicable federal, state, county and Town of Colden laws, regulations, and building, plumbing, electrical, and fire codes.

H. Any solar energy system shall be accessible for all emergency service vehicles and personnel complying with the requirements of the New York State Building Code.

I. All structures and devices used to support solar collectors shall be nonreflective and/or painted a subtle color or earth-tone color.

J. The design, construction, operation, and maintenance of any solar energy system shall prevent the misdirection and/or reflection of solar rays onto neighboring properties, public roads, and public parks in excess of that which already exists.

K. The development and operation of a solar energy system shall not have a significant adverse impact on fish, wildlife, or plant species or their critical habitats, or other significant habitats identified by the Town of Colden or other federal or state regulatory agencies.

L. Artificial lighting of any solar energy system shall be limited to lighting required for safety and operational purposes and shall be shielded from all neighboring properties and public roads.

M. If the use, or functional capability, of an approved solar energy system which required a special use permit is discontinued, the owner or operator shall notify the Code Enforcement Officer within 30 days of such discontinuance. If a solar energy system is to be retained and reused, the owner or operator shall further inform the Code Enforcement Officer of this in writing at such time and obtain any necessary approvals within one year; otherwise it shall be automatically deemed abandoned.

N. Any solar energy system to be used strictly for agricultural use purposes, in accordance with New York State Agriculture and Markets Law, may have some of the requirements of this article waived by the Code Enforcement Officer or Town Board.

# Article II. Special Use Permit Requirements

## § 107-8. Special use permit requirements.

Certain applicants for solar energy systems will be required to proceed via the Colden special use permit procedures and process in order for the solar energy conversion system to be considered for approval and building permit approval. Applications under this article shall be made as described in this section. Applicants for a special use permit to place, construct, and make a major modification to a utility-scale solar energy system, or other solar energy conversion system which is required to proceed via the special use permit method, within the boundaries of the Town of Colden shall submit 12 sets of the following information to the Town Board, who shall first present it to the Colden Planning Board and/or a professional engineer or consultant for an initial review, and then onto the Planning Board for review and issuance of an advisory recommendation for consideration by the Town Board. The Planning Board may make such additional referrals to experts, consultants, or applicable engineering professionals as it deems appropriate. No such application shall be deemed filed until any required application fee has been paid by the applicant. For applicants using the special use permit process, the following information shall be contained in the application:

A. A completed State Environmental Quality Review Act (SEQRA) long form environmental assessment form (EAF). Compliance with the appropriate SEQRA action type should be confirmed prior to submission.

B. Other necessary permit information for a complete, non-piecemeal, submission is:

(1) Name, address, and telephone number of the property owner. If the property owner is not the applicant, the application shall include the name, address, and telephone number of the applicant and a letter or other written permission signed by the property owner authorizing the applicant to represent the property owner.

(2) Documentation of access to the project site(s), including, but not limited to location of all access roads, gates, and parking areas.

(3) Documentation of the clearing, grading, stormwater and erosion control plans.

(4) Utility interconnection data, a copy of written notification to the utility of the proposed interconnection and any related agreements for the purchase of electricity.

(5) One- or three-line electrical diagram detailing the solar energy system installation, associated components, and electrical interconnection methods, with all disconnects and over-current devices.

(6) A property owner who has installed, or intends to install, a utility-scale solar energy system or private solar energy system may choose to negotiate with other property owners in the vicinity for any necessary solar skyspace easements. The issuance of a special use permit by the

Town does not constitute solar skyspace rights, and the Town shall not be responsible for ensuring impermissible obstruction to the solar skyspace as a result of uses or development performed in accordance with Town Code.

C. A site plan in accordance with the Town of Colden's site plan requirements and drawn in sufficient detail as follows:

(1) Plans and drawings of the solar energy system installation signed by a professional engineer (PE) registered in New York State or a registered architect (RA) showing the proposal layout of the entire solar energy system along with a description of all components, whether on site or off site, existing vegetation and proposed clearing and grading of all sites involved, and utility lines, both above and below ground, on the site and adjacent to the site;

(2) Property lot lines and the location and dimensions of all existing structures and uses within 500 feet of the solar panels;

(3) Proposed fencing and/or screening for said project;

(4) Any such additional information as may be required by the Town's Planning Board, a Town professional engineer or consultant, the Colden Town Board, the Town Attorney, the Town Code Enforcement Officer, or other Town entity.

D. Decommissioning plan: To ensure the proper removal of large utility-scale solar energy systems, a decommissioning plan shall be submitted as part of the application. Compliance with this plan shall be made a condition of the issuance of a special permit under this section. The decommissioning plan must specify that after the utility-scale solar energy system can no longer be used, it shall be removed by the applicant or any subsequent owner. The plan shall demonstrate how the removal of all infrastructures and the remediation of soil and vegetation shall be conducted to return the parcel to its original state prior to construction. The plan shall also include an expected timeline for execution. A cost estimate detailing the projected cost of executing the decommissioning plan shall be prepared by a registered New York State professional engineer or a professional solar decommissioning contractor regularly engaged in the work scope involved for the decommissioning plan. Cost estimates shall take inflation into account. Removal of utility-scale solar energy systems must be completed in accordance with the decommissioning plan. If the utility-scale solar energy system is not decommissioned after being considered abandoned, the municipality may remove the system and restore the property and impose a lien on the property to cover the costs to the municipality.

## § 107-9. Special use permit criteria.

Special use permits issued for utility-scale solar energy systems shall meet the following conditions and restrictions:

A. Maximum lot area: The maximum lot area used by the utility-scale solar energy system shall be 40 acres.

B. Setbacks: In addition to the setback requirements of the underlying zoning district, any utility-scale solar energy system shall adhere to the following setbacks:

(1) A minimum 200 feet from all property lot lines bordering a residential (R1, R2, R-RB) use district.

(2) For utility-scale solar energy systems installed in Agricultural (Ag) and Commercial (C) use district the location of said solar energy system shall be placed no closer than the setback distances as below from each property boundary for the parcel on which the system is installed:

(a) From road frontage: 100 feet from edge of right-of-way.

(b) From side property boundaries: 30 feet from boundary.

(c) From rear property boundary: 80 feet from boundary.

(3) If parcel/lot is in Agricultural (Ag) Zoning, but is shown on the current Town of Colden Zoning Map as a parcel/lot which has the first 300 feet of depth from the road frontage zoned as R1, R2 or R-RB, then no portion or component of the utility-scale solar energy system may be located within that frontage zoning (R1, R2, R-RB) except for any existing overhead or proposed buried electrical wire infrastructure associated with the solar energy system as proposed by the applicant.

(4) From railroads: A minimum of 100 feet from any railroad (measured from the railroad right-of-way).

(5) From an inactive railroad's rail bed right-of-way corridor that is part of the rail-banking system: A minimum of 100 feet from any railroad roadbed in the rail-banking system (as measured from the rail bed's right-of-way).

(6) From schools, public parks: A minimum of 750 feet from all property lot lines bordering a school or public park.

C. Maximum overall height. The height of a utility-scale solar energy system shall not exceed 15 feet when oriented at maximum tilt.

D. There shall only be allowed one utility-scale solar energy system per lot.

E. If a utility-scale solar energy system is situated on a parcel/lot which is at the edge of a zoning boundary (for example, the last parcel in an Ag Zoning District which abuts to a residential parcel (R1, R2, R-RB District), then additional screening via retaining existing trees, suitable vegetation, plantings, or the topography, shall be included in the site plan so as to screen the boundary parcel from the visual impact of the solar energy system.

F. All utility-scale solar energy systems, if located within 1,000 feet of a public or private airfield/airport must, at the time of special use permit submission include results of the Federal Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower (if any) and for the final approach aircraft flight paths, consistent with the current policy of the FAA for Review of Solar Energy Projects, and any similar regulatory mandates which include private airfields near the solar energy system's area.

G. A utility-scale solar energy system shall adhere to all applicable federal, state, county and Town of Colden laws and regulations, and all building, plumbing, electrical, and fire codes. The applicant is also required to obtain all necessary formal regulatory approvals and/or permits from any federal, state, county, or local agency having jurisdiction and approval requirements related to the completion of a utility-scale solar energy system.

H. Development and operation of a utility-scale solar energy system shall not have a significant adverse impact on fish, wildlife, or plant species or their critical habitats, or other significant habitats identified by the Town of Colden, or other federal or state regulatory agencies.

I. The design, construction, operation, and maintenance of a utility-scale solar energy system shall prevent the misdirection and/or reflection of solar rays onto neighboring properties, public roads, and public parks in excess of that which already exists.

J. All structures and devices used to support solar collectors shall be nonreflective and/or painted a subtle or earth-tone color.

K. All transmission lines and wiring associated with a utility-scale solar energy system shall be buried or utilize existing overhead transmission line structures and include necessary encasements in accordance with the National Electric Code and Town requirements. The applicant is required to show the locations of all proposed overhead and underground electric utility lines, including substations and junction boxes and other electrical components for the project on the site plan.

L. All transmission lines and electrical wiring shall be in compliance with the utility company's requirements for interconnection.

M. Artificial lighting of utility-scale solar energy systems shall be limited to lighting required for safety and operational purposes and shall be shielded from all neighboring properties and public roads.

N. All utility-scale solar energy systems shall be enclosed by fencing, of a minimum height of six feet, to prevent unauthorized access. Warning signs with the owner's contact information shall be placed on the entrance and perimeter of the fencing.

O. Any signage used to advertise the solar energy facility shall be in accordance with the Town's signage regulations.

P. A berm, landscape screen, or other opaque enclosure or any combination thereof acceptable to the Town capable of screening the site may be required along any property line that abuts an existing residence.

Q. After completion of a utility-scale solar energy system, the applicant shall provide a post-construction certification from a professional engineer (PE), registered in New York State, that the project complies with applicable codes and industry practices, and that it has been constructed and is operating according to the design plans.

R. Clearing, grading, stormwater and erosion control:

(1) It has been determined that much of the soil type classification within the Town of Colden consists of highly and moderately erodible soils types; therefore, erosion control and prevention is a critical component of any solar energy system project. Therefore, the Town will require formal documentation that any proposed solar energy project will not cause a negative impact on the Town's soil resources. This is especially true for large utility-scale solar energy systems; therefore, Colden requires a determination that erosion will be addressed in any development for solar energy systems.

(2) Before the Town of Colden shall issue a clearing, grading, stormwater, or building permit for a utility-scale solar energy system, the applicant shall prepare an acceptable New York State Pollutant Discharge Elimination System (SPDES), filed and issued in accordance with Environmental Conservation Law, which fully defines the measures to be taken during and after the construction phase(s) of the solar energy system as required by law. When the permit coverage is received by the applicant, a copy should be filed within five days with the Colden Code Enforcement Officer for review.

(3) Before the Town of Colden shall issue a clearing, grading, stormwater or building permit for a utility-scale solar energy system, the applicant shall submit a complete New York State stormwater pollution prevention plan (SWPPP) to the Town for review and approval by the Planning Board and/or their designated consultant or professional engineer, the Colden Environmental Board, the Colden Code Enforcement Officer whom will all supply advisory recommendations to the Town Board when they determine approval status.

(4) The applicant's SWPPP shall minimize the potential adverse impacts on wetlands and Class I and II streams and the banks and vegetation along those streams and wetlands and minimize erosion or sedimentation.

(5) To assist in processing, if not mandated elsewhere, the SWPPP should include a copy of the filed New York State Environmental Quality Review Act (SEQRA) document(s), so that efficient review of both submittals may be done by the Town's advisory boards as well as the Town Board.

# Article III. Maintenance, Procedures and Fees

## § 107-10. Maintenance, procedures and fees.

A. Time limit on completion. Upon receipt of any required approval by the Colden Town Board, the applicant shall have six months to apply for a building permit. After issuance of a building permit, the applicant shall have six months to begin the project and 12 months to complete the project.

B. Upon receipt of any required approval by the Colden Town Board, the applicant shall have 12 months to begin the project before those approvals lapse. Prior to the lapse of any approvals the applicant may, for just cause, apply by written request to the Town Board for an extension to this timeline.

C. Inspections. Upon reasonable notice, the Colden Code Enforcement Officer, or his designee, may enter a lot on which a solar energy system has been approved for the purpose of compliance verification with any requirements or conditions. Twenty-four hours' advance notice by telephone to the owner/operator or designated contact person shall be deemed reasonable notice. Furthermore, a utility-scale solar energy system shall be inspected annually by a New York State-licensed professional engineer that has been approved by the Town or at any other time, upon a determination by the Town's Code Enforcement Officer that damage may have occurred. A copy of the inspection report shall be submitted to the Town Code Enforcement Officer. Any fee or expense associated with this inspection shall be borne entirely by the permit holder.

D. General complaint process. During construction, the Town Code Enforcement Officer can issue a stop order at any time for any violations of a special use or building permit. After construction is complete, the permit holder of a utility-scale solar energy system shall establish a contact person, including name and phone number, for receipt of any complaint concerning any permit requirements.

E. Continued operation. A solar energy system shall be maintained in operational condition at all times, subject to reasonable maintenance and repair outages. Operational condition includes meeting all approval requirements and conditions. Further, the Code Enforcement Officer shall also have the right to request documentation from the owner of a solar energy system regarding the system's usage at any time.

F. Removal. All solar energy systems shall be dismantled and removed immediately from a lot when the special use permit or approval has been revoked by the Town Board or the solar energy system has been deemed inoperative or abandoned by the Code Enforcement Officer for a period of more than 365 consecutive days at the owner's expense. If the owner does not dismantle and remove said solar energy system as required, the Town Board may, after a hearing at which the owner shall be given an opportunity to be heard and present evidence, dismantle and remove said facility and place the cost of removal as a tax lien on said parcel.

G. Determination of abandonment or inoperability. A determination of the abandonment or inoperability of a solar energy conversion system shall be made by the Town Code Enforcement Officer, who after suitable review shall provide the owner with written notice by personal service or certified mail. Any appeal by the owner about the Code Enforcement Officer's determination of abandonment or inoperability shall be filed with the Town of Colden Zoning Board of Appeals within 30 days of the Code Enforcement Officer's formal notification. This notification shall include a written determination, and the Zoning Board of Appeals shall hold a hearing on same. The filing of an appeal does not stay the following expiration time frame unless the Zoning Board of Appeals, or a court of competent jurisdiction, grants a stay or reverses said determination. At the earlier of the 366 days from the date of determination of abandonment or inoperability without reactivation, or upon completion of dismantling and removal, any approvals for the solar energy system shall automatically expire.

H. Application and annual fees.

(1) Utility-scale solar energy system. An applicant shall pay an initial application fee of $2,500 or such other amount as the Town Board may from time to time determine by resolution, payable at the time of filing of the applicant's special permit and site plan application, to cover the cost of processing and reviewing the application. If approved, the owner shall pay an annual fee of $1,000, or such other amount as the Town Board may from time to time determine by

resolution, to cover the cost of processing and reviewing the annual inspection report and for ongoing and annual costs for administration, inspections and enforcement.

(2) Site plan application for ground-mounted solar energy systems. An applicant shall pay the standard site plan review fee as determined from time to time by resolution of the Town Board.

(3) Fee for issuance of a building permit. In addition to any special use permit or site plan review application fee, or utility-scale annual fee, an applicant shall pay a building permit fee for a:

(a) Building-mounted, building-integrated, ground-mounted, or rooftop-mounted solar energy system: As listed on the Town of Colden Fees and Fines Schedule or such other amount as the Town Board may from time to time determine by resolution.

(b) Utility-scale solar energy systems. As listed on the Town of Colden Schedule of Fees and Fines or such other amount as the Town Board may from time to time determine by resolution.

I. Prior to the issuance of a building permit, the applicant shall document that all applicable federal, state, county, and local permits have been obtained.

J. Special use permits for a utility-scale solar energy system granted under this article shall be issued only following a public hearing held as required for special use permits under the New York State Town Law.

K. The Town Board may:

(1) For utility-scale solar energy systems, grant a special use permit, deny a special use permit, or grant a special use permit with written stated conditions. Denial of a special use permit shall be by written decision based upon substantial evidence and advisory recommendations considered by the Town Board. Upon issuance of a special use permit, the applicant shall obtain a building permit for the utility-scale solar energy system.

(2) For all other non-utility-scale solar energy systems (includes roof-mounted and ground-mounted systems not eligible for processing via the Colden Unified Solar Permit method), and all systems larger than 25kW in capacity, which require approval of a special use permit, or when review is required by the Town Board pursuant to this article, the Town Board may grant site plan and/or special use permit approval, deny site plan and/or special use permit approval, or grant site plan and/or special use permit approval with written stated conditions. Denial of site plan and/or special use permit approval shall be by written decision based upon substantial evidence considered by the Town Board. Upon issuance of a site plan approval and/or special use permit approval, the applicant shall obtain a Colden building permit for the ground-mounted solar energy system that was not eligible for processing via the Colden Unified Solar Permit method.

L. Any changes or alterations (post-construction) to a utility-scale or any solar energy system which was not processed via the Colden Unified Solar Permit method shall be done only by amendment to the special use permit and/or site plan (if required) subject to all requirements of this Code at the time of the change or alteration is requested by the applicant.

M. Special use permits for utility-scale solar energy systems shall be assignable or transferable so long as they are in full compliance with this article and all the conditions, and the Code Enforcement Officer is notified in writing at least 15 days prior thereto.

N. In addition to the requirements of this article, the special use permit application shall be subject to any other site plan approval requirements set forth in the Town's Zoning Law.[1]

[1] *See Ch.* ***108****, Zoning.*

# Article IV. Revocation

## § 107-11. Revocation.

Violations of any of the conditions of the special use permit, the approved site plan, or any other local, state or federal law, rules or regulations, shall be grounds for revocation of the special use permit or site plan approval. Revocation may occur after the applicant is notified in writing of the violations, and the Colden Town Board holds a hearing on same.

## § 107-12. Interpretation; conflict with other laws.

In their interpretation and application, the provisions of this article shall be held to be minimum requirements, adopted for the promotion of the public health, safety and general welfare. It is not intended to interfere with, abrogate, or annul other rules, regulations or laws, provided that whenever the requirements of this article are at a variance with the requirements of any other lawfully adopted regulations, rules or laws, the most restrictive, or those which impose the highest standards, shall govern.

## § 107-13. Severability.

If any section, subsection, phrase, sentence, or other portion of this article is for any reason held invalid, void, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions hereof.

# Article V. Penalties for Offenses

## § 107-14. Penalties for offenses.

A. Any person or persons, association or corporation committing an offense against this chapter or any section or provision thereof is guilty of a violation punishable by a fine not exceeding $250 or imprisonment for a period not exceeding 15 days for each such offense, or by both such fine and imprisonment.

B. This chapter may also be enforced by civil action or by proceedings by the Town of Colden.

C. Each week that a violation is permitted to exist shall constitute a separate offense.

## § 107-15. Fees.

All fees shall be determined by resolution of the Town Board.

# Chapter 92. Subdivision of Land

[HISTORY: Adopted by the Town Board of the Town of Colden 8-10-1978 by L.L. No. 2-1978. Sections 92-2, 92-4E and 92-5 amended at time of adoption of Code; see Ch. 1, General Provisions, Art. I. Other amendments noted where applicable.]

**GENERAL REFERENCES**
Building construction — See Ch. **26.**
Building Inspector and Enforcement Officer — See Ch. **28.**
Environmental quality review — See Ch. **43.**
Flood hazard areas — See Ch. **52.**
Streets and sidewalks — See Ch. **89.**
Zoning — See Ch. **108.**

## § 92-1. Declaration of policy; applicability of statutory provisions; purpose.

A. In order to provide for orderly growth and development of the town and to afford adequate facilities for housing, transportation, distribution, comfort, convenience, safety, health and welfare of the citizens, it is declared to be the policy of the Town Board to consider land subdivisions as part of a plan for the orderly, efficient and economical development of the town. Land to be subdivided shall be of such character that it can be used for building purposes without danger to health or peril from fire, flood or other menace. Proper provision shall be made for drainage, water, sewerage and other needed improvements. The proposed streets, if any, shall compose a convenient system conforming to the Official Map (as it may be adopted) and shall be properly related to the proposals shown on the Town Plan. Streets and rights-of-way shall conform to standard Town of Colden specifications adopted May 9, 1974. In proper cases, park areas of suitable location, size and character for playground or other recreational purposes shall be shown on the subdivision plat.

B. Should any of these regulations conflict or be inconsistent with any provision of the Town Law, such provision of the Town Law shall apply.

C. In order that land may be subdivided in accordance with this policy, these regulations are hereby adopted.

## § 92-2. Definitions.

For the purpose of these regulations, which shall be known and may be cited as "Town of Colden Land Subdivision Regulations," certain words used herein are defined as follows:

**ENGINEER**
The duly designated Engineer of the Town of Colden, or if there be no such official, the Planning Engineer employed by or assigned to the Town Planning Board.

**FINAL PLAT**
The final map, drawing or chart on which the subdivider's plan of subdivision is presented to the Planning Board for approval, and which, if approved, will be submitted to the County Clerk for

recording.[1]

**MASTER PLAN**

A comprehensive plan, prepared by the Planning Board pursuant to § 272-a of the Town Law, which indicates the general locations recommended for the various functional classes of public works, places and structures and for the general physical development of the Town of Colden, and includes any unit or part of such plan separately adopted and any amendment to such plan or parts thereof.

**OFFICIAL MAP**

The map established by the Town Board or additions thereto resulting from the approval of subdivision plats by the Planning Board and the subsequent filing of such approved plats.

**PARCEL OF LAND**

The boundaries of a conveyance by deed, will, intestacy or otherwise. A single contiguous conveyance shall be deemed one parcel regardless of the existence of one or more streets or roads traversing the whole or any part of the parcel.

**PRELIMINARY PLAT**

The preliminary drawing indicating the proposed layout of the subdivision to be submitted to the Planning Board for its consideration. (See § **92-6A**).

**STREET**

A dedicated and accepted public right-of-way for vehicular circulation, including all areas between right-of-way lines.

A. **ARTERIAL, MAJOR ARTERIAL OR MAJOR STREET**
To expedite movement of through traffic to major traffic generators and from community to community; to collect and distribute traffic from freeways and expressways to less important major streets or directly to traffic destinations.

B. **COLLECTOR STREET**
To collect and distribute traffic from higher-type major streets to access streets or directly to traffic destinations; to serve neighborhood traffic generators.

C. **LOCAL OR MINOR STREET**
A street, the principal purpose of which is to provide vehicular access to the proproperties abutting it.

D. **MARGINAL ACCESS STREET**
A local or minor (service) street which parallels and is immediately adjacent to a major street or highway, and which provides access to abutting properties and protection from through traffic and control of intersections with major traffic streets.

E. **CUL-DE-SAC**
A street intersecting another street at one end and permanently terminated by a vehicular turnaround at the other.

**SUBDIVISION**

A. The division of any parcel of land, including adjacent or contiguous parcels conveyed by separate deed to the applicant, into two or more lots, plots, sites or other divisions of land for immediate or future sale or transfer of ownership or for building development which division shall require the construction of streets or other municipal facilities; provided, however, that the sale or exchange of parcels of land between adjacent or adjoining property owners or where such sales do not create additional lots and are not to be offered separately for sale shall not be considered a "subdivision" of land.

B. Exception. This chapter shall not apply to the division of a parcel of record as of the effective date of this chapter into lots or parcels which front along an existing highway or road.

C. The term "subdivision" also includes a resubdivision and, as appropriate in these regulations, shall refer to the process of subdividing the land or to the land subdivided.

**SURFACE DRAINAGE PLAN**

A plan showing all present or proposed grades and facilities for stormwater drainage.

[1] *Editor's Note: Amended at time of adoption of Code; see Ch. **1**, General Provisions, Art. **I**.*

# § 92-3. Special permit procedure.

A. No parcel of land shall be subdivided as hereinbefore defined without a special permit from the Town Board pursuant to the provisions of this chapter.

B. Submission of application; consultations.

(1) The subdivider shall submit an application to the Town Board which shall include general site information, a local map and sketch plan with a request for informal consideration and advice.

(2) Consultation.

(a) It is presumed that the subdivider will consult with other parties potentially interested in the development, such as lending institutions, with a view to reaching firm conclusions regarding what parts of the market demand should be served, the suitability of the proposed location and the most advantageous subdivision plan.

(b) Preliminary consultation should also be sought with the Erie County Health Department, in all cases, to familiarize the applicant with relevant provisions of the Erie County regulations and the relevant laws and regulations of the State of New York regarding provisions for sewer and water.

C. The Town Board shall first submit the application and the preliminary plat, if required, to the Planning Board and the Conservation Board for review and recommendation of the concept. Said Boards shall consider the matter at the next respective regular meetings of said Boards, following the referral from the Town Board, and shall report to the Town Board on or before the next regular meeting of the Town Board.

D. Submission of preliminary plat.

(1) The Town Board, in its discretion, may hold a public hearing on the original application and site plan, within 30 days from the regular meeting at which the application is submitted, or it may require the submittal of a preliminary plat as defined in § **92-6** hereof before holding said hearing.

(2) In the event that the Town Board requires a preliminary plat before consideration of the application, the applicant shall have 45 days in which to submit said preliminary plat.

(3) Upon submission of said preliminary plat, the Town Board shall hold a public hearing on the application within 30 days from the date of the regular meeting at which said preliminary plat is submitted.

E. Within 30 days of said public hearing, the Town Board shall either approve, approve with conditions or deny said application. In the event of approval with conditions, the Town Board may require satisfaction of said conditions before issuing the special permit or issue the special permit with conditions and empower the Planning Board or the Building Inspector to enforce said conditions.

F. Upon the approval of the special permit, the Town Board shall refer the entire application to the Planning Board for consideration as set forth in § **92-4** below.

# § 92-4. Review of preliminary plat by Planning Board.

A. In the event that the preliminary plat accompanies the application and special permit, the Planning Board shall immediately begin review of the preliminary plat.

B. In the event that the application and special permit were based on a preliminary site plan only, the subdivider shall submit the preliminary plat to the Planning Board, within 30 days of the granting of the special permit.

C. The Planning Board shall review the preliminary plat at the next regular meeting after receipt. The Planning Board may require supplemental material or additional information or reports from the subdivider or other appropriate agency which it may deem necessary for its review.

D. The Planning Board shall submit the preliminary plat and all supporting material to the Town Conservation Board for a report and recommendation. Said Conservation Board shall report its findings and recommendations no later than the date set by the Planning Board for the public hearing.

E. Following the review of the preliminary plat, requested reports and supplemental material required, the Planning Board shall hold a public hearing within 45 days after receipt of such preliminary plat by the Clerk of the Planning Board, which hearing shall be advertised at least once in the newspaper of general circulation in the town at least five days before such hearing.[1]

[1] *Editor's Note: Amended at time of adoption of Code; see Ch.* ***1****, General Provisions, Art.* ***I****.*

F. Within 45 days after the date of such hearing, the Planning Board shall recommend approval with or without modification or recommend disapproval of such preliminary plat and the ground of a modification, if any, or the ground for disapproval shall be stated upon the records of the Planning Board. Notwithstanding the foregoing provisions of this section, the time in which the Planning Board must take action on such plat may be extended by mutual consent of the owner and the Planning Board. When recommending a preliminary plat, the Planning Board shall state, in writing, modifications if any, as it deems necessary for submission of the plat in final form. Within five days of the recommendation of approval of such preliminary plat, it shall be certified by the Clerk of the Planning Board as granted preliminary approval and a copy filed in his/her office and a certified copy mailed to the owner. Within six months of the approval of the preliminary plat, the owner must submit the plat in final form. If such plat is not submitted, recommendation of the preliminary plat may be revoked by the Planning Board. In the event that a Planning Board fails to take action on a preliminary plat within the time prescribed therefor, such plat shall be deemed recommended by the Planning Board.

G. Within 45 days of the submission of a plat in final form for approval by the Planning Board, a hearing shall be held by the Planning Board, which hearing shall be advertised at least once in a newspaper of general circulation in the town at least five days before such hearing; provided, however, that when the Planning Board deems the final plat to be in substantial agreement with a preliminary plat approved under Subsection **F** of this section and modified in accordance with requirements of such approval, if such preliminary plat has been approved with modifications, the Planning Board may waive requirements for such public hearing. The Planning Board shall, by resolution, recommend conditional approval, conditional approval with or without modification, disapproval or recommend final approval and the signing of such plat, within 45 days of its receipt by the Clerk of the Planning Board, if no such hearing is held or, in the event such hearing is held, within 45 days after the date of such hearing. Notwithstanding the foregoing provisions of this subsection, the time in which a Planning Board must take action on such plat may be extended by mutual consent of the owner and the Planning Board. In the event that the Planning Board fails to take action on a final plat within the time prescribed therefor, the plat shall be deemed approved by the Planning Board. Thereafter, the final plat shall be forwarded to the Town Board, together with the report and recommendation of the Planning Board.

H. The subdivider will be required to tender offers of cession in a form certified as satisfactory by the Town Attorney of all sewers, drains, waterlines and all land included in streets, parks or other

public areas, not specifically reserved by him, but approval of the plat by the Board does not constitute an acceptance by the town of the dedication of any street, park or other public open space.

## § 92-5. Approval of final plat.

Upon receipt of final plat by the Town Board, said Board may hold a public hearing before taking formal action. The Town Board shall approve or disapprove said final plat. In the event of approval, the map shall be certified by the Town Clerk and recorded in the Erie County Clerk's office within 60 days by the owner. In the event of disapproval, the Town Board shall indicate its reasons and state whether such disapproval is absolute or conditional. In the event of a conditional disapproval, the applicant may reapply after fulfilling the required conditions or abandon the project.

[1] *Editor's Note: Amended at time of adoption of Code; see Ch. **1**, General Provisions, Art. **I**.*

## § 92-6. Plat specifications.

A. Preliminary plat. Preliminary plats shall be drawn to a scale of not more than one inch equals 100 feet and shall show the following information:

(1) The location of the property with respect to surrounding property and streets. There shall also be included a key map at a scale of one inch equals 500 feet showing all streets, streams and property within 1,500 feet of the applicant's property. All property held by the applicant in the area should be identified.

(2) The location and approximate dimensions of all existing property lines (include entire area proposed to be subdivided and remainder of the tract owned by the subdividing owner).

(3) All pertinent features, such as existing structures, streets, railroads, water bodies, streams, swamps and large trees, that may influence the design of the subdivision, and topography at contour interval of not more than five feet, unless waived by the Town Board.

(4) The location, width and approximate grade of all proposed streets. Approximate elevations shall be shown at the beginning and end of each street, at street intersections and at all points where there is a decided change in the slope or direction.

(5) The approximate location, dimensions and area of all proposed or existing lots.

(6) The approximate location and dimensions of all property proposed to be set aside for playground or park use.

(7) The names of all property owners of record or the names of developments within 500 feet.

(8) The names and addresses of the owner or owners of land to be subdivided, the name and address of the subdivider, if other than the owner, and the name of the land surveyor.

(9) The date, source of the North point and scale.

(10) Acreage of tract to be subdivided to nearest tenth of an acre.

(11) Information on soil types and characteristics as noted in the Official Erie County Soil Maps of the Soil Conservation Service, including information on soil permeability, seasonal high water table and soil bearing capacity.

(12) Proposed provision of water supply, fire protection, disposal of sanitary waste, stormwater drainage, street trees, streetlighting fixtures, street signs and sidewalks, date on which must be available for consideration at this state.

(13) Each block shall be numbered, and the lots within each block shall be numbered consecutively in accordance with the procedure established by the town. The total number of

residential lots shall be noted on the plat.

B. Final plat. Subdivision plats shall be accompanied by separate construction detail sheets, and both shall be submitted to the Planning Board for approval, as follows:

(1) Drawing, scale and size of plat and construction detail sheets. The subdivision plat and construction detail sheets shall be clearly and legibly drawn on a stable transparent base. In areas zoned for lots of minimum size of 20,000 square feet or more, maps and profiles shall be at a scale of one inch equals 100 feet. In areas zoned for lots less than 20,000 square feet, maps and profiles shall be at a scale of one inch equals 50 feet. Maps shall be on uniform size sheets in accordance with the New York State statutes. Whenever any project is of such size that more than one sheet is required, then an index map on the same size sheet shall accompany these sheets. The construction detail sheets shall show all items included in subsection **B(3)** herein and as actually constructed.

(2) Information to be shown on plat.

(a) Plats shall show the following information:

[1] Proposed subdivision name or identifying title which shall not duplicate or too closely approximate that of any other development in the town.

[2] Date, source of the North point and scale.

[3] Name, address and signature of the owner, subdivider and licensed engineer or land surveyor.

[4] Names of owners on record of abutting properties or developments.

[5] Locations, names and widths of existing streets, highways and easements, building lines, parks and other public properties.

[6] Locations and widths of all streets and sidewalks, together with names of streets and location, dimensions and status of all easements proposed by the subdivider.

[7] Lot areas in square feet.

[8] Lot lines with accurate dimensions and bearings of angles.

[9] Sufficient data to determine readily the location, bearing and length of all lines, and to reproduce such lines upon the ground.

[10] Radii of all curves and lengths of arcs.

[11] Location, material and approximate size of all monuments.

[12] The accurate outlines of all property which is offered, or to be offered, for dedication for public use, with the purpose indicated thereon, and of all property that is proposed to be reserved by deed covenant for the common use of the property owners of the subdivision.

[13] Acreage of tract to be subdivided to the nearest tenth of an acre.

[14] Each block shall be numbered and the lots within such block shall be numbered consecutively in accordance with the procedure established by the town. The total number of residential lots shall be noted on the plat.

(b) In addition to the subdivision plat as described above, there shall also be presented to the Planning Board a certificate that there are no tax liens on the property being subdivided and a performance bond in such amount as is necessary to complete street and utility improvements.

(3) Construction detail sheets.

(a) Construction detail sheets shall show the following information, except that, where requirements have been waived, applicable specifications may be omitted:

[1] Profiles showing existing and proposed elevations along the center lines of all streets. Where a proposed street intersects an existing street or streets, the elevation along the center line of the existing street or streets, within 100 feet of the intersection, in both directions, shall be shown. All elevations must be referred to established United States government or approved local bench marks, where they exist within 1/2 mile of the boundary of the subdivision.

[2] The Planning Board may require, where steep slopes exist, that present elevations of all proposed streets shall be shown every 100 feet at five points on a line at right angles to the center line of the street, and said elevation points shall be at the center line of the street, each property line and points 30 feet inside each property line.

[3] Plans and profiles showing the location and a typical section of street pavements, including curbs and gutters, sidewalks, manholes and catch basins; the locations of street trees, streetlighting standards and street signs; the location, size and invert elevations of existing and proposed sanitary sewers, stormwater drains and fire hydrants; and the exact location and size of all water, gas, electric or other underground utilities or structures.

(b) All plans shall conform to the town minimum road specifications and shall be subject to the approval of the Town Engineer.

# § 92-7. Design standards.

A. Streets.

(1) The arrangement, character, extent, width, grade and location of all streets shall conform to the Master Plan and to the Official Map, if any, and shall be considered in their relation to other existing and planned streets, to topographical conditions, to public convenience and safety and in their appropriate relation to the proposed uses of land to be served and/or abutted by such streets and must meet all design standards for construction as adopted by the Town of Colden, May 9, 1974, or as revised.

(2) Where such is not shown in the Master Plan, the arrangement of streets in a subdivision shall either:

(a) Provide for the continuation or appropriate projection of existing principal streets in surrounding areas; or

(b) Conform to a plan for the neighborhood approved or adopted by the Board to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impracticable.

(3) Streets shall be so laid out that their use by through traffic will be discouraged.

(4) Where a subdivision borders on or contains a railroad right-of-way or controlled access highway right-of-way, the Board may require a street approximately parallel to and on each side of such right-of-way at a distance suitable for the appropriate use of the intervening land, as for park purposes in residential districts or for commercial or industrial purposes in appropriate districts. Such distances shall also be determined with due regard for the requirements of approach grades and future grade separations.

(5) Reserve strips controlling access to streets, water plants or sewage treatment plants or to other land dedicated or to be dedicated to public use shall be prohibited except where their control is definitely placed in the town under conditions approved by the Board.

(6) Street jogs with center-line offsets of less than 125 feet shall be avoided.

(7) A tangent at least 100 feet long shall be introduced between reverse curves on arterial and collector streets.

(8) When connecting streetlines deflect from each other at any one point by more than 10°, they shall be connected by a curve with a radius at the inner streetline of not less than 250 feet.

(9) Streets shall be laid out so as to intersect as nearly as possible at right angles, and no street shall intersect any other street at less than 75°. Any change in street alignment to meet this requirement shall occur at least 100 feet from the intersection.

(10) No street names shall be used which will duplicate or likely be confused with the names of existing streets. Street names shall be subject to the approval of the Board, Postmaster, Board of Fire Commissioners, local police agency and Town Clerk, prior to final approval.

B. Lots.

(1) The lot size, width, depth, shape and orientation, and the minimum building setback lines, shall be appropriate for the location of the subdivision and for the type of development and use contemplated.

(2) Land subject to flooding shall not be platted for residential occupancy nor for such other uses as may increase danger to life or property or aggravate the flood hazard.

(3) Lot dimensions shall conform to the requirements of the Zoning Ordinance.[1]

[1] *Editor's Note: See Ch.* ***28****, Building Inspector and Enforcement Officer, Ch.* ***52****, Flood Hazard Areas, and Ch.* ***108****, Zoning.*

(4) Corner lots for residential use shall have extra width to permit appropriate building setback from and orientation to both streets.

(5) The subdividing of the land shall be such as to provide, by means of a public street, each lot with satisfactory access to an existing public street.

C. Public sites and open spaces.

(1) Where a proposed park, playground, school or other public use shown in a Master Plan is located, in whole or in part, in a subdivision, the Board may require the dedication or reservation of such area within the subdivision in those cases in which the Board deems such requirements to be reasonable.

(2) Where deemed essential by the Board, upon consideration of the particular type of development proposed in the subdivision, and especially in large-scale neighborhood unit developments not anticipated in the Master Plan, the Board may require the dedication or reservation of such other areas or sites or a character, extent and location suitable to the needs created by such development for schools, parks, water plants, sewage treatment plants and other community purposes.

D. Required improvements.

(1) Monuments. For preservation of land boundaries, monuments shall be placed at appropriate places, usually property corners, street intersections or as designated by the Engineer. The monuments shall be of such material, size and length as may be approved by the Engineer.

(2) The Board may require the planting of trees or other landscaping as may be deemed appropriate where public streets are to be constructed and dedicated. Plans for this will be approved by the Board.

(3) All public utilities and street improvements will meet the latest construction specification of the Town of Colden and be subject to inspection as designated therein.

# § 92-8. Variances and modifications.

A. Where the Board finds that because of unusual circumstances of shape, topography or other physical features of the land or because of the nature of adjacent developments, extraordinary hardships may result from strict compliance with these regulations, it may vary the regulations so that substantial justice may be done and the public interest secured, provided that no such variation shall be granted which will have the effect of nullifying the intent and purpose of the Master Plan, the Zoning Ordinance[1] or any other law or ordinance of the Town Colden.

[1] *Editor's Note: See Ch.* ***28****, Building Inspector and Enforcement Officer, Ch.* ***52****, Flood Hazard Areas, and Ch.* ***108****, Zoning.*

B. In granting variances and modifications, the Board may require such conditions as will, in its judgment, secure substantially the objectives of the standards or requirements so varied or modified.

# Chapter 108. Zoning

## Article XVII. Supplemental Cluster Housing and Townhouse Regulations

### § 108-93. Cluster housing.

A. Minimum development area. Cluster housing shall apply to a subdivision of not less than 10 acres in area. For purposes of this article, the area of the subdivision shall include the area that the Town Board requires to be set aside and dedicated to the Town of Colden for park and recreation purposes as described in Subsection **G** below.

B. Service by utilities. All cluster housing shall be served by a system of public utilities.

C. Minimum lot size. The required minimum lot area for single-family detached dwellings may be reduced to no less than 6,000 square feet, provided that any and all such area reduced per single-family detached dwelling in the subdivision shall be restricted on the subdivision plat for park and/or recreational purposes of an active and/or passive nature.

D. Minimum yards. Where the required minimum lot area has been reduced pursuant to Subsection **C** above, the following yard requirements shall be minimum:

   (1) Front yard: 35 feet.

   (2) Side yards: two required.

      (a) Minimum width of any side yard shall be five feet.

      (b) The total width of both side yards shall not be less than 13 feet.

   (3) Rear yard: 20 feet.

   (4) Minimum lot width: 60 feet.

E. Maximum height of buildings: 2 1/2 stories not to exceed 35 feet.

F. Maximum density. The maximum density for the entire subdivision, whether designed for cluster housing for single-family detached dwellings or townhouses, or a combination thereof, shall not be more than the minimum density permitted in the district where the property is located. If the property is in two different density districts, an average of the density is taken.

G. Maintenance of common area.

   (1) Nothing herein shall prevent the Town Board from requiring that 10% of the entire subdivision be set aside for park and recreation purposes nor, in lieu thereof, the payment of a recreational fee per dwelling unit as established by the Town Board, in addition to the private land assembled in common as the result of the clustering process referred to in Subsection **C**.

   (2) Provisions satisfactory to the Town Board shall be made to assure the proper maintenance of all nonpublic areas and facilities for the common use of occupants of any cluster housing development, including townhouses, but not in individual ownership of such occupants, without

expense to the general taxpayers of the Town of Colden. The instrument incorporating such provisions shall be approved by the Town Attorney of the Town of Colden as to form and legal sufficiency before any approval action is taken by the Town Board.

H. Variances and modifications.

(1) Where the Town Board finds that, because of unusual circumstances of shape, topography or other physical features of the land or because of the nature of the adjacent developments, extraordinary hardships may result from the strict compliance with these regulations, it may vary the regulations so that substantial justice may be done and the public interest secured, provided that no such variation shall be granted which will have the effect of nullifying the intent and the purpose of the Master Plan, the Zoning Code or any other law or ordinance of the Town of Colden.

(2) In granting variances and modifications, the Board may require such conditions as will, in its judgment, secure substantially the objectives of the standards or requirements so varied or modified.

**Appendix C**
NYS Department of Agriculture and Markets Information

Appendix C Includes:

- Circular 1150 - Article 25AA: Agricultural Districts

- Local Laws and Agricultural Districts: How Do They Relate?

- Circular 1500 - Article 25AAA: Agricultural and Farmland Protection Programs

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**New York State**
**Department of Agriculture and Markets**
**10B Airline Drive**
**Albany, New York  12235**
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# CIRCULAR 1150

## ARTICLE 25AA -- AGRICULTURAL DISTRICTS

## AGRICULTURE AND MARKETS LAW
## (AS AMENDED THROUGH January 1, 2009)
## AGRICULTURAL DISTRICTS LAW

Summary of **1999 Amendments** to the Agricultural Districts Law

Section Amended:§301(4)(e) and §301(9)(e)
Description: Provides that land set aside through participation in a federal conservation program, regardless of the income derived from the land, shall be eligible for an agricultural assessment.
Effective Date: 9/7/99

Section Amended:§301(9)(e)
Description: Adds a new paragraph (e) to allow payments received for land set aside under a federal conservation reserve program to be included in calculating the average gross sales value of products produced in determining whether land used as a single farm operation qualifies as "land used in agricultural production."
Effective Date: 9/7/99

Section Amended:§303-a(4)
Description: Renumbers subdivision (4) to subdivision (5)
Effective Date: 7/20/99

Section Amended:§303-a(4)
Description: Adds a new subdivision (4) that states that if the county legislative body does not review a district upon its anniversary date, the agricultural district remains as originally constituted or until such time that the agricultural district is modified or terminated.
Effective Date: 7/20/99

Section Amended:§305(7)
Description: Provides that the real property tax exemption for agricultural land which is used solely for the purpose of replanting or crop expansion as part of an orchard or vineyard may be greater than 20% of the total acreage of such orchard or vineyard when such orchard or vineyard is located within an area declared by the Governor to be a disaster emergency.
Effective Date: 9/7/99 and shall apply to assessment rolls prepared on the basis of taxable status dates occurring on or after 9/7/99.

Section Amended:§308(3)
Description: Renumbers subdivision (3), which was added by Chapter 362 of the Laws of 1998, to subdivision (4)
Effective Date: 4/6/99

Section Repealed: §309(8) & (9)
Description: Repeals the two subdivisions
Effective Date: 7/20/99

Section Amended:§309(10)
Description: Renumbers subdivision (10) to subdivision (8)
Effective Date: 7/20/99

Section Amended §310(1)

Description: Adds language to the agricultural district disclosure statement to notify a prospective buyer of land within an agricultural district that under certain circumstances, the availability of water and sewer services may be limited.
Effective Date: 7/1/00

Summary of **2000 Amendments** to the Agricultural Districts Law

Section Amended: §305(1)(d)(v) and §306(2)(b)(iii)
Description: Revises reporting requirement of assessors to the State Board of Real Property Services when land receiving an agricultural assessment is converted to non-agricultural uses.
Effective Date: 7/11/00

Section Amended: §308(1)(b)
Description: Requires the Commissioner to give consideration to a practice conducted under the Agricultural Environmental Management (AEM) Program when making a sound agricultural practice determination.
Effective Date: 11/8/00

Summary of **2001 Amendments** to the Agricultural Districts Law

Section Amended: §301(11)
Description: Includes manure processing and handling facilities as part of a "farm operation" for purposes of administering the Agricultural Districts Law.
Effective Date: 10/23/01

Section Amended: §301(11)
Description: Includes "commercial horse boarding operations" as part of a "farm operation" for purposes of administering the Agricultural Districts Law.
Effective Date: 10/31/01

Summary of **2002 Amendments** to the Agricultural Districts Law

Section Amended: §301(4)
Description: Eliminates county legislative body approval for the designation of eligible horse boarding operations as land used in agricultural production.
Effective Date: 1/30/03

Sections Amended: §301(4), §301(4)(b), and §301(4)(f)
Description: Reduces the number of acres needed to qualify for agricultural real property assessment from ten acres to 7 or more acres as long as the value of crops produced exceeds $10,000 on average in the preceding two years. The size of rented land eligible for an agricultural assessment is reduced from 10 acres to 7 acres as long as the smaller parcel yields at least $10,000 in average annual gross sales independently or in conjunction with land owned by the farmer renting the parcel. The amendment also reduces the number of acres needed to qualify as land used in agricultural production from not less than ten acres to seven or more acres and average gross sales of $10,000 or

more in the preceding two years or less than seven acres and average gross sales $50,000 or more in the preceding two years.

Effective Date: 1/1/03

Section Added: §301(9)(f)
Description: Allows payments received by thoroughbred breeders pursuant to Section 247 of the racing pari-mutuel wagering and breeding law to be included in the definition of "gross sales value" for agricultural assessment purposes.
Effective Date: 9/17/02

Section Amended: §301(11)
Description: Amends the definition of farm operation to indicate that such operation may consist of one or more parcels of owned or rented land and such parcels may or may not be contiguous to each other.
Effective Date: 1/1/03

Section Amended: §301(13)
Description: Reduces the minimum acreage required for a commercial horse boarding operation from ten to seven acres.
Effective Date: 1/1/03

Sections Amended: §303(2)(a)(1), §303(4), §303(5)(a) and (b), §303(6)(a) and (b), §303(7) and §303(8)
Description: Amends various sections of the law to allow a landowner to include viable agricultural land within a certified agricultural district prior to its eight, twelve or twenty year review period.
Effective Date: 12/20/02

Summary of **2003 Amendments** to the Agricultural Districts Law

Section Added: §301(4)(h)
Description: Adds a new paragraph (h) to allow first year farmers to receive an agricultural assessment if they meet the gross sales value requirements during their first year of operation.
Effective Date: 9/9/03

Sections Amended: §301(5), §305(1)(d)(iv), and §306(2)(c)
Description: Amends various sections of the law so that conversion penalties are not assessed on farmland that is being used in agricultural production and receives an agricultural assessment when such land is converted to wind energy generation facilities.
Effective Date: 9/22/03

Sections Amended: §303-b, §303(2)(a)(1) and §303(4)

Description: Adds a new section 303-b to establish an annual 30-day period during which a farmer can submit proposals to include viable land within a certified agricultural district.
Effective Date: 9/17/03

Sections Amended: §303(5)(b), §303(6)(b) and §303(8)
Description: Repeals various sections of the law to conform with the provisions of a new section 303-b.
Effective Date: 9/17/03

Summary of **2004 Amendment** to the Agricultural Districts Law

Section Amended:§301(4)(h)
Description: Amends paragraph (h) to allow a farm operation to receive an agricultural assessment if it meets the acreage and gross sales value requirements during its first or second year of agricultural production.
Effective Date: 2/24/04

Section Amended:§301(4)(i)
Description: Adds a new paragraph (i) to allow start-up farm operations that plant orchard or vineyard crops to immediately become eligible to receive an agricultural assessment in its first, second, third or fourth year of production.
Effective Date: 1/1/05

Summary of **2005 Amendments** to the Agricultural Districts Law

Section Amended:§301(2)(e)
Description: Amends paragraph (e) by adding wool bearing animals, such as alpacas and llamas, to the definition of “livestock and livestock products.”
Effective Date: 7/12/05

Section Amended:§301(4)(h) and §301(13)
Description: Amends paragraph (h) to allow a “commercial horse boarding operation” to receive an agricultural assessment if it meets the acreage and gross sales value requirements during its first or second year of agricultural production. The definition of “commercial horse boarding operation” is amended by stating that such operations may qualify as a “farm operation” in its first or second year of operation if it meets the acreage and number of horse requirements.
Effective Date: 8/23/05

Section Amended:§301(11) and §301(14)
Description: Includes “timber processing” as part of a “farm operation” for purposes of administering the Agricultural Districts Law and adds a new section by defining the term “timber processing.”
Effective Date: 8/23/05

Section Amended:§305-b

Description: Adds a new section that authorizes the Commissioner to review and comment upon the proposed rules and regulations of other State agencies which may have an adverse impact on agriculture and farming operations in the State.

Effective Date: 10/4/05 (Shall apply to proposed rules and regulations publicly noticed 60 or more days following the effective date.)

Summary of **2006 Amendments** to the Agricultural Districts Law

Section Amended:§301(4)

Description: Adds a new section (j) to allow newly planted Christmas tree farms to be eligible for agricultural assessment in their first through fifth years of agricultural production.

Effective Date: 1/1/07 and applies to assessment rolls prepared on the basis of taxable status dates occurring on or after such date.

Section Amended:§§301 and 308(1)

Description: Adds a new subdivision (15) to §301 to define “agricultural tourism” and amends §308(1) to add “agricultural tourism” to the list of examples of activities which entail practices the Commissioner may consider for sound agricultural practice opinions.

Effective Date: 8/16/06

Section Amended:§305(1)(a)

Description: Amends paragraph (1)(a) to allow filing of an application after taxable status date where failure to timely file resulted from a death of applicant’s spouse, child, parent, brother or sister or illness of the applicant or applicant’s spouse, child, parent, brother or sister which prevents timely filing, as certified by a licensed physician.

Effective Date: 9/13/06 and applies to assessment rolls prepared on the basis of a taxable status date occurring on or after such date.

Section Amended:§305(7)

Description: Amends paragraph (7) to extend the 100% exemption for newly planted orchards and vineyards from 4 to 6 years.

Effective Date: 9/13/06 and applies to assessment rolls prepared on the basis of a taxable status date occurring on or after 1/1/06.

Section Amended:§310(1), §308(5)

Description: Amends AML §§310(1), 308(5) and RPL §333-c(1) relative to the disclosure notice required for prospective purchasers of property within an agricultural district.

Effective Date: 7/26/06

Summary of **2007 Amendments** to the Agricultural Districts Law

Section Amended: §§303, 303-a & 304-b, repeals §303-a(2)(b) and (c)
Description: Amends AML §§303, 303-a and 304-b concerning the review of agricultural districts and the reporting of agricultural district data and repeals certain provisions of such law relating thereto.
Effective Date: 7/3/07

Section Amended: §304-a
Description: Amends AML §304-a to limit an increase in the base agricultural assessment values for any given year to 10 percent or less of the assessment value of the preceding year.
Effective Date: 6/4/07

Section Amended: §305(1)(a)
Description: Amends AML §305(1)(a) in relation to authorizing the filing of an application for an agricultural assessment after the taxable status date in the event of a natural disaster or destruction of farm structures.
Effective Date: 8/15/07

Summary of **2008 Amendments** to the Agricultural Districts Law

Section Amended: §§301(2)(j), 301(4)(k) and 301(16)
Description: Adds a new paragraph (j) to §301(2) to add "apiary products" to the definition of "crops, livestock and livestock products," adds a new paragraph (k) to §301(4) to independently qualify apiaries for an agricultural assessment and adds a new subdivision (16) to define "apiary products operation."
Effective Date: 7/21/08 and applies to assessment rolls prepared on the basis of a taxable status date occurring on or after 7/21/08 .

Section Amended: §§301(11) and 308(1)(b)
Description: Amends subdivision (11) of §301 to add the "production, management and harvesting of 'farm woodland'" to the definition of "farm operation" and amends §308(1)(b) to add the "production, management and harvesting of 'farm woodland'" to the list of examples of activities which entail practices the Commissioner may consider for sound agricultural practice opinions.
Effective Date: 9/4/08

Section Amended: §§301(9), 301(11), and 301(16)
Description: Adds a new paragraph (g) to §301(9) to allow up to $5,000 from the sale of "compost, mulch or other organic biomass crops" to help meet the eligibility requirements for an agricultural assessment; amends subdivision (11) of §301 to add "compost, mulch or other biomass crops" to the definition of "farm operation" and adds a new subdivision (16) to define "compost, mulch or other organic biomass crops."
Effective Date: 9/4/08

## ARTICLE 25AA - AGRICULTURAL DISTRICTS

Sec.


300. Declaration of legislative findings and intent.
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304. Unique and irreplaceable agricultural land; creation of districts.
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306. Agricultural lands outside of districts; agricultural assessments.
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309. Advisory council on agriculture.
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### 300. Declaration of legislative findings and intent

It is hereby found and declared that many of the agricultural lands in New York state are in jeopardy of being lost for any agricultural purposes. When nonagricultural development extends into farm areas, competition for limited land resources results. Ordinances inhibiting farming tend to follow, farm taxes rise, and hopes for speculative gains discourage investments in farm improvements, often leading to the idling or conversion of potentially productive agricultural land.

The socio-economic vitality of agriculture in this state is essential to the economic stability and growth of many local communities and the state as a whole. It is, therefore, the declared policy of the state to conserve, protect and encourage the development and improvement of its agricultural land for production of food and other agricultural products. It is also the declared policy of the state to conserve and protect agricultural lands as valued natural and ecological resources which provide needed open spaces for clean air sheds, as well as for aesthetic purposes.

The constitution of the state of New York directs the legislature to provide for the protection of agricultural lands. It is the purpose of this article to provide a locally-initiated mechanism for the protection and enhancement of New York state's agricultural land as a viable segment of the local and state economies and as an economic and environmental resource of major importance.

**301. Definitions**

When used in this article:

1. "Agricultural assessment value" means the value per acre assigned to land for assessment purposes determined pursuant to the capitalized value of production procedure prescribed by section three hundred four-a of this article.
2. "Crops, livestock and livestock products" shall include but not be limited to the following:
   a. Field crops, including corn, wheat, oats, rye, barley, hay, potatoes and dry beans.
   b. Fruits, including apples, peaches, grapes, cherries and berries.
   c. Vegetables, including tomatoes, snap beans, cabbage, carrots, beets and onions.
   d. Horticultural specialties, including nursery stock, ornamental shrubs, ornamental trees and flowers.
   e. Livestock and livestock products, including cattle, sheep, hogs, goats, horses, poultry, ratites, such as ostriches, emus, rheas and kiwis, farmed deer, farmed buffalo, fur bearing animals, wool bearing animals, such as alpacas and llamas, milk, eggs and furs.
   f. Maple sap.
   g. Christmas trees derived from a managed Christmas tree operation whether dug for transplanting or cut from the stump.
   h. Aquaculture products, including fish, fish products, water plants and shellfish.
   i. Woody biomass, which means short rotation woody crops raised for bioenergy, and shall not include farm woodland.
   j. Apiary products, including honey, beeswax, royal jelly, bee pollen, propolis, package bees, nucs and queens. For the purposes of this paragraph, “nucs” shall mean small honey bee colonies created from larger colonies including the nuc box, which is a smaller version of a beehive, designed to hold up to five frames from an existing colony.
3. "Farm woodland" means land used for the production for sale of woodland products, including but not limited to logs, lumber, posts and firewood. Farm woodland shall not include land used to produce Christmas trees or land used for the processing or retail merchandising of woodland products.
4. "Land used in agricultural production" means not less than seven acres of land used as a single operation in the preceding two years for the production for sale of crops, livestock or livestock products of an average gross sales value of ten thousand dollars or more; or, not less than seven acres of land used in the preceding two years to support a commercial horse boarding operation with annual gross receipts of ten thousand dollars or more. Land used in agricultural production shall not include land or portions thereof used for processing or retail merchandising of such crops, livestock or livestock products. Land used in agricultural production shall also include:
   a. Rented land which otherwise satisfies the requirements for eligibility for an agricultural assessment.
   b. Land of not less than seven acres used as a single operation for the production for sale of crops, livestock or livestock products, exclusive of woodland products, which does not independently satisfy the gross sales value requirement, where such land was used in such production for the preceding two years and currently is being so used under a written rental arrangement of five or more years in conjunction with land which is eligible for an agricultural assessment.
   c. Land used in support of a farm operation or land used in agricultural production, constituting a portion of a parcel, as identified on the assessment roll, which also contains land qualified for an agricultural assessment.

d. Farm woodland which is part of land which is qualified for an agricultural assessment, provided, however, that such farm woodland attributable to any separately described and assessed parcel shall not exceed fifty acres.

e. Land set aside through participation in a federal conservation program pursuant to title one of the federal food security act of nineteen hundred eighty-five or any subsequent federal programs established for the purposes of replenishing highly erodible land which has been depleted by continuous tilling or reducing national surpluses of agricultural commodities and such land shall qualify for agricultural assessment upon application made pursuant to paragraph a of subdivision one of section three hundred five of this article, except that no minimum gross sales value shall be required.

f. Land of not less than seven acres used as a single operation in the preceding two years for the production for sale of crops, livestock or livestock products of an average gross sales value of ten thousand dollars or more, or land of less than seven acres used as a single operation in the preceding two years for the production for sale of crops, livestock or livestock products of an average gross sales value of fifty thousand dollars or more.

g. Land under a structure within which crops, livestock or livestock products are produced, provided that the sales of such crops, livestock or livestock products meet the gross sales requirements of paragraph f of this subdivision.

h. Land that is owned or rented by a farm operation in its first or second year of agricultural production, or, in the case of a commercial horse boarding operation in its first or second year of operation, that consists of (1) not less than seven acres used as a single operation for the production for sale of crops, livestock or livestock products of an annual gross sales value of ten thousand dollars or more; or (2) less than seven acres used as a single operation for the production for sale of crops, livestock or livestock products of an annual gross sales value of fifty thousand dollars or more; or (3) land situated under a structure within which crops, livestock or livestock products are produced, provided that such crops, livestock or livestock products have an annual gross sales value of (i) ten thousand dollars or more, if the farm operation uses seven or more acres in agricultural production, or (ii) fifty thousand dollars or more, if the farm operation uses less than seven acres in agricultural production; or (4) not less than seven acres used as a single operation to support a commercial horse boarding operation with annual gross receipts of ten thousand dollars or more.

i. Land of not less than seven acres used as a single operation for the production for sale of orchard or vineyard crops when such land is used solely for the purpose of planting a new orchard or vineyard and when such land is also owned or rented by a newly established farm operation in its first, second, third or fourth year of agricultural production.

j. Land of not less than seven acres used as a single operation for the production and sale of Christmas trees when such land is used solely for the purpose of planting Christmas trees that will be made available for sale, whether dug for transplanting or cut from the stump and when such land is owned or rented by a newly established farm operation in its first, second, third, fourth or fifth year of agricultural production.

k. Land used to support an apiary products operation which is owned by the operation and consists of (i) not less than seven acres nor more than ten acres used as a single operation in the preceding two years for the production for sale of crops, livestock or livestock products of an average gross sales value of ten thousand dollars or more or (ii) less than seven acres used as a single operation in

the preceding two years for the production for sale of crops, livestock or livestock products of an average gross sales value of fifty thousand dollars or more. The land used to support an apiary products operation shall include, but not be limited to, the land under a structure within which apiary products are produced, harvested and stored for sale; and a buffer area maintained by the operation between the operation and adjacent landowners. Notwithstanding any other provision of this subdivision, rented land associated with an apiary products operation is not eligible for an agricultural assessment based on this paragraph.

5. "Oil , gas or wind exploration, development or extraction activities" means the installation and use of fixtures and equipment which are necessary for the exploration, development or extraction of oil, natural gas or wind energy, including access roads, drilling apparatus, pumping facilities, pipelines, and wind turbines.
6. "Unique and irreplaceable agricultural land" means land which is uniquely suited for the production of high value crops, including, but not limited to fruits, vegetables and horticultural specialties.
7. "Viable agricultural land" means land highly suitable for agricultural production and which will continue to be economically feasible for such use if real property taxes, farm use restrictions, and speculative activities are limited to levels approximating those in commercial agricultural areas not influenced by the proximity of non-agricultural development.
8. "Conversion" means an outward or affirmative act changing the use of agricultural land and shall not mean the nonuse or idling of such land.
9. "Gross sales value" means the proceeds from the sale of:
    a. Crops, livestock and livestock products produced on land used in agricultural production provided, however, that whenever a crop is processed before sale, the proceeds shall be based upon the market value of such crop in its unprocessed state;
    b. Woodland products from farm woodland eligible to receive an agricultural assessment, not to exceed two thousand dollars annually;
    c. Honey and beeswax produced by bees in hives located on an otherwise qualified farm operation but which does not independently satisfy the gross sales requirement; and
    d. Maple syrup processed from maple sap produced on land used in agricultural production in conjunction with the same or an otherwise qualified farm operation.
    e. Or payments received by reason of land set aside pursuant to paragraph e of subdivision four of this section.
    f. Or payments received by thoroughbred breeders pursuant to section two hundred forty-seven of the racing, pari-mutuel wagering and breeding law.
    g. Compost, mulch or other organic biomass crops as defined in subdivision sixteen of this section produced on land used in agricultural production, not to exceed five thousand dollars annually.
11. "Farm operation" means the land and on-farm buildings, equipment, manure processing and handling facilities, and practices which contribute to the production, preparation and marketing of crops, livestock and livestock products as a commercial enterprise, including a “commercial horse boarding operation” as defined in subdivision thirteen of this section and “timber processing” as defined in subdivision fourteen of this section and “compost, mulch or other biomass crops” as defined in subdivision sixteen of this section. For the purposes of this section, such farm operation shall also include the production, management and harvesting of “farm woodland”, as defined in subdivision

three of this section. Such farm operation may consist of one or more parcels of owned or rented land, which parcels may be contiguous or noncontiguous to each other.[1]

12. "Agricultural data statement" means an identification of farm operations within an agricultural district located within five hundred feet of the boundary of property upon which an action requiring municipal review and approval by the planning board, zoning board of appeals, town board, or village board of trustees pursuant to article sixteen of the town law or article seven of the village law is proposed, as provided in section three hundred five-a of this article.
13. "Commercial horse boarding operation" means an agricultural enterprise, consisting of at least seven acres and boarding at least ten horses, regardless of ownership, that receives ten thousand dollars or more in gross receipts annually from fees generated either through the boarding of horses or through the production for sale of crops, livestock, and livestock products, or through both such boarding and such production. Under no circumstances shall this subdivision be construed to include operations whose primary on site function is horse racing. Notwithstanding any other provision of this subdivision, a commercial horse boarding operation that is proposed or in its first or second year of operation may qualify as a farm operation if it is an agricultural enterprise, consisting of at least seven acres, and boarding at least ten horses, regardless of ownership, by the end of the first year of operation.
14. “Timber processing” means the on-farm processing of timber grown on a farm operation into woodland products, including but not limited to logs, lumber, posts and firewood, through the use of a readily moveable, nonpermanent saw mill, provided that such farm operation consists of at least seven acres and produces for sale crops, livestock or livestock products of an annual gross sales value of ten thousand dollars or more and that the annual gross sales value of such processed woodland products does not exceed the annual gross sales value of such crops, livestock or livestock products.
15. “Agricultural tourism” means activities conducted by a farmer on-farm for the enjoyment or education of the public, which primarily promote the sale, marketing, production, harvesting or use of the products of the farm and enhance the public’s understanding and awareness of farming and farm life.
16. “Apiary products operation” means an agricultural enterprise, consisting of land owned by the operation, upon which bee hives are located and maintained for the purpose of producing, harvesting and storing apiary products for sale.
16. “Compost, mulch or other organic biomass crops” means the on-farm processing, mixing, handling or marketing of organic matter that is grown or produced by such farm operation to rid such farm operation of its excess agricultural waste; and the on-farm processing, mixing or handling of off-farm generated organic matter that is transported to such farm operation and is necessary to facilitate the composting of such farm operation’s agricultural waste. This shall also include the on-farm processing, mixing or handling of off-farm generated organic matter for use only on that farm operation. Such organic matter shall include, but not be limited to, manure, hay, leaves, yard waste, silage, organic farm waste, vegetation, wood biomass or by-products of agricultural products that have been processed on such farm operation. The resulting products shall be converted into compost, mulch or other organic biomass crops that can be used as fertilizers, soil enhancers or supplements, or bedding materials. For purposes of this section, “compost” shall be processed by the aerobic, thermophilic decomposition of solid organic constituents of solid waste to produce a stable, humus-like material.

[1] The definition of "farm operation" was separately amended by Chapters 374 and 388 of the Laws of 2001 to add "manure processing and handling facilities" (Chapter 374) and "commercial horse boarding operations" (Chapter 388) and in 2005, “timber processing” (Chapter 573).

## 302. County agricultural and farmland protection board

1. (a) A county legislative body may establish a county agricultural and farmland protection board which shall consist of eleven members, at least four of whom shall be active farmers. At least one member of such board shall represent agribusiness and one member may represent an organization dedicated to agricultural land preservation. These six members of the board shall reside within the county which the respective board serves. The members of the board shall also include the chairperson of the county soil and water conservation district's board of directors, a member of the county legislative body, a county cooperative extension agent, the county planning director and the county director of real property tax services. The chairperson shall be chosen by majority vote. Such board shall be established in the event no such board exists at the time of receipt by the county legislative body of a petition for the creation or review of an agricultural district pursuant to section three hundred three of this article, or at the time of receipt by the county of a notice of intent filing pursuant to subdivision four of section three hundred five of this article. The members of such board shall be appointed by the chairperson of the county legislative body, who shall solicit nominations from farm membership organizations except for the chairperson of the county soil and water conservation district's board of directors, the county planning director and director of real property tax services, who shall serve ex officio. The members shall serve without salary, but the county legislative body may entitle each such member to reimbursement for actual and necessary expenses incurred in the performance of official duties.

   (b) After the board has been established, the chairperson of the county legislative body shall appoint to it two qualified persons for terms of two years each, two qualified persons for terms of three years each and two qualified persons for a term of four years. Thereafter, the appointment of each member shall be for a term of four years. Appointment of a member of the county legislative body shall be for a term coterminous with the member's term of office. Appointment of the county planning director and county director of real property tax services shall be coterminous with their tenure in such office. The appointment of the chairperson of the county soil and water conservation district's board of directors shall be for a term coterminous with his or her designation as chairperson of the county soil and water conservation district's board of directors. Any member of the board may be reappointed for a succeeding term on such board without limitations as to the number of terms the member may serve.

   (c) The county agricultural and farmland protection board shall advise the county legislative body and work with the county planning board in relation to the proposed establishment, modification, continuation or termination of any agricultural district. The board shall render expert advice relating to the desirability of such action, including advice as to the nature of farming and farm resources within any proposed or established area and the relation of farming in such area to the county as a whole. The board may review notice of intent filings pursuant to subdivision four of section three hundred five of this article and make findings and recommendations pursuant to that section as to the effect and reasonableness of proposed actions involving the advance of public funds or acquisitions of farmland in agricultural districts by governmental entities. The board shall also assess and approve county agricultural and farmland protection plans.

(d) A county agricultural and farmland protection board may request the commissioner of agriculture and markets to review any state agency rules and regulations which the board identifies as affecting the agricultural activities within an existing or proposed agricultural district. Upon receipt of any such request, the commissioner of agriculture and markets shall, if the necessary funds are available, submit in writing to the board (i) notice of changes in such rules and regulations which he or she deems necessary, (ii) a copy of correspondence with another agency if such rules and regulations are outside his or her jurisdiction, including such rules and regulations being reviewed, and his or her recommendations for modification, or (iii) his or her reasons for determining that existing rules and regulations be continued without modification.

(e) The county agricultural and farmland protection board shall notify the commissioner and the commissioner of the department of environmental conservation of any attempts to propose the siting of solid waste management facilities upon farmland within an agricultural district.

2. Upon the request of one or more owners of land used in agricultural production the board may review the land classification for such land established by the department of agriculture and markets, consulting with the district soil and water conservation office, and the county cooperative extension service office. After such review, the board may recommend revisions to the classification of specific land areas based on local soil, land and climatic conditions to the department of agriculture and markets.

**303. Agricultural districts; creation**

1. Any owner or owners of land may submit a proposal to the county legislative body for the creation of an agricultural district within such county, provided that such owner or owners own at least five hundred acres or at least ten per cent of the land proposed to be included in the district, whichever is greater. Such proposal shall be submitted in such manner and form as may be prescribed by the commissioner, shall include a description of the proposed district, including a map delineating the exterior boundaries of the district which shall conform to tax parcel boundaries, and the tax map identification numbers for every parcel in the proposed district. The proposal may recommend an appropriate review period of either eight, twelve or twenty years.
2. Upon the receipt of such a proposal, the county legislative body:
   a. shall thereupon provide notice of such proposal by publishing a notice in a newspaper having general circulation within the proposed district and by posting such notice in five conspicuous places within the proposed district. The notice shall contain the following information:
      (1) a statement that a proposal for an agricultural district has been filed with the county legislative body pursuant to this article;
      (2) a statement that the proposal will be on file open to public inspection in the county clerk's office;
      (3) a statement that any municipality whose territory encompasses the proposed district or any landowner who owns at least ten per cent of the land proposed to be included within the proposed modification of the proposed district may propose a modification of the proposed district in such form and manner as may be prescribed by the commissioner of agriculture and markets;
      (4) a statement that the proposed modification must be filed with the county clerk and the clerk of the county legislature within thirty days after the publication of such notice;

(5) a statement that at the termination of the thirty day period, the proposal and proposed modifications will be submitted to the county planning board and county agricultural and farmland protection board and that thereafter a public hearing will be held on the proposal, proposed modifications and recommendations of the planning board and county agricultural and farmland protection board;

b. shall receive any proposals for modifications of such proposal which may be submitted by such landowners or municipalities within thirty days after the publication of such notice;

c. shall, upon the termination of such thirty day period, refer such proposal and proposed modifications to the county planning board, which shall, within forty-five days, report to the county legislative body the potential effect of such proposal and proposed modifications upon the county's planning policies and objectives;

d. shall simultaneously, upon the termination of such thirty day period, refer such proposal and proposed modifications to the county agricultural and farmland protection board, which shall, within forty-five days report to the county legislative body its recommendations concerning the proposal and proposed modifications, and;

e. shall hold a public hearing in the following manner:

(1) The hearing shall be held at a place within the proposed district or otherwise readily accessible to the proposed district;

(2) The notice shall contain the following information:

(a) a statement of the time, date and place of the public hearing;

(b) a description of the proposed district, any proposed additions and any recommendations of the county planning board or county agricultural and farmland protection board;

(c) a statement that the public hearing will be held concerning:

(i) the original proposal;

(ii) any written amendments proposed during the thirty day review period;

(iii) any recommendations proposed by the county agricultural and farmland protection board and/or the county planning board.

(3) The notice shall be published in a newspaper having a general circulation within the proposed district and shall be given in writing to those municipalities whose territory encompasses the proposed district and any proposed modifications, owners of real property within such a proposed district or any proposed modifications who are listed on the most recent assessment roll, the commissioner, the commissioner of environmental conservation and the advisory council on agriculture.

3. The following factors shall be considered by the county planning board, the county agricultural and farmland protection board, and at any public hearing:

(i) the viability of active farming within the proposed district and in areas adjacent thereto;

(ii) the presence of any viable farm lands within the proposed district and adjacent thereto that are not now in active farming;

(iii) the nature and extent of land uses other than active farming within the proposed district and adjacent thereto;

(iv) county developmental patterns and needs; and

(v) any other matters which may be relevant.

In judging viability, any relevant agricultural viability maps prepared by the commissioner of agriculture and markets shall be considered, as well as soil, climate, topography,

other natural factors, markets for farm products, the extent and nature of farm improvements, the present status of farming, anticipated trends in agricultural economic conditions and technology, and such other factors as may be relevant.

4. The county legislative body, after receiving the reports of the county planning board and the county agricultural and farmland protection board and after such public hearing, may adopt as a plan the proposal or any modification of the proposal it deems appropriate, and shall adopt as part of the plan an appropriate review period of either eight, twelve or twenty years. The plan as adopted shall, to the extent feasible, include adjacent viable farm lands, and exclude, to the extent feasible, nonviable farm land and non-farm land. The plan shall include only whole tax parcels in the proposed district. The county legislative body shall act to adopt or reject the proposal, or any modification of it, no later than one hundred eighty days from the date the proposal was submitted to this body. Upon the adoption of a plan, the county legislative body shall submit it to the commissioner. The commissioner may, upon application by the county legislative body and for good cause shown, extend the period for adoption and submission once for an additional thirty days. Where he or she does so, the county legislative body may extend the period for the report from the county planning board and/or the period for the report from the county agricultural and farmland protection board.

5. a. The commissioner shall have sixty days after receipt of the plan within which to certify to the county legislative body whether the proposal, or a modification of the proposal, is eligible for districting, whether the area to be districted consists predominantly of viable agricultural land, and whether the plan of the proposed district is feasible, and will serve the public interest by assisting in maintaining a viable agricultural industry within the district and the state. The commissioner shall submit a copy of such plan to the commissioner of environmental conservation, who shall have thirty days within which to report his or her determination to the commissioner. A copy of such plan shall also be provided to the advisory council on agriculture. The commissioner shall not certify the plan as eligible for districting unless the commissioner of environmental conservation has determined that the area to be districted is consistent with state environmental plans, policies and objectives.

   b. [repealed]

6. a. Within sixty days after the certification by the commissioner that the proposed area is eligible for districting, and that districting would be consistent with state environmental plans, policies and objectives, the county legislative body may hold a public hearing on the plan, except that it shall hold a public hearing if the plan was modified by the commissioner or was modified by the county legislative body after they held the public hearing required by paragraph e of subdivision two of this section and such modification was not considered at the original hearing. Notice of any such hearing shall be in a newspaper having general circulation in the area of the proposed district and individual notice, in writing, to those municipalities whose territories encompass the proposed district modifications, the persons owning land directly affected by the proposed district modifications, the commissioner, the commissioner of environmental conservation and the advisory council on agriculture. The proposed district, if certified without modification by the commissioner, shall become effective thirty days after the termination of such public hearing or, if there is no public hearing, ninety days after such certification unless its creation is disapproved by the county legislative body within such period. Provided, however, that if, on a date within the thirty days after the termination of such public hearing or, if there is no public hearing, within the ninety days after such certification, the county legislative body approves creation of the district, such district shall become effective

on such date. Provided further, that notwithstanding any other provision of this subdivision, if the commissioner modified the proposal, the district shall not become effective unless the county legislative body approves the modified district; such approval must be given on a date within the thirty days after termination of the public hearing; and the district, if approved, shall become effective on such date. Before approving or disapproving any proposal modified by the commissioner, the county legislative body may request reports on such modified proposal, from the county planning board and the county agricultural and farmland protection board.

b. [repealed]

7. Upon the creation of an agricultural district, the description thereof, which shall include tax map identification numbers for all parcels within the district, plus a map delineating the exterior boundaries of the district in relation to tax parcel boundaries, shall be filed by the county legislative body with the county clerk, the county director of real property tax services, and the commissioner. For all existing agricultural districts, the county clerk shall also file with the commissioner upon request the tax map identification numbers for tax parcels within those districts. The commissioner, on petition of the county legislative body, may, for good cause shown, approve the correction of any errors in materials filed pursuant to a district creation at any time subsequent to the creation of any agricultural district.
8. [repealed]

**303-a. Agricultural districts; review.**

1. The county legislative body shall review any district created under this section eight, twelve or twenty years after the date of its creation, consistent with the review period set forth in the plan creating such district and at the end of every eight, twelve or twenty year period thereafter, whichever may apply. In counties with multiple districts with review dates in any twelve month period, the commissioner, on petition of the county legislative body, may, for good cause shown, approve an extension of up to four years for a district review. Thereafter, the extended review date shall be deemed the creation date for purposes of subsequent reviews by the county legislative body in accordance with this section. The review date of a district may not be extended more than four years. The petition of the county legislative body for an extension shall be submitted to the commissioner at least six months prior to the review date.
2. In conducting a district review the county legislative body shall;
   a. Provide notice of such district review by publishing a notice in a newspaper having general circulation within the district and by posting such notice in at least five conspicuous places within the district. The notice shall identify the municipalities in which the district is found and the district's total area; indicate that a map of the district will be on file and open to public inspection in the office of the county clerk and such other places as the legislative body deems appropriate; and notify municipalities and land owners within the district that they may propose a modification of the district by filing such proposal with the county clerk of the county legislature within thirty days after the publication of such notice;
   b. Direct the county agricultural and farmland protection board to prepare a report concerning the following:
      (1) The nature and status of farming and farm resources within such district, including the total number of acres of land and the total number of acres of land in farm operations in the district;
      (2) The extent to which the district has achieved its original objectives;

(3) The extent to which county and local comprehensive plans, policies and objectives are consistent with and support the district;
(4) The degree of coordination between local laws, ordinances, rules and regulations that apply to farm operations in such district and their influence on farming; and;
(5) Recommendations to continue terminate or modify such district.

c. Hold a public hearing at least one hundred twenty days prior to the district review date and not more than one hundred eighty days prior to such date, in the following manner:
(1) The hearing shall be held at a place within the district or other-wise readily accessible to the proposed district;
(2) A notice of public hearing shall be published in a newspaper having a general circulation within the district and shall be given in writing to those municipalities whose territories encompass the district and any proposed modifications to the district; to persons, as listed on the most recent assessment roll, whose land is the subject of a proposed modification; and to the commissioner;
(3) The notice of hearing shall contain the following information:
(a) a statement of the time, date and place of the public hearing; and
(b) a description of the district, any proposed modifications and any recommendations of the county agricultural and farmland protection board.

3. The county legislative body, after receiving the report and recommendation of the county agricultural and farmland protection board, and after public hearing, shall make a finding whether the district should be continued, terminated or modified. If the county legislative body finds that the district should be terminated, it may do so at the end of such eight, twelve or twenty year period, whichever may be applicable, by filing a notice of termination with the county clerk and the commissioner. If the county legislative body finds that the district should be continued or modified, it shall submit a district review plan to the commissioner. The district review plan shall include a description of the district, including a map delineating the exterior boundaries of the district which shall conform to tax parcel boundaries; the tax map identification numbers for every parcel in the district; a copy of the report of the county agricultural and farmland protection board required by paragraph b of subdivision two of this section; and a copy of the testimony given at the public hearing required by subdivision two of this section or a copy of the minutes of such hearing.
4. If the county legislative body does not act, or if a modification of a district is rejected by the county legislative body, the district shall continue as originally constituted, unless the commissioner, after consultation with the advisory council on agriculture, terminates such district, by filing a notice thereof with the county clerk, because:
a. The area in the district is no longer predominantly viable agricultural land; or
b. The commissioner or environmental conservation has determined that the continuation of the district would not be consistent with state environmental plans, policies and objectives; provided, however, that if the commissioner certifies to the county legislative body that he or she will not approve the continuance of the district unless modified, the commissioner shall grant the county an extension as provided in subdivision one of this section to allow the county to prepare a modification of the district in the manner provided in this section.
5. Plan review, certification and filing shall be conducted in the same manner prescribed for district creation in subdivisions five, six and seven of section three hundred three of this article.

**303-b. Agricultural districts; inclusion of viable agricultural land**

1. The legislative body of any county containing a certified agricultural district shall designate an annual thirty-day period within which a land owner may submit to such body a request for inclusion of land which is predominantly viable agricultural land within a certified agricultural district prior to the county established review period. Such request shall identify the agricultural district into which the land is proposed to be included, describe such land, and include the tax map identification number and relevant portion of the tax map for each parcel of land to be included.
2. Upon the termination of such thirty-day period, if any requests are submitted, the county legislative body shall:
   a. refer such request or requests to the county agricultural and farmland protection board, which shall, within thirty days report to the county legislative body its recommendations as to whether the land to be included in the agricultural district consists predominantly of "viable agricultural land" as defined in subdivision seven of section three hundred one of this article and the inclusion of such land would serve the public interest by assisting in maintaining a viable agricultural industry within the district; and
   b. publish a notice of public hearing in accordance with subdivision three of this section.
3. The county legislative body shall hold a public hearing upon giving notice in the following manner:
   a. The notice of public hearing shall contain a statement that one or more requests for inclusion of predominantly viable agricultural land within a certified agricultural district have been filed with the county legislative body pursuant to this section; identify the land, generally, proposed to be included; indicate the time, date and place of the public hearing, which shall occur after receipt of the report of the county agricultural and farmland protection board; and include a statement that the hearing shall be held to consider the request or requests and recommendations of the county agricultural and farmland protection board.
   b. The notice shall be published in a newspaper having a general circulation within the county and shall be given in writing directly to those municipalities whose territory encompasses the lands which are proposed to be included in an agricultural district and to the commissioner.
4. After the public hearing, the county legislative body shall adopt or reject the inclusion of the land requested to be included within an existing certified agricultural district. Such action shall be taken no later than one hundred twenty days from the termination of the thirty day period described in subdivision one of this section. Any land to be added shall consist of whole tax parcels only. Upon the adoption of a resolution to include predominantly viable agricultural land, in whole or in part, within an existing certified agricultural district, the county legislative body shall submit the resolution, together with the report of the county agricultural and farmland protection board and the tax map identification numbers and tax maps for each parcel of land to be included in an agricultural district to the commissioner.
5. Within thirty days after receipt of a resolution to include land within a district, the commissioner shall certify to the county legislative body whether the inclusion of predominantly viable agricultural land as proposed is feasible and shall serve the public interest by assisting in maintaining a viable agricultural industry within the district or districts.

6. If the commissioner certifies that the proposed inclusion of predominantly viable agricultural land within a district is feasible and in the public interest, the land shall become part of the district immediately upon such certification.

**304. Unique and irreplaceable agricultural lands; creation of districts**

1. The commissioner, after consulting with the advisory council on agriculture, may create agricultural districts covering any land in units of two thousand or more acres not already districted under section three hundred three of this article, if (a) the land encompassed in a proposed district is predominantly unique and irreplaceable agricultural land; (b) the commissioner of environmental conservation has determined that such district would further state environmental plans, policies and objectives; and (c) the director of the division of the budget has given approval of the establishment of such area.
2. Prior to creating an agricultural district under this section, the commissioner of agriculture and markets shall work closely, consult and cooperate with local elected officials, planning bodies, agriculture and agribusiness interests, community leaders, and other interested groups. The commissioner shall give primary consideration to local needs and desires, including local zoning and planning regulations as well as regional and local comprehensive land use plans. The commissioner shall file a map of the proposed district in the office of the clerk of any municipality in which the proposed district is to be located, and shall provide a copy thereof to the chief executive officer of any such municipality and the presiding officer of the local governing body, and, upon request, to any other person. The commissioner shall publish a notice of the filing of such proposed map and the availability of copies thereof in a newspaper of general circulation within the area of the proposed district, which notice shall also state that a public hearing will be held to consider the proposed district at a specified time and at a specified place either within the proposed district or easily accessible to the proposed district on a date not less than thirty days after such publication. In addition, the commissioner shall give notice, in writing, of such public hearing to persons owning land within the proposed district. The commissioner shall conduct a public hearing pursuant to such notice, and, in addition, any person shall have the opportunity to present written comments on the proposed district within thirty days after the public hearing. After due consideration of such local needs and desires, including such testimony and comments, if any, the commissioner may affirm, modify or withdraw the proposed district. Provided, however, that if the commissioner modifies the proposal to include any land not included in the proposal as it read when the public hearing was held, the commissioner shall hold another public hearing, on the same type of published and written notice, and with the same opportunity for presentation of written comments after the hearing. Then the commissioner may affirm, modify or withdraw the proposed district, but may not modify it to include land not included in the proposal upon which the second hearing was held.
3. Upon such affirmation or modification, a map of the district shall be filed by the commissioner of agriculture and markets with the county clerk of each county in which the district or a portion thereof is located, and publication of such filing shall be made in a newspaper of general circulation within the district to be created. The creation of the district shall become effective thirty days after such filing and publication.
4. The commissioner shall review any district created under this section, in consultation with the advisory council on agriculture, the commissioner of environmental conservation and the director of the division of the budget, eight, twelve or twenty years after the date of its creation, consistent with the review period set forth in the plan creating such district or every eight years if the district was adopted prior to August first, nineteen hundred eighty-three, and every eight, twelve or twenty year period thereafter, whichever may be

applicable. Each such review shall include consultations with local elected officials, planning bodies, agricultural and agribusiness interests, community leaders, county agricultural and farmland protection boards, and other interested groups, and shall also include a public hearing at a specified time and at a specified place either within the district or easily accessible to the proposed district, notice of such hearing to be published in a newspaper having general circulation within the district. In addition, the commissioner shall give notice, in writing, of such public hearing to persons owning land in the district. After any such review, the commissioner may modify such district so as to exclude land which is no longer predominantly unique and irreplaceable agricultural land or to include additional such land, provided: (a) such modification would serve the public interest by assisting in maintaining a viable agricultural industry within the district and the state; (b) the commissioner of environmental conservation has determined that such modification would further state environmental plans, policies and objectives; and (c) such modification has been approved by the director of the division of the budget; provided, further that if the commissioner modifies the district to include additional land, he or she shall hold another public hearing, on the same type of published and written notice. Then the commissioner may again modify or dissolve the district, but may not modify it to include land not included in the proposed modifications upon which the second hearing was held. After any such review the commissioner, after consultation with the advisory council on agriculture, shall dissolve any such district if (a) the land within the district is no longer predominantly unique and irreplaceable agricultural land, or (b) the commissioner of environmental conservation has determined that the continuation of the district would not further state environmental plans, policies and objectives. A modification or dissolution of a district shall become effective in the same manner as is provided for in subdivision three of this section, except that in the case of dissolution, a notice of dissolution shall be filed instead of a map.

**304-a. Agricultural assessment values**

1. Agricultural assessment values shall be calculated and certified annually in accordance with the provisions of this section.
2. a. The commissioner of agriculture and markets shall establish and maintain an agricultural land classification system based upon soil productivity and capability. The agricultural land classification system shall distinguish between mineral and organic soils. There shall be ten primary groups of mineral soils and such other subgroups as the commissioner determines necessary to represent high-lime and low-lime content. There shall be four groups of organic soils.
   b. The land classification system shall be promulgated by rule by the commissioner following a review of comments and recommendations of the advisory council on agriculture and after a public hearing. In making any revisions to the land classification system the commissioner may, in his or her discretion, conduct a public hearing. The commissioner shall foster participation by county agricultural and farmland protection boards, district soil and water conservation committees, and the cooperative extension service and consult with other state agencies, appropriate federal agencies, municipalities, the New York state college of agriculture and life sciences at Cornell university and farm organizations.
   c. The commissioner shall certify to the state board of real property services the soil list developed in accordance with the land classification system and any revisions thereto.

d. The commissioner shall prepare such materials as may be needed for the utilization of the land classification system and provide assistance to landowners and local officials in its use.

3. a. The state board of real property services shall annually calculate a single agricultural assessment value for each of the mineral and organic soil groups which shall be applied uniformly throughout the state. A base agricultural assessment value shall be separately calculated for mineral and organic soil groups in accordance with the procedure set forth in subdivision four of this section and shall be assigned as the agricultural assessment value of the highest grade mineral and organic soil group.

b. The agricultural assessment values for the remaining mineral soil groups shall be the product of the base agricultural assessment value and a percentage, derived from the productivity measurements determined for each soil and related soil group in conjunction with the land classification system, as follows:

| **Mineral Soil Group** | **Percentage of Base Agricultural Assessment Value** |
|---|---|
| 1A | |
| 1B | |
| 2A | 89 |
| 2B | 79 |
| 3A | 79 |
| 3B | 68 |
| 4A | 68 |
| 4B | 58 |
| 5A | 58 |
| 5B | 47 |
| 6A | 47 |
| 6B | 37 |
| 7 | 37 |
| 8 | 26 |
| 9 | 16 |
| 10 | 5 |

c. The agricultural assessment values for the remaining organic soil groups shall be the products of the base agricultural assessment value and a percentage, as follows:

| **Organic Soil Group** | **Percentage of Base Agricultural Assessment Value** |
|---|---|
| A | 100 |
| B | 65 |
| C | 55 |
| D | 35 |

d. The agricultural assessment value for organic soil group A shall be two times the base agricultural assessment value calculated for mineral soil group 1A.

e. The agricultural assessment value for farm woodland shall be the same as that calculated for mineral soil group seven.

f. Where trees or vines used for the production of fruit are located on land used in agricultural production, the value of such trees and vines, and the value of all posts, wires and trellises used for the production of fruit, shall be considered to be part of the agricultural assessment value of such land.

g. The agricultural assessment value for land and waters used in aquacultural enterprises shall be the same as that calculated for mineral soil group 1A.

4. a. The base agricultural assessment value shall be the average capitalized value of production per acre for the eight year period ending in the second year preceding the year for which the agricultural assessment values are certified. The capitalized value of production per acre shall be calculated by dividing the product of the value of production per acre and the percentage of net profit by a capitalization rate of ten percent, representing an assumed investment return rate of eight percent and an assumed real property tax rate of two percent.

b. The value of production per acre shall be the value of production divided by the number of acres harvested in New York state.

c. The percentage of net profit shall be adjusted net farm income divided by realized gross farm income.

(i) Adjusted net farm income shall be the sum of net farm income, taxes on farm real estate and the amount of mortgage interest debt attributable to farmland, less a management charge of one percent of realized gross farm income plus seven percent of adjusted production expenses.

(ii) The amount of mortgage interest debt attributable to farmland shall be the product of the interest on mortgage debt and the percentage of farm real estate value attributable to land.

(iii) The percentage of farm real estate value attributable to land shall be the difference between farm real estate value and farm structure value divided by farm real estate value.

(iv) Adjusted production expenses shall be production expenses, less the sum of the taxes on farm real estate and the interest on mortgage debt.

d. The following data, required for calculations pursuant to this subdivision, shall be as published by the United States department of agriculture for all farming in New York state:

(i) Farm real estate value shall be the total value of farmland and buildings, including improvements.

(ii) Farm structure value shall be the total value of farm buildings, including improvements.

(iii) Interest on mortgage debt shall be the total interest paid on farm real estate debt.

(iv) Net farm income shall be realized gross income less production expenses, as adjusted for change in inventory.

(v) Production expenses shall be the total cost of production.

(vi) Realized gross income shall be the total of cash receipts from farm marketings, government payments, nonmoney income and other farm income.

(vii) Taxes on farm real estate shall be the total real property taxes on farmland and buildings, including improvements.

(viii) Number of acres harvested including all reported crops.

(ix) Value of production shall be the total estimated value of all reported crops.

e. In the event that the data required for calculation pursuant to this subdivision is not published by the United States department of agriculture or is incomplete, such

required data shall be obtained from the New York state department of agriculture and markets.

f. Upon completion of the calculation of agricultural assessment values, the state board of real property services shall publish an annual report, which shall include a schedule of values, citations to data sources and presentation of all calculations. The state board of real property services shall transmit copies of the annual report to the governor and legislature, the advisory council on agriculture and other appropriate state agencies and interested parties. The state board of real property services shall thereupon certify the schedule of agricultural assessment values and the state board of real property services shall transmit a schedule of such certified values to each assessor.

g. Notwithstanding any other provision of this section to the contrary, in no event shall the change in the base agricultural assessment value for any given year exceed ten percent of the base agricultural assessment value of the preceding year.

5. a. In carrying out their responsibilities under this section, the state board of real property services and the commissioner shall keep the advisory council on agriculture fully apprised on matters relating to its duties and responsibilities.

b. In doing so, the state board of real property services and the commissioner shall provide, in a timely manner, any materials needed by the advisory council on agriculture to carry out its responsibilities under this section.

**304-b. Agricultural district data reporting**

1. The commissioner shall file a written report with the governor and the legislature on January first, two thousand eight and biennially thereafter, covering each prior period of two years, concerning the status of the agricultural districts program. Such report shall include, but not be limited to, the total number of agricultural districts, the total number of acres in agricultural districts, a list of the counties that have established county agricultural and farmland protection plans, and a summary of the agricultural protection planning grants program.
2. Between report due dates, the commissioner shall maintain the necessary records and data required to satisfy such report requirements and to satisfy information requests received from the governor and the legislature between such report due dates.

**305. Agricultural districts; effects**

1. Agricultural assessments.

a. Any owner of land used in agricultural production within an agricultural district shall be eligible for an agricultural assessment pursuant to this section. If an applicant rents land from another for use in conjunction with the applicant's land for the production for sale of crops, livestock or livestock products, the gross sales value of such products produced on such rented land shall be added to the gross sales value of such products produced on the land of the applicant for purposes of determining eligibility for an agricultural assessment on the land of the applicant. Such assessment shall be granted only upon an annual application by the owner of such land on a form prescribed by the state board of real property services. The applicant shall furnish to the assessor such information as the state board of real property services shall require, including classification information prepared for the applicant's land or water bodies used in agricultural production by the soil and water conservation district office within the county, and information demonstrating the eligibility for agricultural assessment of any land used in conjunction with

rented land as specified in paragraph b of subdivision four of section three hundred one of this article. Such application shall be filed with the assessor of the assessing unit on or before the appropriate taxable status date; provided, however, that (i) in the year of a revaluation or update of assessments, as those terms are defined in section one hundred two of the real property tax law, the application may be filed with the assessor no later than the thirtieth day prior to the day by which the tentative assessment roll is required to be filed by law; or (ii) an application for such an assessment may be filed with the assessor of the assessing unit after the appropriate taxable status date but not later than the last date on which a petition with respect to complaints of assessment may be filed, where failure to file a timely application resulted from: (a) a death of the applicant's spouse, child, parent, brother or sister, (b) an illness of the applicant or of the applicant's spouse, child, parent, brother or sister, which actually prevents the applicant from filing on a timely basis, as certified by a licensed physician, or (c) the occurrence of a natural disaster, including, but not limited to, a flood, or the destruction of such applicant's residence, barn or other farm building by wind, fire or flood. If the assessor is satisfied that the applicant is entitled to an agricultural assessment, the assessor shall approve the application and the land shall be assessed pursuant to this section. Not less than ten days prior to the date for hearing complaints in relation to assessments, the assessor shall mail to each applicant, who has included with the application at least one self-addressed, pre-paid envelope, a notice of the approval or denial of the application. Such notice shall be on a form prescribed by the state board of real property services which shall indicate the manner in which the total assessed value is apportioned among the various portions of the property subject to agricultural assessment and those other portions of the property not eligible for agricultural assessment as determined for the tentative assessment roll and the latest final assessment roll. Failure to mail any such notice or failure of the owner to receive the same shall not prevent the levy, collection and enforcement of the payment of the taxes on such real property.

b. That portion of the value of land utilized for agricultural production within an agricultural district which represents an excess above the agricultural assessment as determined in accordance with this subdivision shall not be subject to real property taxation. Such excess amount if any shall be entered on the assessment roll in the manner prescribed by the state board of real property services.

c. (i) The assessor shall utilize the agricultural assessment values per acre certified pursuant to section three hundred four-a of this article in determining the amount of the assessment of lands eligible for agricultural assessments by multiplying those values by the number of acres of land utilized for agricultural production and adjusting such result by application of the latest state equalization rate or a special equalization rate as may be established and certified by the state board of real property services for the purpose of computing the agricultural assessment pursuant to this paragraph. This resulting amount shall be the agricultural assessment for such lands.

(ii) Where the latest state equalization rate exceeds one hundred, or where a special equalization rate which would otherwise be established for the purposes of this section would exceed one hundred, a special equalization rate of one hundred shall be established and certified by the state board for the purpose of this section.

(iii) Where a special equalization rate has been established and certified by the state board for the purposes of this paragraph, the assessor is directed and authorized to recompute the agricultural assessment on the assessment roll

by applying such special equalization rate instead of the latest state equalization rate, and to make the appropriate corrections on the assessment roll, subject to the provisions of title two of article twelve of the real property tax law.

d. (i) If land within an agricultural district which received an agricultural assessment is converted parcels, as described on the assessment roll which include land so converted shall be subject to payments equaling five times the taxes saved in the last year in which the land benefited from an agricultural assessment, plus interest of six percent per year compounded annually for each year in which an agricultural assessment was granted, not exceeding five years. The amount of taxes saved for the last year in which the land benefited from an agricultural assessment shall be determined by applying the applicable tax rates to the excess amount of assessed valuation of such land over its agricultural assessment as set forth on the last assessment roll which indicates such an excess. If only a portion of a parcel as described on the assessment roll is converted, the assessor shall apportion the assessment and agricultural assessment attributable to the converted portion, as determined for the last assessment roll for which the assessment of such portion exceeded its agricultural assessment. The difference between the apportioned assessment and the apportioned agricultural assessment shall be the amount upon which payments shall be determined. Payments shall be added by or on behalf of each taxing jurisdiction to the taxes levied on the assessment roll prepared on the basis of the first taxable status date on which the assessor considers the land to have been converted; provided, however, that no payments shall be imposed if the last assessment roll upon which the property benefited from an agricultural assessment, was more than five years prior to the year for which the assessment roll upon which payments would otherwise be levied is prepared.

(ii) Whenever a conversion occurs, the owner shall notify the assessor within ninety days of the date such conversion is commenced. If the landowner fails to make such notification within the ninety day period, the assessing unit, by majority vote of the governing body, may impose a penalty on behalf of the assessing unit of up to two times the total payments owed, but not to exceed a maximum total penalty of five hundred dollars in addition to any payments owed.

(iii) (a) An assessor who determines that there is liability for payments and any penalties assessed pursuant to subparagraph (ii) of this paragraph shall notify the landowner by mail of such liability at least ten days prior to the date for hearing complaints in relation to assessments. Such notice shall indicate the property to which payments apply and describe how the payments shall be determined. Failure to provide such notice shall not affect the levy, collection or enforcement or payment of payments.

(b) Liability for payments shall be subject to administrative and judicial review as provided by law for review of assessments.

(iv) If such land or any portion thereof is converted to a use other than for agricultural production by virtue of oil, gas or wind exploration, development, or extraction activity or by virtue of a taking by eminent domain or other involuntary proceeding other than a tax sale, the land or portion so converted shall not be subject to payments. If the land so converted constitutes only a portion of a parcel described on the assessment roll, the assessor shall

apportion the assessment, and adjust the agricultural assessment attributable to the portion of the parcel not subject to such conversion by subtracting the proportionate part of the agricultural assessment attributable to the portion so converted. Provided further that land within an agricultural district and eligible for an agricultural assessment shall not be considered to have been converted to a use other than for agricultural production solely due to the conveyance of oil, gas or wind rights associated with that land.

(v) An assessor who imposes any such payments shall annually, and within forty-five days following the date on which the final assessment roll is required to be filed, report such payments to the state board of real property services on a form prescribed by the state board.

(vi) The assessing unit, by majority vote of the governing body, may impose a minimum payment amount, not to exceed one hundred dollars.

(vii) The purchase of land in fee by the city of New York for watershed protection purposes or the conveyance of a conservation easement by the city of New York to the department of environmental conservation which prohibits future use of the land for agricultural purposes shall not be a conversion of parcels and no payment shall be due under this section.

e. In connection with any district created under section three hundred four of this article, the state shall provide assistance to each taxing jurisdiction in an amount equal to one-half of the tax loss that results from requests for agricultural assessments in the district. The amount of such tax loss shall be computed annually by applying the applicable tax rate to an amount computed by subtracting the agricultural assessment from the assessed value of the property on the assessment roll completed and filed prior to July first, nineteen hundred seventy-one, taking into consideration any change in the level of assessment. The chief fiscal officer of a taxing jurisdiction entitled to state assistance under this article shall make application for such assistance to the state board of real property services on a form approved by such board and containing such information as the board shall require. Upon approval of the application by such board, such assistance shall be apportioned and paid to such taxing jurisdiction on the audit and warrant of the state comptroller out of moneys appropriated by the legislature for the purpose of this article; provided, however, that any such assistance payment shall be reduced by one-half the amount of any payments levied under subparagraph (i) of paragraph d of this subdivision, for land in any district created under section three hundred four of this article, unless one-half the amount of such payments has already been used to reduce a previous assistance payment under this paragraph.

f. Notwithstanding any inconsistent general, special or local law to the contrary, if a natural disaster, act of God, or continued adverse weather conditions shall destroy the agricultural production and such fact is certified by the cooperative extension service and, as a result, such production does not produce an average gross sales value of ten thousand dollars or more, the owner may nevertheless qualify for an agricultural assessment provided the owner shall substantiate in such manner as prescribed by the state board of real property services that the agricultural production initiated on such land would have produced an average gross sales value of ten thousand dollars or more but for the natural disaster, act of God or continued adverse weather conditions.

2. [repealed]

3. Policy of state agencies. It shall be the policy of all state agencies to encourage the maintenance of viable farming in agricultural districts and their administrative regulations

and procedures shall be modified to this end insofar as is consistent with the promotion of public health and safety and with the provisions of any federal statutes, standards, criteria, rules, regulations, or policies, and any other requirements of federal agencies, including provisions applicable only to obtaining federal grants, loans, or other funding.

4. Limitation on the exercise of eminent domain and other public acquisitions, and on the advance of public funds.
   a. Any agency of the state, any public benefit corporation or any local government which intends to acquire land or any interest therein, provided that the acquisition from any one actively operated farm within the district would be in excess of one acre or that the total acquisition within the district would be in excess of ten acres, or which intends to construct, or advance a grant, loan, interest subsidy or other funds within a district to construct, dwellings, commercial or industrial facilities, water or sewer facilities to serve non-farm structures, shall use all practicable means in undertaking such action to realize the policy and goals set forth in this article, and shall act and choose alternatives which, consistent with social, economic and other essential considerations, to the maximum extent practicable, minimize or avoid adverse impacts on agriculture in order to sustain a viable farm enterprise or enterprises within the district. The adverse agricultural impacts to be minimized or avoided shall include impacts revealed in the notice of intent process described in this subdivision.
   b. As early as possible in the development of a proposal of an action described in paragraph a of this subdivision, but in no event later than the date of any determination as to whether an environmental impact statement need be prepared pursuant to article eight of the environmental conservation law, the agency, corporation or government proposing an action described in paragraph a of this subdivision shall file a preliminary notice of its intent with the commissioner and the county agricultural and farmland protection board in such manner and form as the commissioner may require. Such preliminary notice shall include the following:
      (i) a brief description of the proposed action and its agricultural setting;
      (ii) a summary of any anticipated adverse impacts on farm operations and agricultural resources within the district; and
      (iii) such other information as the commissioner may require.
   c. The agency, corporation or government proposing the action shall also, at least sixty-five days prior to such acquisition, construction or advance of public funds, file a final notice of intent with the commissioner and the county agricultural and farmland protection board. Such final notice shall include a detailed agricultural impact statement setting forth the following:
      (i) a detailed description of the proposed action and its agricultural setting;
      (ii) the agricultural impact of the proposed action including short-term and long-term effects;
      (iii) any adverse agricultural effects which cannot be avoided should the proposed action be implemented;
      (iv) alternatives to the proposed action;
      (v) any irreversible and irretrievable commitments of agricultural resources which would be involved in the proposed action should it be implemented;
      (vi) mitigation measures proposed to minimize the adverse impact of the proposed action on the continuing viability of a farm enterprise or enterprises within the district;
      (vii) any aspects of the proposed action which would encourage non-farm development, where applicable and appropriate; and
      (viii) such other information as the commissioner may require.

The commissioner shall promptly determine whether the final notice is complete or incomplete. If the commissioner does not issue such determination within thirty days, the final notice shall be deemed complete. If the final notice is determined to be incomplete, the commissioner shall notify the party proposing the action in writing of the reasons for that determination. Any new submission shall commence a new period for department review for purposes of determining completeness.

d. The provisions of paragraphs b and c of this subdivision shall not apply and shall be deemed waived by the owner of the land to be acquired where such owner signs a document to such effect and provides a copy to the commissioner.

e. Upon notice from the commissioner that he or she has accepted a final notice as complete, the county agricultural and farmland protection board may, within thirty days, review the proposed action and its effects on farm operations and agricultural resources within the district, and report its findings and recommendations to the commissioner and to the party proposing the action in the case of actions proposed by a state agency or public benefit corporation, and additionally to the county legislature in the case of actions proposed by local government agencies.

f. Upon receipt and acceptance of a final notice, the commissioner shall thereupon forward a copy of such notice to the commissioner of environmental conservation and the advisory council on agriculture. The commissioner, in consultation with the commissioner of environmental conservation and the advisory council on agriculture, within forty-five days of the acceptance of a final notice, shall review the proposed action and make an initial determination whether such action would have an unreasonably adverse effect on the continuing viability of a farm enterprise or enterprises within the district, or state environmental plans, policies and objectives.

If the commissioner so determines, he or she may (i) issue an order within the forty-five day period directing the state agency, public benefit corporation or local government not to take such action for an additional period of sixty days immediately following such forty-five day period; and (ii) review the proposed action to determine whether any reasonable and practicable alternative or alternatives exist which would minimize or avoid the adverse impact on agriculture in order to sustain a viable farm enterprise or enterprises within the district.

The commissioner may hold a public hearing concerning such proposed action at a place within the district or otherwise easily accessible to the district upon notice in a newspaper having a general circulation within the district, and individual notice, in writing, to the municipalities whose territories encompass the district, the commissioner of environmental conservation, the advisory council on agriculture and the state agency, public benefit corporation or local government proposing to take such action. On or before the conclusion of such additional sixty day period, the commissioner shall report his or her findings to the agency, corporation or government proposing to take such action, to any public agency having the power of review of or approval of such action, and, in a manner conducive to the wide dissemination of such findings, to the public. If the commissioner concludes that a reasonable and practicable alternative or alternatives exist which would minimize or avoid the adverse impact of the proposed action, he or she shall propose that such alternative or alternatives be accepted. If the agency, corporation or government proposing the action accepts the commissioner's proposal, then the requirements of the notice of intent filing shall be deemed fulfilled. If the agency,

corporation or government rejects the commissioner's proposal, then it shall provide the commissioner with reasons for rejecting such proposal and a detailed comparison between its proposed action and the commissioner's alternative or alternatives.

g. At least ten days before commencing an action which has been the subject of a notice of intent filing, the agency, corporation or government shall certify to the commissioner that it has made an explicit finding that the requirements of this subdivision have been met, and that consistent with social, economic and other essential considerations, to the maximum extent practicable, adverse agricultural impacts revealed in the notice of intent process will be minimized or avoided. Such certification shall set forth the reasons in support of the finding.

h. The commissioner may request the attorney general to bring an action to enjoin any such agency, corporation or government from violating any of the provisions of this subdivision.

h-1. Notwithstanding any other provision of law to the contrary, no solid waste management facility shall be sited on land in agricultural production which is located within an agricultural district, or land in agricultural production that qualifies for and is receiving an agricultural assessment pursuant to section three hundred six of this article. Nothing contained herein, however, shall be deemed to prohibit siting when:

(i) The owner of such land has entered into a written agreement which shall indicate his consent for site consideration; or

(ii) The applicant for a permit has made a commitment in the permit application to fund a farm land protection conservation easement within a reasonable proximity to the proposed project in an amount not less than the dollar value of any such farm land purchased for the project; or

(iii) The commissioner in concurrence with the commissioner of environmental conservation has determined that any such agricultural land to be taken, constitutes less than five percent of the project site.

For purposes of this paragraph, "solid waste management facility" shall have the same meaning as provided in title seven of article twenty-seven of the environmental conservation law, but shall not include solid waste transfer stations or land upon which sewage sludge is applied, and determinations regarding agricultural district boundaries and agricultural assessments will be based on those in effect as of the date an initial determination is made, pursuant to article eight of the environmental conservation law, as to whether an environmental impact statement needs to be prepared for the proposed project.

i. This subdivision shall not apply to any emergency project which is immediately necessary for the protection of life or property or to any project or proceeding to which the department is or has been a statutory party.

j. The commissioner may bring an action to enforce any mitigation measures proposed by a public benefit corporation or a local government, and accepted by the commissioner, pursuant to a notice of intent filing, to minimize or avoid adverse agricultural impacts from the proposed action.

5. Limitation on power to impose benefit assessments, special ad valorem levies or other rates or fees in certain improvement districts or benefit areas. Within improvement districts or areas deemed benefited by municipal improvements including, but not limited to, improvements for sewer, water, lighting, non-farm drainage, solid waste disposal, including those solid waste management facilities established pursuant to section two hundred twenty-six-b of the county law, or other landfill operations, no benefit assessments, special ad valorem levies or other rates of fees charged for such

improvements may be imposed on land used primarily for agricultural production within an agricultural district on any basis, except a lot not exceeding one-half acre surrounding any dwelling or non-farm structure located on said land nor on any farm structure located in an agricultural district unless such structure benefits directly from the service of such improvement district or benefited area; provided, however, that if such benefit assessments, ad valorem levies or other rates of fees were imposed prior to the formation of the agricultural district, then such benefit assessments, ad valorem levies or other rates or fees shall continue to be imposed on such land or farm structure.

6. Use of assessment for certain purposes. The governing body of a fire, fire protection, or ambulance district for which a benefit assessment or a special ad valorem levy is made, may adopt a resolution to provide that the assessment determined pursuant to subdivision one of this section for such property shall be used for the benefit assessment or special ad valorem levy of such fire, fire protection, or ambulance district.
7. Notwithstanding any provision of law to the contrary, that portion of the value of land which is used solely for the purpose of replanting or crop expansion as part of an orchard or vineyard shall be exempt from real property taxation for a period of six successive years following the date of such replanting or crop expansion beginning on the first eligible taxable status date following such replanting or expansion provided the following conditions are met:
    a. The land used for crop expansion or replanting must be a part of an existing orchard or vineyard which is located on land used in agricultural production within an agricultural district or such land must be part of an existing orchard or vineyard which is eligible for an agricultural assessment pursuant to this section or section three hundred six of this chapter where the owner of such land has filed an annual application for an agricultural assessment;
    b. The land eligible for such real property tax exemption shall not in any one year exceed twenty percent of the total acreage of such orchard or vineyard which is located on land used in agricultural production within an agricultural district or twenty percent of the total acreage of such orchard or vineyard eligible for an agricultural assessment pursuant to this section and section three hundred six of this chapter where the owner of such land has filed an annual application for an agricultural assessment;
    c. The land eligible for such real property tax exemption must be maintained as land used in agricultural production as part of such orchard or vineyard for each year such exemption is granted; and
    d. When the land used for the purpose of replanting or crop expansion as part of an orchard or vineyard is located within an area which has been declared by the governor to be a disaster emergency in a year in which such tax exemption is sought and in a year in which such land meets all other eligibility requirements for such tax exemption set forth in this subdivision, the maximum twenty percent total acreage restriction set forth in paragraph b of this subdivision may be exceeded for such year and for any remaining successive years, provided, however, that the land eligible for such real property tax exemption shall not exceed the total acreage damaged or destroyed by such disaster in such year or the total acreage which remains damaged or destroyed in any remaining successive year. The total acreage for which such exemption is sought pursuant to this paragraph shall be subject to verification by the commissioner or his designee.

**305-a. Coordination of local planning and land use decision-making with the agricultural districts program**

1. Policy of local governments.
   a. Local governments, when exercising their powers to enact and administer comprehensive plans and local laws, ordinances, rules or regulations, shall exercise these powers in such manner as may realize the policy and goals set forth in this article, and shall not unreasonably restrict or regulate farm operations within agricultural districts in contravention of the purposes of this article unless it can be shown that the public health or safety is threatened.
   b. The commissioner, upon his or her own initiative or upon the receipt of a complaint from a person within an agricultural district, may bring an action to enforce the provisions of this subdivision.
2. Agricultural data statement; submission, evaluation. Any application for a special use permit, site plan approval, use variance, or subdivision approval requiring municipal review and approval by a planning board, zoning board of appeals, town board, or village board of trustees pursuant to article sixteen of the town law or article seven of the village law, that would occur on property within an agricultural district containing a farm operation or on property with boundaries within five hundred feet of a farm operation located in an agricultural district, shall include an agricultural data statement. The planning board, zoning board of appeals, town board, or village board of trustees shall evaluate and consider the agricultural data statement in its review of the possible impacts of the proposed project upon the functioning of farm operations within such agricultural district. The information required by an agricultural data statement may be included as part of any other application form required by local law, ordinance or regulation.
3. Agricultural data statement; notice provision. Upon the receipt of such application by the planning board, zoning board of appeals, town board or village board of trustees, the clerk of such board shall mail written notice of such application to the owners of land as identified by the applicant in the agricultural data statement. Such notice shall include a description of the proposed project and its location, and may be sent in conjunction with any other notice required by state or local law, ordinance, rule or regulation for the said project. The cost of mailing said notice shall be borne by the applicant.
4. Agricultural data statement; content. An agricultural data statement shall include the following information: the name and address of the applicant; a description of the proposed project and its location; the name and address of any owner of land within the agricultural district, which land contains farm operations and is located within five hundred feet of the boundary of the property upon which the project is proposed; and a tax map or other map showing the site of the proposed project relative to the location of farm operations identified in the agricultural data statement.

**305-b. Review of proposed rules and regulations of state agencies affecting the agricultural industry**

1. Upon request of the state advisory council on agriculture, or upon his or her own initiative, the commissioner may review and comment upon a proposed rule or regulation by another state agency which may have an adverse impact on agriculture and farm operations in this state, and file such comment with the proposing agency and the administrative regulations review commission. Each comment shall be in sufficient detail to advise the proposing agency of the adverse impact on agriculture and farm operations and the recommended modifications. The commissioner shall prepare a status report of any actions taken in accordance with this section and include it in the department's annual report.

**306. Agricultural lands outside of districts; agricultural assessments**

1. Any owner of land used in agricultural production outside of an agricultural district shall be eligible for an agricultural assessment as provided herein. If an applicant rents land from another for use in conjunction with the applicant's land for the production for sale of crops, livestock or livestock products, the gross sales value of such products produced on such rented land shall be added to the gross sales value of such products produced on the land of the applicant for purposes of determining eligibility for an agricultural assessment on the land of the applicant.

   Such assessment shall be granted pursuant to paragraphs a, b and f of subdivision one of section three hundred five of this article as if such land were in an agricultural district, provided the landowner annually submits to the assessor an application for an agricultural assessment on or before the taxable status date. In the year of a revaluation or update of assessments, as those terms are defined in section one hundred two of the real property tax law, the application may be filed with the assessor no later than the thirtieth day prior to the day by which the tentative assessment roll is required to be filed by law. Nothing therein shall be construed to limit an applicant's discretion to withhold from such application any land, or portion thereof, contained within a single operation.

1-a [repealed]

2. a. (i) If land which received an agricultural assessment pursuant to this section is converted at any time within eight years from the time an agricultural assessment was last received, such conversion shall subject the land so converted to payments in compensation for the prior benefits of agricultural assessments. The amount of the payments shall be equal to five times the taxes saved in the last year in which land benefited from an agricultural assessment, plus interest of six percent per year compounded annually for each year in which an agricultural assessment was granted, not exceeding five years.

   (ii) The amount of taxes saved for the last year in which the land benefited from an agricultural assessment shall be determined by applying the applicable tax rates to the amount of assessed valuation of such land in excess of the agricultural assessment of such land as set forth on the last assessment roll which indicates such an excess. If only a portion of such land as described on the assessment roll is converted, the assessor shall apportion the assessment and agricultural assessment attributable to the converted portion, as determined for the last assessment roll on which the assessment of such portion exceeded its agricultural assessment. The difference between the apportioned assessment and the apportioned agricultural assessment shall be the amount upon which payments shall be determined. Payments shall be levied in the same manner as other taxes, by or on behalf of each taxing jurisdiction on the assessment roll prepared on the basis of the first taxable status date on which the assessor considers the land to have been converted; provided, however, that no payments shall be imposed if the last assessment roll upon which the property benefited from an agricultural assessment, was more than eight years prior to the year for which the assessment roll upon which payments would otherwise be levied is prepared.

   (iii) Whenever a conversion occurs, the owner shall notify the assessor within ninety days of the date such conversion is commenced. If the landowner fails to make such notification within the ninety day period, the assessing unit, by majority vote of the governing body, may impose a penalty on behalf of the assessing

unit of up to two times the total payments owed, but not to exceed a maximum total penalty of five hundred dollars in addition to any payments owed.

b. (i) An assessor who determines that there is liability for payments and any penalties pursuant to subparagraph (ii) of this paragraph shall notify the landowner of such liability at least ten days prior to the day for hearing of complaints in relation to assessments. Such notice shall specify the area subject to payments and shall describe how such payments shall be determined. Failure to provide such notice shall not affect the levy, collection, or enforcement of payments.

(ii) Liability for payments shall be subject to administrative and judicial review as provided by law for the review of assessments.

(iii) An assessor who imposes any such payments shall annually, and within forty-five days following the date on which the final assessment roll is required to be filed, report such payments to the state board of real property services on a form prescribed by the state board.

(iv) The assessing unit, by majority vote of the government body, may impose a minimum payment amount, not to exceed one hundred dollars.

c. If such land or any portion thereof is converted by virtue of oil, gas or wind exploration, development, or extraction activity or by virtue of a taking by eminent domain or other involuntary proceeding other than a tax sale, the land or portion so converted shall not be subject to payments. If land so converted constitutes only a portion of a parcel described on the assessment roll, the assessor shall apportion the assessment, and adjust the agricultural assessment attributable to the portion of the parcel not subject to such conversion by subtracting the proportionate part of the agricultural assessment attributable to the portion so converted. Provided further that land outside an agricultural district and eligible for an agricultural assessment pursuant to this section shall not be considered to have been converted to a use other than for agricultural production solely due to the conveyance of oil, gas or wind rights associated with that land.

d. The purchase of land in fee by the city of New York for watershed protection purposes or the conveyance of a conservation easement by the city of New York to the department of environmental conservation which prohibits future use of the land for agricultural purposes shall not be a conversion of parcels and no payment for the prior benefits of agricultural assessments shall be due under this section.

3. Upon the inclusion of such agricultural lands in an agricultural district formed pursuant to section three hundred three, the provisions of section three hundred five shall be controlling.

4. A payment levied pursuant to subparagraph (i) of paragraph a of subdivision two of this section shall be a lien on the entire parcel containing the converted land, notwithstanding that less than the entire parcel was converted.

5. Use of assessment for certain purposes. The governing body of a water, lighting, sewer, sanitation, fire, fire protection, or ambulance district for whose benefit a special assessment or a special ad valorem levy is imposed, may adopt a resolution to provide that the assessments determined pursuant to subdivision one of this section for property within the district shall be used for the special assessment or special ad valorem levy of such special district.

**307. Promulgation of rules and regulations**

The state board of real property services and the commissioner are each empowered to promulgate such rules and regulations and to prescribe such forms as each shall deem

necessary to effectuate the purposes of this article, and the commissioner is further empowered to promulgate such rules and regulations as are necessary to provide for the reasonable consolidation of existing agricultural districts with new agricultural districts or with other existing districts undergoing modification pursuant to section three hundred three of this article. Where a document or any other paper or information is required, by such rules and regulations, or by any provision of this article, to be filed with, or by, a county clerk or any other local official, such clerk or other local official may file such document, paper, or information as he deems proper, but he shall also file or record it in any manner directed by the state board of real property services, by rule or regulation. In promulgating such a rule or regulation, such board shall consider, among any other relevant factors, the need for security of land titles, the requirement that purchasers of land know of all potential tax and penalty liabilities, and the desirability that the searching of titles not be further complicated by the establishment of new sets of record books.

**308. Right to farm**

1. a. The commissioner shall, in consultation with the state advisory council on agriculture, issue opinions upon request from any person as to whether particular agricultural practices are sound.
   b. Sound agricultural practices refer to those practices necessary for the on-farm production, preparation and marketing of agricultural commodities. Examples of activities which entail practices the commissioner may consider include, but are not limited to, operation of farm equipment; proper use of agricultural chemicals and other crop protection methods; direct sale to consumers of agricultural commodities or foods containing agricultural commodities produced on-farm; agricultural tourism; production, management and harvesting of "farm woodland," as defined in subdivision three of section three hundred one of this article and construction and use of farm structures. The commissioner shall consult appropriate state agencies and any guidelines recommended by the advisory council on agriculture. The commissioner may consult as appropriate, the New York state college of agriculture and life sciences and the U.S.D.A. natural resources conservation service. The commissioner shall also consider whether the agricultural practices are conducted by a farm owner or operator as part of his or her participation in the AEM program as set forth in article eleven-A of this chapter. Such practices shall be evaluated on a case-by-case basis.
2. Upon the issuance of an opinion pursuant to this section, the commissioner shall publish a notice in a newspaper having a general circulation in the area surrounding the practice and notice shall be given in writing to the owner of the property on which the practice is conducted and any adjoining property owners. The opinion of the commissioner shall be final, unless within thirty days after publication of the notice a person affected thereby institutes a proceeding to review the opinion in the manner provided by article seventy-eight of the civil practice law and rules.
3. Notwithstanding any other provisions of law, on any land in an agricultural district created pursuant to section three hundred three or land used in agricultural production subject to an agricultural assessment pursuant to section three hundred six of this article, an agricultural practice shall not constitute a private nuisance, when an action is brought by a person, provided such agricultural practice constitutes a sound agricultural practice pursuant to an opinion issued upon request by the commissioner. Nothing in this section shall be construed to prohibit an aggrieved party from recovering damages for personal injury or wrongful death.

4. The commissioner, in consultation with the state advisory council on agriculture, shall issue an opinion within thirty days upon request from any person as to whether particular land uses are agricultural in nature. Such land use decisions shall be evaluated on a case-by-case basis.
5. The commissioner shall develop and make available to prospective grantors and purchasers of real property located partially or wholly within any agricultural district in this state and to the general public, practical information related to the right to farm as set forth in this article including, but not limited to right to farm disclosure requirements established pursuant to section three hundred ten of this article and section three hundred thirty-three-c of the real property law.

**308-a. Fees and expenses in certain private nuisance actions.**

1. Definitions. For purposes of this section:
   a. "Action" means any civil action brought by a person in which a private nuisance is alleged to be due to an agricultural practice on any land in an agricultural district or subject to agricultural assessments pursuant to section three hundred three or three hundred six of this article, respectively.
   b. "Fees and other expenses" means the reasonable expenses of expert witnesses, the reasonable cost of any study, analysis, consultation with experts, and like expenses, and reasonable attorney fees, including fees for work performed by law students or paralegals under the supervision of an attorney, incurred in connection with the defense of any cause of action for private nuisance which is alleged as part of a civil action brought by a person.
   c. "Final judgment" means a judgment that is final and not appealable, and settlement.
   d. "Prevailing party" means a defendant in a civil action brought by a person, in which a private nuisance is alleged to be due to an agricultural practice, where the defendant prevails in whole or in substantial part on the private nuisance cause of action.
2. Fees and other expenses in certain private nuisance actions.
   a. When awarded. In addition to costs, disbursements and additional allowances awarded pursuant to sections eight thousand two hundred one through eight thousand two hundred four and eight thousand three hundred one through eight thousand three hundred three-a of the civil practice law and rules, and except as otherwise specifically provided by statute, a court shall award to a prevailing party, other than the plaintiff, fees and other expenses incurred by such party in connection with the defense of any cause of action for private nuisance alleged to be due to an agricultural practice, provided such agricultural practice constitutes a sound agricultural practice pursuant to an opinion issued by the commissioner under section three hundred eight of this article, prior to the start of any trial of the action or settlement of such action, unless the court finds that the position of the plaintiff was substantially justified or that special circumstances make an award unjust. Fees shall be determined pursuant to prevailing market rates for the kind and quality of the services furnished, except that fees and expenses may not be awarded to a party for any portion of the litigation in which the party has unreasonably protracted the proceedings.
   b. Application for fees. A party seeking an award of fees and other expenses shall, within thirty days of final judgment in the action, submit to the court an application which sets forth
      (i) the facts supporting the claim that the party is a prevailing party and is eligible to receive an award under this section,
      (ii) the amount sought, and

(iii) an itemized statement from every attorney or expert witness for which fees or expenses are sought stating the actual time expended and the rate at which such fees and other expenses are claimed.

3. Interest. If the plaintiff appeals an award made pursuant to this section and the award is affirmed in whole or in part, interest shall be paid on the amount of the award. Such interest shall run from the date of the award through the day before the date of the affirmance.
4. Applicability.
   a. Nothing contained in this section shall be construed to alter or modify the provisions of the civil practice law and rules where applicable to actions other than actions as defined by this section.
   b. Nothing contained in this section shall affect or preclude the right of any party to recover fees or other expenses authorized by common law or by any other statute, law or rule.

**309. Advisory council on agriculture**

1. There shall be established within the department the advisory council on agriculture, to advise and make recommendations to the state agencies on state government plans, policies and programs affecting agriculture, as outlined below, and in such areas as its experience and studies may indicate to be appropriate. The department of agriculture and markets shall provide necessary secretariat and support services to the council.
2. The advisory council on agriculture shall consist of eleven members appointed by the governor with the advice and consent of the senate, selected for their experience and expertise related to areas of council responsibility. At least five members of the council shall be operators of a commercial farm enterprise and at least two members shall be representatives of local governments. The balance of the council shall be comprised of representatives of business or institutions related to agriculture. Members shall be appointed for a term of three years and may serve until their successors are chosen provided, however, that of the members first appointed, three shall serve for a term of one year, three shall serve for a term of two years, and three shall serve for a term of three years. Members shall serve without salary but shall be entitled to reimbursement of their ordinary and necessary travel expenses. The members of the council shall elect a chairman.
3. The duties and responsibilities of the advisory council on agriculture as they pertain to agricultural districts shall include, but not be limited to, providing timely advice, comments and recommendations to the commissioner in regard to:
   a. the establishment of agricultural districts;
   b. the eight year review of agricultural districts; and
   c. the establishment of and any revision to the land classification system used in connection with the determination of agricultural assessment values.

   The commissioner may delegate to the council such additional duties and responsibilities as he deems necessary.
4. The duties and responsibilities of the advisory council on agriculture shall include, but not be limited to, providing timely advice, comments and recommendations to the state board of real property services in regard to the establishment of agricultural assessment values.
5. The advisory council on agriculture shall advise the commissioner and other state agency heads on state government plans, policies and programs affecting farming and the agricultural industry of this state. Concerned state agencies shall be encouraged to

establish a working relationship with the council and shall fully cooperate with the council in any requests it shall make.

6. The advisory council on agriculture may ask other individuals to attend its meetings or work with it on an occasional or regular basis provided, however, that it shall invite participation by the chairman of the state soil and water conservation committee and the dean of the New York state college of agriculture and life sciences at Cornell university. The advisory council on agriculture shall set the time and place of its meetings, and shall hold at least four meetings per year.
7. The advisory council on agriculture shall file a written report to the governor and the legislature by April first each year concerning its activities during the previous year and its program expectations for the succeeding year.
8. The advisory council on agriculture shall advise the commissioner in regards to whether particular land uses are agricultural in nature.

**310. Disclosure**

1. When any purchase and sale contract is presented for the sale, purchase, or exchange of real property located partially or wholly within an agricultural district established pursuant to the provisions of this article, the prospective grantor shall present to the prospective grantee a disclosure notice which states the following:
"It is the policy of this state and this community to conserve, protect and encourage the development and improvement of agricultural land for the production of food, and other products, and also for its natural and ecological value. This disclosure notice is to inform prospective residents that the property they are about to acquire lies partially or wholly within an agricultural district and that farming activities occur within the district. Such farming activities may include, but not be limited to, activities that cause noise, dust and odors. Prospective residents are also informed that the location of property within an agricultural district may impact the ability to access water and/or sewer services for such property under certain circumstances. Prospective purchasers are urged to contact the New York State Department of Agriculture and Markets to obtain additional information or clarification regarding their rights and obligations under article 25-AA of the Agriculture and markets Law."

1-a. Such disclosure notice shall be signed by the prospective grantor and grantee prior to the sale, purchase or exchange of such real property.

2. Receipt of such disclosure notice shall be recorded on a property transfer report form prescribed by the state board of real property services as provided for in section three hundred thirty-three of the real property law.

# Local Laws and Agricultural Districts: How Do They Relate?

Counties, towns and villages in New York State have broad powers to enact laws to govern their own affairs. However, State laws impose certain restrictions on local government authority. One such restriction is found in Section 305-a of the Agriculture and Markets Law which contains the following mandate:

> "Local governments, when exercising their powers to enact and administer comprehensive plans and local laws, ordinances, rules or regulations, shall exercise these powers in such manner as may realize the policy and goals set forth in this article [*Article 25-AA of the Agriculture and Markets Law],* and shall not unreasonably restrict or regulate farm operations within agricultural districts in contravention of the purposes of this article unless it can be shown that the public health or safety is threatened."

This brochure has been prepared by the New York State Department of Agriculture and Markets to assist municipalities in drafting and administering local laws and ordinances which may affect farming in an agricultural district. It should not be substituted for legal advice from a municipality's attorney. The brochure also offers guidance to farmers and municipalities on the application of Section 305-a.

*The Commissioner of Agriculture and Markets may independently initiate a review of a proposed or existing local law or ordinance or proceed upon the request of a farmer or municipality in an agricultural district. The following describes the procedure for requesting review, how the local requirements are analyzed, and remediated, if necessary.*

## PROCEDURE

Questions concerning the impact of local laws and ordinances on farm operations are solved far more easily at the drafting stage than after the provision is in place. Municipalities are, therefore, encouraged to contact the Department, either by phone or in writing, in advance of enacting a law or ordinance which may restrict farming in an agricultural district. The Department will provide a response to such inquiries. Similarly, a farmer or other affected party in a district may seek the Department's opinion on a proposed or existing law or ordinance without filing a complaint.

*Farmers*

A request for review must be provided in writing and include at least the following information:

- the location of the farm operation and identification of the agricultural district in which it is situated;
- a description of the affected farm operation (e.g. size of farm, type of enterprise, years in operation);
- a description of the specific farm buildings, equipment or practices involved and how they are affected;
- a copy of the complete local law or ordinance and identification of the specific section or sections involved;
- a listing of involved parties who can be contacted for further information (including addresses and phone numbers).

Subsequent to receiving a request for review of a local law or ordinance, the Department will contact the municipality involved and provide them with an opportunity to respond.

*Municipalities*

A request for review must be provided in writing and include at least the following information:

- the identification of the agricultural district(s) affected;
- a description of the specific law or proposed law and how farm buildings, equipment or practices are or may be affected
- a copy of the complete local law or ordinance and identification of the specific section or sections involved;
- a listing of involved parties who can be contacted for further information (including addresses and phone numbers).

## ANALYSIS

The Department examines several factors in evaluating whether a local law or ordinance is in compliance with Section 305-a. Tests that must be met in each case are as follows:

- **Is the affected farm located within an agricultural district?**

  Section 305-a only applies to farm operations in an agricultural district.

**David Paterson**
**Governor**

**Patrick Hooker**
**Commissioner**

- **Does the regulated activity encompass farm operations?**

  Section 301(11) of the Agriculture and Markets Law defines "Farm Operation" as meaning: "...the land and on-farm buildings, equipment, manure processing and handling facilities, and practices which contribute to the production, preparation and marketing of crops, livestock and livestock products as a commercial enterprise, including a 'commercial horse boarding operation' as defined in subdivision thirteen of this section and 'timber processing' as defined in subdivision fourteen of this section. Such farm operation may consist of one or more parcels of owned or rented land, which parcels may be contiguous or noncontiguous to each other." The definition of "crops, livestock and livestock products" is found in Section 301(2).

  Only farm operations are protected by Section 305-a. The Department draws on the expertise of its program and legal staff, and other resources as needed, to make these determinations.

- **Does the local law or ordinance unreasonably restrict or regulate?**

  The evaluation of reasonableness consists of two parts: 1) whether the law or ordinance is unreasonably restrictive "on its face," and 2) whether it is unreasonably restrictive as applied to a particular situation.

  Some laws or ordinances are so vague that they inhibit farmers from undertaking certain activities or constructing certain buildings out of concern for violating the law or ordinance. In this case, it is possible that the law or ordinance, because of its vague construction, could be construed as unreasonably restricting a farm operation.

  An ordinance may also appear reasonable in the abstract, but may unreasonably restrict or regulate a particular farmer. For example, many zoning ordinances impose setback requirements for structures in the interest of public safety or even aesthetics. These setbacks may be entirely reasonable under usual conditions, but may be construed as being unreasonably restrictive if applied to a farmer who, for example, constructs a building on a dead-end street, shielded from view, and near the only available water source.

  A reasonable exercise of authority in one locality may translate into an unduly burdensome restriction on farming in another. In sum, reasonableness depends on the totality of circumstances in each case.

- **Is the public health or safety threatened by the regulated activity?**

  Even if the Department determines that a particular law or ordinance is unreasonably restrictive, it must also ask whether the public health or safety is threatened by the regulated activity. If so, it could withstand the limitations of Section 305-a.

**REMEDIES**

If the Department determines that a local law or ordinance unreasonably restricts or regulates farm operations in an agricultural district, it will notify the involved municipality to that effect and attempt to arrive at a mutually satisfactory resolution. In the case where a municipality rejects the Department's attempts at remediation, the Commissioner of Agriculture and Markets is explicitly authorized by law to bring an action to enforce Section 305-a. Alternatively, the Commissioner may issue an Order to comply, pursuant to Section 36 of the Agriculture and Markets Law.

*Requests for general information or assistance, and formal written complaints alleging violations of Section 305-a, should be directed to:*

**Agricultural Districts Program Administrator**
**New York State Department of Agriculture and Markets**
**10B Airline Drive**
**Albany, NY 12235**

**Phone: (518) 457-2713**

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**New York State**
**Department of Agriculture and Markets**
**10B Airline Drive**
**Albany, New York  12235**
~~~~~~~~~~~~~~~~~~~~

# CIRCULAR 1500

## ARTICLE 25AAA -- AGRICULTURAL AND FARMLAND PROTECTION PROGRAMS

**AGRICULTURE AND MARKETS LAW**
**AS AMENDED by Chapter 527 of the Laws of 2005,**
**effective on February 12, 2006**

# ARTICLE 25AAA - AGRICULTURAL AND FARMLAND PROTECTION PROGRAMS

Sec.
321. Statement of legislative findings and intent
322. Definitions
323. State agricultural and farmland protection program
324. County agricultural and farmland protection plans
324-a. Municipal agricultural and farmland protection plans
325. Agricultural protection
326. Promulgation of rules and regulations

## 321. Statement of legislative findings and intent

It is hereby found and declared that agricultural lands are irreplaceable state assets. In an effort to maintain the economic viability, and environmental and landscape preservation values associated with agriculture, the state must explore ways to sustain the state's valuable farm economy and the land base associated with it. External pressures on farm stability such as population growth in non-metropolitan areas and public infrastructure development pose a significant threat to farm operations, yet are the pressures over which farmers have the least control. Local initiatives in agricultural protection policy, facilitated by the agricultural districts program established in article twenty-five-AA of this chapter, have proved effective as a basic step in addressing these pressures. In an effort to encourage further development of agricultural and farmland protection programs, and to recognize both the crucial role that local government plays in developing these strategies, plus the state constitutional directive to the legislature to provide for the protection of agricultural lands, it is therefore declared the policy of the state to promote local initiatives for agricultural and farmland protection.

## 322. Definitions

When used in this article:

1. "Agricultural and farmland protection" means the preservation, conservation, management or improvement of lands which are part of viable farming operations, for the purpose of encouraging such lands to remain in agricultural production.

2. "Plan" means the county and municipal agricultural and farmland protection plan as provided for in this article.

3. "Program" means the state agricultural and farmland protection program created pursuant to the provisions of this article.

## 323. State agricultural and farmland protection program

The commissioner shall initiate and maintain a state agricultural and farmland protection program to provide financial and technical assistance, within funds available, to counties and municipalities for their agricultural and farmland protection efforts. Activities to be conducted by the commissioner shall include, but not be limited to:

1. developing guidelines for the creation by counties and municipalities of agricultural and farmland protection plans;

2. providing technical assistance to county agricultural and farmland protection boards, as established in article twenty-five-AA of this chapter, and municipalities;

3. administering state assistance payments to county agricultural and farmland protection boards and municipalities;

4. disseminating information to county and municipal governments, owners of agricultural lands and other agricultural interests about the state agricultural and farmland protection program established pursuant to this article;

5. reporting biennially to the governor and the legislature regarding the activities of the commissioner, the types of technical assistance rendered to county agricultural and farmland protection boards and municipalities, and the need to protect the state's agricultural economy and land resources.

**324. County agricultural and farmland protection plans**

1. County agricultural and farmland protection boards may develop plans, in cooperation with the local soil and water conservation district and soil conservation service, which shall include, but not be limited to:

a) the location of any land or areas proposed to be protected;

b) an analysis of the following factors concerning any areas and lands proposed to be protected:

i) value to the agricultural economy of the county;
ii) open space value;
iii) consequences of possible conversion; and
iv) level of conversion pressure on the lands or areas proposed to be protected; and

c) a description of the activities, programs and strategies intended to be used by the county to promote continued agricultural use.

2. The county agricultural and farmland protection board shall conduct at least one public hearing for public input regarding such agricultural and farmland protection plan, and shall thereafter submit such plan to the county legislative body for its approval.

3. The county agricultural protection plan must be submitted by the county to the commissioner for approval.

**324-a. Municipal agricultural and farmland protection plans**

1. Municipalities may develop agricultural and farmland protection plans, in cooperation with cooperative extension and other organizations, including local farmers. These plans shall include, but not be limited to:
a) the location of any land or areas proposed to be protected;

b) an analysis of the following factors concerning any areas and lands proposed to be protected;

i) value to the agricultural economy of the municipality;
ii) open space value;
iii) consequences of possible conversion; and
iv) level of conversion pressure on the lands or areas proposed to be protected; and

c) a description of activities, programs and strategies intended to be used by the municipality to promote continued agricultural use, which may include but not be limited to revisions to the municipality's comprehensive plan pursuant to paragraph (a) of subdivision two of section two hundred seventy-two-a of the town law and land use regulations as defined in paragraph (b) of subdivision two of section two hundred seventy-two-a of the town law as appropriate.

2. The municipality shall conduct at least one public hearing for public input regarding such agricultural and farmland protection plan, and shall thereafter submit such plan to the municipal legislative body and the county agricultural farmland protection board for approval.

3. The municipal agricultural and farmland protection plan must be submitted by the municipality to the commissioner for approval.

**325. Agricultural protection**

1. Subject to the availability of funds, a program is hereby established to finance through state assistance payments the state share of the costs of county and municipal agricultural and farmland protection activities. State assistance payments for planning activities shall not exceed fifty thousand dollars to each county agricultural and farmland protection board or one hundred thousand dollars to two such boards applying jointly, and shall not exceed fifty percent of the cost of preparing an agricultural and farmland protection plan. State assistance payments for planning activities shall not exceed twenty-five thousand dollars to each municipality other than a county or fifty thousand dollars to two such municipalities applying jointly, and shall not exceed seventy-five percent of the cost of preparing an agricultural and farmland protection plan. State assistance payments for implementation of approved agricultural and farmland protection plans may fund up to seventy-five percent of the cost of implementing the county plan or a portion of the plan for which state assistance payments are requested.

2. a) A county agricultural and farmland protection board, two such boards acting jointly, a municipality or two such municipalities acting jointly shall make application to the commissioner in such manner as the commissioner may prescribe. Application for state assistance payments for planning activities may be made at any time after the county agricultural and farmland protection board has formed and has elected a chairperson. A county agricultural and farmland protection board may make application for state assistance payments for plan implementation at any time after the commissioner has approved a county agricultural and farmland protection plan pursuant to section three hundred twenty-four of this article. Application made jointly by two county agricultural and

farmland protection boards may be made after such agricultural and farmland protection plan is approved by each county pursuant to the provisions of section three hundred twenty-four of this article.

b) Within a county, a municipality which has in place a local farmland protection plan may apply and shall be eligible for agricultural protection state assistance payments to implement its plan, or a portion of its plan, provided the proposed project is endorsed for funding by the agricultural and farmland protection board for the county in which the municipality is located and that any plan developed on or after January first, two thousand six complies with section three hundred twenty-four-a of this article. State assistance payments to such municipalities shall not exceed seventy-five percent of the cost of implementing the local plan or portion of the plan for which state assistance has been requested. The commissioner may require such information or additional planning as he or she deems necessary to evaluate such a request for state assistance.

c) In evaluating applications for funding, the commissioner shall give priority to projects intended to preserve viable agricultural land as defined in section three hundred one of this chapter; that are in areas facing significant development pressure; and that serve as a buffer for a significant natural public resource containing important ecosystem or habitat characteristics.

3. Upon receipt of a request for state assistance, the commissioner shall review the request, consult with the advisory council on agriculture and, within ninety days from the receipt of a complete application, shall make a determination as to whether or not such projects shall receive state assistance.

**326. Promulgation of rules and regulations**

The commissioner is empowered to promulgate such rules and regulations and to prescribe such forms as he or she deems necessary to effectuate the purposes of this article.

## Appendix D
Sample Agricultural Data Statement

# AGRICULTURAL DATA STATEMENT

NYS Agricultural and Markets Law requires the submission of an agricultural data statement by an applicant to the municipality for a rezoning, special use permit, site plan approval, use variance, or subdivision of parcel(s) occurring on property within an agricultural district containing a farm operation or on property within 500 feet of an active farm operation located in an agricultural district.

| Applicant's Name & Address | Owner's Name & Address *(if different from applicant)* |
|---|---|
| | |
| | |
| | |
| | |

| Type of Application | | | |
|---|---|---|---|
| | ☐ Rezoning | ☐ Special Use Permit | ☐ Site Plan Approval |
| | ☐ Use Variance | ☐ Subdivision Approval | |

Project Description:

Project Address:

Project Location:
*(Example: west side of Main Street or 250 feet south of Second Avenue)*

Project Size:
*(Square footage, acreage, etc.)*

Current Use of Site:
*(Identify: idle, hay, pasture, crop, brushland, forest, dairy, tilled, orchard, single residence, etc.)*

History of Farming on Site:

*(Last year farmed, type of activity, number of acres, by owner or another, etc.)*

Other Site Information:

*(Drainage direction and features, e.g. ditches, tiles, streams, gullies, proposed changes, etc.)*

Include a tax or other map with project boundaries clearly marked and with nearby farm operations indicated. *(Municipal assessor or County tax office may be able to assist with this requirement.)*

Use the space below to provide the full mailing address of all farm operations within 500 feet of this project, including lands used in agricultural production. If necessary, please continue on a separate sheet. *(Municipal assessor or County tax office may be able to assist with this requirement.)*

Applicant Signature: _____

Owner Signature: _____

*(If different from applicant)*

THE MUNICIPALITY MUST REFER A COPY OF THIS STATEMENT TO THE ERIE COUNTY DEPARTMENT OF ENVIRONMENT & PLANNING AT 95 FRANKLIN STREET, BUFFALO, NY 14202 OR TO AGRICULTURE@ERIE.GOV AND TO ALL ADDRESSES ON THE FARM OPERATION MAILING LIST

**Appendix E**

American Farmland Trust Cost of Services Study Fact Sheet

FARMLAND INFORMATION CENTER

# FACT SHEET

## COST OF COMMUNITY SERVICES STUDIES

American Farmland Trust

FARMLAND INFORMATION CENTER
(800) 370-4879
www.farmlandinfo.org

NRCS

### DESCRIPTION

Cost of Community Services (COCS) studies are a case study approach used to determine the fiscal contribution of existing local land uses. A subset of the much larger field of fiscal analysis, COCS studies have emerged as an inexpensive and reliable tool to measure direct fiscal relationships. Their particular niche is to evaluate working and open lands on equal ground with residential, commercial and industrial land uses.

COCS studies are a snapshot in time of costs versus revenues for each type of land use. They do not predict future costs or revenues or the impact of future growth. They do provide a baseline of current information to help local officials and citizens make informed land use and policy decisions.

### METHODOLOGY

In a COCS study, researchers organize financial records to assign the cost of municipal services to working and open lands, as well as to residential, commercial and industrial development. Researchers meet with local sponsors to define the scope of the project and identify land use categories to study. For example, working lands may include farm, forest and/or ranch lands. Residential development includes all housing, including rentals, but if there is a migrant agricultural work force, temporary housing for these workers would be considered part of agricultural land use. Often in rural communities, commercial and industrial land uses are combined. COCS studies findings are displayed as a set of ratios that compare annual revenues to annual expenditures for a community's unique mix of land uses.

COCS studies involve three basic steps:

1. Collect data on local revenues and expenditures.
2. Group revenues and expenditures and allocate them to the community's major land use categories.
3. Analyze the data and calculate revenue-to-expenditure ratios for each land use category.

The process is straightforward, but ensuring reliable figures requires local oversight. The most complicated task is interpreting existing records to reflect COCS land use categories. Allocating revenues and expenses requires a significant amount of research, including extensive interviews with financial officers and public administrators.

### HISTORY

Communities often evaluate the impact of growth on local budgets by conducting or commissioning fiscal impact analyses. Fiscal impact studies project public costs and revenues from different land development patterns. They generally show that residential development is a net fiscal loss for communities and recommend commercial and industrial development as a strategy to balance local budgets.

Rural towns and counties that would benefit from fiscal impact analysis may not have the expertise or resources to conduct a study. Also, fiscal impact analyses rarely consider the contribution of working and other open lands, which is very important to rural economies.

American Farmland Trust (AFT) developed COCS studies in the mid-1980s to provide communities with a straightforward and inexpensive way to measure the contribution of agricultural lands to the local tax base. Since then, COCS studies have been conducted in at least 151 communities in the United States.

### FUNCTIONS & PURPOSES

Communities pay a high price for unplanned growth. Scattered development frequently causes traffic congestion, air and water pollution, loss of open space and increased demand for costly public services. This is why it is important for citizens and local leaders to understand the relationships between residential and commercial growth, agricultural land use, conservation and their community's bottom line.

COCS studies help address three misperceptions that are commonly made in rural or suburban communities facing growth pressures:

1. Open lands—including productive farms and forests—are an interim land use that should be developed to their "highest and best use."
2. Agricultural land gets an unfair tax break when it is assessed at its current use value for farming or ranching instead of at its potential use value for residential or commercial development.
3. Residential development will lower property taxes by increasing the tax base.

While it is true that an acre of land with a new house generates more total revenue than an acre of hay or corn, this tells us little about



The **FARMLAND INFORMATION CENTER** (FIC) is a clearinghouse for information about farmland protection and stewardship.
The FIC is a public/private partnership between the USDA Natural Resources Conservation Service and American Farmland Trust.

## SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, REVENUE-TO-EXPENDITURE RATIOS IN DOLLARS

| Community | Residential including farm houses | Commercial & Industrial | Working & Open Land | Source |
|---|---|---|---|---|
| **Colorado** | | | | |
| Custer County | 1 : 1.16 | 1 : 0.71 | 1 : 0.54 | Haggerty, 2000 |
| Sagauche County | 1 : 1.17 | 1 : 0.53 | 1 : 0.35 | Dirt, Inc., 2001 |
| **Connecticut** | | | | |
| Bolton | 1 : 1.05 | 1 : 0.23 | 1 : 0.50 | Geisler, 1998 |
| Brooklyn | 1 : 1.09 | 1 : 0.17 | 1 : 0.30 | Green Valley Institute, 2002 |
| Durham | 1 : 1.07 | 1 : 0.27 | 1 : 0.23 | Southern New England Forest Consortium, 1995 |
| Farmington | 1 : 1.33 | 1 : 0.32 | 1 : 0.31 | Southern New England Forest Consortium, 1995 |
| Hebron | 1 : 1.06 | 1 : 0.47 | 1 : 0.43 | American Farmland Trust, 1986 |
| Lebanon | 1 : 1.12 | 1 : 0.16 | 1 : 0.17 | Green Valley Institute, 2007 |
| Litchfield | 1 : 1.11 | 1 : 0.34 | 1 : 0.34 | Southern New England Forest Consortium, 1995 |
| Pomfret | 1 : 1.06 | 1 : 0.27 | 1 : 0.86 | Southern New England Forest Consortium, 1995 |
| Windham | 1 : 1.15 | 1 : 0.24 | 1 : 0.19 | Green Valley Institute, 2002 |
| **Florida** | | | | |
| Leon County | 1 : 1.39 | 1 : 0.36 | 1 : 0.42 | Dorfman, 2004 |
| **Georgia** | | | | |
| Appling County | 1 : 2.27 | 1 : 0.17 | 1 : 0.35 | Dorfman, 2004 |
| Athens-Clarke County | 1 : 1.39 | 1 : 0.41 | 1 : 2.04 | Dorfman, 2004 |
| Brooks County | 1 : 1.56 | 1 : 0.42 | 1 : 0.39 | Dorfman, 2004 |
| Carroll County | 1 : 1.29 | 1 : 0.37 | 1 : 0.55 | Dorfman and Black, 2002 |
| Cherokee County | 1 : 1.59 | 1 : 0.12 | 1 : 0.20 | Dorfman, 2004 |
| Colquitt County | 1 : 1.28 | 1 : 0.45 | 1 : 0.80 | Dorfman, 2004 |
| Columbia County | 1 : 1.16 | 1 : 0.48 | 1 : 0.52 | Dorfman, 2006 |
| Dooly County | 1 : 2.04 | 1 : 0.50 | 1 : 0.27 | Dorfman, 2004 |
| Grady County | 1 : 1.72 | 1 : 0.10 | 1 : 0.38 | Dorfman, 2003 |
| Hall County | 1 : 1.25 | 1 : 0.66 | 1 : 0.22 | Dorfman, 2004 |
| Jackson County | 1 : 1.28 | 1 : 0.58 | 1 : 0.15 | Dorfman, 2008 |
| Jones County | 1 : 1.23 | 1 : 0.65 | 1 : 0.35 | Dorfman, 2004 |
| Miller County | 1 : 1.54 | 1 : 0.52 | 1 : 0.53 | Dorfman, 2004 |
| Mitchell County | 1 : 1.39 | 1 : 0.46 | 1 : 0.60 | Dorfman, 2004 |
| Morgan County | 1 : 1.42 | 1 : 0.25 | 1 : 0.38 | Dorfman, 2008 |
| Thomas County | 1 : 1.64 | 1 : 0.38 | 1 : 0.67 | Dorfman, 2003 |
| Union County | 1 : 1.13 | 1 : 0.43 | 1 : 0.72 | Dorfman and Lavigno, 2006 |
| **Idaho** | | | | |
| Booneville County | 1 : 1.06 | 1 : 0.84 | 1 : 0.23 | Hartmans and Meyer, 1997 |
| Canyon County | 1 : 1.08 | 1 : 0.79 | 1 : 0.54 | Hartmans and Meyer, 1997 |
| Cassia County | 1 : 1.19 | 1 : 0.87 | 1 : 0.41 | Hartmans and Meyer, 1997 |
| Kootenai County | 1 : 1.09 | 1 : 0.86 | 1 : 0.28 | Hartmans and Meyer, 1997 |
| **Kentucky** | | | | |
| Campbell County | 1 : 1.21 | 1 : 0.30 | 1 : 0.38 | American Farmland Trust, 2005 |
| Kenton County | 1 : 1.19 | 1 : 0.19 | 1 : 0.51 | American Farmland Trust, 2005 |
| Lexington-Fayette County | 1 : 1.64 | 1 : 0.22 | 1 : 0.93 | American Farmland Trust, 1999 |
| Oldham County | 1 : 1.05 | 1 : 0.29 | 1 : 0.44 | American Farmland Trust, 2003 |
| Shelby County | 1 : 1.21 | 1 : 0.24 | 1 : 0.41 | American Farmland Trust, 2005 |

## SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, REVENUE-TO-EXPENDITURE RATIOS IN DOLLARS

| Community | Residential including farm houses | Commercial & Industrial | Working & Open Land | Source |
|---|---|---|---|---|
| **Maine** | | | | |
| Bethel | 1: 1.29 | 1 : 0.59 | 1 : 0.06 | Good, 1994 |
| **Maryland** | | | | |
| Carroll County | 1 : 1.15 | 1 : 0.48 | 1 : 0.45 | Carroll County Dept. of Management & Budget, 1994 |
| Cecil County | 1 : 1.17 | 1 : 0.34 | 1 : 0.66 | American Farmland Trust, 2001 |
| Cecil County | 1 : 1.12 | 1 : 0.28 | 1 : 0.37 | Cecil County Office of Economic Development, 1994 |
| Frederick County | 1 : 1.14 | 1 : 0.50 | 1 : 0.53 | American Farmland Trust, 1997 |
| Harford County | 1 : 1.11 | 1 : 0.40 | 1 : 0.91 | American Farmland Trust, 2003 |
| Kent County | 1 : 1.05 | 1 : 0.64 | 1 : 0.42 | American Farmland Trust, 2002 |
| Wicomico County | 1 : 1.21 | 1 : 0.33 | 1 : 0.96 | American Farmland Trust, 2001 |
| **Massachusetts** | | | | |
| Agawam | 1 : 1.05 | 1 : 0.44 | 1 : 0.31 | American Farmland Trust, 1992 |
| Becket | 1 : 1.02 | 1 : 0.83 | 1 : 0.72 | Southern New England Forest Consortium, 1995 |
| Dartmouth | 1 : 1.14 | 1 : 0.51 | 1 : 0.26 | American Farmland Trust, 2009 |
| Deerfield | 1 : 1.16 | 1 : 0.38 | 1 : 0.29 | American Farmland Trust, 1992 |
| Deerfield | 1 : 1.14 | 1 : 0.51 | 1 : 0.33 | American Farmland Trust, 2009 |
| Franklin | 1 : 1.02 | 1 : 0.58 | 1 : 0.40 | Southern New England Forest Consortium, 1995 |
| Gill | 1 : 1.15 | 1 : 0.43 | 1 : 0.38 | American Farmland Trust, 1992 |
| Leverett | 1 : 1.15 | 1 : 0.29 | 1 : 0.25 | Southern New England Forest Consortium, 1995 |
| Middleboro | 1 : 1.08 | 1 : 0.47 | 1 : 0.70 | American Farmland Trust, 2001 |
| Southborough | 1 : 1.03 | 1 : 0.26 | 1 : 0.45 | Adams and Hines, 1997 |
| Sterling | 1 : 1.09 | 1 : 0.26 | 1 : 0.34 | American Farmland Trust, 2009 |
| Westford | 1 : 1.15 | 1 : 0.53 | 1 : 0.39 | Southern New England Forest Consortium, 1995 |
| Williamstown | 1 : 1.11 | 1 : 0.34 | 1 : 0.40 | Hazler et al., 1992 |
| **Michigan** | | | | |
| Marshall Twp., Calhoun County | 1 : 1.47 | 1 : 0.20 | 1 : 0.27 | American Farmland Trust, 2001 |
| Newton Twp., Calhoun County | 1 : 1.20 | 1 : 0.25 | 1 : 0.24 | American Farmland Trust, 2001 |
| Scio Twp., Washtenaw County | 1 : 1.40 | 1 : 0.28 | 1 : 0.62 | University of Michigan, 1994 |
| **Minnesota** | | | | |
| Farmington | 1 : 1.02 | 1 : 0.79 | 1 : 0.77 | American Farmland Trust, 1994 |
| Independence | 1 : 1.03 | 1 : 0.19 | 1 : 0.47 | American Farmland Trust, 1994 |
| Lake Elmo | 1 : 1.07 | 1 : 0.20 | 1 : 0.27 | American Farmland Trust, 1994 |
| **Montana** | | | | |
| Carbon County | 1 : 1.60 | 1 : 0.21 | 1 : 0.34 | Prinzing, 1997 |
| Flathead County | 1 : 1.23 | 1 : 0.26 | 1 : 0.34 | Citizens for a Better Flathead, 1999 |
| Gallatin County | 1 : 1.45 | 1 : 0.16 | 1 : 0.25 | Haggerty, 1996 |
| **New Hampshire** | | | | |
| Brentwood | 1 : 1:17 | 1 : 0.24 | 1 : 0.83 | Brentwood Open Space Task Force, 2002 |
| Deerfield | 1 : 1.15 | 1 : 0.22 | 1 : 0.35 | Auger, 1994 |
| Dover | 1 : 1.15 | 1 : 0.63 | 1 : 0.94 | Kingsley, et al., 1993 |
| Exeter | 1 : 1.07 | 1 : 0.40 | 1 : 0.82 | Niebling, 1997 |
| Fremont | 1 : 1.04 | 1 : 0.94 | 1 : 0.36 | Auger, 1994 |
| Groton | 1 : 1.01 | 1 : 0.12 | 1 : 0.88 | New Hampshire Wildlife Federation, 2001 |
| Hookset | 1 : 1.16 | 1 : 0.43 | 1 : 0.55 | Innovative Natural Resource Solutions, 2008 |
| Lyme | 1 : 1.05 | 1 : 0.28 | 1 : 0.23 | Pickard, 2000 |
| Milton | 1 : 1:30 | 1 : 0.35 | 1 : 0.72 | Innovative Natural Resource Solutions, 2005 |

## SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, REVENUE-TO-EXPENDITURE RATIOS IN DOLLARS

| Community | Residential including farm houses | Commercial & Industrial | Working & Open Land | Source |
|---|---|---|---|---|
| **New Hampshire (continued)** | | | | |
| Mont Vernon | 1 : 1.03 | 1 : 0.04 | 1 : 0.08 | Innovative Natural Resource Solutions, 2002 |
| Stratham | 1 : 1.15 | 1 : 0.19 | 1 : 0.40 | Auger, 1994 |
| **New Jersey** | | | | |
| Freehold Township | 1 : 1.51 | 1 : 0.17 | 1 : 0.33 | American Farmland Trust, 1998 |
| Holmdel Township | 1 : 1.38 | 1 : 0.21 | 1 : 0.66 | American Farmland Trust, 1998 |
| Middletown Township | 1 : 1.14 | 1 : 0.34 | 1 : 0.36 | American Farmland Trust, 1998 |
| Upper Freehold Township | 1 : 1.18 | 1 : 0.20 | 1 : 0.35 | American Farmland Trust, 1998 |
| Wall Township | 1 : 1.28 | 1 : 0.30 | 1 : 0.54 | American Farmland Trust, 1998 |
| **New York** | | | | |
| Amenia | 1 : 1.23 | 1 : 0.25 | 1 : 0.17 | Bucknall, 1989 |
| Beekman | 1 : 1.12 | 1 : 0.18 | 1 : 0.48 | American Farmland Trust, 1989 |
| Dix | 1 : 1.51 | 1 : 0.27 | 1 : 0.31 | Schuyler County League of Women Voters, 1993 |
| Farmington | 1 : 1.22 | 1 : 0.27 | 1 : 0.72 | Kinsman et al., 1991 |
| Fishkill | 1 : 1.23 | 1 : 0.31 | 1 : 0.74 | Bucknall, 1989 |
| Hector | 1 : 1.30 | 1 : 0.15 | 1 : 0.28 | Schuyler County League of Women Voters, 1993 |
| Kinderhook | 1 : 1.05 | 1 : 0.21 | 1 : 0.17 | Concerned Citizens of Kinderhook, 1996 |
| Montour | 1 : 1.50 | 1 : 0.28 | 1 : 0.29 | Schuyler County League of Women Voters, 1992 |
| North East | 1 : 1.36 | 1 : 0.29 | 1 : 0.21 | American Farmland Trust, 1989 |
| Reading | 1 : 1.88 | 1 : 0.26 | 1 : 0.32 | Schuyler County League of Women Voters, 1992 |
| Red Hook | 1 : 1.11 | 1 : 0.20 | 1 : 0.22 | Bucknall, 1989 |
| Rochester | 1 : 1.27 | 1 : 0.18 | 1 : 0.18 | Bonner and Gray, 2005 |
| **North Carolina** | | | | |
| Alamance County | 1 : 1.46 | 1 : 0.23 | 1 : 0.59 | Renkow, 2006 |
| Chatham County | 1 : 1.14 | 1 : 0.33 | 1 : 0.58 | Renkow, 2007 |
| Henderson County | 1 : 1.16 | 1 : 0.40 | 1 : 0.97 | Renkow, 2008 |
| Orange County | 1 : 1.31 | 1 : 0.24 | 1 : 0.72 | Renkow, 2006 |
| Union County | 1 : 1.30 | 1 : 0.41 | 1 : 0.24 | Dorfman, 2004 |
| Wake County | 1 : 1.54 | 1 : 0.18 | 1 : 0.49 | Renkow, 2001 |
| **Ohio** | | | | |
| Butler County | 1 : 1.12 | 1 : 0.45 | 1 : 0.49 | American Farmland Trust, 2003 |
| Clark County | 1 : 1.11 | 1 : 0.38 | 1 : 0.30 | American Farmland Trust, 2003 |
| Hocking Township | 1 : 1.10 | 1 : 0.27 | 1 : 0.17 | Prindle, 2002 |
| Knox County | 1 : 1.05 | 1 : 0.38 | 1 : 0.29 | American Farmland Trust, 2003 |
| Liberty Township | 1 : 1.15 | 1 : 0.51 | 1 : 0.05 | Prindle, 2002 |
| Madison Village, Lake County | 1 : 1.67 | 1 : 0.20 | 1 : 0.38 | American Farmland Trust, 1993 |
| Madison Twp., Lake County | 1 : 1.40 | 1 : 0.25 | 1 : 0.30 | American Farmland Trust, 1993 |
| Madison Village, Lake County | 1 : 1.16 | 1 : 0.32 | 1 : 0.37 | American Farmland Trust, 2008 |
| Madison Twp., Lake County | 1 : 1.24 | 1 : 0.33 | 1 : .030 | American Farmland Trust, 2008 |
| Shalersville Township | 1 : 1.58 | 1 : 0.17 | 1 : 0.31 | Portage County Regional Planning Commission, 1997 |
| **Pennsylvania** | | | | |
| Allegheny Twp., Westmoreland County | 1 : 1.06 | 1 : 0.14 | 1 : 0.13 | Kelsey, 1997 |
| Bedminster Twp., Bucks County | 1 : 1.12 | 1 : 0.05 | 1 : 0.04 | Kelsey, 1997 |
| Bethel Twp., Lebanon County | 1 : 1.08 | 1 : 0.17 | 1 : 0.06 | Kelsey, 1992 |
| Bingham Twp., Potter County | 1 : 1.56 | 1 : 0.16 | 1 : 0.15 | Kelsey, 1994 |
| Buckingham Twp., Bucks County | 1 : 1.04 | 1 : 0.15 | 1 : 0.08 | Kelsey, 1996 |

## SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, REVENUE-TO-EXPENDITURE RATIOS IN DOLLARS

| Community | Residential including farm houses | Commercial & Industrial | Working & Open Land | Source |
|---|---|---|---|---|
| **Pennsylvania (continued)** | | | | |
| Carroll Twp., Perry County | 1 : 1.03 | 1 : 0.06 | 1 : 0.02 | Kelsey, 1992 |
| Hopewell Twp., York County | 1 : 1.27 | 1 : 0.32 | 1 : 0.59 | The South Central Assembly for Effective Governance, 2002 |
| Kelly Twp., Union County | 1 : 1.48 | 1 : 0.07 | 1 : 0.07 | Kelsey, 2006 |
| Lehman Twp., Pike County | 1 : 0.94 | 1 : 0.20 | 1 : 0.27 | Kelsey, 2006 |
| Maiden Creek Twp., Berks County | 1 : 1.28 | 1 : 0.11 | 1 : 0.06 | Kelsey, 1998 |
| Richmond Twp., Berks County | 1 : 1.24 | 1 : 0.09 | 1 : 0.04 | Kelsey, 1998 |
| Shrewsbury Twp., York County | 1 : 1.22 | 1 : 0.15 | 1 : 0.17 | The South Central Assembly for Effective Governance, 2002 |
| Stewardson Twp., Potter County | 1 : 2.11 | 1 : 0.23 | 1 : 0.31 | Kelsey, 1994 |
| Straban Twp., Adams County | 1 : 1.10 | 1 : 0.16 | 1 : 0.06 | Kelsey, 1992 |
| Sweden Twp., Potter County | 1 : 1.38 | 1 : 0.07 | 1 : 0.08 | Kelsey, 1994 |
| **Rhode Island** | | | | |
| Hopkinton | 1 : 1.08 | 1 : 0.31 | 1 : 0.31 | Southern New England Forest Consortium, 1995 |
| Little Compton | 1 : 1.05 | 1 : 0.56 | 1 : 0.37 | Southern New England Forest Consortium, 1995 |
| West Greenwich | 1 : 1.46 | 1 : 0.40 | 1 : 0.46 | Southern New England Forest Consortium, 1995 |
| **Tennessee** | | | | |
| Blount County | 1 : 1.23 | 1 : 0.25 | 1 : 0.41 | American Farmland Trust, 2006 |
| Robertson County | 1 : 1.13 | 1 : 0.22 | 1 : 0.26 | American Farmland Trust, 2006 |
| Tipton County | 1 : 1.07 | 1 : 0.32 | 1 : 0.57 | American Farmland Trust, 2006 |
| **Texas** | | | | |
| Bandera County | 1 : 1.10 | 1 : 0.26 | 1 : 0.26 | American Farmland Trust, 2002 |
| Bexar County | 1 : 1.15 | 1 : 0.20 | 1 : 0.18 | American Farmland Trust, 2004 |
| Hays County | 1 : 1.26 | 1 : 0.30 | 1 : 0.33 | American Farmland Trust, 2000 |
| **Utah** | | | | |
| Cache County | 1 : 1.27 | 1 : 0.25 | 1 : 0.57 | Snyder and Ferguson, 1994 |
| Sevier County | 1 : 1.11 | 1 : 0.31 | 1 : 0.99 | Snyder and Ferguson, 1994 |
| Utah County | 1 : 1.23 | 1 : 0.26 | 1 : 0.82 | Snyder and Ferguson, 1994 |
| **Virginia** | | | | |
| Augusta County | 1 : 1.22 | 1 : 0.20 | 1 : 0.80 | Valley Conservation Council, 1997 |
| Bedford County | 1 : 1.07 | 1 : 0.40 | 1 : 0.25 | American Farmland Trust, 2005 |
| Clarke County | 1 : 1.26 | 1 : 0.21 | 1 : 0.15 | Piedmont Environmental Council, 1994 |
| Culpepper County | 1 : 1.22 | 1 : 0.41 | 1 : 0.32 | American Farmland Trust, 2003 |
| Frederick County | 1 : 1.19 | 1 : 0.23 | 1 : 0.33 | American Farmland Trust, 2003 |
| Northampton County | 1 : 1.13 | 1 : 0.97 | 1 : 0.23 | American Farmland Trust, 1999 |
| **Washington** | | | | |
| Okanogan County | 1 : 1.06 | 1 : 0.59 | 1 : 0.56 | American Farmland Trust, 2007 |
| Skagit County | 1 : 1.25 | 1 : 0.30 | 1 : 0.51 | American Farmland Trust, 1999 |
| **Wisconsin** | | | | |
| Dunn | 1 : 1.06 | 1 : 0.29 | 1 : 0.18 | Town of Dunn, 1994 |
| Dunn | 1 : 1.02 | 1 : 0.55 | 1 : 0.15 | Wisconsin Land Use Research Program, 1999 |
| Perry | 1 : 1.20 | 1 : 1.04 | 1 : 0.41 | Wisconsin Land Use Research Program, 1999 |
| Westport | 1 : 1.11 | 1 : 0.31 | 1 : 0.13 | Wisconsin Land Use Research Program, 1999 |

Note: Some studies break out land uses into more than three distinct categories. For these studies, AFT requested data from the researcher and recalculated the final ratios for the land use categories listed in this table. The Okanogan County, Wash., study is unique in that it analyzed the fiscal contribution of tax-exempt state, federal and tribal lands.

American Farmland Trust's Farmland Information Center acts as a clearinghouse for information about Cost of Community Services studies. Inclusion in this table does not necessarily signify review or endorsement by American Farmland Trust.

# COST OF COMMUNITY SERVICES STUDIES

For additional information on farmland protection and stewardship contact the Farmland Information Center. The FIC offers a staffed answer service and online library with fact sheets, laws, sample documents and other educational materials.

www.farmlandinfo.org

(800) 370-4879

American Farmland Trust

AFT National Office
1200 18th Street, NW, Suite 800
Washington, DC 20036
(202) 331-7300
www.farmland.org

NRCS

a community's bottom line. In areas where agriculture or forestry are major industries, it is especially important to consider the real property tax contribution of privately owned working lands. Working and other open lands may generate less revenue than residential, commercial or industrial properties, but they require little public infrastructure and few services.

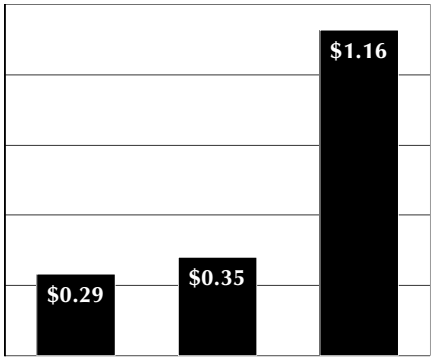
COCS studies conducted over the last 20 years show working lands generate more public revenues than they receive back in public services. Their impact on community coffers is similar to that of other commercial and industrial land uses. On average, because residential land uses do not cover their costs, they must be subsidized by other community land uses. Converting agricultural land to residential land use should not be seen as a way to balance local budgets.

The findings of COCS studies are consistent with those of conventional fiscal impact analyses, which document the high cost of residential development and recommend commercial and industrial development to help balance local budgets. What is unique about COCS studies is that they show that agricultural land is similar to other commercial and industrial uses. In nearly every community studied, farmland has generated a fiscal surplus to help offset the shortfall created by residential demand for public services. This is true even when the land is assessed at its current, agricultural use. However as more communities invest in agriculture this tendency may change. For example, if a community establishes a purchase of agricultural conservation easement program, working and open lands may generate a net negative.

Communities need reliable information to help them see the full picture of their land uses. COCS studies are an inexpensive way to evaluate the net contribution of working and open lands. They can help local leaders discard the notion that natural resources must be converted to other uses to ensure fiscal stability. They also dispel the myths that residential development leads to lower taxes, that differential assessment programs give landowners an "unfair" tax break and that farmland is an interim land use just waiting around for development.

One type of land use is not intrinsically better than another, and COCS studies are not meant to judge the overall public good or long-term merits of any land use or taxing structure. It is up to communities to balance goals such as maintaining affordable housing, creating jobs and conserving land. With good planning, these goals can complement rather than compete with each other. COCS studies give communities another tool to make decisions about their futures.

**Median COCS Results**




*Median cost per dollar of revenue raised to provide public services to different land uses.*



The **Farmland Information Center** (FIC) is a clearinghouse for information about farmland protection and stewardship. The FIC is a public/private partnership between the USDA Natural Resources Conservation Service and American Farmland Trust.

**Appendix F**
Purchase of Development Rights

Appendix F Includes:

- Purchase of Development Rights: Preserving Farmland and Open Space

- USDA: Agricultural Land Easements

- Towns are Slowing the Invasion of Farms by Bulldozers

- Town of Clarence Greenprint Program Information

FEATURE

# Purchase of Development Rights:
## Preserving Farmland and Open Space

*by Gayle Miller & Douglas Krieger*

### The Growing Demand for Land Preservation

As strip malls and subdivisions eat away at undeveloped land, a growing number of communities are taking new steps to save their remaining farmland and open space. While land use tools such as zoning and cluster development facilitate land preservation, citizens are recognizing that these methods alone may not be enough.

Despite tough economic times, preserving open space is a top spending priority for many communities. Between 1999 and 2002, 544 successful state and local ballot measures generated approximately $16.7 billion in funds for land conservation programs. In 2003, voters approved an additional 99 measures with a total value of $1.3 billion. Overall, between 75 and 80 percent of initiatives and referendums that raise taxes or fees for land conservation have passed.[1]

While there are numerous reasons for preserving open space, the main benefits fall into four general categories: environmental (protecting groundwater, wildlife habitat, etc.); agricultural (preserving farming industries and communities); aesthetic (preserving rural character and scenic beauty); and managing growth.[2]

The specific benefits to any given community depend upon the area's growth patterns, geography, and economy. Preserving undeveloped land around cities can contain urban growth and direct development towards areas already served by infrastructure. Maintaining floodplains can benefit entire watersheds by reducing flood damage. Preserving woodlots or fallow fields can protect scenic vistas important to tourism. Retaining farmland can help support the local economy by maintaining a viable agricultural base.[3]

> PDR PROGRAMS ARE BECOMING INCREASINGLY POPULAR BECAUSE THEY OFFER SUBSTANTIAL BENEFITS TO BOTH COMMUNITIES AND LANDOWNERS.

In the past, communities have reaped these benefits "free of charge," thanks to the owners of undeveloped land. Yet as development pressures and land values have increased, the quantity of undeveloped land has shrunk. As a result, communities are recognizing the importance of preserving farmland and open space.

### Preserving Land by Purchasing Development Rights

Purchase of development rights (PDR) programs are one viable approach that state and local governments are using to preserve farmland and open space.[4] *See An Array of Strategies, p.7.* The following discussion provides an introduction to PDR programs and discusses some of the issues that commonly arise in their implementation.

PDR programs provide a way to financially compensate willing landowners for not developing their land. When buying development rights, the community obtains a legal easement, sometimes referred to as a conservation easement, that restricts development on the land. The landowner, however, still owns the land and can use or sell it for purposes specified in the easement, such as farming, timber production, or hunting.

Since PDR programs are flexible, program administrators can customize purchases of development rights to meet the objectives of both landowners and communities. For example, an easement designed to preserve agricultural resources might allow the landowner to build an additional home or two as long as their placement does not limit the property's long-term agricultural potential.

Development rights are similar to mineral rights: they represent a portion of the land's total value. This amount can be estimated by appraisal. The value of development rights is the difference between the fair market value of the land without the easement and its value as restricted by the easement. For example, an 80 acre farm may be worth $10,000 per acre if sold for home sites, but only $2,500 if restricted, by an easement, to agricultural use. This means the parcel's development value would be $7,500 per acre (or $600,000 for the entire 80 acres) – that would be the cost to purchase the development rights.

PDR programs are becoming increasingly popular because they offer substantial benefits to both communities and

1 *LandVote 2002: Americans Invest in Parks and Open Space* and *LandVote 2003* (Trust for Public Land; Land Trust Alliance, Washington DC).

2 Jeffrey Kline & Dennis Wichelns, "Public Preferences Regarding the Goals of Farmland Preservation Programs," *Land Economics 72:4* (1986), pp. 538-549.

3 Agriculture is an important segment of the economy in many areas. To cite just one example, the Dutchess County, New York, "Agriculture and Farmland Protection Plan," (adopted in 1998) notes that: "The effects of the loss of farmland reach well beyond those farmers who are directly involved. … Businesses that supply farm equipment and services suffer and are forced to leave, making it difficult for the remaining farms to maintain their operations. … Farms [in Dutchess County] directly employ 1,500 people. Another 2,000 people are employed providing goods and services to farmers."

4 PDR programs in some parts of the country are called PACE (purchase of conservation easements) or APR (agricultural preservation restriction) programs.

landowners. Many agricultural landowners are cash-poor: that is, they have a great deal of equity in land, but little income. By selling only their development rights, owners can convert some of the wealth tied up in their land into cash, without relinquishing ownership of the land or use of its productive capacity.

Landowners may use proceeds from a sale of development rights in any way they choose – purchasing additional acreage, upgrading equipment, paying taxes, or investing for retirement. While proceeds of a PDR sale are taxable, depending upon state tax laws, selling development rights may offer significant tax savings by reducing the taxable value of the land, or by reducing future inheritance taxes.

For communities, PDR programs are a means to manage growth and provide the benefits of open space without the expense of purchasing, maintaining, and policing publicly-owned land. Preserving land can also save communities money in the long run, since development often costs more in public infrastructure and community services than the tax revenue realized by the growth. *Community Costs, p. 6.*

PDR programs recognize that owners of undeveloped land provide valuable amenities to the community. Buying development rights from willing landowners provides a market-driven and compensatory approach to preserving those amenities, and an attractive supplement to other forms of land management, such as zoning.

According to the American Farmland Trust, at least 44 counties and towns have adopted PDR programs for agricultural land preservation purposes. Among the communities establishing programs in the past two years: Kane County, Illinois; Albemarle County, Virginia; and Fayette County, Kentucky.[5]

At least 24 states also have state-level PDR programs. These state programs either allocate funds to counties, cities, and towns to purchase development rights / conservation easements (often on a matching basis), or provide for a state agency or board to purchase and hold development rights.

The American Farmland Trust estimates that approximately 1.3 million acres of land are currently held in conservation easements, with 234,000 acres of this total being held by local programs.[6]

### Developing a PDR Program

While there is no one approach to developing a PDR program, some common "fundamentals" include: conducting background research; having a dedicated group to guide the process; involving the public in the program's development; establishing eligibility and scoring criteria for potential purchases; and ensuring adequate funding.

**1. Laying the Groundwork**

Before developing a PDR program, doing background research is essential. This includes an awareness of any state requirements,[7] knowledge of relevant local planning policies, and familiarity with a broad range of possible land preservation approaches used elsewhere – including PDRs.

Communities considering a PDR program should have an up-to-date comprehensive land use plan. The PDR program should be consistent with the comprehensive plan's goals and policies. When built upon this foundation, the PDR program will serve as a tool to implement the plan, rather than an isolated program of its own.

Identifying existing information and resources pertinent to the PDR

*continued on next page*

5 "Fact Sheet: Status of Local PACE Programs" (American Farmland Trust, Sept. 2003), 1-800-370-4879. AFT also maintains a very useful Web site: <www.farmlandinfo.org>.

6 "Fact Sheet: Status of State PACE Programs" (American Farmland Trust, Sept. 2003).

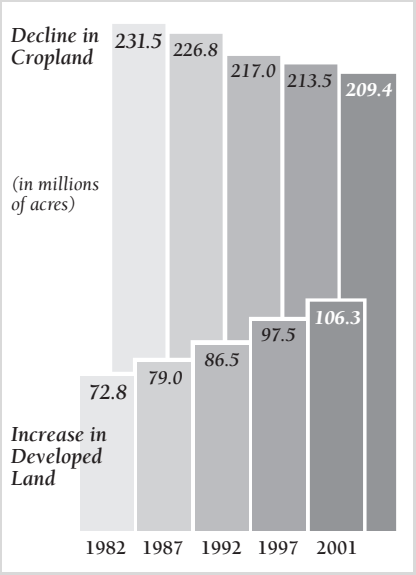
7 All states now have laws enabling conservation easements on agricultural lands through voluntary donations from landowners. U.S. Department of Agriculture, Economic Research Service, "Development at the Urban Fringe and Beyond …" (2001) p. 60. Your state's planning or agriculture department should be able to tell you whether there's a state-level program which can provide funds to support a local PDR program.

## Land Trends

Nationwide data collected by the U.S. Department of Agriculture, in cooperation with Iowa State University, shows a steady increase in developed land and decline in farmland (especially cropland) over the past twenty years. Among the key findings reported in the 2001 National Resources Inventory:

- Between 1982 and 2001, about 34 million acres – an area the size of Illinois – was converted to developed land.
- Of this 34 million acres, about 10.4 million was considered prime farmland.
- The rate of farmland development increased from an average of 400,000 acres per year between 1982 and 1992 to 600,000 acres per year between 1992 and 2001.

U.S. Census data also indicates that average per capita land consumption increased by 22.6 percent between 1970 and 1990 in the nation's 100 largest metropolitan areas, while the total urbanized land area increased by an average of 51.5 percent during this same time period. "Weighing Sprawl Factors in Large U.S. Cities," by Leon Kolankiewicz and Roy Beck (March 2001), pp. 17-24. Available at:<www.sprawlcity.org/studyUSA/index.html>.




*Derived from the 2001 National Resources Inventory.*

*continued from previous page*

program's development is also important. Mapping of soil types, microclimates, and land cover may be necessary when agricultural productivity is a priority. Having an inventory of historic, cultural, and environmental features may also be important in identifying features such as burial mounds, floodplains, key habitat areas, or scenic vistas of special value.

Designers of local PDR programs should also be aware of existing land preservation initiatives. For example, federal and state agencies buy easements to preserve wildlife habitat, restore wetlands, preserve farmland, and create erosion control buffers. Local or regional non-profit land conservancies also obtain easements to meet their goals.

Easements held by other organizations can provide critical links in meeting overall preservation objectives, particularly if larger tracts of land are desired for agricultural preservation, greenbelts, or wildlife habitat preservation. These organizations may also have valuable expertise to lend to the community's efforts, such as legal services, mapping capabilities, natural features inventories, or experience in monitoring easements.

**2. A Guiding Force**

The inspiration and "guiding force" behind a local PDR program will vary from community to community. It may come from the local planning commission, the county board of commissioners, a parks and recreation board, a grassroots citizen's organization, or even just one individual with a vision. Regardless of who is the prime mover, early involvement by planning commissioners and planning staff is important, and will help ensure that the PDR program meshes with the community's comprehensive planning efforts.

Having a diverse and dedicated steering committee can be invaluable in developing, and then promoting, a local PDR program. Committee members might include farmers or ranchers, real estate appraisers, bankers, planning commissioners, parks and recreation board members, environmentalists, and local government officials. And it doesn't hurt to have someone skilled at public relations! As with many planning efforts, bringing many diverse interests into the process will increase the likelihood of gaining broad public support.

Based upon their knowledge of the community, steering committee members should be able to establish a draft mission statement and preservation objectives for the PDR program.

While it may seem more expeditious for the committee members to then simply design the PDR program and take it before the public for final comment, this approach could be the program's undoing. Thorough and credible two-way communication between the steering committee and the public is essential to creating a program the community will ultimately support.

**3. Public Involvement**

Communities need to go beyond minimum public participation requirements to ensure the PDR program proceeds on a firm foundation of public support – and that it appeals to the program's ultimate participants: landowners.

Designing a community-driven land preservation program requires research to determine public preferences, and skill in communicating with the public. Professional assistance with these two related tasks can be a sound investment. Agricultural extension offices, universities or colleges, state agencies, land

## The Rationale for Public Funding

PDR programs are generally publicly funded. Why should public dollars be spent to help preserve farmland, ranches, and other open space? One answer is that in many areas preserving these lands actually saves local government money compared to the public infrastructure costs of supporting scattered, low-density residential development. *See Sidebar, "Community Costs."*

Another answer is that the public as a whole benefits by preserving these lands:

"The public has a stake in the preservation of working landscapes for a variety of reasons, including keeping locally-grown food and fiber available; maintaining scenic and historic landscapes; and protecting watersheds, wildlife habitat, and recreational opportunities. It would be unfair to expect landowners to bear the full cost and responsibility for open space protection … by voluntarily forgoing the development value of their land. PDR programs allow the costs of conserving private lands for agricultural and open space values to be shared by all the beneficiaries – landowners, their communities, and the public as a whole." *Purchase of Development Rights: Conserving Lands, Preserving Western Livelihoods* (Western Governors' Association, National Cattlemen's Beef Association, and Trust for Public Land, 2001).

## Planners for Farmland Preservation

The American Planning Association's *Policy Guide on Agricultural Land Preservation*, adopted in 1999, offers strong support for programs such as purchase of development rights. Among the key points noted in the *Policy Guide*:

*Most traditional zoning tools have minimal efficacy to protect against the development of agricultural lands.*

*Communities must develop, implement and enforce multiple mechanisms for the effective preservation of productive agricultural land (i.e. urban growth boundaries, purchase of development rights, exclusive agricultural zoning).*

*Agricultural land should be protected and preserved in large contiguous blocks in order to maintain a 'critical mass' of farms and agricultural land.*

*Agricultural land preservation programs, projects and policies are best implemented and enforced when they are done so at the local level with technical and financial support from state and federal sources.*

trusts, and independent consultants are all potential sources of expertise, and can be extremely valuable in this critical stage of program development.

At a minimum, the public preferences research should address the following questions:

- How important is the preservation of open space in relation to other spending priorities?
- What are the community's main motivations for preserving open space?
- How should the community fund the program?
- How much is the public willing to pay?
- How much open space should the program seek to preserve?

Analysis of public preferences and the community's "willingness to pay" are central to the research process. Pretty brochures and flashy multi-media presentations are worth little if based upon inaccurate data or assumptions about public preferences.

Mail or telephone surveys of residents, focus groups, public forums, and hearings all facilitate public input. Outreach efforts can include press releases, radio talk shows, public presentations, and reports documenting survey results. Also quite helpful are fliers or brochures which clearly and succinctly describe the proposed program and its benefits to the community.

**4. Establishing Eligibility and Scoring Criteria**

PDR programs are like the "field of dreams" – if you build it, they will come. Once the program is in place, landowners will want to take part.

Eligibility requirements are threshold measures to identify land that would contribute to the program's goals. For example, a program designed to preserve agricultural productivity might consider only those parcels larger than forty acres which are actively being farmed.

Given that financial resources will likely be limited, scoring criteria allow program administrators to rank applications that meet the basic eligibility

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## Peninsula Township, Michigan

Surrounded by the clear, blue waters of Grand Traverse Bay, Peninsula Township is a spectacular finger of rolling agricultural land in northwest lower Michigan. When development began eating away at the township's agricultural center – and threatening the peninsula's world renowned cherry industry – planning officials realized they needed to protect the agricultural and scenic integrity of their community.

During an update of their master land use plan in the late 1980s, the planning commission prepared maps which identified the township's prime agricultural areas and fourteen critical "viewsheds." These maps served as the foundation for future land protection activities, including one of the most active PDR programs in the Midwest.

Planning commission members were involved in all aspects of the program's development, including researching other PDR programs, evaluating the financial viability of the planned program, identifying preservation priorities, and overseeing extensive public input and outreach activities (including random surveys, one-on-one interviews with landowners, and community focus groups).

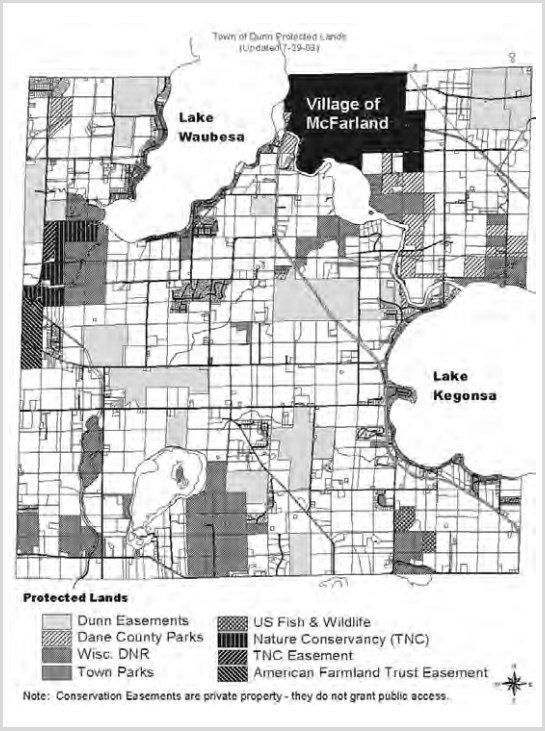
Since the PDR program's adoption in 1994, Peninsula Township has spent over $6 million to acquire development rights on approximately 2,000 acres. In 2002, voters increased the original 1.25 mil funding to 2 mils for the next 20 years. The township's next goal is to acquire 9,200 acres by 2008.

*For more information contact Township Planner Gordon Hayward at: 231-223-7322, email: planner @peninsula township.com*

## Dunn, Wisconsin

Citizens in the Town of Dunn (population 5,270), located just south of Madison, began thinking about preserving open spaces and agricultural land more than twenty years ago. A two year building moratorium in 1977 provided time for the community to develop its first land use plan. The plan called for complete build-out of existing service areas and strict zoning to protect agricultural lands.

In 1993, a committee of residents and Plan Commission members began investigating methods of land protection that would accomplish preservation goals without total reliance on restrictive land use regulations.




*In Dunn, land protection reflects the combined efforts of several agencies and organizations.*

A survey asking residents about establishing a PDR program showed strong support. A cost of community services study suggested that preserving open space was also in the town's long-term financial interests.

In 1996, voters approved a half mil property tax increase, providing $160,000 in its first year for purchasing development rights. In 2000, residents approved a $2.4 million bond to expand the program. Since its inception, locally raised dollars have leveraged more than $2 million in additional funds from federal, state, and county agencies.

Town Land Use Manager Renee Lauber says the PDR program is popular because, prior to its establishment, a landowner's only option was to sell to developers.

In a cooperative agreement, the Town and the Natural Heritage Land Trust (a private non-profit organization) hold development rights easements jointly and share responsibility for monitoring compliance. Residents ratify development rights purchases at special town meetings. To date, the program has preserved some 15 farm parcels, totaling over 2,000 acres.

Details on the Town's PDR program can be foundat: <www.town. dunn. wi.us/>. For more information, contact town land use manager Renee Lauber at: rlauber@ town .dunn.wi.us; 608-255-4219.

**PDRs: Preserving Farmland...**

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requirements. For example, scoring criteria for a PDR program focused on protecting farmland might include measures of:

- Agricultural productivity (measured by soil types, economic value of crops, etc.).
- Development pressure.
- Contribution of a farm to the local agricultural industry.
- Compatibility of adjacent land to long-term agricultural use of a property.

In contrast, scoring criteria for a program designed to preserve the scenic beauty of a tourist community might take into consideration:

- Proximity of the land to a well-traveled road or scenic corridor.
- The historic or cultural significance of the land.
- Whether the land has accessible views of local water bodies or other vistas.
- Inclusion of the land in important and specifically targeted "viewsheds."

The eligibility requirements and scoring criteria are the essence of the PDR program. A good understanding of public preferences will ensure that the application and evaluation process for selecting participants meets the program objectives. This, in turn, will help the program gain acceptance – and funding support – from the community.

### Paying for the Program

Two of the most important questions about a PDR program are: "How much will it cost?" and "Who is going to pay?" Developing a funding mechanism is often the greatest challenge in designing a PDR program. Many financing options exist, including bonds, property taxes, real estate transfer taxes, sales taxes on certain products or services, general appropriations, and other sources. State law may limit which funding mechanisms are available.

Possible supplemental funding sources include state and federal matching grants, private monetary donations, and foundation grants.

In order to leverage these additional

dollars, however, local PDR programs generally need a homegrown source of financing that can provide matching funds and sustain the program for the long run.

Promoting and passing a local funding mechanism is no less an undertaking than a new school millage or tax – and in some communities it will be far more controversial. Even in areas where the concept of open space preservation is vigorously supported, funding is almost invariably the most contentious issue.

The research process should identify public preferences for how to fund the program. The more closely the program's objectives and its related funding efforts align with public preferences, the more likely the funding effort will succeed.

### Dealing With Opposition

No matter how laudable its goals, a PDR program will have its detractors. One of the most common objections is that it will interfere with private property rights. Quite the contrary is true. While a purchase of development rights does restrict future uses of a parcel, it is essential to make clear to potential participants that a PDR program is completely voluntary *and* provides fair compensation to those who participate. In fact, PDR programs give landowners a new ability to exercise their property rights by providing a means to sell a partial interest in their land.

General opposition over funding the program is a more challenging objection. The public involvement process should reveal whether or not a community has such pressing funding needs as to make the purchase of development rights unrealistic. However, a growing body of research has documented that land preservation programs, especially in rural areas, often end up costing taxpayers less than the conversion of farmland into low-density residential development. *Community Costs.*

One of the most ironic objections to PDR programs is the claim that buying development rights is "too permanent,"

*continued on next page*

## Community Costs

Land in purchase of development rights programs will likely be assessed at lower rates since the use of the land is restricted. In most cases, a lower assessed value will reduce property taxes. Indeed, this reduction in property taxes is a large part of what makes PDR programs attractive to farmers. Like other programs which limit assessments on farmland, this property tax reduction makes it more feasible to continue farming, especially in areas where development pressures are causing land values to rise.

While the municipality will receive less tax revenue, this needs to be balanced against the substantial cost savings when farmland and open space is preserved. A number of "cost of community services" studies have found that these cost savings often exceed lost property tax revenue.

For example, in 1999 the Minnesota Department of Agriculture examined this question.

The Minnesota study found through an in-depth analysis of five counties (and the cities and townships in these counties) that: "For two of the four largest non-utility operating expenditure categories (public safety and general government), a strong agricultural sector correlates with lower per capita costs. … When viewed from the perspective of the combined impact on county and municipal budgets, the net fiscal impact of new residential development is negative in all five case studies for development in the townships, and negative in four of the five case studies for development in the cities." … *Cost of Public Services Study* (Duncan Associates for the Minnesota Dept. of Agriculture, 1999).

*Editor's Note: For a comprehensive review of research in this area, see "The Impact of Parks and Open Space on Property Values and the Property Tax Base," by John L. Crompton (National Recreation and Parks Association, 2000). The American Farmland Trust is also a good source of information about cost of community services studies: <www.farmlandinfo.org>; 1-800-370-4879.*

## State & Local Funding

A wide variety of funding mechanisms are being used by states and localities to support PDR programs. Some examples:

*Douglas County, Colorado* – Approved a $25-million revenue bond backed by a sales/use tax to preserve open space in 1996.

*Missoula and Helena, Montana* – Each approved $5 million in bonds backed by property tax increases to fund parks, recreation, and open space programs.

*Davis, California* – Developers pay for PDR programs through a unique farmland mitigation program. They are allowed to develop properties in appropriate areas if they help pay for open space mitigation by funding PDR on properties in other areas.

*Bernalillo County, New Mexico* – Voters approved a two-year 1/2 of 1 percent sales tax increase to fund open space preservation in 1998.

*Carson City, Nevada* – Voters passed a 1/2 of 1 percent "quality of life" sales/use tax for parks, trails, and open space acquisition in 1996.

*Kentucky* – Counties may fund their PDR programs by: an *ad valorem* tax; a license fee on franchises, trades and professions, or room taxes; or a combination of those options, chosen by local referendum.

*Maryland* – Several counties use local real-estate transfer taxes supplemented by general fund appropriations to finance their PDR programs.

*Virginia Beach, Virginia* – raises approximately $450,000 annually for its PDR program from a cellular phone tax; a dedicated 1.5 percent increase in local property taxes; and county appropriations. The funds have been used to leverage an additional $3.2 million from a variety of granting agencies.

*Source: "Purchase of Development Rights: Conserving Lands, Preserving Western Livelihoods." A report published by the Western Governors' Association, The Trust for Public Land, and National Cattlemen's Beef Association, January 2001.*

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and that future options may be limited by restrictions against development. While most purchases of development rights *are* permanent, so is urbanization, whether in the form of new subdivisions, malls, or industrial parks.[8]

### Summing Up:

PDR programs can help implement local land use plans by preserving farmland and other important open space for future generations. When used in conjunction with other land preservation techniques, PDR programs can be highly effective. While significant effort is often required to establish a PDR program, the long-term benefits to the community can be substantial. ◆

*Gayle Miller works for the Michigan Sierra Club on issues of sprawl, air and water pollution, and solid waste. She previously served for twelve years as a county solid waste coordinator. Miller is a graduate of Central Michigan University.*

*Douglas Krieger is a natural resource/agricultural economist. He consults with local governments and non-profits to determine public preferences for land preservation, estimate willingness to pay for preservation, and design preservation programs consistent with preferences. Krieger earned his Ph.D. from Michigan State University's Department of Agricultural Economics. He can be reached at 989-834-0146 or <dkrieger@gocougs. wsu.edu>*

*Editor's Note:*

## An Array of Strategies:

As Gayle Miller and Douglas Krieger note at the start of this article, purchase of development rights is one of several tools planners can use to facilitate land preservation. Various strategies are often used in combination. For example, farmland preservation might be encouraged through a combination of purchase of development rights, agricultural zoning, and clustering of development.

Tom Daniels and Deborah Bowers note in their fine book, *Holding Our Ground: Protecting American's Farms and Farmland* (Island Press 1997), "The nation's best farmland preservation programs combine PDR with growth-management techniques …. The danger occurs when a purchase-of-development rights program is not backed up with effective agricultural zoning, and building rights are too numerous and therefore land values too high to make the purchase of development rights financially possible." p. 167.

**Subdivision Regulation.** Another important land preservation tool is subdivision regulation. Randall Arendt has focused on the principles of conservation subdivision design in his article, "Growing Greener: Conservation Subdivision Design," in *PCJ #33* (Winter 1999). Arendt explains how conservation-oriented subdivision regulations, when integrated with the comprehensive plan and zoning provisions, can promote "an interconnected network of conservation lands."

It is important to note that Arendt stresses the need for local plans to map out areas most important to preserve, laying the groundwork for the subdivision design process. This is similar to Gayle Miller and Douglas Krieger's emphasis on linking purchase of development rights programs to comprehensive plan goals and policies.

**Transfer of Development Rights.** A more complicated, though sometimes quite effective, tool for land preservation is transfer of development rights, or TDRs. Please keep in mind that *transfer* of development rights is quite different than *purchase* of development rights.

In a nutshell, TDR programs delineate "receiving" areas where development is desired and "sending" areas prioritized for preservation. Developers can purchase development rights from landowners in the sending areas, and then "transfer" those rights to land in designated receiving areas (allowing them to develop this land at a higher density than would otherwise be permitted).

For TDR programs to work there must be enough development to create an active market in transferable development rights. An excellent overview of TDRs can be found in Rick Pruetz's article, "Putting Growth In Its Place With Transfer of Development Rights," in *PCJ #31* (Summer 1998).

**Land Trusts.** One final aspect of land conservation deserves mention. That is the critically important role that private land trusts play in land preservation. While Miller and Krieger focus on the public acquisition of development rights, comparable efforts by non-profit land trusts are being carried out across the country. In fact, private and public land preservation efforts often work in tandem. The role of land trusts is explored in Joel Russell's "Land Trusts and Planning Commissions: Forging Strategic Alliances," in *PCJ #34* (Spring 1999).

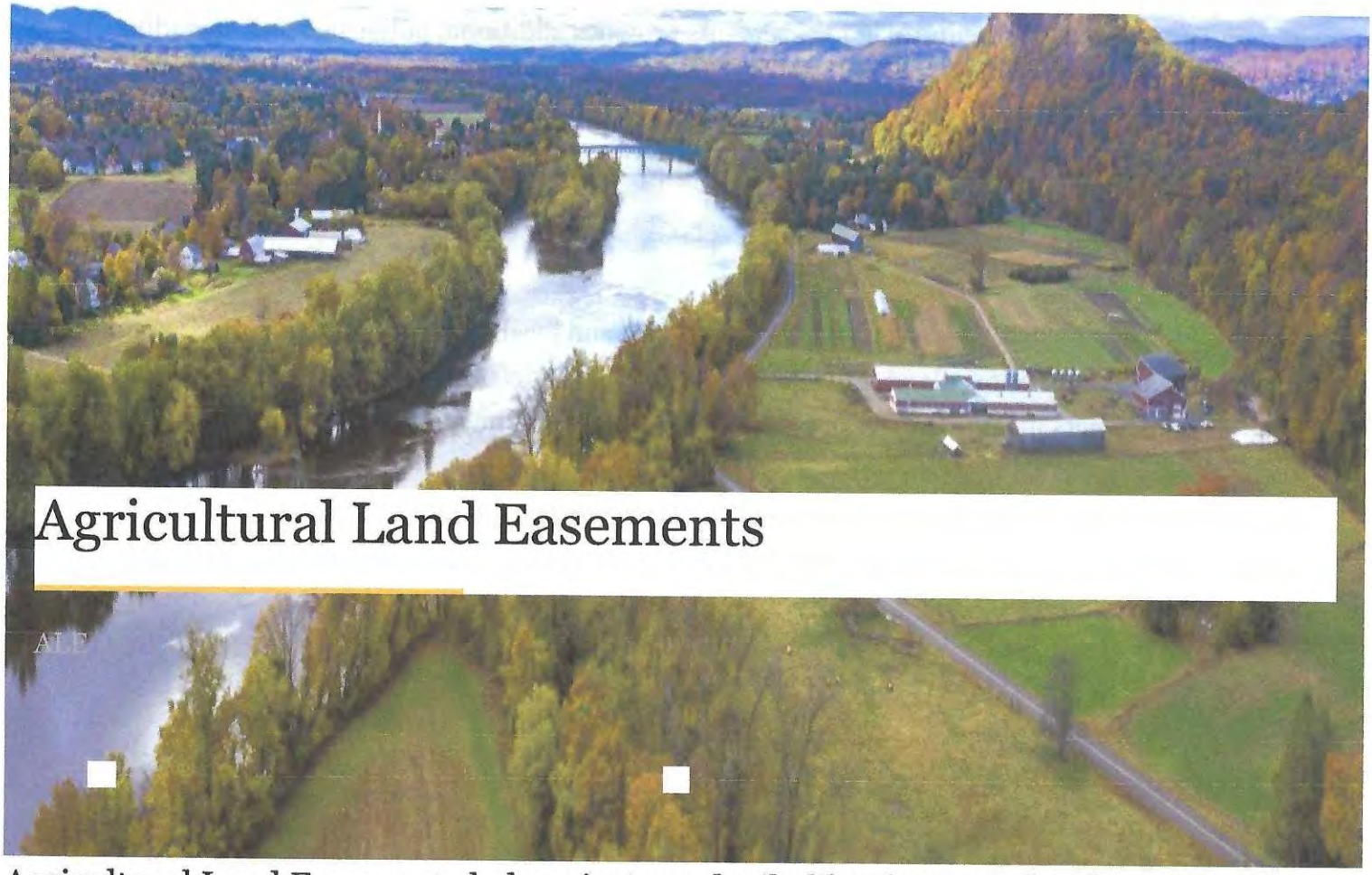
## Resources

**American Farmland Trust**
1200 18th Street NW
Washington, D.C. 20036
202-331-7300
email: info@farmland.org
www.farmland.org

**Trust for Public Land**
116 New Montgomery St.,
4th Floor
San Francisco, CA 94105
415-495-4014
email: info@tpl.org
www.tpl.org

**Land Trust Alliance**
1331 H Street NW,
Suite 400
Washington DC
20005-4734
202-638-4725
email: lta@lta.org
www.lta.org

8 While unlikely, a local government holding a development right could, if it chose to, sell it back to the landowner.



# Agricultural Land Easements

Agricultural Land Easements help private and tribal landowners, land trusts, and other entities such as state and local governments protect croplands and grasslands on working farms and ranches by limiting non-agricultural uses of the land through conservation easements.

## On This Page

CONTACT INFORMATION (#CONTACT)

HOW TO GET ASSISTANCE (#ASSISTANCE)

RELATED NEWS AND EVENTS (#NEWS-EVENTS)

# Benefits

The Agricultural Land Easements component of the Agricultural Conservation Easement Program (/programs-initiatives/acep-agricultural-conservation-easement-program) protects the long-term viability of the nation's food supply by preventing conversion of productive working lands to non-agricultural uses. Land protected by agricultural land easements provides additional public benefits, including environmental quality, historic preservation, wildlife habitat and protection of open space. Additionally, Agricultural Land Easements leverage local partnerships to match NRCS funding and local partners are responsible for the long-term stewardship of the easement.

# Who is eligible?

- Eligible partners include American Indian tribes, state and local governments and non-governmental organizations that have farmland, rangeland or grassland protection programs.
- Eligible landowners include owners of privately held land including land that is held by tribes and tribal members.
- All landowners, including required members of landowner-legal entities, must meet adjusted gross income (AGI) limitations and must be compliant with the HEL/WC provisions of the Food Security Act of 1985.

# What land is eligible?

Land eligible for agricultural easements includes private or Tribal land that is agricultural land, cropland, rangeland, grassland, pastureland and nonindustrial private forest land. NRCS will prioritize applications that protect agricultural uses and related conservation values of the land and those that maximize the protection of contiguous acres devoted to agricultural use, including land on a farm or ranch.

Eligible Land Types must also meet one of the four following land eligibility criteria:

- Parcels enrolled to protect Prime, Unique, or Other productive soil.
- Parcels enrolled to provide protection of grazing uses and related conservation values.
- Parcels containing historical or archeological resources.
- Land that furthers a state or local policy consistent with the purposes of ACEP-ALE.

# How does it work?

NRCS provides financial assistance to eligible partners for purchasing Agricultural Land Easements that protect the agricultural use and conservation values of eligible land.

For working farms, the program helps farmers and ranchers keep their land in agriculture. Under the Agricultural Land Easement component, NRCS may contribute up to 50 percent of the fair market value of the agricultural land easement.

The program also protects grazing uses and related conservation values by conserving grassland, including rangeland, pastureland and shrubland. Where NRCS determines that grasslands of special environmental significance will be protected, NRCS may contribute up to 75 percent of the fair market value of the agricultural land easement.

Agricultural Land Easements are permanent or for the maximum term allowed by law.

# How do I find an eligible partner to hold my Agricultural Land Easement?

Visit the following websites to learn how to find an eligible partner to hold conservation easements.

- Farmland Protection Directory (https://farmlandinfo.org/farmland-protection-directory/)
- Land Trust Alliance (https://www.findalandtrust.org/)

# How to get started?

**Landowners** - To learn more about ALE, contact your local NRCS office (/contact/find-a-service-center). An NRCS conservationist will visit you and evaluate your land to help you determine eligibility for the various components of ACEP. If your land is eligible for ALE and you are looking for an eligible entity to hold your conservation easement; please visit ACEP-ALE for Landowners - FIC (https://farmlandinfo.org/acep-ale-for-landowners/).

**Eligible Entities** - To learn more about ALE, please contact your NRCS state office (/conservation-basics/conservation-by-state/state-offices) programs staff to inquire about how you can partner with NRCS to enroll conservation easements on eligible land.

- ACEP-ALE for Entities (https://farmlandinfo.org/acep-ale-for-entities/)

# Additional Documents

Is ACEP Right for Me? fact sheet (/sites/default/files/2022-10/NRCS-ACEP-Factsheet_10.26_0.pdf) (988.5 KB)

Ensuring the Future of Agriculture booklet (/sites/default/files/2022-11/ALE_magazine_1.pdf) (8.95 MB)

**March 20, 1997, Thursday**

**BUSINESS/FINANCIAL DESK**

# Towns Are Slowing Invasion of Farms by Bulldozers

**By BARNABY J. FEDER (NYT) 1917 words**

Mark Greene's family has been farming in Pittsford, N.Y., since 1812, but until recently the prospects that his 400-acre farm would be in business for another generation looked dim. A local ordinance requires developers to set aside 50 percent of any new project for farming or open space, but even that did not knock land prices down enough to slow the relentless sprawl of Rochester, 10 miles to the northwest.

Last year, though, Pittsford issued $10 million in bonds so it could pay Mr. Greene and six other farmers for promises not to sell their 1,200 acres -- about 60 percent of the tillable land remaining in the town -- to developers.

"If we didn't do this," Mr. Greene said, "it would only be a matter of time."

It has long been an iron law of the real estate market that if farmland stands in the path of urban expansion, no crop is valuable enough to keep it out of developers' hands.

As Pittsford's bond issue highlights, though, that iron law can be bent a bit. By arguing that farms provide more than food and fiber -- the list includes environmental benefits, soul-soothing scenery, diversity for the local economy and especially tax savings -- advocates of farmland preservation are forging the political ties and financial tools to steer developers' backhoes away from farmland.

"You are going to see some very interesting alliances evolve," said Ralph Grossi, president of the American Farmland Trust, a lobbying group based in Washington that for nearly two decades has been charting both farmland losses and the efforts to halt them. He cited a coalition formed last year to channel new growth toward already-developed areas in and around Fresno, Calif., an alliance that includes the local Chamber of Commerce and the regional building industry association in addition to farm groups.

Despite America's unparalleled agricultural abundance, concern about disappearing farmland is clearly on the rise. Numerous states and communities have in recent years experimented with tax and zoning policies to encourage farmers at the urban edge to hang on. And both private and public programs to buy development rights are spreading.

At the Federal level, the Government in 1995 finally began applying a 1981 law that required it to look for alternatives to proposed highways, airports and other public projects that consume prime farmland. And in last year's farm bill, Congress authorized spending $35 million over six years to bolster state and local programs that pay farmers not to sell to developers, the first such Federal payments ever.

Federal officials say saving prime farmland not only has local benefits but also helps the nation's balance of trade and protects against volatility in food prices. "Land is the bank

supporting 15 percent to 20 percent of our economy," Dan Glickman, the Secretary of Agriculture, said. "Keeping it in agriculture is extremely important."

So far, though, such talk and the measures backing it up have been too restricted and modestly financed to have much effect. In the 20 years since Suffolk County, L.I., began the first program to buy development rights from farmers, such buyouts have preserved 450,000 acres in 18 states.

But that is a drop in the bucket. In a report to be issued today, the American Farmland Trust says that urban sprawl eats up two acres a minute -- a million acres a year, including 400,000 acres uniquely suited to certain crops.

Some of the best farmland being lost is around heartland cities like Indianapolis and Des Moines that tend to be overlooked because there is so much high-quality farmland in the Midwest.

"We lose a little bit every year," said Anthony Hession, who farms 3,000 acres just west of Indianapolis, most of it rented. Mr. Hession said he had won a statewide corn-growing contest in 1995 on a 160-acre field being torn up this month for a subdivision.

Still, Mr. Grossi said, conditions might be better than ever for slowing the loss of farmland, especially in 20 hot spots highlighted by the Farmland Trust report, like California's Central Valley, the northern Piedmont stretching from Virginia to New Jersey, the region bordering the Florida Everglades and the prairie land around the Illinois-Wisconsin border. The report focuses not just on soil quality but on areas where soil and climate together are uniquely suited for certain crops.

"We have a much better understanding of the cost of losing this land than even five years ago, a lot more examples of good local programs, and the Federal action legitimizes this effort," Mr. Grossi said.

Farmland preservation would be a much easier sell, of course, if the nation seemed in even remote danger of ever being hungry. At current development rates, the worst-case scenarios suggest that the nation's surplus food for export would not dry up until the middle of the next century, when 13 percent of the prime land being farmed would be gone. Some products now produced domestically would become imports, food prices could climb substantially, and other food-short regions of the world would be politically and economically less stable.

But blessed as it is with more than 300 million acres of prime agricultural land, the United States has paid about as much attention to such pessimistic visions as a billionaire to fliers suggesting it's time to open a savings account.

After all, decades of paving over farmland has not stopped farmers from producing such huge surpluses that Americans pay less of their income for food than anyone else in the world. And agricultural goods are the nation's largest export. The Federal Government has spent hundreds of billions of dollars on price-support programs intended to prevent the farm economy from drowning in its own abundance.

"We are losing good farmland needlessly, but we don't need it to feed ourselves," said Dennis Avery, an agriculture specialist at the Hudson Institute, a conservative research group. Ending excessive losses of American farmland to development might help feed other nations and slow the destruction of rain forests, Mr. Avery said, but not as much as increased spending on agricultural research or efforts to halt urban sprawl in developing countries.

Others note that each acre lost simply increases farmers' incentives to improve output on the remaining land. And biotechnology is very likely to provide previously unimagined opportunities, such as more drought-resistant strains of key crops like wheat and corn that would make marginal land far from cities more productive.

"Our concept of what is prime land has changed dramatically over time," said Philip Raup, a land economist at the University of Minnesota, who noted that pioneer farmers wanted land with exposed salt deposits for livestock nutrition. "Genetic engineering will change it again in the next 30 or 40 years."

Regardless of their long-range accuracy, such assessments encourage political leaders and voters to vastly underrate how much the nation might gain now from paying more attention to farmland, the Farmland Trust and its allies say. In the Central Valley of California alone, where the population is expected to triple by 2040 and today's sprawling development averages three homes an acre, a million acres of farmland will be lost and 2.6 million more will become harder to farm efficiently, according to a 1995 study.

Given the same population growth, the study projected, new laws forcing "compact growth" at an average of six homes an acre would save more than 500,000 acres of farmland, protect a million acres from encroachment, add nearly $70 billion to the agricultural economy and save taxpayers $29 billion that would be spent extending sewers and other services to newly developed areas.

Farmland losses are easy to dramatize. Farmers on the urban edge are often featured in news reports showing how the approach of suburbia can be more disruptive and nerve-racking than the eventual outright loss of the land, which, after all, can make millionaires of them if they are lucky enough to own it.

New homeowners often push local officials to halt normal farm practices, like noisy nighttime harvesting or planting, spreading manure to fertilize fields, importing swarms of bees to pollinate fruit trees and spraying pesticides. Subdivisions can cause crop losses by altering drainage patterns in nearby fields. Dogs chase cattle and other livestock. And vandalism of machinery and crops becomes commonplace.

"There was one kid who drove around in my alfalfa one night, got stuck in a creek and had the gall to come ask me to get my tractor to pull him out," said Jim Lehrer, a dairy farmer in Kaukauna, Wis. "He said he was just having fun."

Mr. Lehrer said he pulled the vehicle out after first demanding the teen-ager's address, then drove his tractor to the offender's home and rode around on the lawn until the teen-ager's father burst out furiously demanding to know what he was doing. Mr. Lehrer said he told him he was "just having fun like your son," and then took a spin through the

backyard before going home.

Most farmers never catch the vandals, though, and in many cases, they say, there are burdens even well-intentioned suburbanites do not perceive. Sayre Miller, co-owner of 300 acres of almond groves outside Clovis, Calif., said that suburban horse riders and the cross-country team from a new school to the west had worn enough of a trail through the groves to disrupt the path of her unmanned harvesting machines.

Such problems give a human dimension to issues of urban sprawl. But cataloguing such conflicts provides no rationale for treating farms differently from any other business. That leaves it to groups like the Farmland Trust and various national agriculture and environmental groups to assemble the larger arguments for zoning and tax changes that could limit the farmland losses.

Often the actual quality of the farmland is not decisive. In Pittsford, the cost of development was what impressed voters most. Pittsford planners calculated that providing services and schools to subdivisions on the 1,200 acres would have a net cost of $200 a taxpayer indefinitely, compared with $67 a year for 20 years to pay off the bonds.

Town of Clarence, New York

# CLARENCE GREENPRINT PROGRAM

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## I. Project History/Origin

1998- The Clarence Recreation Advisory Committee ("Committee") began research and analysis of residents' concerns over sprawl, congestion and quality of life issues. The Committee undertook a review of efforts by other communities across New York State to preserve open space.

2002- The Committee formally proposed to the Town Board a plan to preserve open space and the town's rural character, protect property values and sustain the tax base through smart growth and balanced development.

The Committee recommended a Public Referendum to provide Greenprint Program funding.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

2002- The Town Board accepts the Committee's recommendation and a Public Hearing was held. The Committee presented the Greenprint Program proposal and received public comment.

Late 2002- The Greenprint Program is approved in a public referendum by 2/3 vote of Town residents.

Bond funds of $12.5 million are secured as part of a 10 year Greenprint Preservation program. If after ten years the budget is not expended, the Town Board has the option to extend.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## II. Estimated Costs and Anticipated Benefits

***Estimated Costs***

- The Committee estimated an increase of $52 in additional annual taxes for a property assessed at $100,000, assuming the full $12.5 million bond were spent at once.

***Anticipated Benefits***

- Increased property values.
- Reduction of municipal expenses through decreased demand on services.
- Balanced economic growth, tax stabilization, green space preservation and enhanced quality of life.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## III. Greenspace Review

### *1) Preliminary Review*

- Willing property owners complete a participation interest survey. The Committee, in conjunction with the Western New York Land Conservancy ("Land Conservancy") analyzes property data, screens interest of the applicant, assesses development potential, natural land, wetland, agricultural, open space, possible recreational use/bikepaths, size, and scenic considerations of the property.
- The Committee decides whether the property fits within the goals and parameters of the program and is suitable for further consideration.
- The Town Office of Planning and Zoning and Land Conservancy provide parcel data and an environmental review for the consideration of the Committee.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## *2) Matrix Evaluation and Property Ranking*

❑ The Land Conservancy evaluates and ranks each property with a point matrix analysis form arranged in 2 categories:

-Natural Land Form- Analyzes natural land features: wetland and riparian corridors, scenic views, unique ecological communities, wildlife habitat, mature forests, open space, and creek corridors.

-Agricultural Land Form- Analyzes agricultural land: value to the local agricultural economy, soil type, size, and proximity to adjacent farms.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## *3) Fair Market Appraisal and Price Negotiation*

- ❑ Based upon all data received and land rankings, the Committee decides whether to request a Fair Market Property Appraisal.
- ❑ The Committee reviews the Property Appraisal and discusses with the property owner whether to purchase outright and/or to place a conservation easement on the property or purchase development rights.
- ❑ The Committee provides the Town Attorney's Office with a not to exceed value and authorizes negotiations. The negotiated price may not exceed appraised value.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

***4) Town Board Review and Approval*:**

- ❑ After agreement with the property owner, the Committee recommends acceptance by the Town Board.
- ❑ The Board decides whether to conduct a public hearing to receive public comment.
- ❑ The Town Board makes the final decision whether to contract with the property owner.
- ❑ If the Town Board decides to purchase, the property or development rights are acquired and the land is preserved as forever green.

# Town of Clarence, New York

## Clarence Greenprint Program

**June 6, 2012**

## IV. Properties Purchased

| PROPERTY ADDRESS | PDR/LAND PURCHASE (YEAR) | TOTAL LAND AREA | COST INCURRED | CURRENT OWNER |
|---|---|---|---|---|
| Salt Road/Greiner Road ("Eichorn Farm") | Land Purchase(2004) | 184 acres | $780,000 | Town of Clarence |
| Gunnville Road ("Nappo Preserve") | Land Purchase (2004) | 22 acres | $42,800 | Town of Clarence |
| 10591 Rapids Road ("Krueger Preserve") | Land Purchase (2004) | 57 acres | $128, 600 | Town of Clarence |
| Goodrich Road ("Frey Preserve") | Land Purchase (2005) | 16 acres | $400,000 | Town of Clarence |
| Roll Road ("Ribbeck Farm") | PDR (2005) | 62 acres | $431,368 | Gregory C. Ribbeck |
| Parker Road ("Laubacher Preserve") | Land Purchase (2005) | 30 acres | $36,000 | Town of Clarence |
| Rapids Road ("Owen Farm") | Land Purchase (2008) | 90 acres | $320,000 | Town of Clarence |
| Salt Road ("Christner Farm") | Land Purchase (2009) | 96 acres | $705,000 | Town of Clarence |
| Lapp Road ("Spoth Farm") | PDR (2009) | 102 acres | (TOC- $300,000)<br>(NYS-$150,000)<br>(FED- $150,000)<br>TOTAL- $600,000 | Greg Spoth |
| Keller Road ("Mosher Farm") | Land Purchase (2009) | 41 acres | $331,280 | Town of Clarence |
| Greiner Road ("Ball Farm") | Land Purchase (2010) | 120 acres | $900,000 | Town of Clarence |
| Rapids Road ("Baker Farm") | PDR (2011) | 102 acres | $95,000 | Gary Baker |
| Rapids Road ("Hedges Farm") | PDR (2011) | 116 acres | $500,000 | Melvyn C. Hedges |
| Harris Hill Road ("Deni Preserve") | Land Purchase (2011) | 86 acres | $825,000 | Town of Clarence |
| Shimerville Road/Roll Road ("Ribbeck Farm II") | PDR (2012) | 84 acres | $754,110 | Gregory C. Ribbeck |
| | **TOTAL:** | **1,236 acres** | **$6,802,328** | |

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## V. Actual Program Expenses

### Tax Impact- Property Acquisition and Purchase of Development Rights

- Resultant Tax Increase per $100,000 of Assessed Value:

| | | |
|---|---|---|
| Committee's Cost Estimate for full | $12,500,000 expenditure- | $52.00 |
| Actual Cost of | $ 6,802,328 expenditure- | $14.10* |
| Actual Cost of | $12,500,000 expenditure- | $30.40 |

**As discussed later, cost reduction can be achieved by reselling purchased property with conservation easements in place ensuring continued protection of greenspace.*

## VI. Actual Program Benefits

### *1) Protection of Property Values and Stabiliztion of Tax Rates*

- The availability of open space directly affects quality of life which is a significant factor in the purchasing decisions of many consumers. Local sales data reflects an average 15% increase in property sale value of those properties directly adjacent to open space or permanently conserved property compared to similar non-adjacent housing.

- The average appreciation rate of existing property within the Town of Clarence is 5 times that of comparable Towns in the region. Furthermore, the Town has sustained an average 3% positive appreciation rate for the past decade. (*source: County Wide Equalization Change, 2009-2011*)

- When comparing the Town of Clarence to similar communities across the region, residents in other communities are paying an average of 30% more in total property taxes. (*source: 2010-2011 Erie County Real Property Tax Comparison*)

## VI. Actual Program Benefits

### *1) Protection of Property Values and Stabiliztion of Tax Rates (Cont.)*

- In 2011, the Town of Clarence had a 2.32% increase in existing property assessed valuations. This increase resulted in an additional $78,499,025 in assessed valuation within the community.

- Assuming only 10% of the overall assessed valuation increase of existing properties can be attributed to open space preservation, the program is responsible for $1,712,700 in additional tax revenue for the community over a 20 year period.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## *2) Optional Resale of Purchased Properties with Conservation Easement Protection*

- If the Board exercised the option to resell properties protected by conservation easements, the Town would recoup approximately $1,250,000, while still ensuring the land is permanently protected as open space.

- Additional tax revenue from resold land over 20 years: $226,280.

- Therefore, the total potential Greenprint Program cost reduction that could be realized through resale of protected properties and additional tax revenues would total $3,188,980.

- Applying this cost reduction to the actual current expenditure of $6,802,328 would yield an actual cost to the taxpayers of only $6.60 per $100,000 of assessed valuation annually.

## *3) Reduced Costs of Required Services*

- Since 1980, developed area in WNY increased 38 percent, households increased by only 5.5% and population declined by 5.8% (*source: Erie Niagara Framework for Regional Growth*). This suburban sprawl has caused a dramatic increase in demand for expensive municipal services while the tax base required to pay for the increased demand has decreased.

- The Greenprint Program is a significant tool in the battle against suburban sprawl by preserving open space, creating balanced growth patterns, reducing the demand for and costs of services and preserving the tax base by protecting property values.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

## *4) Protection of Our Quality of Life*

- The Greenprint Program supports a balanced growth pattern that impedes residential sprawl, reduces traffic and human congestion, noise, exhaust emissions, and protects aesthetic and scenic vistas.

- Lands protected thus far include working farms, forests, stream corridors, meadows, State and Federal wetlands, vernal pools, areas containing endangered flora and fauna, and other areas that provide habitat for fish and wildlife and act as filters to cleanse water, decrease flooding, and provide recreation and wildlife viewing opportunities for the general public.

# Town of Clarence, New York

Clarence Greenprint Program
June 6, 2012

**This Program is considered a creative and successful partnership that serves as a model for other communities considering land preservation**

CLARENCE

The Clarence Recreation Advisory Committee, Town Board members and Town residents have been instrumental in the development of the Greenprint program. Their vision and recognition of the benefits derived from land preservation have helped preserve our quality of life, stabilize our tax base and protect property values

The program is dependent upon willing landowners who are committed to open space preservation and the local agricultural economy. Those landowners who have voluntarily participated in the program have supported long term planning efforts while rejecting potential short term and short lived financial gain.

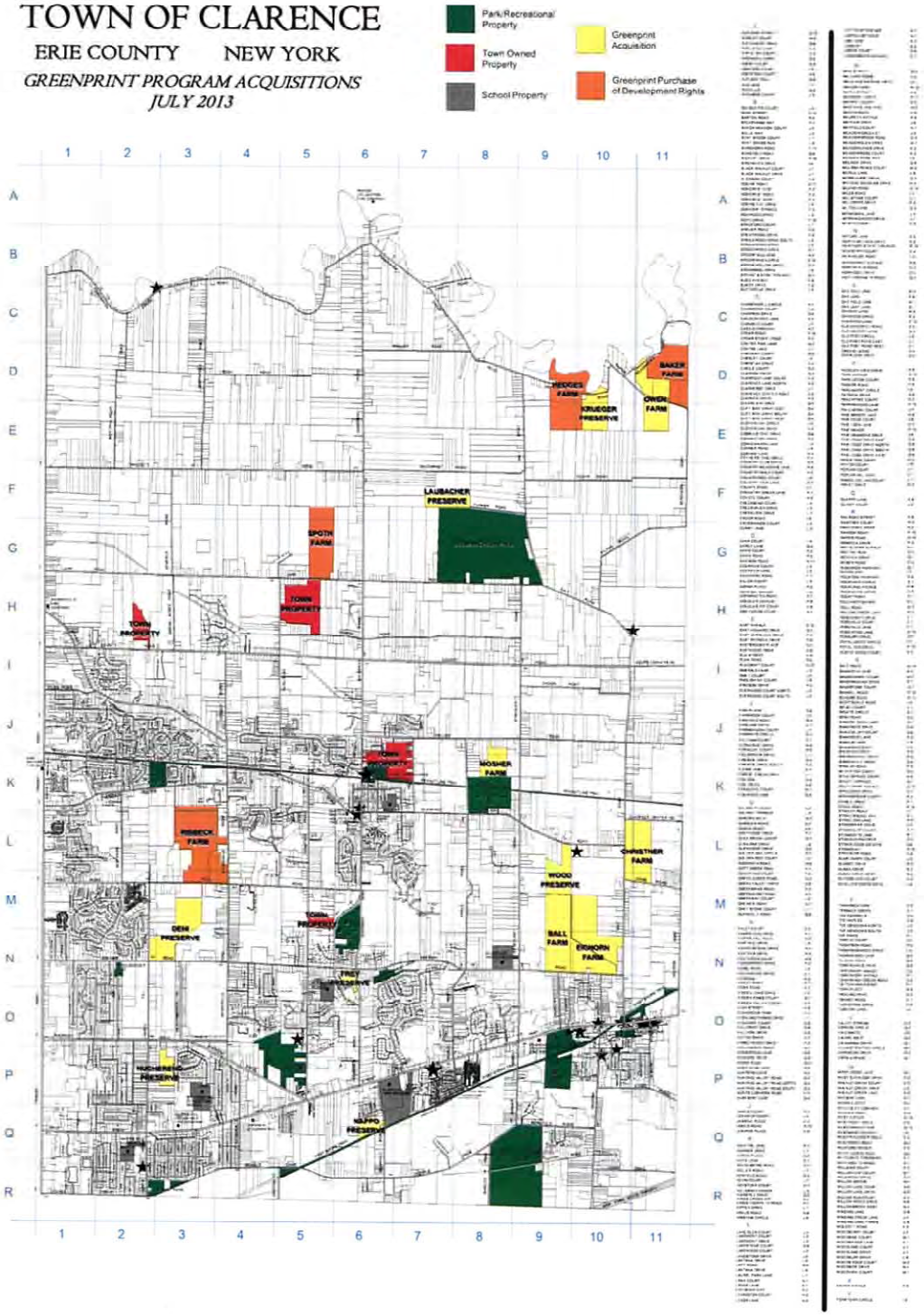
WESTERN NEW YORK
LAND CONSERVANCY

The Western New York Land Conservancy is a private, non-profit land trust dedicated to preserving our region's irreplaceable natural environments, farms, forestlands and open space in order to maintain wildlife habitat, economic resources, public recreation areas and the unique scenic character of Western New York. They are a critical resource for evaluating potential greenprint properties, structuring and co-holding conservation easements, and long term monitoring of protected properties.

# TOWN OF CLARENCE

ERIE COUNTY NEW YORK

*GREENPRINT PROGRAM ACQUISITIONS*
*JULY 2013*



# Appendix G
Transfer of Development Rights

Appendix G Includes:

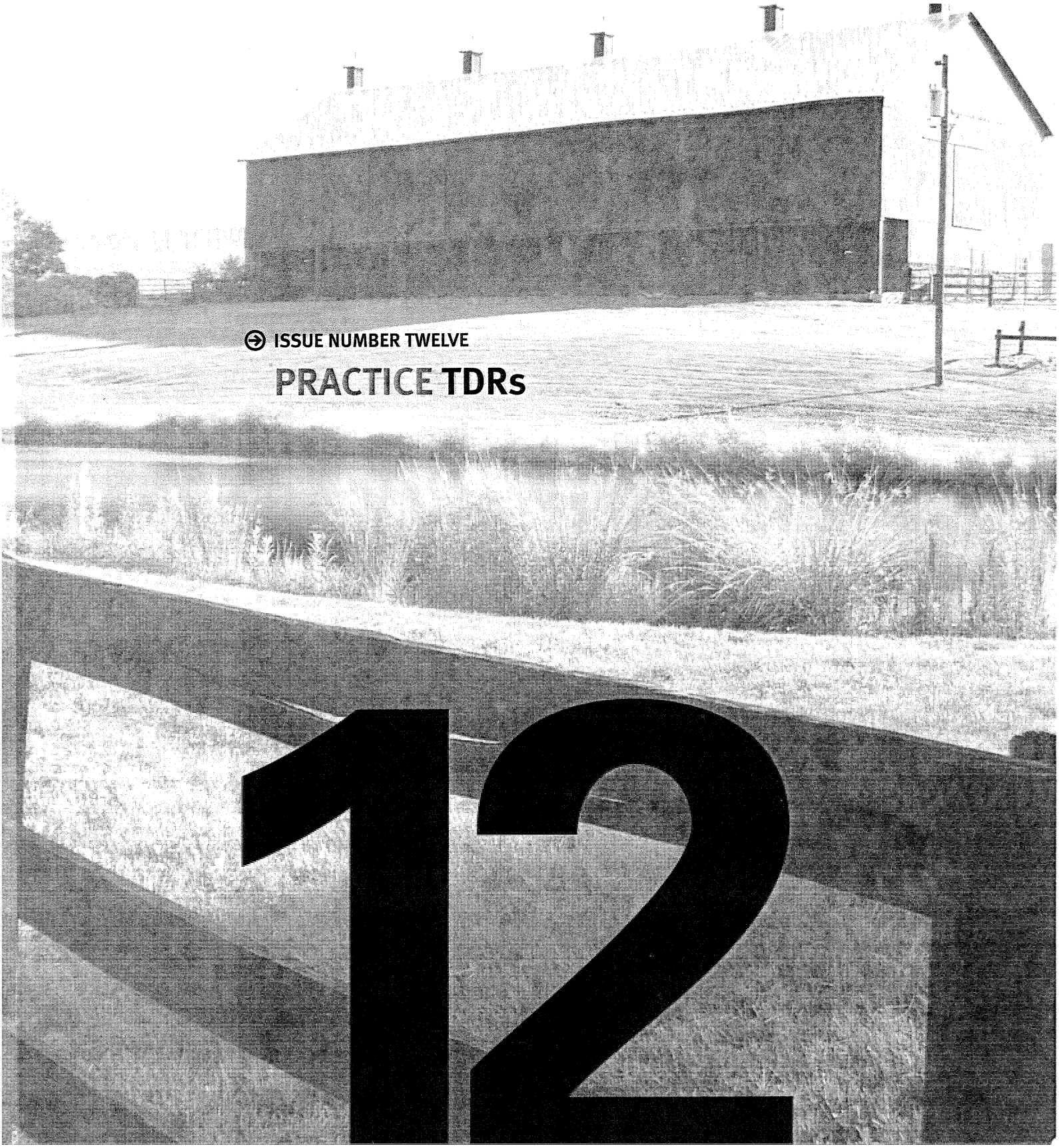
- American Planning Association Zoning Practice: Practice TDRs

- American Farmland Trust - Transfer of Development Rights Fact Sheet

- Town of Glenville NY Draft TDR Ordinance

ZONINGPRACTICE December 2007

AMERICAN PLANNING ASSOCIATION



ISSUE NUMBER TWELVE

# PRACTICE TDRs

# Zoning for Successful Transferable Development Rights Programs

*By Tom Daniels*

Good development design and the protection of large areas of farmland, open space, and natural areas are two primary goals of smart growth.

Yet achieving these goals in a common process is often elusive. Since the late 1960s, the transfer of development rights has held considerable promise for preserving rural landscapes by moving development potential from the countryside into designated growth areas. To date, thousands of TDR transactions have occurred, but not as many as some proponents might have hoped.

A major obstacle to the creation of effective TDR programs has been local zoning. A local government's by-right zoning may allow ample development opportunities for developers who choose not to acquire TDRs, and local elected officials may choose to grant greater densities through bonus zoning without requiring that developers acquire and apply TDRs. Also, developers may be wary of encountering bureaucratic and procedural delays if they propose a development that uses TDRs, compared to a development that simply follows by-right zoning. Within designated growth areas, local residents may oppose increased densities that come with developments that use TDRs, for fear that the increased density will not be well designed, will result in more congestion, and will reduce property values. In areas designated for resource protection, rural landowners may resist suggested downzonings that may be used in conjunction with TDRs because they perceive a loss in property values.

There are several ways local governments can use the zoning ordinance to create effective TDR programs. But first it is important to understand how the TDR process works.

**HOW THE TRANSFER OF DEVELOPMENT RIGHTS WORKS**

| Sending Area (zoned agrigulture) | Receiving Area (R-2, medium density residential) |
|---|---|
| ***Farm Parcel A*** sends TDRs Farm is preserved through a conservation easement. | ***Housing Development Parcel B*** purchased TDRs allow more housing units. |

Developer buys TDRs on Farm Parcel A and transfers them to Parcel B. Developer can then build more housing units than zoning ordinance would normally allow. Parcel A can no longer be developed, except for farming.

*Source:* Adapted from Daniels and Bowers, 1997, p. 173.

## WHAT IS A TRANSFERABLE DEVELOPMENT RIGHT AND HOW DOES IT WORK?

A transferable development right is the right to create a residential building lot or to construct a dwelling unit or build additional square footage onto a commercial, industrial, or residential structure. A TDR is not one of the rights that come with property ownership. A TDR must be created through state enabling legislation and a local ordinance to allow a landowner to transfer a development right to another parcel owned by someone else. A local government creates a market in development rights between landowners in designated preservation areas (sellers) and developers (buyers) who can then use the TDRs to build at a higher density in the designated growth areas.

A local government creates a TDR program through four main steps. First, the local government identifies one or more sending areas from which TDR will be moved and gives landowners in the sending areas a certain number of TDRs. For instance, Montgomery County, Maryland, gave landowners in its sending area one TDR for every five acres owned. So a landowner who had 100 acres received 20 TDRs. This allocation formula, together with the size of the sending areas, determines the total potential number of TDRs available.

Next, the local government must identify one or more receiving areas that could accommodate higher density development than currently exists in the receiving area. Then the local government determines how many TDRs a developer must acquire from one or more landowners in the sending areas in order to receive approval for increased density. For instance, Montgomery County allowed one additional dwelling unit on an acre for each TDR a developer purchased and applied to a residential development project in the receiving area. The local government must set a maximum for the total potential number of TDRs that can be applied in the receiving areas, thus establishing the maximum amount of development those receiving areas can accommodate. Finally, the local government must set up a process for:

- confirming the use of TDRs by a developer;
- placing a conservation easement on lands in the sending area from which TDRs have been sold; and
- keeping track of how many TDRs landowners in the sending areas still have.

A developer will need to execute a deed of transferable development rights to show

## ASK THE AUTHOR JOIN US ONLINE!

*Go online from January 14 to 25 to participate in our "Ask the Author" forum, an interactive feature of Zoning Practice. Thomas L. Daniels will be available to answer questions about this article. Go to the APA website at www.planning.org and follow the links to the Ask the Author section. From there, just submit your questions about the article using the e-mail link. The author will reply, and Zoning Practice will post the answers cumulatively on the website for the benefit of all subscribers. This feature will be available for selected issues of Zoning Practice at announced times. After each online discussion is closed, the answers will be saved in an online archive available through the APA Zoning Practice web pages.*

**About the Author**

Tom Daniels is a professor in the Department of City and Regional Planning at the University of Pennsylvania, where he teaches courses on land-use planning, growth management, and land preservation. He is the coauthor of The *Environmental Planning Handbook* (APA Planners Press, 2003) and *The Small Town Planning Handbook* (APA Planners Press, 1995).

that TDRs have been severed and purchased from a property in the sending area. A conservation easement is a legally binding contract between the landowner and the local government, stating the restrictions (for example, agricultural, forestry, or open space land uses) that apply to the property. The property is still privately owned, and there is usually no right of public access.

In sum, a local government creates a market for TDRs by assigning a certain number of TDRs to landowners in sending (or preservation) areas and requiring developers who want to build at higher than by-right densities in receiving (or growth) areas to purchase TDRs from landowners in the sending areas. The price of the TDRs is established through negotiations between a willing buyer and a willing seller, like an ordinary real estate transaction. A key feature of successful TDR programs is continued demand for TDRs from developers who see potential profits from purchasing TDRs and using them to develop projects in the receiving areas. One reason that TDR programs have not worked well in rural areas is that there is often insufficient development activity and little demand from developers for TDRs.

An overall rule of thumb is that at the start of a TDR program there should be twice as many receiving sites for TDRs as there are TDRs to send from the sending areas. This will help ensure that TDRs have a value. Another reason that TDR programs have a poor track record in rural areas is that there are usually many more TDRs in the sending areas than there are places to use them in the receiving area. This oversupply of TDRs drives down prices and discourages landowners in the sending areas from selling TDRs.

### PUTTING THE TDR PROGRAM IN THE ZONING ORDINANCE

The local government can create a separate TDR ordinance, but a better approach is to include it as part of the local zoning code. Because a comprehensive plan sets the legal foundation for the zoning ordinance or TDR program, a local government should first amend its comprehensive plan to reflect the identified sending and receiving areas.

Although developers may prefer by-right zoning for the use of TDRs, the conditional use process allows the governing body to impose conditions for approval to address development impacts that may affect the community. The conditional use process also allows the local government greater discretion than simply subjecting a TDR receiving area development to subdivision and land development standards. In short, the zoning ordinance can require a conditional use process for new developments that use TDRs in the receiving areas, and describe the process for approval of a development that uses TDRs. For instance, once a conditional use permit has been granted, a local government could waive the preliminary land development plan and go straight to the final plan stage. This in effect grants the developer vested rights in the development, and final approval is mainly a formality.

A local government creates a market for TDRs by assigning a certain number of TDRs to landowners in sending areas and requiring developers in receiving areas to purchase TDRs from landowners in the sending areas.

To add a TDR program to the zoning ordinance involves several changes. First, new definitions must be added to reflect the language of the TDR program, such as definitions for transferable development rights, sending area, receiving area, deed of transferable development rights, and deed of easement. Next, the TDR option must be added to the list of permitted uses in the zoning districts that are the designated sending areas, along with the minimum size parcel eligible for TDRs, the TDR allocation method, and the procedures for legally severing TDR and using a conservation easement to permanently preserve the sending area property. Then the TDR option must be added to the list of permitted uses, special exceptions, or conditional uses within the zoning districts that comprise the receiving areas.

The zoning ordinance should include:

a. a purpose clause, explaining the reason for establishing the TDR ordinance;

b. the authorization for the TDR ordinance in the state enabling legislation, and a basic explanation of the TDR program;

c. the procedure for sale of TDRs from a sending area, including a definition of the send-

Developers need to recognize that their use of TDRs will result in better financial returns than developments that meet only by-right zoning.

ing area, how TDRs are calculated, procedures for severing TDRs from land in the sending area, and the conservation easement that is applied to land from which TDRs have been severed;

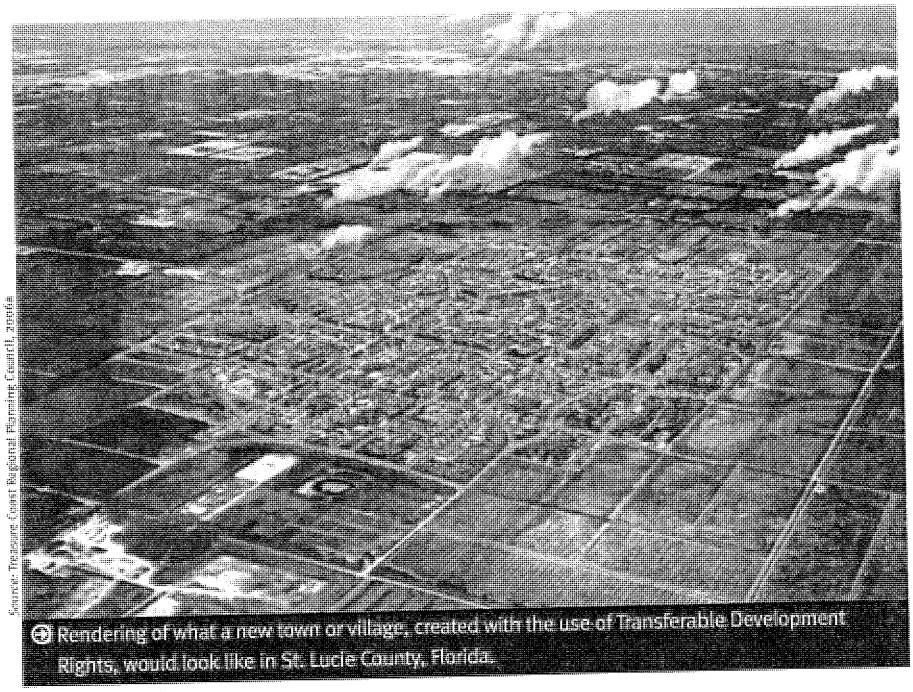
d. how TDRs can be used in a receiving area, including a definition of the receiving area, how the use of TDRs is calculated, design requirements and changes to base zoning standards (area and bulk standards), and the conditional use process and the land development and subdivision plan process for approval of a development that uses TDRs; and

e. definition in the ordinance spelling out whether the TDR program is mandatory or voluntary. Most are voluntary, allowing a landowner the choice of selling off a certain number of building lots and selling a certain number of TDRs. (Under a mandatory program, such as at Lake Tahoe, Nevada, a landowner may not be allowed to build on the property, but can still sell TDRs.)

## HOW CAN THE TDR PROGRAM AVOID ZONING OBSTACLES?

A TDR program blends financial incentives with planning and zoning. For a TDR program to be effective, developers need to recognize that their use of TDRs will result in better financial returns than developments that meet only by-right zoning. Local officials are often eager to encourage development in designated growth areas and may grant developers bonus density in return for certain design features or infrastructure. For TDR programs to work, local officials cannot "give away" density in designated receiving areas. Any increase in density through a rezoning in a receiving area must require the developer to acquire and apply development rights. This requirement can be spelled out in the zoning ordinance.

Local governments may find that there is some trial and error involved in setting by-right zoning in the sending and receiving areas and as bonus densities in the receiving areas. Don't be afraid to make changes. Over time the TDR program may require occasional adjustments to the zoning ordinance to respond to changing conditions in the real estate market, changes in the comprehensive plan, or density or land-use provisions that did not produce the intended outcomes.



Source: Treasure Coast Regional Planning Council, 2008

Rendering of what a new town or village, created with the use of Transferable Development Rights, would look like in St. Lucie County, Florida.

Calvert County, Maryland, began the nation's first county-level TDR program to preserve open space in 1978. Part of the program has featured a single-zone TDR in which the sending area and the receiving area are the same. Calvert County started with an existing zoning density standard that allowed one house per five acres and allowed one house per 2.5 acres in its Rural Community districts with the purchase of TDRs. In 1999 the county attempted to slow development by downzoning its Rural Community districts to one house per 10 acres, but allowed up to one house per two acres with the purchase of TDRs. Then, in 2003, in the face of continued growth pressures, the county again downzoned the Rural Community districts to one house per 20 acres, allowing only one house per four acres with the purchase of TDRs (see McConnell *et al*, 2007).

A TDR program can incorporate bonus zoning through the use of multipliers. Multipliers are bonus TDRs that reward developers for building desirable developments in the receiving areas. For example, St. Lucie County, Florida, gave one TDR per acre to landowners in its sending area because the underlying zoning is one dwelling unit per acre. A developer who buys a TDR can obtain a TDR bonus of 1.5 additional TDRs for each TDR purchased by building workforce housing (based on 80 to 120 percent of the median area household income), building higher education facilities, building a research and development park, or attracting a "targeted industry," such as an electronics manufacturer.

Developers want as much certainty as possible in the development process. Thus, expedited rezoning and subdivision and land development reviews are important to encourage developers to use TDRs. West Lampeter Township in Lancaster County, Pennsylvania, requires a developer to apply for a conditional use permit when proposing a development that uses TDRs. The conditional use process means that the elected officials will have to vote on the project. Once the project receives conditional use approval,

the township will waive the preliminary plan review and go straight to final plan review. This waiver in effect grants a developer vested rights in the project.

One way to keep property owners in receiving areas mollified is to use a form-based code. Ultimately, a form-based code is easier to do if the receiving area is a greenfield site. St. Lucie County has incorporated form-based code elements into its land development regulations, which relate to the TDR ordinance. The ordinance won an Award of Excellence from the Florida Chapter of the American Planning Association in 2006 and an award from the Form-Based Codes Institute in 2007.

The county's land development regulations include, for example:

- The development shall incorporate principles of Traditional Neighborhood Design, including a mix of land uses, a mix of building types, a mix of housing for different income levels, a pedestrian-friendly block and street network, and a significant amount of public open space.
- Neighborhood size shall be scaled upon a five-minute walk radius (approximately 0.25 mile) or a total area of 125 acres, as measured from the Neighborhood Center.
- Each neighborhood shall have well-defined edges, and range from 80 to 150 acres in size. The shape or form of the neighborhood is flexible, provided that the 0.25-mile radius benchmark for scale is maintained.
- A neighborhood shall provide a variety of dwelling unit types and prices that support a broad range of family sizes and incomes.
- A neighborhood shall contain at least one civic building, such as a school, social center, fire or police station.
- A neighborhood shall contain at least one local store.
- Blocks shall be scaled to accommodate a variety of building types.
- A neighborhood shall have an interconnected network of public streets designed to balance the needs of all users, including pedestrians, bicyclists, and motor vehicle operators (Treasure Coast Regional Planning Council, 2006b).

Warwick Township in Lancaster County, Pennsylvania, created a dual-zone TDR program to preserve farmland in the sending areas but tied it to the expansion of commercial and industrial space in its receiving area. The increased development in the receiving area thus expands the local property tax base without adding school-age children. This produces a net revenue gain for the township. The Campus Industrial Zone receiving area is 167 acres. The township zoning allows only 10 percent maximum lot coverage by-right. For each TDR that a landowner/developer acquires, another 4,000 square feet of lot coverage is allowed, up to a maximum of 70 percent coverage. The township has preserved nearly 1,000 acres of farmland through its TDR program, which got a major boost when a regional hospital decided to locate in the Campus Industrial Zone and needed to purchase more than 100 TDRs.

Downzoning in sending areas has been a major obstacle to creating effective TDR programs. One way that local governments have attempted to minimize the effects of downzoning is to create single zones that serve as both the sending and receiving areas. In a single-zone TDR, the transfer of development rights rearranges development, often to cluster the development and maintain some open space. This is primarily a rural residential strategy. The by-right zoning in a single-zone TDR program generally uses a density standard, so that one house lot may be developed for every certain number of acres. For instance, if the density standard is one house per five acres and a landowner has 20 acres, then the landowner could create four building lots by right. The landowner could purchase a TDR from another property and create an additional lot, for a total of five lots on the 20 acres, but some of the open land, such as 50 percent or 10 acres, would be placed under a conservation easement restricting future development. Farmland protection zoning of one house per 20 acres (or more) is rarely used in a single-zone TDR.

The single-zone TDR is not a recommended method for several reasons. First, it encourages more people to move out to the countryside and live in automobile-dependent developments. In other words, this new development adds to sprawl, though perhaps in a more attractive setting. Second, the additional development is likely to lead to increased conflicts with nearby farm operations. And third, it encourages greater use of on-site septic systems, which contribute to groundwater pollution. In Maryland, for example, there are 14 county TDR programs, of

## THE LEGALITY OF TDRs

**The concept of transferable development rights came into practice in 1968 when New York City adopted a TDR program in the form of transferable air rights to protect historic landmarks (Preutz 1997). In 1978, the U.S. Supreme Court upheld New York City's transferable air rights program and found that the owners of Grand Central Station could earn a reasonable profit by transferring development potential above the station to another site in the city. That is, the owners of Grand Central could build higher than the zoning height limit would normally allow on another site (see *Penn Central Transp. v. New York City*, 438 U.S. 104 (1978)).**

**TDRs have drawn the interest of elected local officials because of the potential to avoid the Fifth Amendment takings issue that has plagued proposals to downzone property as a way to manage growth. Thus far, the courts have not given definitive direction on the legality of using TDRs as just compensation. In *Suitum v. Tahoe Regional Planning Agency*, 96 U.S. 243 (1997), the U.S. Supreme Court ruled that the plaintiff, Mrs. Suitum, did not have a "ripe" situation because she had not tried to sell her TDRs and had not determined what they were worth.**

**In *Williamstown County Regional Planning Commission v. Hamilton Bank of Johnson City*, 473 U.S. 172 (1985), the Supreme Court ruled that "if a State provides an adequate procedure for seeking just compensation, the property owner cannot claim a violation of the Just Compensation Clause [of the Fifth Amendment] until it has used the procedure and been denied just compensation." In short, the role of TDRs as "just compensation" has not been fully resolved by the courts.**

One way that local governments have attempted to minimize the effects of downzoning is to create single zones that serve as both the sending and receiving areas.

which only Montgomery County uses a dual zone that clearly separates sending and receiving areas. Montgomery County downzoned its rural area from one house per five acres to one per 25 and then gave each landowner in the sending area one TDR per five acres.

St. Lucie County adopted a single-zone TDR program, but requires that a landowner or two or more landowners have a minimum of 500 acres and develop their land in a new urbanist town or village. In return, the county agrees to provide central sewer and water service, even to new towns or villages outside the county's urban service boundary.

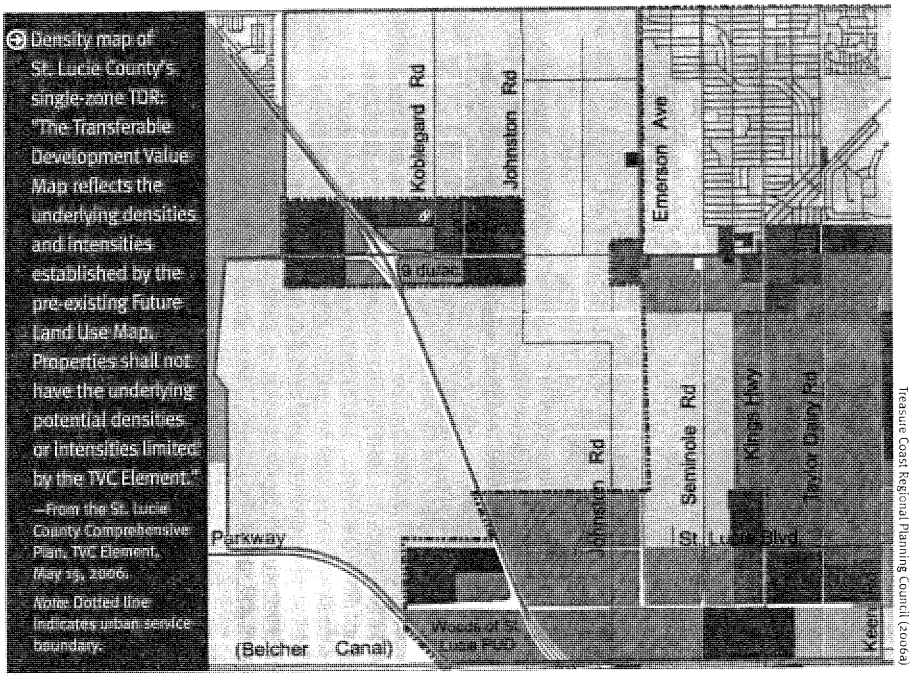
Take the case of an owner of a 500-acre parcel outside the USB who proposes to build a new village development:

- The landowner must set aside at least 75 percent of the site as open space.
- The minimum density is five dwelling units per acre, so the 125 acres of development land must support at least 625 dwelling units, of which 50 units (eight percent) must be Workforce Housing units.
- Transferable development rights moved from the open space for use as Workforce Housing receive a multiplier of 2.5. The remaining land set aside for open space receives a multiplier of 1.25.
- The landowner can receive additional TDR multipliers (bonuses) by attracting a target industry, institution of higher learning, or a research facility.

## TDRS: THE NEXT GENERATION

The next generation of TDRs will feature the transfer of development rights across political jurisdictions and landscape-scale preservation. TDR programs may provide a way to encourage greater regional cooperation, especially in the Northeast, where townships control planning and zoning.

In 2000, the State of Pennsylvania authorized the use of TDRs across municipal boundaries if the municipalities have a written intergovernmental agreement or have adopted a multimunicipal plan. Even though dozens of multimunicipal plans have been completed, to date, no TDRs have moved from one municipality to another. An obvious problem: Why would one municipality want to provide space for another's development?




Density map of St. Lucie County's single-zone TDR: "The Transferable Development Value Map reflects the underlying densities and intensities established by the pre-existing Future Land Use Map. Properties shall not have the underlying potential densities or intensities limited by the TVC Element."
—From the St. Lucie County Comprehensive Plan, TVC Element, May 15, 2006.
Note: Dotted line indicates urban service boundary.

Treasure Coast Regional Planning Council (2006)

In 2004, the State of New Jersey passed legislation allowing the transfer of development rights not only across municipal boundaries but from a sending area anywhere in the state to a receiving area anywhere in the state. New Jersey is proposing to use transfer of development rights as a key tool in preserving the New Jersey Highlands in the northeast corner of the state.

King County, Washington, has preserved more than 92,000 acres since 1999, mainly through a single transaction that enabled it to put many TDRs in its bank. In 2004, the county paid $22 million for TDRs from a 90,000-acre tract owned by Hancock Timber Resource Group. Development rights can be transferred to inside Seattle's urban growth boundary to allow taller buildings in downtown Seattle, or for a 50 percent increase in the number of homes allowed in some unincorporated parts of the county. For instance, in 2006, R.C. Hedreen Co. paid $930,000 to King County's TDR Bank for 31 rural development rights. In exchange, the company was allowed to add 62,000 square feet of residential space and increase the height of a building it owned above 300 feet.

## CONCLUSION

The transfer of development rights technique is nearly 40 years old. Local governments have used TDRs to protect historic sites, wetlands, and scenic areas in addition to farmland and forestland. A TDR program can be addressed in the local comprehensive plan and added to the local zoning ordinance. The zoning in both the sending areas and receiving areas should match the outcomes the local government is trying to achieve. And the procedures for operating the TDR program should be spelled out in the zoning ordinance.

A common mistake local governments make is giving away density for free in the rezoning process rather than requiring a developer to acquire TDRs to help preserve land in the community and thus maintain a balance between open space and development. Also, most TDR programs place a heavy emphasis on preserving open space and not enough attention to the appearance, density,

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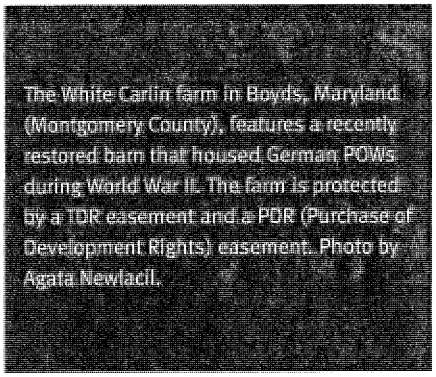

The White Carlin farm in Boyds, Maryland (Montgomery County), features a recently restored barn that housed German POWs during World War II. The farm is protected by a TDR easement and a PDR (Purchase of Development Rights) easement. Photo by Agata Newlacil.

and function of development that can be built in the receiving areas.

Intergovernmental cooperation, landscape-scale preservation, and form-based zoning codes for major developments will be needed to make transfer of development rights programs effective over the next few decades. Between now and 2050, the United States is projected to add more than 100 million people. TDRs can be a helpful tool to accommodate growth and preserve important natural and cultural resources, but getting the zoning and comprehensive plan right are important first steps.


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FARMLAND INFORMATION CENTER

# FACT SHEET

## TRANSFER OF DEVELOPMENT RIGHTS

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### DESCRIPTION

Transfer of development rights (TDR) programs enable the transfer of development potential from one parcel of land to another. TDR programs are typically established by local zoning ordinances. In the context of farmland protection, TDR is often used to shift development from agricultural land to designated growth zones located closer to municipal services. TDR is also known as transfer of development credits (TDC) and transferable development units (TDU).

TDR programs are based on the concept that landowners have a bundle of different property rights, including the right to use the land; lease, sell and bequeath it; borrow money using it as security; construct buildings on it; and mine it; subject to reasonable local land use regulations. When a landowner sells property, generally all the rights transfer to the buyer. TDR programs allow landowners to separate from their other property rights, and to sell, the right to develop land.

The parcel of land where the development rights originate is called the "sending" parcel. When the rights are transferred from the sending parcel, the land is typically protected with a permanent conservation easement. A few localities record transfer documents to track the number of rights transferred and to notify buyers and local officials of limited future development potential. This approach, however, offers less protection than a conservation easement because changes in local land use regulations—even if such changes require a comprehensive plan update—could alter the rules for determining the remaining development potential on sites in sending areas.

The parcel of land to which the rights are transferred is called the "receiving" parcel. Transferred rights generally allow the purchaser of the rights to build at a higher density than ordinarily permitted by the base zoning on the receiving parcel.

TDR is most suitable in places where large blocks of land remain in agricultural use. In communities with a fragmented agricultural land base, it may be difficult to find viable sending areas. Communities also must be able to identify receiving areas that can accommodate the development potential to be transferred. Well-planned receiving areas have the infrastructure needed to absorb additional density. They also respond to residents' concerns about increased residential density while taking advantage of market conditions.

Local officials in Chesterfield Township, New Jersey, for example, designed a mixed-use community, Old York Village, *outside* of previously developed areas to accommodate transferred development potential. Other communities have authorized, or are considering, alternate applications of development potential such as increases in non-residential floor area, impervious surface area, decreases in parking requirements and even *decreases* in residential density.

The most effective TDR programs help facilitate transactions between private landowners and developers. A few programs allow developers to make payments in lieu of actual transfers. The locality then buys conservation easements on land in the sending area, sometimes in partnership with established purchase of agricultural conservation easement (PACE) programs and/or local land trusts. Other programs maintain public lists of TDR sellers and buyers. Some buy and retire rights to stimulate the market and/or reduce overall building potential. Lastly, at least a dozen communities have established TDR banks that buy development rights with public funds and sell the rights to developers. Some banks finance loans using the rights as collateral.

Some states have enacted legislation explicitly authorizing local governments to create TDR programs. For example in 2004, the New Jersey Legislature enacted the State Transfer of Development Rights Act. The State TDR Act authorizes municipalities to develop and participate in intra-municipal and inter-municipal programs. This law also established a formal planning process to enact a TDR ordinance and authorized the State TDR Bank Board to provide planning grants to communities.

TDR programs are distinct from PACE programs because TDR programs harness private dollars to achieve permanent land protection. TDR programs also differ from PACE programs in that they permit development potential to be transferred to a more appropriate location while PACE programs permanently retire development potential.

The FARMLAND INFORMATION CENTER (FIC) is a clearinghouse for information about farmland protection and stewardship.
The FIC is a public/private partnership between the USDA Natural Resources Conservation Service and American Farmland Trust.

# TRANSFER OF DEVELOPMENT RIGHTS

## HISTORY

TDR is used predominantly by counties, towns and townships. The 1981 National Agricultural Lands Study reported that 12 localities had enacted TDR programs to protect farmland and open space, but very few of these programs had been implemented. In the 1980s and 1990s, many local governments adopted TDR ordinances. An American Farmland Trust (AFT) Farmland Information Center (FIC) survey in 2000 identified 50 jurisdictions with TDR ordinances on the books.

In 2007, the FIC identified 99 TDR programs that protect agricultural land. We collected information from 64 programs. Of these, 38 had protected land or received payments in lieu of transfers. This activity is summarized in the accompanying table. Seventeen programs had not protected any agricultural land to date. Nine programs had been discontinued.

As of January 2008, 12 programs had each protected more than 1,000 acres of agricultural land, compared to eight programs during our previous survey. Since 1980, Montgomery County, Maryland, has protected 51,489 acres using TDR, or 40 percent of the agricultural land protected by the programs that responded to our survey (129,810 acres). The county's share of protected agricultural land via TDR dropped significantly, down from 60 percent of the national total at the time of the 2000 survey. Two programs that permit payments in lieu of transfers have received a combined total of more than $1.4 million for agricultural land protection.

## FUNCTIONS & PURPOSES

TDR programs can be designed to accomplish multiple goals including farmland protection, conservation of environmentally sensitive areas and preservation of historic landmarks. In the context of farmland protection, TDR programs prevent non-agricultural development of farmland, help keep farmland affordable and provide farmland owners with liquid capital that can be used to enhance farm viability.

TDR programs also offer a potential solution to the political and legal problems that many communities face when they try to restrict development of farmland. Landowners may oppose agricultural protection zoning (APZ) and other land use regulations because of their concern that such controls will reduce the value of their land. When more restrictive land use regulations are enacted in conjunction with a TDR program, communities can retain equity for landowners. For example, development rights for transfer may be allocated based on the "underlying" or prior zoning. Selling development rights enables landowners to recapture the equity available under the previous zoning.

When downzoning is combined with a TDR program, however, landowners can retain their equity by selling development rights.

## ISSUES TO ADDRESS

In developing a TDR program, planners must address a variety of technical issues. These issues include:

- Which agricultural areas should be protected?
- What type of transfers should be permitted?
- How should development rights be allocated?
- Where should development potential be transferred, how should rights be applied, and at what densities?
- Should the zoning in the sending area be changed to create more of an incentive for landowners to sell development rights?
- Should the zoning in the receiving area be changed to create more of an incentive for developers to buy development rights?
- Should the local government buy and sell development rights through a TDR bank?

One of the most difficult aspects of implementing TDR is developing the right mix of incentives. Farmers must have incentives to sell development rights instead of building lots. Developers must benefit from buying development rights instead of building according to existing standards. Thus, local governments must predict the likely supply of, and demand for, development rights in the real estate market, which determines the price. TDR programs are sometimes created in conjunction with

APZ: New construction is restricted in the agricultural zone, and farmers are compensated with the opportunity to sell development rights.

Because the issues are so complex, TDR programs are usually the result of a comprehensive planning process. Comprehensive planning helps a community envision its future and generally involves extensive public participation. The process of developing a community vision may help build understanding of TDR and support for farmland protection.

### BENEFITS OF TDR

- Most TDR programs protect farmland permanently, while keeping it in private ownership.
- Participation in TDR programs is voluntary—landowners are never required to sell their development rights.
- TDR can promote orderly growth by concentrating development in areas with adequate public services.
- TDR programs allow landowners in agricultural protection zones to retain their equity without developing their land.
- TDR programs are market-driven—private parties pay to protect farmland, and more land is protected when development pressure is high.
- TDR programs can accomplish multiple goals, including farmland protection, protection of environmentally sensitive areas, the development of compact urban areas, the promotion of downtown commercial growth and the preservation of historic landmarks.

### DRAWBACKS

- TDR programs are technically complicated and require a significant investment of time and staff resources to implement.
- TDR is an unfamiliar concept. A lengthy and extensive public education campaign is generally required to explain TDR to citizens.
- The pace of transactions depends on the private market for development rights. If the real estate market is depressed, few rights will be sold, and little land will be protected.

# TRANSFER OF DEVELOPMENT RIGHTS

For additional information on farmland protection and stewardship, contact the Farmland Information Center. The FIC offers a staffed answer service, online library, program monitoring, fact sheets and other educational materials.

www.farmlandinfo.org

(800) 370-4879

# LOCAL GOVERNMENTS WITH TDR PROGRAMS FOR FARMLAND, 2008

| Locality | Year of Inception | Rights Transferred | Agricultural Acres Protected | How Rights Are Used | Notes |
|---|---|---|---|---|---|
| **California** | | | | | |
| City of Livermore | 2003 | 56 payments | $1,200,000 | Increase residential density | Allows payments in lieu of transfers |
| Marin County | 1981 | 11 | 660 | Increase residential density | Multi-purpose program |
| **Colorado** | | | | | |
| Larimer County | 1994 | 721 | 503 | Increase residential density | Multi-purpose program |
| Mesa County | 2003 | 10 | 50 | Increase residential density | Multi-purpose program |
| **Delaware** | | | | | |
| Kent County | 2004 | 157 | 157 | Increase residential density<br>Change permitted land use | Multi-purpose program |
| New Castle County | 1998 | 93 | 300 | Increase residential density | Multi-purpose program |
| **Georgia** | | | | | |
| City of Chattahoochee Hill Country | 2003 | 21 | 21 | Increase residential density<br>Increase commercial square footage | Multi-purpose program<br>Chattahoochee Hill Conservancy operates TDR bank |
| **Idaho** | | | | | |
| Payette County | 1982 | 154 | 4,000 | Permit development on substandard lots | Multi-purpose program |
| **Maryland** | | | | | |
| Calvert County | 1978 | UNK | 13,260 | Increase residential density | Multi-purpose program<br>Purchases and retires rights |
| Caroline County | 2006 | 136 | 1,500 | Increase residential density | Multi-purpose program<br>Maintains registry of interested buyers/sellers |
| Charles County | 1992 | 1,110 | 3,330 | Increase residential density | Multi-purpose program |
| Howard County | 1993 | NR | 2,045 | Increase residential density | Multi-purpose program<br>Purchases and retires rights |
| Montgomery County | 1987 | 9,630 | 51,489 | Increase residential density | Operated bank but discontinued in 1990 |
| Queen Anne's County | 1987 | UNK | 8,032 | Increase residential density<br>Increase commercial square footage<br>Increase impervious surface area | Multipurpose program<br>Non-Contiguous Development activity included in county figures |
| St. Mary's County | 1990 | 155 | 465 | Increase residential density | |
| **Massachusetts** | | | | | |
| Town of Groton | 1980 | 25 | 100 | Increase residential density<br>Increase rate of development | Multi-purpose program |
| Town of Hadley | 2000 | 3 payments | $206,772 | Increase commercial or industrial floor area<br>Reduce parking requirements | Allows payments in lieu of transfers |
| Town of Plymouth | 2004 | 13 | 118 | Increase residential density | Multi-purpose program |
| **Minnesota** | | | | | |
| Blue Earth County | 1996 | 150 | 6,000 | Increase residential density | Multi-purpose program |
| Chisago County | 2001 | 11 | 290 | Increase residential density | Multi-purpose program |
| Rice County | 2004 | 102 | 3,252 | Increase residential density | Multi-purpose program |
| **Nevada** | | | | | |
| Churchill County | 2006 | 200 | 688 | Increase residential density | Multi-purpose program<br>Operates TDR bank |
| Douglas County | 1997 | 3,518 | 3,727 | Increase residential density<br>Increase commercial square footage | |
| **New Jersey** | | | | | |
| Chesterfield Twp., Burlington Co. | 1998 | 652 | 2,231 | Increase residential density<br>Increase commercial square footage | Burlington County operates bank used by township |
| New Jersey Pinelands | 1981 | 4,000 | 25,000 | Increase residential density<br>Permit development on substandard lots | Multi-purpose program<br>Operates TDR bank<br>Maintains registry of interested buyers/sellers |

# LOCAL GOVERNMENTS WITH TDR PROGRAMS FOR FARMLAND, 2008

| Locality | Year of Inception | Rights Transferred | Agricultural Acres Protected | How Rights Are Used | Notes |
|---|---|---|---|---|---|
| **New York** | | | | | |
| Central Pine Barrens | 1995 | 48 | 48 | Increase residential density<br>Increase commercial or industrial density/intensity<br>All permitted increases in density or intensity relate to, and are capped by, increases in sewage flow | Multi-purpose program<br>Commission operates bank<br>Maintains registry of interested buyers/sellers |
| Town of Perinton | 1993 | 68 | 174 | Increase residential density | Multi-purpose program<br>Purchases and retires rights |
| **Pennsylvania** | | | | | |
| Honey Brook Twp., Chester Co. | 2003 | 18 | 50 | Increase residential density<br>Increase non residential square footage<br>Increase impervious surface area | |
| Manheim Twp., Lancaster Co. | 1991 | 422 | 476 | Increase residential density<br>Increase commercial square footage<br>Increase impervious surface area | Operates TDR bank<br>Purchases and retires rights |
| Shrewsbury Twp., York Co. | 1976 | 30 | 60 | Increase residential density<br>Allowance of certain non-residential uses | Operates TDR bank |
| South Middleton Twp., Cumberland Co. | 1999 | 8 | 135 | Increase residential density | Multi-purpose program |
| Warrington Twp., Bucks Co. | 1985 | 187 | UNK | Increase residential density<br>Increase commercial square footage<br>Increase impervious surface area | Multi-purpose program |
| Warwick Twp., Lancaster Co. | 1993 | 447 | 897 | Increase commercial and light industrial square footage | Operates TDR bank<br>Partners with Lancaster Farmland Trust |
| West Vincent Twp., Chester Co. | 1998 | 162 | NR | Increase residential density<br>Increase commercial square footage | Multi-purpose program |
| **Vermont** | | | | | |
| South Burlington | 1992 | 414 | 497 | Increase residential density | Operates TDR bank |
| **Washington** | | | | | |
| King County | 2000 | 8 | 80 | Increase residential density | Multi-purpose program<br>Operates TDR bank |
| Snohomish County | 2004 | 49 | 70 | Increase residential density<br>Increase commercial square footage | Operates TDR bank |
| **Wisconsin** | | | | | |
| Cottage Grove Twp., Dane Co. | 2000 | 3 | 105 | Increase residential density | |
| **TOTALS** | | **22,733** | **129,810** | | |

Most of the programs listed in this table protect multiple resources including agricultural land. For the purposes of this table, we only included transfers from agricultural land and acres of agricultural land protected by each program.

Two programs included in this table—Livermore, Calif., and Hadley, Mass.—allow payments in lieu of transfers. For these programs, the figure in "Rights Transferred" column represents the number of payments received to date and the figure in the "Agricultural Acres Protected" column equals the funds received to date. These numbers are not included in the totals at the bottom.

UNK means the program manager did not know. NR indicates that the program manager did not respond.

Surveys were sent to programs identified by staff and profiled in publications and reports about TDR programs, including *Transfer of Development Rights in U.S. Communities:Evaluating Program Design, Implementation, and Outcomes* by Margaret Wells and Virginia McConnell and *Beyond Takings and Givings: Saving Natural Areas, Farmland, and Historic Landmarks with Transfer of Development Rights and Density Transfer Charges* by Rick Pruetz.

Figures for St. Mary's County, Md., are from the Wells/McConnell report. Figures for Queen Anne's County, Md., are from a presentation posted on the county's Department of Land Use, Growth Management and Environment Web site.

(Draft Glenville ordinance, June 2008)

# ARTICLE XXII
## Transfer of Development Rights

### §270-161. Purpose.

The primary purpose of establishing a transfer of development rights (TDR) program is to permanently preserve important farmland, forest land, sensitive natural areas, groundwater quality and rural community character that would be lost in the Town of Glenville if the land were developed. In addition, this Article is intended to protect property rights by allowing landowners whose land is intended for preservation to transfer their right to develop to other areas deemed appropriate for higher density development or other development incentives based on the availability of community facilities and infrastructure. Finally, this Article is intended to permit the establishment and administration of an intermunicipal TDR program between the Town and the Village of Scotia.

### §270-162. Authority.

This ordinance is enacted pursuant to the authority granted by §261-a of New York Town Law for the creation of a transfer of development rights program, under the terms of which development rights are acknowledged to be severable and separately conveyable from a "sending area" to a "receiving area." This ordinance is further enacted pursuant to the authority granted by §284 of New York Town Law on intermunicipal cooperation that permits the development and implementation of intermunicipal planning and regulatory programs. The Town is therefore authorized to enter into an intermunicipal agreement with the Village of Scotia.

### §270-163. Basic concept.

A. The provisions of this Article allow landowners (here "transferor") in areas of the Town proposed for conservation, called "sending areas," to voluntarily sell or convey the right to develop their land to other entities (here "transferee") for use in areas of the Town or Village proposed for additional development, called "receiving areas." Each transferor shall have the right to sever all or a portion of the rights to develop from a property in a sending area and to sell, trade, donate or barter all or a portion of those rights to a transferee consistent with the purposes of §270-161.

B. The transferee may retire the development rights, resell them, hold them or apply them to property in a receiving area in order to obtain approval for development at a density of use or for other development incentives greater than would otherwise be allowed on the land, up to the maximum density or incentive indicated in

§270-169.

C. When transferors sell or convey development rights, they must restrict that portion of land from which the rights are conveyed against any future development with a conservation easement, although the land may still be used for purposes that do not involve residential, commercial, industrial or institutional development, such as agriculture or forestry. Lands within sending areas that are restricted with conservation easements may be sold to others, but the restrictions apply to all future owners of the property. Conservation easements on lands in designated sending areas shall be held by an approved conservation organization defined as a charitable organization under §501(c)(3) of the Internal Revenue Code, or the Town or Village.

**§270-164. Establishment of sending and receiving areas.**

A. Sending Areas – The Town has established a large sending area in the northwest part of Town, two smaller sending areas in the south-central part of Town and a smaller sending area in the northeast part of Town. These areas include important farmland, sensitive natural areas, scenic viewsheds and public wellheads (defined by the wellhead protection zone and primary recharge zone) that the Town has identified as important to protect in the 2008 Open Space Plan. All of these areas are zoned RA Rural Residential and Agricultural, except for part of the public wellhead areas. An overlay district is hereby created to apply to these areas, to be entitled "TDR-S" and to be reflected on the official Zoning Map for the Town.

B. Receiving Areas. The Town has established three receiving areas in the eastern part of Town, two of which have been identified in the Town Center Plan and Freemans Bridge Road Plan as having good potential for redevelopment and mixed-use development, respectively. These areas are zoned Community Business/General Business and Mixed-Use Development, respectively. A third receiving area is a former brownfields site that is ready for redevelopment. An overlay district is hereby created to apply to these areas, to be entitled "TDR-R" and to be reflected on the official Zoning Map for the Town.

**§270-165. Calculation of transferable development rights.**

A. Sending area tract qualifications. A tract of land proposed for placement under easement for the purpose of acquiring transferable development rights shall:

(1) Be located within a Town or Village TDR-S Overlay.

(2) Comprise at least 80 percent of the ownership, which shall include all contiguous, commonly-held land within the sending area.

(3) Consist of a minimum of 20 acres of contiguous land, except along a stream or potential trail corridor, or where adjacent to already-preserved land.

B. Transferable development rights computation.

(1) The total number of development rights available on a sending area tract shall be determined by multiplying the net tract area by .5.

(2) The net tract area shall be determined by subtracting from the gross tract area all lands shown on the Town's GIS Constraints Map, which shall include a) FEMA floodplains, b) State-designated wetlands and steep slopes over 15%.

(3) Fractions of acres shall be rounded to the nearest whole number in computing assigned development rights.

(4) Land previously restricted against development by covenant, easement or deed restriction shall not be eligible for calculation of development rights.

**§270-166. Issuance of TDR Certificate.**

A. Any landowner in a Town or Village sending area may request a TDR Certificate from the Town that specifies the number of development rights that may be separated and transferred from a qualified sending area tract based on the provisions of §270-165 above. The Town planner shall be responsible for making this determination and issuing the certificate, for which no fee shall be charged.

B. An application for a TDR Certificate shall include:

(1) A new title search and legal description, including any existing boundary survey, of the sending area tract, and legal opinion of title affirming that the development rights being transferred have not been previously severed from or prohibited upon the sending area tract.

(2) An identification of lands previously restricted by development as described in §270-165.B.(4) above.

(3) Such additional information required by the Town planner as necessary to determine the number of development rights that qualify for transfer, but not including a plat map or new boundary survey.

C. A TDR Certificate shall:

(1) Identify the transferor.

(2) Include a legal description of the original sending area tract.

(3) Include a GIS map showing the original sending area tract, the portion of the tract on which the calculation of development rights is based and constrained or otherwise restricted areas as identified in §270.165.B.(2) and (4).

(4) Show a calculation for and statement of the number of development rights eligible for transfer.

(5) If only a portion of the total development rights are being transferred from the sending area tract, a statement both of the remaining transferable development rights or the remaining on-site development potential in number of dwelling units on the sending area tract.

(6) The date of issuance.

(7) The signature of the Town planner.

(8) A tracking number assigned by the Town planner

D. No transfer of development rights under this ordinance shall be recognized by the Town as valid unless the instrument of original transfer contains the Town planner's certification.

**§270-167. Deed of Transferable Development Rights.**

Transferable development rights that have been severed shall be conveyed by a Deed of Transferable Development Rights duly recorded with the Schenectady County Clerk. Such deeds shall include both the original instrument of transfer - "Original TDR Deed" and subsequent instruments of transfer - "Intermediate TDR Deed." All such deeds on land within the Town shall conform to the requirements of this Section.

A. An Original TDR Deed is required when development rights are initially separated from a sending area tract. The Original TDR Deed shall include or be accompanied by the following information:

(1) The names and signatures of the transferor and transferee.

(2) Either:
a. the identity of the tract of land to which the development rights will be attached, or
b. a statement that the rights are either being transferred to the Town, an approved conservation organization or other person, or
c. a statement that the rights are being retained by the owner of the

sending area tract.

(3) The date of transfer.

(4) A copy of the TDR Certificate described in §270-166 above.

(5) The number of development rights being transferred up to the number permitted on the TDR Certificate.

(6) The number of development rights remaining on the sending area tract (both for on-site and off-site use).

(7) A current title search of the sending area tract (or portion of the tract to be placed under easement) prepared within 30 days prior to submission of the deed, or a signed affidavit that title has not changed since issuance of the TDR Certificate under §270-166.

(8) A legal description and plat of the sending area tract or that portion of the tract to be placed under easement, prepared by a licensed surveyor.

(9) A conservation easement, which shall permanently restrict development of the sending area tract as provided in §270-168. below and which shall be recorded with the Schenectady County Clerk at the same time as the Original TDR Deed.

B. An Intermediate TDR Deed is required for any subsequent conveyance of development rights after the recording of the Original TDR Deed. An Intermediate TDR Deed shall include or be accompanied by the following Information:

(1) Items 1-7 above.

(2) Copies and a listing of all previous TDR deeds identified by the books and pages where they are recorded with the Schenectady County Clerk.

C. The Town planner shall, prior to their recording and within 30 days of receipt, review and endorse the Original TDR Deed and conservation easement after comparing them with the TDR Certificate to determine the accuracy of the representation of the number of development rights being transferred as well as the number of any remaining development rights that may later be used either on- or off-site. The Town planner shall also, within 30 days of receipt, review and endorse any Intermediate TDR Deeds at the time of submittal of any application for development under §270-169.B. of this Ordinance.

D. The Town legal counsel shall, prior to their recording and within 30 days of

receipt, review and endorse as to form and legal sufficiency the Original TDR Deed and conservation easement. The Town legal counsel shall also, within 30 days of receipt, review and endorse as to form and legal sufficiency any Intermediate TDR Deeds at the time of submittal of any application for development under §270-169.B. of this Ordinance.

E. No transfer of development rights under this Ordinance shall be recognized by the Town as valid until or unless a TDR Deed Endorsement Certificate signed by both the Town planner and Town legal counsel has been issued.

**§270-168. Recording of conservation easement.**

Any sending area tract from which development rights have been severed must be permanently restricted from future development by a conservation easement as defined in title three of Article 49 of the Environmental Conservation Law. Such easement must meet the following requirements:

A. Except where any development rights are retained, such as within an "acceptable development area," the conservation easement shall permanently restrict the land from future development for any purpose other than principal or accessory agricultural uses, forest uses, public parkland, conservation areas and similar uses, but excluding golf courses. Structural development for such permitted uses shall be allowed subject to compliance with the standards set forth in the Town's Zoning Ordinance.

B. The conservation easement shall designate the Town and/or a bona fide conservation organization acceptable to the Town at its sole discretion, as the beneficiary/grantee.

C. If the Town is to hold or be a party to the conservation easement, it shall be approved by the Town legal counsel with respect to form and legal sufficiency, within 30 days of its receipt and prior to its recording.

D. The conservation easement shall apply to the tract of land or portion thereof from which development rights are conveyed (sending area tract), and shall specify the number of development rights to be severed as well as any to be retained. No portion of the tract area used to calculate the number of development rights to be severed shall be used to satisfy minimum yard setbacks or lot area requirements for any development rights that are to be retained or for any other development except as permitted under §270-168.A above.

E. On any portion of a tract from which development rights are severed, retained development rights may not exceed one (1) dwelling unit per twenty (20) acres. Notwithstanding the foregoing, any tract within a designated sending area that is less than twenty (20) acres in area may retain no more than one development right.

F. On any tract from which development rights are severed, retained development rights may be developed with traditional farm/estate building groupings including one (1) residence and customary accessory structures. In order to be utilized, this option must be specified in the conservation easement as occurring within the "acceptable development area."

G. All owners of all legal and beneficial interest in the tract from which development rights are severed shall execute the conservation easement(s). All lienholders of the tract from which development rights are severed shall execute a subordination agreement or a release of lien.

H. The conservation easement must make permanent provision for the annual monitoring of the eased land to assure its continuing compliance with the terms of the easement.

I. Final approval for any subdivision or land development plan utilizing transferred development rights shall not be granted prior to the recording of the conservation easement with the Schenectady County Clerk and the New York Department of Environmental Conservation.

**§270-169. Application of development rights to a receiving parcel.**

A. Owners of tracts within a designated receiving area may use development rights that are purchased or conveyed from sending area landowners, the Town, an eligible conservation organization or intermediate transferor as described below and in Table 1's shaded spaces. Transferred development rights shall entitle the owner of those rights to a variety of development incentives that may be used either to increase development density or secure other development advantages within a receiving area.

(1) Development incentive A: For each TDR acquired, 3,000 square feet of additional lot coverage shall be allowed up to a maximum combined lot coverage of 70% in the CB/GB district and 60% in the MU district.

(2) Development incentive B: In the CB/GB and MU districts, for each TDR acquired, 10 required parking spaces shall be waived up to a maximum waiver of 20% of required parking.

(3) Development incentive C: In the MU district, for each TDR acquired, one additional single-family dwelling or duplex shall be allowed, up to a doubling of underlying permitted density, or 7,500 square feet for a single-family dwelling and 10,000 square feet for a duplex. In such case, the lot frontage requirement for a single-family dwelling shall be reduced to 60 feet and the side yard requirement reduced to five feet on each side.

(4) Development incentive D: In the MU district, for each TDR acquired, four additional dwelling units may be added to a senior complex or condo building, up to a doubling of the underlying permitted maximum per building, or 16 for a condo and 64 for a senior complex.

Table 1
Maximum Density and Development Incentives Allowed
Through Transfer of Development Rights

| **Existing/Incentivized (shaded) Development Standards** | **Community Business District** | **General Business District** | **Mixed-Use District** | **Ratio of DRs to Incentives** |
|---|---|---|---|---|
| Max. lot coverage (1) | 30% | 30% | 20% | |
| *A. Max. combined lot coverage w/TDR (2)* | *70%* | *70%* | *60%* | *3,000sf per DR* |
| | | | | |
| Required parking spaces (3) | 1 per 350FA | 1 per 350FA | 1 per 350 FA | |
| *B. Parking space waiver w/TDR (4)* | *20%* | *20%* | *20%* | *10 parking spaces per DR* |
| | | | | |
| Max. density in SF dus & duplexes | | | 15,000sf/ 20,000sf | |
| *C. Max. density w/TDR (5)* | | | *7,500sf/ 10,000sf* | *1 DU per DR* |
| | | | | |
| Max. # units in structure | | | 8 per condo 32 per senior | |
| *D. Max. # units in structure w/TDR* | | | *16 per condo 64 per senior* | *4 DUs per DR* |

1) building lot coverage only
2) combined lot coverage for buildings, parking and loading areas, access drive and sidewalks
3) approximate average; actual number is variable depending on use
4) the 20% waiver is to actual parking standards in Schedule A of the Zoning Ordinance
5) for 7,500 sf lots, the lot frontage requirement shall be 60' and the side yard requirements five feet each

B. A landowner who wants to use development rights on a property in a receiving area up to the maximums specified in Table 1 above shall submit an application for the use of such rights on a receiving area tract as part of an application for a development permit. In addition to any other information required for the development permit, the application shall be accompanied by:

(1) An affidavit of intent to transfer development rights to the property.

(2) Either of the following:

(a) a certified copy of a recorded Original TDR Deed of the developments rights proposed to be used and any Intermediate TDR Deeds through which the applicant became a transferee of those rights; or

(b) a signed written agreement between the applicant and a proposed original transferor, which contains information required by §270-167.A above and in which the proposed transferor agrees to execute an Original TDR Deed for the proposed receiving parcel when the use of the development rights, as determined by the issuance of a development permit, is finally approved.

C. The Town may grant preliminary subdivision approval of a proposed development incorporating additional development rights upon proof of ownership of development rights and covenants on the sending parcel being presented to the Town as a condition of final subdivision approval.

D. The Town planner shall be responsible for maintaining permanent records of all certificates issued, instruments of transfer and conservation easements recorded and development rights transferred to specific properties or otherwise retired.

**§270-170. Public acquisition.**

The Town may purchase development rights, may accept ownership of development rights through transfer by gift, and may accept land in fee simple for the purpose of severing development rights, within designated sending areas in either the Town or Village. All such development rights may be held or resold by the Town for use within designated receiving areas in either the Town or Village. Any purchase or gift of development rights shall be accompanied by evidence of the recording of a conservation easement as specified in §270-168 above. Any gift of land in fee simple may be followed at any time by a conservation easement as specified in §270-168 above, should the Town decide to use said land for the purpose of generating transferable development rights; this provision shall be retroactive from January 1, 2007.

**§270-171. Transfers of development rights to conservation organizations.**

Development rights may be transferred by the owner of a sending area tract to an approved conservation organization that has as its primary purpose the preservation of land for historic, scenic, agricultural or open space purposes. If such organization purchases or acquires development rights by gift or otherwise, the organization shall be entitled to resell such rights only if the proceeds from the sale of the rights are used to contribute to an endowment fund to monitor existing easements or purchase development rights from other lands in Town- or Village-designated sending areas. A minimum of 20% of the revenues generated from the sale of TDRs from any preserved sending area tract shall be dedicated to the endowment fund; as each easement is unique and

monitoring requirements differ, the amount dedicated to the fund must be negotiated with the conservation organization to its satisfaction. Prior to dispersal of the funds, this amount must be ratified by the Town Board. The remaining revenues remaining from the sale of TDRs for a sending area tract shall be used for additional easement acquisition.

**§270-172. TDR Bank.**

The Town hereby authorizes the creation of a transfer of development rights (TDR) Bank to encourage the exchange of development rights in the private market, thereby promoting the preservation of open space land. The Bank is authorized to acquire and sell development rights through the creation of a revolving dedicated open space preservation fund that will be the repository both for development rights and dedicated revenues.

A. Acquisition of development rights.

(1) Any development rights acquired under §270.170 above, any revenues from the sale of development rights under §270-172.B(1) below, and any local revenues, grant monies or donations of money received in support of the TDR program shall be held in a revolving dedicated open space preservation fund.

(2) The Town may accept development rights transferred to it by any approved conservation organization. A minimum of 20% of the revenues generated from the sale of these TDRs shall be dedicated to the organization's endowment fund; as each easement is unique and monitoring requirements differ, the amount dedicated to the fund must be negotiated with the conservation organization to its satisfaction. Prior to dispersal of the funds, this amount must be ratified by the Town Board. The remaining revenues remaining from the sale of TDRs for a sending area tract shall be used by the Town for additional easement acquisition.

B. Sale of development rights.

(1) The Town may periodically sell development rights using a competitive bid process or any other method deemed fair and equitable by the Town Board.

(2) All offers to purchase development rights from the TDR bank shall be in writing and shall include a minimum 10% down payment with purchase option. Payment of the remaining 90% shall be at the time the development rights are transferred.

C. Program administration.

(1) The TDR Bank will be administered by the Town Planner, under the supervision of the Town Board. The Planner will set up a TDR webpage on the Town's website to: 1) provide information on the program, 2) provide applicable forms and contacts, and 3) create a registry for TDR buyers and sellers. The Planner will keep records of the dates, amounts and locations of development rights acquisitions and sales and provide periodic reports to the Town Board.

(2) The Town may use up to 10% of revenues generated from the sale of development rights to cover the administrative costs of the TDR program.

**§270.173. Amendment**

The Town reserves the right to amend this Article in the future, including the right to change the sending and receiving area boundaries, the right to change the manner in which the number of development rights are calculated and the manner in which the development rights can be conveyed and utilized. No owner of land or owner of development rights shall have any claim against the Town for damages resulting from a change in this Article. The Town further reserves the right to terminate its transferable development rights program at any time. If the program is abolished, holders of outstanding development rights shall have 12 months from the effective date of the termination of the program to apply to use their remaining development rights within formerly-designated receiving areas.

**§270-174. Definitions**

As used in this ordinance, the following words and terms shall have the meanings specified herein:

ACCEPTABLE DEVELOPMENT AREA -

COMBINED LOT COVERAGE –The proportion of a parcel that is covered by buildings as well as parking and loading areas, access driveways and sidewalks.

DEVELOPMENT RIGHTS – The rights permitted to a lot, parcel or area of land under a zoning ordinance or local law respecting permissible use, area, density, bulk or height of improvements executed thereon. Development rights may be calculated and allocated in accordance with such factors as area, floor area, floor area ratios, density, height limitations, or any other criteria that will effectively quantify a value for the development right in a reasonable and uniform manner that will carry out the objectives of this section.

INSTRUMENT OF TRANSFER – A Deed of Transferable Development Rights that permits a specified number of development rights to be legally transferred from one party to another. A Deed of Original Transfer is the original instrument

that is used to separate these development rights from a sending area tract.

LOT COVERAGE* – The proportion of a parcel that is covered by buildings, including covered porches and accessory buildings.

OVERLAY DISTRICT – A district superimposed over one or more underlying zoning districts or parts of districts that imposes additional or alternative requirements to those applicable for the underlying district.

RECEIVING AREA – One or more designated areas of land to which development rights generated from one or more sending areas may be transferred and in which increased development is permitted to occur by reason of such transfer.

RECEIVING AREA TRACT – A parcel or parcels of land in the receiving area that is the object of a transfer of development rights, where the owner of the parcel(s) is receiving development rights, directly or by intermediate transfers, from a sending area tract, and on which increased density or development incentives is allowed.

SENDING AREA – One or more designated areas of land in which development rights are designated for use in one or more receiving areas.

SENDING AREA TRACT – A parcel or parcels of land in the sending area that are the subject of a transfer of development rights, where the owner of the parcel(s) is conveying development rights of the parcel(s), and on which those rights so conveyed may no longer be used on the sending area tract.

TDR – A single transferable development right.

TDR CERTIFICATE – A Town-issued certificate for which prospective transferors may apply to determine the number of transferable development rights to which a potential sending area tract would be entitled.

TRANSFEREE – The person or legal entity, including one who may own property in a receiving area, who purchases or otherwise acquires development rights.

TRANSFEROR – The owner of either a sending area tract or development rights that originated from a sending area tract.

TRANSFER OF DEVELOPMENT RIGHTS – The process by which development rights are transferred from one lot, parcel or area of land in any sending area to another lot, parcel or area of land in one or more receiving areas.

* already defined in 2005 Zoning Ordinance

**§270-175. Enforcement**

For the purposes of enforcement of this Article, the provisions of Article XXI of the Zoning Ordinance – Violations and Enforcement – apply.

# Appendix H

Miscellaneous Farming and Agriculture Program Information

Appendix H Includes:

- Cornell University Small Farms Program: Guide to Farming in New York
- American Farmland Trust: Farmland for a New Generation
- USDA Biomass Crop Assistance Program Fact Sheet
- USDA Resources for Conservation Planning for Organic and Transitioning to Organic Operators
- New York Small Dairy Innovators: Successful Strategies for Small Dairy Farmers
- USDA High Tunnel System Initiative
- USDA EQIP Organic Initiative
- USDA Organic Farming Fact Sheet
- USDA Farm Service Agency - Microloan Fact Sheet

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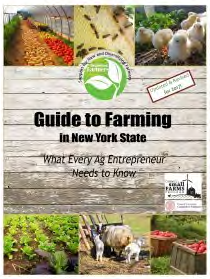
# GUIDE TO FARMING IN NY

This Guide is updated annually to provide answers to questions about taxes, business planning, labor law, zoning, regulations, marketing and many other topics that farmers need to know.

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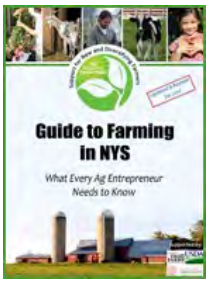



**1. Download the entire Guide to Farming (PDF)**
**2. Browse in an Online Reader, or**
**3. Click on individual fact sheets below.**

**Explore How to Use this Guide here (PDF)**

## Getting Started

#1 Finding a Farm to Buy or Lease – revised 12/13/16
#2 Climate & Soil Considerations – revised 12/13/16
#3 Infrastructure Considerations – revised 12/13/16
#4 Financing a Farm Operation – revised 12/13/16
#5 Farm Risk Management – revised 12/13/16
#6 Farm Insurance – revised 12/13/16
#7 Farm Vehicles – revised 12/13/16
#8 Zoning Regulations & Farming – revised 12/13/16
#9 Legal Aspects of Rural Living – revised 12/13/16
#10 Environmental Regulations – revised 12/13/16
#11 Forest Land Resources – revised 6/8/12

## Business Considerations

#12 Business Plans – revised 12/13/16
#13 Business Structures – revised 12/13/16
#14 Making Money – revised 12/13/16
#15 Record Keeping – revised 12/13/16
#16 Income Taxes – revised 12/13/16
#17 Sales Tax Exemptions/Refunds – revised 12/13/16
#18 Labor Laws – revised 12/13/16
#19 Payroll and Worker Documentation – revised 12/13/16
#20 Agricultural District Law Provisions – revised 12/13/16
#21 Ag Value Assessment for Farmland – revised 12/13/16
#22 Property Tax Exclusions for Buildings – revised 12/13/16

## Marketing Considerations

#23 Assessing Your Market Potential – revised 12/13/16
#24 Pricing Farm Products – revised 12/13/16
#25 Finding Price Information – revised 12/13/16
#26 Direct Marketing Options – revised 12/13/16
#27 Marketing Regulations – revised 12/13/16
#28 Becoming a Small Scale Food Processor – revised 12/13/16
#29 Collecting Sales Tax on Farm Product Sales – revised 6/25/12
#30 Organic Certification– 6/26/12

## Resources

#31 Grant Opportunities for Farmers – revised 12/13/16
#32 Opportunities for Veterans in Farming – revised 12/13/16
#33 Agricultural Agencies and Organizations – revised 12/13/16
#34 Information Sources for Getting Started – revised 12/13/16

## Not Farming in NY?

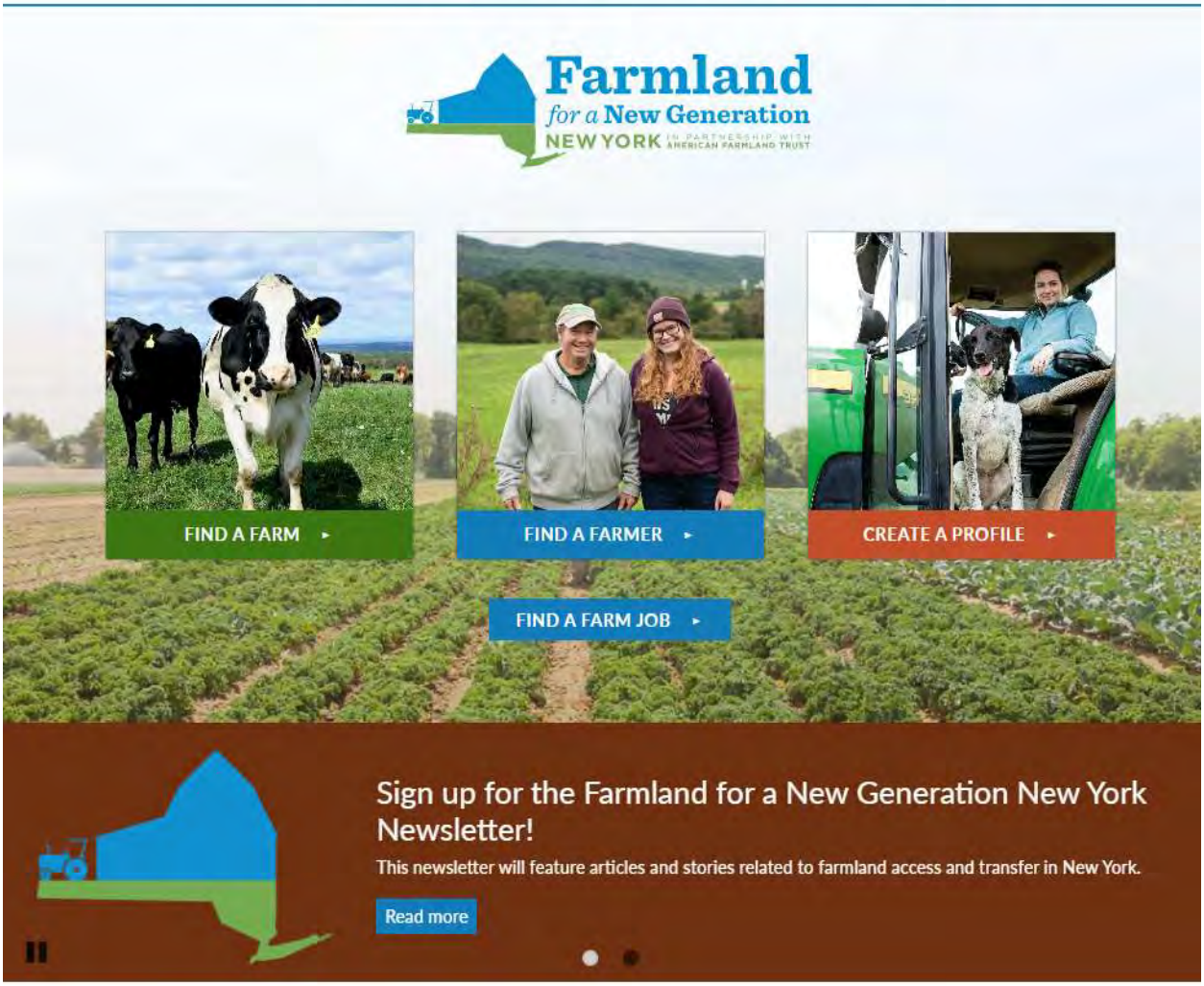
Much of the information in the *Guide to Farming in NY* is applicable no matter where you live. But if you are seeking specific tax, legal, and regulatory information and you live outside of NY, check with your state Department of Agriculture, or download the following publications to find information for these states:

Massachusetts: MA Agricultural Resource Guide and other helpful guides available from the New Entry Sustainable Farming Project
Connecticut: Connecticut Agricultural Business Management Guide (PDF)
Vermont: Legal Guide to the Business of Farming in Vermont
Pennsylvania: Guide to Farming in Pen

NEW YORK STATE | Agriculture and Markets

American Farmland Trust
SAVING THE LAND THAT SUSTAINS US

FIND A FARM FIND A FARMER CREATE A PROFILE RESOURCES EVENTS ABOUT CONTACT LOGIN




## Sign up for the Farmland for a New Generation New York Newsletter!

This newsletter will feature articles and stories related to farmland access and transfer in New York.

Read more

ABOUT THE PROJECT

**Farmland for a New Generation New York** helps farmers seeking land and landowners wanting to keep their land in farming. On this website, you can register to post a farmer or a farm property profile, search for farmers or search for farmland, post or view farm job listings, learn about upcoming events, browse resources, and contact organizations throughout New York State.

UNITED STATES DEPARTMENT OF AGRICULTURE
**FARM SERVICE AGENCY**

ENERGY
**FACT SHEET**
November 2016

# Biomass Crop Assistance Program for Fiscal Year 2017

## OVERVIEW

The Biomass Crop Assistance Program (BCAP), created by the 2008 Farm Bill and reauthorized with modifications by the 2014 Farm Bill, is part of the national strategy to reduce U.S. reliance on foreign oil, improve domestic energy security and reduce carbon pollution, by developing more agricultural products made in rural America.

BCAP provides funds to assist farmers and forester landowners with growing, maintaining and harvesting biomass that can be used for energy or biobased products. BCAP provides assistance in three ways:

- Establishment payments. For growing new biomass crops, BCAP can cover up to 50 percent of the cost of establishing a new, perennial energy crop[1] or biomass crop;
- Maintenance payments (annual payments). To maintain the new biomass crop as it matures until harvest, BCAP can provide up to five years of assistance for an herbaceous crop, or up to 15 years for a woody crop; and
- Retrieval payments (matching payments). To collect existing biomass residues that are not economically retrievable, BCAP can help with the cost of sustainably harvesting and transporting agricultural or forest residues to an energy facility (biomass conversion facility).[2]

The 2014 Farm Bill reauthorized BCAP with an annual mandatory funding level of $25 million through fiscal year 2018, of which between 10 and 50 percent (no greater than $12.5 million) is reserved for matching payments. BCAP is administered by the U.S. Department of Agriculture (USDA) Farm Service Agency (FSA). Annual appropriations acts may limit the BCAP funding level to less than $25 million. Consult your local FSA office for details.

## PROJECT AREAS

A project area has specified boundaries approved by USDA and includes producers with contract acreage (i.e. crops under contract with USDA to receive establishment and maintenance payments) that, upon maturity, will be supplied to an existing or in-progress biomass conversion facility (BCF). A project area is physically located within an economically practicable distance from the BCF.

## ELIGIBLE CROPS

For establishment and maintenance payments in project areas, eligible biomass (or "eligible crops") does not include plants that are invasive or noxious, as determined by USDA, or "conventional" crops (crops that are eligible to receive payments under Title I of the 2014 Farm Bill, such as barley, corn, grain, sorghum, oats, rice or wheat; honey; mohair; oilseeds (including canola, crambe, flaxseed, mustard seed, rapeseed, safflower seed, soybeans, sesame seed and sunflower seed); peanuts; pulse; chickpeas, lentils and dry peas; dairy products; sugar; and wool and cotton boll fiber).

Other restrictions may apply. For full details on eligible crops, please consult your local FSA county office or visit the web at **www.fsa.usda.gov/bcap**.

## ELIGIBLE MATERIALS

For retrieval payments, eligible biomass (or "eligible materials," such as certain agricultural and forestry residues) include:

- Agricultural or crop residues (i.e. crop residues remaining in the field after harvest of conventional crops), woody agriculture residues, like orchard waste, that are removed directly from land, in accordance with an approved conservation plan; and

[1] Up to $750 per acre for underserved producers, or up to $500 per acre for other producers.
[2] At the rate of up to $1 for each $1 per ton delivered to an approved biomass conversion facility, not to exceed $20 per dry ton, for a period no longer than two years.

- Woody forest residues removed directly from that land that are byproducts of preventative treatments that reduce the threat of forest fires, disease or insect infestation; that do not have an existing market that are removed directly from the land, in accordance with an approved forest stewardship or equivalent plan.

Biomass that is ineligible for retrieval payments include:

- Conventional crops that are eligible to receive payments under Title I of the 2014 Farm Bill;
- Secondary agricultural or forest residues resulting from the processing activity of a delivered primary product of biomass;
- Animal waste or byproducts, bagasse, food and yard waste and algae; and
- Biomass that is economically retrievable.

Other limitations apply. For full details on eligible materials, please consult your local FSA county office or visit the web at **www.fsa.usda.gov/bcap**.

## BIOMASS CONVERSION FACILITIES

A BCF is a facility that converts biomass into heat, power, biobased products, research (material conversion) or advanced liquid biofuels. BCFs themselves do not receive BCAP funding; rather, approved facilities are eligible to receive BCAP-funded biomass.

- Before biomass suppliers can receive retrieval payments, a BCF must be approved by FSA before receiving the deliveries.
- Before biomass suppliers can receive establish or maintenance payments, a BCF must be approved by FSA, or must demonstrate that it will be operational in time for when the biomass has reached maturity for delivery.
- FSA may prioritize the approval of facilities that best meet BCAP objectives.

Other restrictions may apply. For full details, please consult your local FSA county office or visit the web at **www.fsa.usda.gov/bcap**.

## APPLICATION AND ENROLLMENT PERIODS FOR FISCAL YEAR 2017

Enrollment periods for BCAP funding will be announced by news release in November 2016. To enroll in electronic updates for upcoming BCAP announcements, visit **www.fsa.usda.gov/bcap**.

## ADDITIONAL INFORMATION

This fact sheet is intended for basic informational purposes only; other restrictions may apply. For full information on specific program requirements and eligibility, please consult USDA FSA or visit the web at **www.fsa.usda.gov/bcap**. To find your local FSA office, visit **http://offices.usda.gov**.

United States Department of Agriculture

# Resources for Conservation Planning on Organic and Transitioning-to-Organic Operations

## Purpose

The purpose of this document is to discuss existing tools and resources that support successful conservation planning on organic and transitioning-to-organic operations. It also includes information about organic certification and the National Organic Program (NOP).

## Organic Standards and Conservation Practices

NOP regulations define organic production as systems that respond "to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity." (7 CFR Part 205.2). Operations "must maintain or improve the natural resources of the operation, including soil and water quality." (NOP Regulation 205.200). To meet these standards, producers are subject to regulations that cover a range of topics related to conservation such as soil fertility, crop rotations, pest management, and biodiversity. NOP standards are broader than conservation-related practices and include aspects of production that are outside of the scope of NRCS. For example, NOP regulations cover the handling, labeling, and marketing of organic products.

While the NOP regulations cover a broad range of topics, they do not include prescriptions detailing how the standards should be met. For example, regulations state that a "producer must manage crop nutrients and soil fertility through rotations, cover crops, and the application of plant and animal materials" (NOP Regulations 205.203(b)). The regulations do not go on to stipulate specific crop rotations or cover crops. In contrast, the NRCS conservation planning process employs land-use specific tools and their interpretations to evaluate resource conditions and develop alternative practices for the landowner's consideration. NOP regulations fit into the NRCS conservation planning process as landowner objectives and should be considered in the alternatives developed for a producer.

It is important to have an awareness of NOP land requirements especially when working with producers transitioning to organic production. Any field or farm parcel from which harvested crops will be sold as organic must have "had no prohibited substances applied to it for a period of 3 years immediately preceding harvest of the crop." (NOP Regulations 205.202). Therefore, transitioning producers must

adhere to all regulations governing allowable substances. During this period, these producers are shifting from conventional to an integrated management approach of their soil fertility and pests. With this change in management, transitional producers are often faced with a steep learning curve and can benefit from NRCS technical expertise.

Despite different strategies and management activities in conventional and organic production systems, the operations face similar resource concerns. When working with organic and transitioning producers, the NRCS planning process is the same. In light of the USDA's goal to increase the number of organic operations, the department is investigating opportunities to streamline conservation planning and organic certification.

## Resources

While not exhaustive, the following documents and online resources provide many tools to support conservation planning on organic and transitioning-to-organic operations.

## Conservation Planning with Transitioning to Organic Producers

National Organic Farming Handbook
This NRCS Handbook describes organic systems and identifies key resources to guide conservation planning and implementation on organic farms. The document covers topics such as nutrient management, crop rotations, livestock grazing and pest management.

Frequently Asked Questions (FAQ): Conservation Planning with Transitioning to Organic Producers
The FAQ provides guidance for conservation planners and includes:

- definitions of key NOP terms including "certified organic," "exempt producer," and "organic system plan";
- answers to key questions about the EQIP Organic Initiative including relationship to NOP, eligibility requirements, and related NRCS conservation practices;
- information on technical assistance available to transitioning producers including NRCS practices that can be implemented on organic or transitioning operations; and
- discussion of the relationship between an NRCS conservation plan and an OSP.

Conservation Plan Supporting Organic Transition (CAP 138)
The CAP 138 is an NRCS Conservation Activity Plan that helps farmers who are interested in transitioning from conventional farming practices to organic production by addressing the natural resource concerns on their operation.

## Practice Specific Resources

Oregon Tilth, the National Center for Appropriate Technology, and the Xerces Society partnered with NRCS to develop four guides that provide conservation planners with detailed information on NOP regulations, organic management practices, and technical guidance for NRCS practice design in an organic context. They include information about the different purposes for the practice's use, design considerations, and how installation might differ on organic operations:

- Nutrient Management Plan (590) for Organic Systems Implementation Guide
- Cover Crop (340) in Organic Systems Implementation Guide
- Conservation Buffers in Organic Systems Implementation Guide
- Common NRCS Practices Related to Pest Management on Organic Farms

A separate resource published by the Natural Resource, Agriculture and Engineering Service (NRAES; now Plant and Life Sciences Publishing) provides an in-depth review of purposes for crop rotation including improving soil quality and health, and managing pests, diseases, and weeds. The book includes instructions for making rotation plans, on-farm examples of specialty crop rotations, and discusses the transition to organic farming.

- Crop Rotation on Organic Farms: A Planning Manual

## Biodiversity Resources

NOP regulations broadly require that producers "conserve biodiversity." (§ 205.2). While the NOP is in the process of developing specific guidance, other resources are available:

- Biodiversity Conservation: An Organic Farmer's Guide is a Wild Farm Alliance publication which provides a range of farm management practices that maintain and enhance biodiversity.
- Pollinator Habitat Assessment Form and Guide for Organic Farms is a Xerces Society guide that assesses pollinator habitat in orchards and field crop settings.

## USDA Resources

USDA National Organic Program (NOP)
Main site has links and information including organic standards, organic certification, news, lists of certified operations, certifying agents, and more.

USDA NOP Organic Literacy Initiative
Many USDA resources: 'Is Organic an Option for me?' brochure, videos, organic certification guidebooks for producers, and AgLearn courses for USDA and the public (including Organic 101 and 201).

NRCS EQIP Organic Initiative
The Environmental Quality Incentives Program (EQIP) Organic Initiative provides technical and financial assistance to eligible organic, transitioning, and certain 'exempt' from certification operations to treat identified natural resource concerns in an organic production setting.

NRCS Science and Technology Training Library: Webinar Portal for Conservation of Natural Resources
Features upcoming and archived conservation webinars including an annual organic series.

## Other Resources

eOrganic
A collection of land-grant university publications and webinars on different aspects of organic agriculture.

National Sustainable Agriculture Information Service (ATTRA)
ATTRA is a premier source of information about sustainable agriculture for farmers and agriculturalists.

Oregon Tilth
Oregon Tilth is an international nonprofit organic certifier. The Organic Education Program works to advance and promote organic agriculture through training, information, research, technical assistance, and advocacy.

Organic Materials Review Institute (OMRI)
OMRI provides a list and independent review of products allowed in certified organic production, handling, and processing.

Rodale Institute
A nonprofit organization focused on organic farming research and outreach. Rodale hosts the longest running side-by-side U.S. study comparing conventional agriculture and organic production systems. The institute has a free 15-hour Organic Transition Course.



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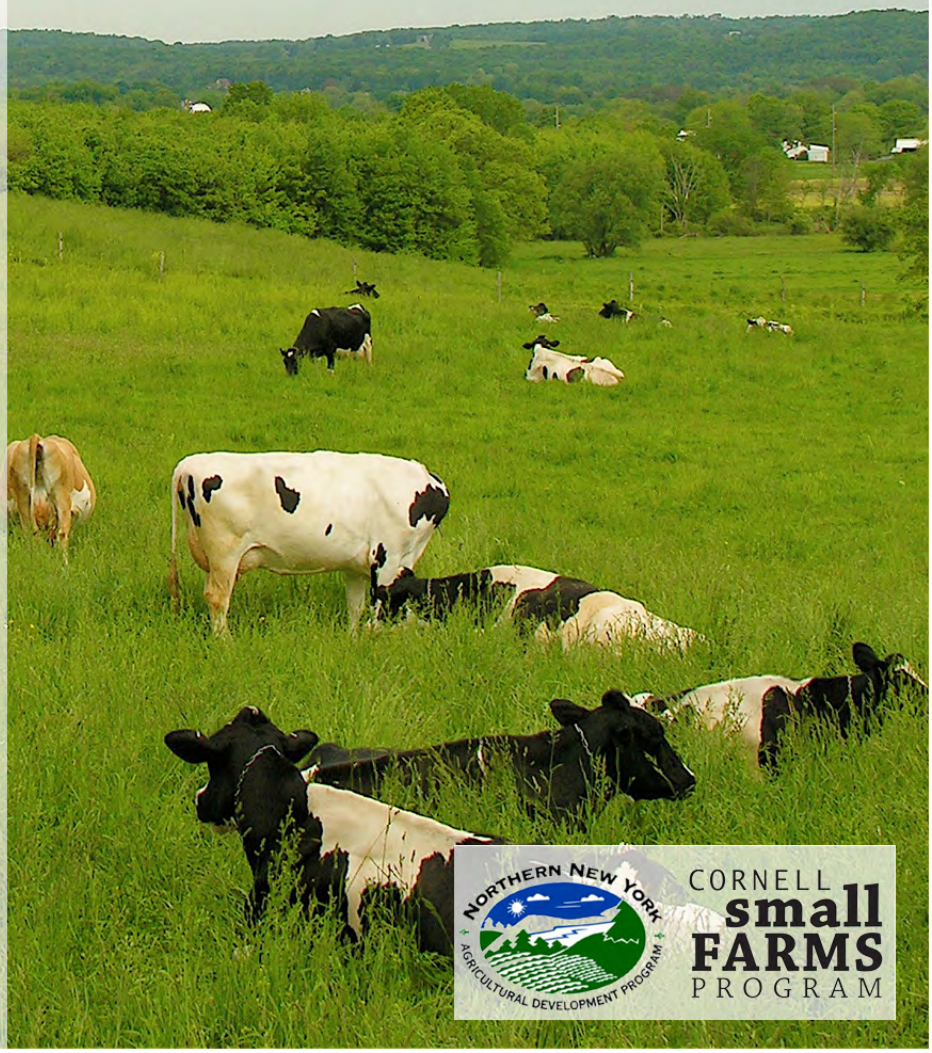
- Lindsay Haines, National Organic and Pest Management Specialist, National Headquarters
- Donna Hopwood, EQIP Organic Program Specialist, National Headquarters


NEW YORK

# Small Dairy Innovators

## Successful Strategies for Smaller Dairy Farms



Northern New York Agricultural Development Program

Cornell small FARMS Program

New York

# Small Dairy Innovators

## Successful Strategies for Small Dairy Farms

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About the Publisher:

*The Cornell Small Farms Program works to foster the sustainability of diverse, thriving small farms that contribute to food security, healthy rural communities, and the environment. We do this by encouraging small farms-focused research and extension programs and fostering collaboration in support of small farms.* [www.smallfarms.cornell.edu](http://www.smallfarms.cornell.edu)

*Several articles were reprinted from a 2004 publication of the Northern New York Agricultural Development Program. The NNYADP is a farmer-driven research and education program specific to New York state's six northernmost counties: Jefferson, Lewis, St. Lawrence, Franklin, Clinton and Essex.* [www.nnyagdev.org](http://www.nnyagdev.org).

# Ice Cream and Hayrides Keep Family Farming

## Bellvale Farms – Orange County, NY

### (NON) AG EDUCATION

When Al and Judy Buckbee's son and daughter announced that they wanted to farm with their parents, the family's question was, "How do we support more people without milking more cows?" The solution, making and selling their own ice cream, answered more than just the original question. A decade later, the Buckbees find themselves selling delicious desserts and teaching neighbors about dairying in New York State.

The Buckbees go way back in Orange County agriculture: they're a New York State Century Farm Family and an Orange County Dairy of Distinction. Al grew up on the farm and participated in 4-H and FFA before heading off to Kansas State. "In the 50s they hadn't started agribusiness yet – there was no emphasis on the business side of running a farm," says Al, so after two years in an agriculture program he transferred to the business school. The choice was a crucial one. Al now relies on technical consultation for cow nutrition, ice cream production, and other key aspects of the farm, but he says that his business knowledge and ability to make financial decisions for the farm have been invaluable.

### LOCATION, LOCATION, LOCATION

Bellvale Farms is the New York State dairy farm closest to New York City. That proximity means that the number of farms in Orange County has declined steadily as the suburbs have grown; many of the Buckbees' neighbors commute to the city for work. In that environment, retailing farm products was an excellent option for growing the business without growing the 60-cow herd. The family started by growing and selling sweet corn, tomatoes, and pumpkins from a wagon on the farm. "We learned a lot from the vegetable business. It was a great way to get started and learn about retail," Al says. The family considered making cheese and bottling their milk, but settled on ice cream because it required the least amount of start-up capital.

**Bellvale Farms is situated in an ideal location for agritourism, just 50 miles north of Times Square, New York City.**

Al's son-in-law, who has a degree in chemistry, took some ice cream "short courses" at Penn State. They built a creamery six tenths of a mile closer to a main road and started selling veggies and ice cream there. Al was surprised to see a 50% increase in sales immediately; they hadn't thought that half a mile would make such a difference. The other surprise was the shift in their customer base. The original business plan emphasized the idea of selling ice cream to the people who already came to buy Bellvale Farms vegetables. What the Buckbees actually observed was a new set of customers coming just for the ice cream. Though farmers' markets are popular, the Buckbees prefer to sell their products from home to save on transportation and labor costs. The creamery is open every year from April through November; 2009 was its seventh season.

### FREE TOURS

Bellvale Farms is open to the public for free tours on Sundays from June through October. They advertise the tours at the creamery and on their website (http://bellvalefarms.com/); Bellvale Farms is also listed on the New York State and Orange County tourism websites. Al says, "I'm not a techie, but there's real value in having a website. It brings your business to the attention of people who wouldn't have known about it otherwise." Petting calves and a milking demonstration are a big draw.

**Building a farm creamery attracted new customers to the farm, generating sales for both the dairy and agritourism operation. The business now supports two generations.**

From a farmer's perspective, it's interesting to watch people encounter a working farm for the first time. Al observes that they do contend with some people who are judgmental of the family's farming practices or of animal agriculture, but most visitors are truly interested in the operation and ask good questions. He's become more aware of the public perception of agriculture and how to respond to visitors' questions. Though the farm isn't compensated financially for the tours, the Buckbees believe that it's important to be ambassadors for agriculture. "We keep things cleaned up," explains Al, noting that appearances are as important for a farm as they are for any other business. The tours are popular, and visitors are willing to go a little farther out of their way to see the farm that produces such yummy ice cream.

## NOTHING VENTURED, NOTHING GAINED

Not all of the Buckbees' efforts have borne fruit. From 1996 to 2000, they tried rotational grazing. Without feeding much grain or silage, their herd average fell to 15000# of milk per cow per year. Al decided that it was worthwhile to spend more on feed in order to generate more income. The rolling herd average is back up to 25000-26000# per cow on a conventional diet including concentrate, corn silage, and haylage. They still turn the cows out on the paddocks but don't depend on grazing for nutrition. Al notes that the farm has excellent soil, which enables them to grow good crops. In 2009, after 10 years, Bellvale Farms discontinued their vegetable sales. They're still selling Halloween pumpkins and offering free hayrides on October weekends. Al says that the pumpkins sold well this year, even with increased prices. Like most other dairies, the Buckbees struggle with the current state of the dairy industry and milk prices. Still, Al is optimistic that the milk price will rebound.

The ice cream and pumpkins are selling well, but the biggest success for Al and Judy is the time they're able to spend with their children and grandchildren. When their daughter and her family lived in California, Al and Judy only saw them a couple times each year. Al and Judy attended their 8-year-old grandson's and their 11-year-old granddaughter's Little League games this summer and noticed that they were the only grandparents in attendance. Many of the players didn't have anyone there to cheer them on. "You get a buzz from family time – not everything is about money," observes Al. They're willing to sacrifice some potential income for that treasured time as long as the bills are paid. Community service is also important to the family: Al has served on the Orange County Agricultural and Farmland Preservation Board and is a past chair of the Soil and Water Conservation board, Judy has served on the town planning board, and their son was elected to the Orange County legislature this fall.

Al emphasizes that New York State has great opportunities for aspiring farmers! Noting that we all need to eat, he often encourages young farm visitors to consider careers in agriculture. Al advises aspiring farmers to do an internship for 3-5 years before starting on their own. Farming isn't for everyone and internships are a good way to get experience.

If you're in Orange County next summer, stop for some Bellvale Farms ice cream! To learn more about Bellvale Farms, visit http://bellvalefarms.com/.

*The above profile was written by Adrienne Masler, a summer intern with the Cornell Small Farms Program in 2009. To learn more about services available to NY small dairies visit www.smallfarms.cornell.edu*

# Small and Versatile: Dairy Adapts to Changing Markets

## Scheffler Organic Farm– Tompkins County, NY

### GETTING CERTIFIED

Dairy farmers Ed and Eileen Scheffler noticed the growing demand for organic and locally produced food. As agricultural practices and consumer preferences change, farms like theirs must find ways to adapt. Small farms possess greater adaptability because they haven't made huge investments in infrastructure or equipment that would tie them to one type of production.

Ed and Eileen bought the farm from Ed's parents in 1981 and continued farming conventionally. By 2000, their philosophy was changing: "We didn't like spraying chemicals," says Ed. "Organic seemed like something we could do, something viable." Change can be scary, and this choice required a willingness to change one's mind. The Schefflers began the transition to organic and sold their first organic milk in December of 2003. They sell to the Organic Valley co-op and have been very happy with organic prices; the increase in income has helped them invest in a retirement account and send their children to college. Ed notes that they haven't seen a significant yield decrease since the transition, an experience that challenges the conventional wisdom that organic simply can't produce enough food. They do spend more time cultivating, but Ed cites a study that determined that mechanical cultivation and chemical spraying cost the same amount of money.

The Schefflers like to do as much of the labor by themselves as possible, so they have made it a point to invest in equipment that will help them work efficiently and achieve high-quality products. For example, the stationary mixer installed in 2008 replaced a Rissler cart (a mobile mixer) and Ed is now producing a much more consistent ration for his cows. When it comes to growing crops, Ed prefers to plant and harvest when the time is right. He says, "It's difficult to see getting a custom operator to the farm on my time."


**Selling raw milk, eggs and meat in an on-farm store has helped to diversity the Scheffler's income and create meaningful relationships with their neighbors.**

### DIRECT MARKETING

Eileen began direct marketing her organic eggs in 2008. After a few false starts – the snowplow buried their roadside cooler and customers couldn't see the cooler on the porch – they decided that Ed's new heated motorcycle shed could double as a farm store. They added grass-fed organic beef shortly afterward; the beef is processed in a Pennsylvania slaughterhouse that is certified organic and humane. They also obtained a raw milk permit in 2009. Customers call ahead to place their order and pick up their milk at the farm store on Tuesdays. "People are looking for a high-quality product, they want to know their farmer and where their food comes from," says Ed. Direct marketing is also a way to diversify the operation and to add value by selling their products at retail value.

Ed and Eileen enjoy talking to their customers and rely on word-of-mouth to attract new customers; they also sell at one farm market. Eileen's egg cartons bear the motto "Sharing our healthy harvest with you" and she says, "That's really what I believe – I really want to get good, wholesome food to people." Their customers' stories are inspiring. One woman reversed severe gum disease by eating natural foods and a high-fat diet, including Schefflers' raw milk. Others are able to drink raw milk after years of avoiding pasteurized milk (lactase, the enzyme that digests the milk sugar lactose, is present in raw milk but is destroyed by pasteurization). Some customers are concerned about their overall health or simply want a relationship with the farmers who supply their food.

**The Schefflers transitioned their herd to certified organic in 2003. The increase in income has helped them invest in a retirement account and send their children to college.**

### ADAPTING ON A SMALL FARM

The Schefflers are happy with their current practices. They enjoy farming without chemicals, not relying on commodity pricing and government subsidies, and having input into the Organic Valley co-op. Most importantly, says Ed, "it's fun again." Direct marketing is one way that the Schefflers are diversifying their farm. They don't have plans to make direct marketing a bigger part of their operation immediately, but they may start growing more beef animals; "We hadn't anticipated such interest in our beef," says Ed. He mentions that they are selling out of eggs every day and that they could probably expand egg production without much investment. They currently sell 9 gallons of raw milk per week – the rest is sold in bulk to Organic Valley – and don't plan to expand their on-farm sales.

The current market for organic milk has been affected by the economic recession just like every other sector, but the Schefflers aren't panicking. They're in better financial shape than many of their non-organic neighbors, although they note that sound management is as important to their success as income. They are also poised to make whatever changes they'll need to be successful. "I would think that large farms would be locked into selling what they produce as commodities. Small farms are probably more accessible to the public and able to adapt," Ed says.

*The above profile was written by Adrienne Masler, a summer intern with the Cornell Small Farms Program in 2009. To learn more about services available to NY small dairies visit [www.smallfarms.cornell.edu](http://www.smallfarms.cornell.edu)*

# Small is Beautiful: Making a Living Milking 12 Cows

## Wake Robin Farm– Onondaga County, NY

### FROM VEGETABLES TO DAIRY

After operating a vegetable CSA for six years, Meg and Bruce Schader agreed that they would rather milk cows. Meg and Bruce were inspired to keep their farm small when they heard about a friend's grandfather who sent his four children to college on his income from milking 12 cows. In order to make their new operation viable, they built a creamery and learned how to produce yogurt in 2006. "We had the idea that we could just transition like snapping our fingers," says Meg, but they quickly learned that it wouldn't be that easy. Despite challenges – the pasteurizer arrived six months late and Meg needed an appendectomy in 2006 – Wake Robin Farm is now making a name for itself and the Schaders have expanded their product line to include bottled milk and artisan cheeses.

**The Schaders process the milk from 12 Jersey cows into cheese & 3 flavors of yogurt**

### STARTING OUT

Before embarking on the transition, the Schaders researched on-farm milk processing. They learned that yogurt was the best product for a start-up because it's easier to make than cheese and has more value than bottled milk. They created a business plan with assistance from NY FarmNet, which Meg says has helped them to focus their goals and secure funding. She adds that loans provided their working capital for the first few years. Their debt-to-income ratio was intimidating at first, but after three years and a lot of hard work, the numbers look better. The management of the dairy is much different from the CSA: all the income from CSA memberships was available by June of each year and the Schaders had a solid number to work with for the rest of the year. When growing vegetables, they could also predict their input costs (e.g., seeds) with relative ease. Now they're learning how to juggle expenses for a variety of supplies such as yogurt cups, vanilla, maple syrup, and their delivery truck. Through it all, "the energy came from our vision – a vision can get you through anything if you really want it to," says Meg. Now they're milking 12 cows on 45 acres of hay and pasture. In the summer months, the cows are rotated to fresh pasture every 12 hours, and in the winter they are let out for exercise and are fed hay and about 5 to 10 pounds of organic grain per day; the grain helps to keep the milk components high.

### FINDING THEIR NICHE

All the milk produced at Waken Robin is processed on-farm and Meg and Bruce don't buy in any additional milk. There's no bulk tank – instead, the Schaders milk into 10-gallon cans, which enables them to use milk from different cows for different products. They usually use milk with the highest butterfat content for the yogurt, which they make rich and creamy.

Meg credits family as the linchpin of Wake Robin's success. Bruce comes from a family of farmers; they own the land and some of the equipment. Meg's family helps to take care of 9-year-old Hugh and made a loan to the farm. "Banks often don't know how to look at farms," Meg says, but in 2008 they were able to get capital through Farm Credit's new Farm Start program.

Meg and Bruce are committed to running the farm themselves and making it work with the land, animals, and equipment that they have. It flies in the face of traditional economic thinking, which emphasizes growth, to ask as Meg does, "How can we stay small forever?" Wake Robin is poised for a different sort of growth by expanding their product line and by increasing their retail sales. Currently the yogurt is wholesaled to local stores and the milk and cheese are sold on-farm and at the farmers market. Meg is inspired by the book "Nature of Slow Money: Investing as if Food, Farms, and Fertility Mattered", which challenges businesses to grow in ways outside of the economic bottom line.

*The above profile was written by Adrienne Masler, a summer intern with the Cornell Small Farms Program in 2009. Learn more about small dairy serives at [www.smallfarms.cornell.edu](http://www.smallfarms.cornell.edu)*

# Balancing Work & Family on a Small Dairy

## Emary Springs Farm – Cattaraugus County, NY

### TRANSITIONS

They say that the only thing that remains constant is change. The Emary Springs Farm in Freedom, NY exemplifies the adage. The farm, operated by Sara and Jeremy Hatch, has undergone many transitions since starting up in 2001. Sara Hatch grew up on a dairy farm. She has an Associates degree in Animal Science from SUNY Cobleskill and started working for a large dairy when she graduated. She soon realized that she would rather have her own farm. Sara's parents co-signed a USDA-guaranteed loan for beginning farmers and shared their equipment with her. When Sara began farming, she was milking 50 cows and farming conventionally. Sara married Jeremy Hatch in 2002, transitioned to organic certification in 2004, and downsized to a milking herd of 20 in 2006.

The Hatches' management of farm labor has changed to keep pace with their growing family. The first transition was from Sara farming with help from her parents to Sara and Jeremy working together. Jeremy worked full-time for the highway department; he worked on the farm before and after highway department work and used vacation time to do cropwork. But in the winter, he would usually be gone plowing snow. He convinced Sara to downsize the herd so that the work would be manageable for her. Jeremy quit his job to work on the farm full-time soon after their 3rd child was born in 2006. He got part-time job in 2007 when Sara could better balance the needs of family and farming.

### STRATEGIES

The Hatches sold their first organic milk early in 2004. Though organic milk prices helped make the herd reduction possible by keeping their income relatively stable, their primary business management strategy has always been paying attention to their bottom line and not spending more than is coming in. Grazing and growing their own feed helps to keep costs down. They've had to buy corn the last two years but grow all of their small grains. "We were producing all of our own feed two years ago and we'd like to get back to that point," Sara explains. Every month or two Sara sits down to analyze how many pounds per cow they need to produce in order to meet their expenses.

Diversifying their income (e.g., by selling hay) is another strategy the Hatches use when needed. They try to avoid debt but do have some: they got an operating loan to buy fertilizer this year. Extra income from Jeremy's part-time off-farm job also helps.

**Raising kids and farming together means engaging in a constant balancing act. From left to right: Emily, Rachel, Abigail, and Matthew Hatch.**

### PUTTING IT ALL TOGETHER

One of the Hatches' biggest challenges this year has been the weather. Rain and a muddy, poorly drained barnyard have contributed to higher-than-usual somatic cell counts. An ongoing challenge for the farm is limited space. They pasture on 18 of their own acres and rent about 200 acres of cropland. Having more acreage would be ideal, but the farm is landlocked: there's no option to expand.

Raising kids and farming together means engaging in a constant balancing act. "We try not to overextend ourselves," says Sara. They're always checking to make sure their strategies are working and adjust course if needed.

Even though some days are harder than others, Sara loves the life that farming provides her family. She says, "I grew up on a dairy farm and swore I would never do this, but I love the animals. Farming gives me the opportunity to be with my kids. If I didn't do this, I'd probably be working an outside job.

*The above profile was written by Adrienne Masler, a summer intern with the Cornell Small Farms Program in 2009. To learn more about services available to NY small dairies visit www.smallfarms.cornell.edu*

# Dairy and Beef: A Perfect Fit

## Herr Dairy Farm– Lewis County, NY

### THE TRANSITION

Larry and Barbara Herr moved their family from Lancaster, Pa., to Lowville, N.Y., in 1987. The couple left behind their Pennsylvania egg production business and began a 60-cow dairy in Lewis County. Their goal then, as it is today, was to raise their family more than cows, Larry says.

For five years, the Herrs milked 65 cows and raised all their replacements. Then in 1992, Larry and Barbara sold all their heifers and bought a few beef cattle. By his own admission, Larry is more of a beef person than a dairyman. He graduated from Penn State with a degree in animal science with a concentration in beef cattle.

Knowing how the beef industry works, Larry realized that he could not make a decent living with just beef. But dairy and beef complement each other, and his land resources fit both enterprises.

Today the Herrs milk about 64 cows, buy replacement heifers and raise 50 head of beef cattle. Larry raises the beef animals to approximately 500 pounds; then sells them to his father in Pennsylvania who raises them to maturity. This allows the Herrs to tap into Lancaster's good market for beef cattle, which Lewis County and the surrounding areas lack. Larry hires a local trucker to haul cattle to Pennsylvania.

### MANAGEMENT & RESOURCES

Initially Larry used his existing facilities to house beef. Then three years ago he built a Coverall building to house them in the winter. The rest of the year, the beef herd is rotationally grazed.

Larry grew both herds to the size his land resources can handle. The combination of beef and dairy maximizes harvesting equipment, which Larry uses for both enterprises. Any lower quality forages are fed to the beef cattle and the best forages to the milking herd.

In 2002, Larry bought his father's farm in Pennsylvania so he could continue to market his beef cattle through that outlet. Larry tapped a number of resources as he made his transitions:

- The Soil and Water Conservation District helped him set up rotational grazing.
- Lewis County Cooperative Extension provided information on selecting grasses beneficial to both dairy and beef.

Larry completed a financial analysis to evaluate the economic feasibility for his initial transition away from raising dairy replacements to raising beef cattle. Buying beef cattle wasn't a huge investment, and Larry didn't have any trouble cash flowing the new operation.

The farm's profitability stayed the same. The trade-off from selling heifer calves, raising the beef and buying dairy replacements was pretty neutral financially. A goal was to generate enough income from his beef operation to buy his dairy replacements. Larry has been able to do that.

Raising beef doesn't require as much labor or management as does raising heifers. The Herrs' children did a lot of the calf chores when the family grew dairy replacements. Transitioning to a beef operation allowed the children to work less and be more involved in other activities.

Larry makes the day-to-day decisions on the dairy and the beef cattle enterprises. He uses QuickBooks and tries to track the economics of each operation separately. Forage costs are split between the two entities. Larry and Barbara make major financial decisions together.

### THE FUTURE

The Herrs' transition to a combination dairy and beef farm has worked well for them. But now that their children are grown and Barbara has taken a job off the farm, Larry wants to slow down a little bit. Over the next two years, the Herrs will make major decisions about their next transition.

Larry is entertaining the idea of a share-milking arrangement. He would bring someone into the dairy who could build some equity by milking and work toward purchasing the dairy herd. Larry would continue the beef operation and grow forages for the dairy herd. He would like to grow calves closer to his market, feed them out and sell them locally. Larry would sell the dairy herd to his associate, rent the barn and provide labor without relying on help from family. Larry thinks this transition could happen in three years.

### TRANSITION TIPS

Larry advises others who are thinking of similar transitions to:

- Look for enterprises that fit together. For instance, a beef business would be tough as a stand-alone business but it fits well with a dairy.
- Talk to other people who have done similar things.
- Ensure that you have a market.
- Pay attention to details of the secondary business as well as the main business. It was a good decision to give up his heifer program to make time for his beef operation, Larry says.

*The above profile was written by Peggy Murray in 2004 and is part of a series titled "Profiles of Successful Strategies for Small Dairy Farms," a publication project of the Northern New York Agricultural Development Program. The entire series may be found at the link: http://www.nnyagdev.org/dairyfarmprofiles.htm*

# Dairy Changes Ownership & Style

## Homestead Fields, Jefferson County

### THE TRANSITION

Ed and Ann Walldroff bought the family's dairy after being in farming for 20 years with Ed's parents, five brothers and a brother-in-law. Upon taking over ownership, the Walldroffs made several changes, which included converting to grazing.

Homestead Fields, as Ed and Anne Walldroff call their dairy, has been in the Walldroff family for more than 100 years, making Ed the fifth generation to work this farm. During the 1970s, Ed's parents ran a 200-cow dairy, a 1,500-acre crop operation and a farm equipment business with Ed, his five brothers and a brother-in-law.

Each family member had specific responsibilities, with Ed managing the dairy. After 20 years of doing business together, the family decided to sell the dairy, move the equipment business to Watertown and get out of the cash-crop business.

There were conflicts along the way, but for the most part the family was able to separate business from family. The Walldroff family always held Monday night business meetings to discuss all parts of the business. Family members were able to agree to the terms of the sale without involving a third party.

With his knowledge of the dairy, Ed felt it could be profitable. He knew there was still a future in dairying, but the Walldroff dairy could only support one family. With that knowledge, the couple decided to buy the dairy from the other family members and exit the family's equipment business in 1995.

### MECHANICS & MANAGEMENT

Today, the Walldroffs milk 125 cows and have approximately 400 acres, with 375 tillable. The Walldroffs house their Holsteins, Jerseys and crossbreds in a freestall barn and milk in a double-seven swing (highline) parlor.

Once they took over as sole proprietors of the dairy, the Walldroffs converted to grazing. The Walldroffs made a conscious decision to give up operations that generated the least amount of profit, such as raising heifers and growing crops, to concentrate on their dairy herd.

Instead of doing their own cropping, the couple leases land to Ed's brother Larry and buys back the forages. The Walldroffs feed a mix of haylage and high moisture corn, which they buy in the fall and store in upright, sealed silos. The total cost of buying forages is less than a 125-cow dairy spends on machinery and its repair and maintenance, as shown in the Cornell Dairy Farm Business Summary, Ed pointed out.

Larry has use of the dairy manure and Ed does not have to pay to have it spread.

A contract grower raises the Walldroffs' heifers beginning at approximately four to five months of age.

The herd maintains 60 pounds of milk per cow all year. Costs are much lower during summer months when the herd is grazed. Though he could make more milk with conventional dairying, Ed, who carefully tracks his costs, feels his cows are healthier and his costs are lower with grazing.

Homestead Fields employs one full-time person. Ed handles the day-to-day operations of the dairy, and Anne works off the farm. They own all the assets together as sole proprietors.

Upon making the decision to buy the dairy, the Walldroffs first had to get financing. Based on Ed's 20 years of experience, they got a loan from the Farm Service Agency through its Beginning Farming Program. Charles Colbert of the Farm Service Agency in Canton was also instrumental in securing that loan.

At that point, the couple had to ensure the business cash flowed. Though they didn't do a financial analysis to determine the dairy's viability, Ed, a business graduate of Canton Agricultural Technical College with accounting savvy, knew the business' inputs, outputs and costs.

For the first three years of ownership, the Walldroffs put every dollar back into the business to help renovate the barn. Ed created a drive-through feed alley and a completely automated AO Smith Harvester System specifically for haylage and high moisture corn. He can feed 120 cows in 20 minutes and never leave the barn.

He bought a new bulk tank and put in manure storage. Because Ed culled heavily, he had to buy replacement heifers.

In the beginning, the couple was 100% leveraged. By the end of the fourth year, the Walldroffs could see an improvement in cash flow.

Resources the couple used included Sonny Golden from Golden Associates who helped the Walldroffs implement their rotational grazing program. Ed often attends Cornell Cooperative Extension workshops and reads many farm publications. He tracks the business' finances with One Write Plus accounting program.

### THE FUTURE

Ed, who is happy with how he runs the dairy, plans to keep the business at its current size. The Walldroffs feel they have the right resources – land, buildings and labor – to milk the number of cows they currently do. Ed feels his most valuable resource is his

abundant supply of natural spring water. There is room to become more efficient, Ed said, but he isn't interested in growing his business.

The couple's goal is to make $1 more per cwt. than the Boston Blend price. Ed's goal is to make 60 pounds of high component milk per cow and do it as cheaply as possible. The Walldroffs hope to be debt free in five years, expecting the business to take Ed to retirement in approximately 10 years.

The couple keeps an up-to-date will and carries sufficient life insurance. An attorney familiar with dairy operations reviewed the business transfer.

The Walldroff families get along better since the separation of the enterprises. Since the sale of the dairy, the family has created a transition plan for the rest of the businesses. Ed's brother Larry runs the cropping business, and his other brothers run the equipment business.

The Walldroffs have three children who are pursuing careers outside the family business. Maria, age 24, a graduate of the Fashion Institute of Technology, worked for FAO Schwartz in New York City and is a May 2005 graduate with a Degree in Elementary Education. Ben, 23, earned a degree from Clarkson University and works for an engineering firm in the Baltimore, Maryland, area. Monica is a junior at Lafargeville Central School and is looking at St. Lawrence University as a political science major.

Family and community are important to the Walldroffs. They're involved in many agricultural and civic organizations as well as their children's activities. By grazing his cows, boarding out heifers and buying all his forages, Ed has time for both his cows and his family. He still sees dairy farming as a viable business and is happy to have the opportunity to be involved in milk production.

## TRANSITION TIPS

- If you are not going to do the cropping yourself, make sure you have a good reliable person to do this for you.
- Keep good records, and know your cost of production.
- Especially when working with family, keep the lines of communication open.
- It helps when going through a transition process, if you have off-farm income and benefits to help with the family living.
- If you are going to be 80 to 100 percent leveraged, be sure to have an exit plan in place.

*The above profile was written by Peggy Murray in 2004 and is part of a series titled "Profiles of Successful Strategies for Small Dairy Farms," a publication project of the Northern New York Agricultural Development Program. The entire series may be found at the link: http://www.nnyagdev.org/dairyfarmprofiles.htm*

# Sound, Slow Growth Positions Dairy for Future

## Reed Haven Farms, Jefferson County

### THE TRANSITION

This is a story of a farm evolving. Reed Haven Farms, a small, family-owned dairy and crop business, has prospered for 62 years. Doing so required its owners to be creative, flexible, patient and diplomatic. Reed Haven Farms has made smooth transitions as it added owners, land and cows without incurring business-destructive debt.

Brothers Dan, Alan and Mason Reed have operated Reed Haven Farms for almost 25 years. Their successful partnership began in 1979 when Alan and Dan, after graduating from Cornell University, bought the farm begun by their parents in 1942. In 1980, Mason joined the partnership after he graduated from Morrisville. They have met and dealt with numerous challenges: generating sufficient income to support multiple family members, encouraging varying interests and talents, and growing incrementally.

Dairying is the family's tradition, but the brothers never rule out adding to that base. They keep their options open for future generations. By allowing family members to join the business when they're ready, the Reeds have successfully maintained financial stability while growing to accommodate additional partners.

The Reed brothers' partnership is based on sound financial management, conservatively paced growth, a commitment to high quality crops and high milk production, thoughtful planning and communication.

### MECHANICS & MANAGEMENT

Incremental, planned growth, which included buying neighboring farms, has marked transitions at Reed Haven Farms. What began in 1942 with 60 acres and 12 cows has grown incrementally to today's 170 cows and 1,200 owned and rented crop acres.

In 1948, the Reeds bought a neighboring farm and dairy, taking herd size from 12 to 50 head, and started milking in two locations. In 1963, the family built onto the main tiestall barn and put together the two herds, which had reached 80 cows. Then, in 1972, the family built a 50-stall freestall addition onto their barn. Four years later, the Reeds bought another dairy, which increased herd size to 125 head. A contiguous land base – all the land the brothers have bought is adjoining – creates efficiency.

Today, the brothers, who use a pipeline milking system in their tiestall barn, have a 21,000-pound rolling herd average. On their approximately 1,200 tillable acres, the Reeds grow hay, soybeans, oats, corn, barley, rye, sudax and some other grains. Protein supplement is the only feed the Reeds buy for their herd's total mixed ration (TMR).

The brothers also do some custom fieldwork and sell some crops. For example, they sell 400 to 600 tons of their approximately 50,000 square bales to Pennsylvania farmers through a local trucker.

The brothers split responsibilities on the farm: Alan handles the milking herd and veterinarian work, Mason does herd feeding and breeding, and Dan runs the cropping program and looks after the machinery. The family does all its own machinery repair in a shop that's second to none. And often when area farmers can't find a part at the local machinery dealer, they turn to the Reeds who frequently have the part.

The farm employs two full-time and a couple of part-time employees.

Dan is the only brother who is married and his wife, Joanne, does the business' bookkeeping as a paid employee. The three brothers own all the farm's assets equally.

Business resources used by the Reeds include:

- Joanne uses Quicken to keep financial records.
- Dan, the "king of spreadsheets," uses them to track many of the farm's projects.
- The Reeds participate in Cornell Cooperative Extension's Dairy Farm Business Summary, using it to help analyze their business.
- They use Cornell Cooperative Extension as a resource and, depending on the program area, one family member tries to attend sessions.
- The partners receive publications from Jefferson and Lewis counties Extension services, and they read farm publications to stay current.

### THE FUTURE

Dan and Joanne have three sons: Andrew, a junior at Cornell; Justin, a freshman at Morrisville; and Corey, an eighth grader. They're all involved in the farm operation, with an interest in crops and machinery. But the family isn't pressuring the boys to return to the farm.

If any of the third generation joins the business, the partners recognize the farm must change again. Cow numbers might have to double, which would mean addressing the capacity of their facilities.

On the positive side, the land base has capacity to produce forages for a larger dairy without additional land acquisitions. In recent years, cash crop income has increased as the land's productivity has out-paced the dairy's

growth. The partners like the future options this allows them.
The brothers feel confident that the strategies that have served them in the past – slow measured growth, informal communication and thoughtful planning – will also serve them well in the future.

## TRANSITION TIPS

Communication and planning are traditions at Reed Haven Farms. The following practices have helped guarantee smooth transitions in the past and surely will in the future:

- Each year the partners prepare a budget. They all review it carefully so that each person knows what he can spend without the other's consent.

- The Reeds, who have not increased debt over the years, are committed to keeping it at a manageable level. They monitor cash flow and use benchmarks to ensure they're in line with industry averages. Because of aging equipment and buildings, the Reeds' net worth has not increased over the past few years, and they know they must update some things to preserve their resources.

- The brothers talk every day, though they don't have formal meetings. They report never having had a disagreement.

- Each brother knows his responsibilities and takes care of those. There is no checking up on each other.

- The Reeds share ideas and goals, mull over options, and weigh the pros and cons of suggestions. They respect different interests and encourage each other's talents.

- The Reeds keep family living low because they all live under one roof and can divide most family living expenses three ways.

- The partners don't take a monthly draw but rather keep track of all expenses and make sure that all partners have withdrawn equal amounts, with an adjustment made at the end of the year if necessary.

The Reed brothers have a unique operation. They work hard but truly enjoy what they are doing. The next generation will have something to say about future transitions at Reed Haven Farms, but dairy and crops will likely be a part of it.

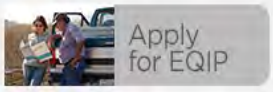
*The above profile was written by Peggy Murray in 2004 and is part of a series titled "Profiles of Successful Strategies for Small Dairy Farms," a publication project of the Northern New York Agricultural Development Program. The entire series may be found at the link: http://www.nnyagdev.org/dairyfarmprofiles.htm*

Programs

- Farm Bill
- Landscape Initiatives
- Financial Assistance
  - Agricultural Management Assistance
  - Conservation Innovation Grants
  - Conservation Stewardship Program
  - Environmental Quality Incentives Program
  - Regional Conservation Partnership Program
- Technical Assistance
- Easements
- Landscape Planning
- Alphabetical Listing & Archive

EQIP Nationwide

EQIP Payments



Apply for EQIP

# High Tunnel System Initiative


A High Tunnel System, commonly called a "hoop house," is an increasingly popular conservation practice for farmers, and is available with financial assistance through the Environmental Quality Incentives Program (EQIP). With high tunnel systems, no summer is too short or winter too cold because high tunnels:

Extend the growing season
Improve plant quality and soil quality
Reduce nutrient and pesticide transportation
Improve air quality through reduced transportation inputs
Reduce energy use by providing consumers with a local source of fresh produce

High tunnels protect plants from severe weather and allow farmers to extend their growing seasons – growing earlier into the spring, later into the fall, and sometimes, year-round. And because high tunnels prevent direct rainfall from reaching plants, farmers can use precise tools like drip irrigation to efficiently deliver water and nutrients to plants. High tunnels also offer farmers a greater ability to control pests and can even protect plants from pollen and pesticide drift.

A number of soil health practices can be used in high tunnels, including cover crops and crop rotations, which also prevent erosion, suppress weeds, increase soil water content, and break pest cycles.

Perhaps the best thing about high tunnels is that they help farmers provide their communities with healthy local food for much of the year – food that requires less energy and transportation inputs.

**Check out the high tunnel topic to learn more.**

**"We have really cold, wet springs with a lot of rain. High tunnels allow people to get into the ground and start producing crops earlier. They can also help people extend the growing season later as we go into the rains in the fall."**

--Danny Perich, Full Plate Farm, WA

## SUPPORTING PRACTICES

Supporting practices may be needed to ensure that resource concerns associated with implementing and managing high tunnel systems are addressed. These conservation practices may include:

Critical Area Planting
Diversion Grassed Waterway
Mulching

Programs

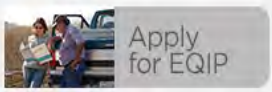
- Farm Bill
- Landscape Initiatives
- Financial Assistance
  - Agricultural Management Assistance
  - Conservation Innovation Grants
  - Conservation Stewardship Program
  - Environmental Quality Incentives Program
  - Regional Conservation Partnership Program
- Technical Assistance
- Easements
- Landscape Planning
- Alphabetical Listing & Archive

Additional Information

- 2015 EQIP Organic Initiative Attachment B
- NRCS Organic Farming Technical Assistance
- Find A Technical Service Provider
- National Organic Program (AMS website)
- National Sustainable Agriculture Information Service EQIP Organic Initiative Page


EQIP Nationwide


EQIP Payments




Apply for EQIP

# EQIP Organic Initiative


The National Organic Initiative, funded through the Environmental Quality Incentives Program (EQIP), is a voluntary conservation program that provides technical and financial assistance for organic farmers and ranchers, or those interested in transitioning to organic. NRCS can help organic producers improve their operations or help producers transition to organic using a conservation plan tailored to their needs.

## Eligibility:

**Certified Organic** - producers with a USDA National Organic Program (NOP) Organic Certificate or proof of good standing from a USDA accredited certifying agent. The certification must be maintained for the life of the EQIP contract.

**Exempt from Certification of the NOP** - producers who are selling less than $5,000 a year in organic agricultural products and are exempt from NOP's certification. Exempt organic producers are eligible for the EQIP Organic Initiative if they self-certify that they agree to develop and work toward implementing an Organic Systems Plan (OSP), as required by the NOP.

**Transitioning to Organic** - producers who are in the process of transitioning to organic. Transitioning producers self-certify that they agree to develop and work toward implementing an OSP, as required by the NOP.

Assistance begins with the development of a conservation plan based on a needs assessment and each farmer's unique goals. The plan includes conservation practices, systems or activities, and the resource concerns identified in the assessment.

Common conservation practices, systems or activities planned include:

Improving irrigation efficiency;
Developing a Conservation Activity Plan for Transition that can be part of the OSP;
Establishing buffer zones;
Creating pollinator habitat;
Improving soil health and controlling erosion;
Developing a grazing plan and supportive livestock practices;
Enhancing cropping rotations;
Nutrient and pest management activities;
Managing cover crops; and
Installing a high tunnel system.

**Additional information about the Organic Initiative:**

- Financial assistance is limited to no more than $140,000 total over the 2018 Farm Bill years, 2019 through 2023.
- Producers must meet all other eligibility requirements associated with EQIP
- Participants who are not certified or exempt from certification, agree to develop and work towards implementing an Organic System Plan to meet National Organic Program organic certification through USDA

Although EQIP supports a wide variety of conservation practices, your local NRCS field office staff will work with you to develop an organic plan that includes practices that fits your resource needs as part of the Organic Initiative.

Organic and transitioning farmers and ranchers may also apply for assistance through general EQIP or other conservatoin initiatives.

For more information about NRCS resources for organic farmers, see the Organic Farming web page.

Ready to improve your organic operation or transition to organic?  Check out Apply for EQIP.

# USDA Organic

Many USDA agencies serve the growing organic sector. Whether you're already certified organic, considering transitioning all or part of your operation, or working with organic producers, we have resources for you. This portal connects you with programs, services, and educational materials that can help your organic farm or business.

| About Organic Certification | Technical Training & Financial Resources | Data and Research |
|---|---|---|
| Becoming an Accredited Certifier | Certification Cost Share | Economic Research |
| Database of Organic Farms and Businesses | Conservation Assistance | Market Reports: Price, Movement, and Demand |
| Factsheets: Learn the Basics | Crop Insurance | Organic Economic and Market Information |
| Getting Certified Organic | Extension Resources: eOrganic | Organic Production Surveys |
| Is Organic an Option for Me? | Financial Resources for Farmers and Ranchers | Organic Research, Education, and Extension Programs |

| | | |
|---|---|---|
| Organic Labeling<br><br>USDA Organic Standards | Get Training and Transition Assistance<br><br>Organic and Transitional Education and Certification Program<br><br>Sound and Sensible Tools: Videos, Tip Sheets, and Guides | Research Grant Opportunities<br><br>Trade and Organic |

USDA

United States Department of Agriculture

## Farm Service Agency

# Microloans

**FACT SHEET**
August 2019

## Overview

The Farm Service Agency (FSA) developed the microloan program to better serve the unique financial operating needs of new, niche, and small to mid-sized family farm operations.

Microloans offer more flexible access to credit and serve as an attractive loan alternative for smaller farming operations, like specialty crop producers and operators of community supported agriculture (CSA). These smaller farms, including non-traditional farm operations, often face limited financing options.

## Types Of Microloans

Two types of microloans are available: Farm Operating Loans and Farm Ownership Loans. The microloans are issued to the applicant directly from FSA.

- Operating microloans can be used for all approved operating expenses authorized by the FSA Operating Loan (OL) Program, including but not limited to: initial start-up expenses; annual expenses such as seed, fertilizer, utilities, land rents; marketing and distribution expenses; family living expenses; purchase of livestock, equipment and other materials essential to farm operations; minor farm improvements such as wells and coolers; hoop houses to extend the growing season; essential tools; irrigation; and delivery vehicles.
- Ownership microloans can be used for all approved expenses authorized by the FSA Farm Ownership (FO) Loan Program, such as to purchase a farm or farm land, enlarge an existing farm, construct new farm buildings, improve existing farm buildings, pay closing costs, and implement soil and water conservation and protection practices.

## Simplified Application Process

The microloan application process is simpler, requiring less paperwork to complete, consistent with a smaller loan amount. Requirements for managerial experience and loan security have been modified to accommodate veterans, smaller farm operations, and beginning farmers.

- Microloan applicants for operating loans will need to have some farm experience; however, FSA will consider an applicant's small business experience, as well as any experience with a self-guided apprenticeship, as a means to meet the farm management requirement. This will assist applicants who have limited farm skills by providing them with an opportunity to gain farm management experience while working with a mentor during the first production and marketing cycle.
- Microloan applicants for ownership loans need to have three years of farm experience out of the last 10 prior to the date of the application being submitted. One of the years can be substituted with any of the following experience:
  - Post-secondary education, that is at least 16 semester hours in agricultural business, horticulture, animal science, agronomy, or other agriculture-related fields

- Significant business management, that is at least one year of management experience in a non ag-related field where the applicant's day-to-day responsibilities included direct management experience, such as personnel decisions, payroll, and inventory ordering; however, not an individual who is a manager in title only
- Military leadership or management that is, as a general rule, any officer or E5 or above will have completed an acceptable military leadership course.
- If an applicant has successfully repaid an FSA youth loan, that experience may partially satisfy the experience requirement for a farm ownership loan.

## Security Requirements

Operating microloans for annual operating expenses must be secured by a first lien on a farm property or agricultural products having a security value of at least 100 percent of the microloan amount, and up to 150 percent, when available. Operating microloans made for purposes other than annual operating expenses must be secured by a first lien on a farm property or agricultural products purchased with loan funds and having a security value of at least 100 percent of the microloan amount.

Ownership microloans are secured by the real estate being purchased or improved. The value of the real estate must be at least 100 percent of the loan amount.

## Rates And Terms

Applicants may apply for microloans totaling a combined maximum of $100,000:  Up to $50,000 for a farm ownership loan and up to $50,000 for an operating loan.

For operating microloans, eligible applicants may obtain up to $50,000. The repayment term may vary and will not exceed seven years. Annual operating loans are repaid within 12 months or when the agricultural commodities produced are sold. Interest rates are based on the regular FSA operating loan rates that are in effect at the time of the microloan approval or microloan closing, whichever is less.

For ownership microloans, eligible applicants may obtain a microloan for up to $50,000. The repayment term may vary and will not exceed 25 years. Interest rates are the regular FSA farm ownership rates in effect at the time of the loan approval or closing.

## How To Apply

FSA microloan application forms can be obtained from the local FSA office or can be downloaded and printed from the USDA website at **fsa.usda.gov/microloans.** Applicants who are having problems gathering information or completing forms should contact their local FSA office for help. After completing the required paperwork, an applicant should submit the farm loan application to their local FSA office. To find your local FSA office, visit **farmers.gov**.

## What Happens After A Loan Application Is Submitted?

After a loan application is submitted, FSA reviews the application and determines if the applicant is eligible for the requested loan. The applicant will receive written notification of each step in the process, such as when the application is received, determination is made and when a final decision is made. If the application is approved, FSA makes the loan and funds are distributed as needed. If the application is denied, the applicant is notified in writing of the specific reasons for the denial and provided reconsideration and appeal rights.

## Who Is Eligible?

To qualify for assistance, the applicant must not be larger than a family-sized farmer, have a satisfactory history of meeting credit obligations, be unable to obtain credit elsewhere at reasonable rates and terms and meet all other loan eligibility requirements.

## More Information

For more information, visit **fsa.usda.gov/farmloans** or **farmers.gov**. Find your local USDA Service Center at **farmers.gov/service-locator**.

# Appendix I
Agricultural Tax Relief Program Information

## Appendix I Includes:

- Historic Barn Rehabilitation Tax Credit Qualifications and Instructions

- Exemptions for Farmers and Commercial Horse Boarding Operators

- 480-a Forest Tax Law Overview

- The Farmers' School Property Tax Credit: How Can it Work for You?

- Questions and Answers on New York State's Farmers' Property School Tax Credit

# Historic Barn Rehabilitation Tax Credit Qualifications & Instructions

New York State Parks, Recreation and Historic Preservation

## Owners of barns may qualify for the New York State Historic Barn Rehabilitation Tax Credit, which is a state income tax credit equal to 25% of Qualified Rehabilitation Expenditures

**Qualifications:**

- You must be a New York State taxpayer.
- The barn must have been constructed prior to 1946, OR
- The barn must be a contributing building to a property listed in the State or National Register of Historic Places.
- Your barn must have been used as an agricultural facility or for related purposes.
- Your qualified rehabilitation expenditures must amount to $5,000 or more.
- The rehabilitation project must not alter or change the historic appearance of the barn.
- The barn must not have been used as a residence within one year prior to applying for the credit.
- The project must not convert the barn to a residence.
- The credit may be applied to certain work that has already been completed.

Please contact the NYS Division for Historic Preservation (DHP) staff at (518) 237-8643 with questions about program qualifications. Additional program information and documents can be found online at https://parks.ny.gov/shpo/tax-credit-programs/.

**The Application:**

The application comprises three parts. Parts 1 and 2 are submitted together and may be submitted prior to work commencing on the property or during the rehabilitation project. Part 3 is submitted after the work is completed.

**Part 1:** Provides the baseline information about the applicant and barn. This helps the DHP establish that the barn meets the qualifications listed above.

**Part 2:** Establishes the proposed work and breaks down the work items into categories (roof, structural framing, etc.). Part 2 additionally requires a brief description of the barn's existing condition, the proposed rehabilitation, estimated costs, and references to images. *Note: you do not need formal estimates from a contractor to submit your application.*

**Part 3:** To be submitted after work is complete. The credit is claimed for the tax year in which the Part 3 is approved. Please submit a description of each complete work item and references to photos.

*Note: the DHP does not require copies of invoices or receipts; please keep those for your tax records.*

**Images/Photographs:**

- Please provide images/photographs of all visible exterior elevations of the barn. This helps DHP evaluate the condition of the structure and the proposed work.
- It is best to provide digital images on a CD or USB/thumb drive. Generally, emailed digital images will not be accepted unless authorized by DHP staff.
- All image files should be named with a number and location.
- Printed color photographs on photo paper are acceptable if a digital photo submission is not possible.

**Part 1 and 2 Submissions Require:**

- Exterior photos of all visible elevations of the barn.
- Photos of all areas where work will be or has been completed.
- If work has been completed, photos showing the barn before the work must be provided.
- Project worksheet(s) describing the proposed work *(if work has already been completed, submit Part 1 & 2 and Part 3 applications together and only include the Part 3 worksheet).*
- Manufacturer's Product Information (if applicable).
- Work completed within the last five years may qualify. Photos showing the barn before and after the work must be provided.

**Part 3 Submissions Require:**

- Exterior photos of all visible elevations showing completed work.
- Additional photos showing remaining areas where work has been completed.
- Part 3 project worksheet showing the amount of qualified rehabilitation expenditures.

**Qualifying Rehabilitation Expenditures include, but are not limited to:**

- Roofs; repair or replacement (with approved material), installation of gutters
- Siding/cladding/sheathing; repair or replacement in-kind, exterior painting
- Foundation repair or replacement
- Foundation drainage
- Masonry; repair or replacement in-kind
- Jacking, leveling, and other structural work, including cabling, bracing, and shoring
- Window & door repair or replacement in-kind
- Flooring repair or replacement in-kind, stair repair or replacement in-kind
- General carpentry
- Mechanical, Electrical and Plumbing (MEP) costs
- "Soft" or professional labor costs; architect, engineer, building/preservation consultant, permit fees
- ADA or OSHA-compliant upgrades, other components related to the building's operation
- Rehabilitation expenditures paid or incurred within the five years immediately preceding the year in which the tax credit shall be applied

**Non-Qualifying Rehabilitation Expenditures:**

- Building additions or extensions of the historic barn's footprint, except for reconstruction of missing historic wings/ additions that is based on physical evidence and other documentation of its appearance
- Enclosure of interior spaces with sheetrock or concealing materials
- Partitioning a substantial amount of interior space
- Removal of structurally sound framing or features, i.e., hay lofts, hay tracks/forks, silos
- Addition of interior mezzanine spaces
- Installation of salvaged architectural parts for decorative purposes
- Interior painting, staining and other cosmetic changes i.e., wallpaper
- Fixtures associated with new kitchens and bathrooms, i.e., cabinetry, appliances, toilets, etc.
- Landscaping
- Alarm systems
- Carpets
- Demolition costs, rubbish removal
- Fencing
- Financing fees, insurance fees, administrative costs, and processing fees
- Equipment such as scaffolding or bucket truck rental, furniture
- Labor completed by the barn owner, tools
- Routine cleaning and maintenance
- Outdoor lighting remote from the building
- Parking lots, walkways, patios, retaining walls not associated with original barn function
- Signage
- Work performed outside the barn's footprint

NEW YORK STATE | Department of Taxation and Finance

**Tax Bulletin**
Sales and Use Tax
TB-ST-244
April 8, 2019

# Exemptions for Farmers and Commercial Horse Boarding Operators

## Introduction

Farmers and commercial horse boarding operators can buy certain items and services without paying state and local sales or use taxes. This bulletin:

- identifies what purchases are exempt from tax,
- identifies what purchases are eligible for a refund or credit of tax, and
- describes what exemption or other documents should be used to make these purchases or apply for refunds or credits.

## Definitions

The word *farming* covers many different activities, including:

- agriculture, floriculture, horticulture, aquaculture, viniculture, viticulture, and silviculture;
- stock, dairy, poultry, fruit or vegetable, graping, truck, and tree farming (e.g., maple trees or Christmas trees);
- ranching;
- raising fur-bearing animals;
- operating orchards;
- raising, growing, and harvesting crops, livestock, and livestock products; and
- raising, growing, and harvesting woodland products including logs, timber, lumber, pulpwood, posts, and firewood.

A *commercial horse boarding operation* is a business that:

- operates on at least seven acres;
- boards at least 10 horses (regardless of ownership); and
- receives $10,000 or more in gross receipts annually from fees generated from:
  - the boarding of horses; or
  - the production for sale of crops, livestock, and livestock products; or
  - both these activities.

A commercial horse boarding operation does not include any operation where the primary on-site function is horse racing.

*Farm production* begins with the preparation of the soil or other growing medium, or with the beginning of the life cycle for animals. Farm production ends when the product is ready for sale in its natural state. For farm products that will be converted into other products, farm production ceases when the normal development of the farm product has reached a stage where it will be processed or converted into another product.

> **Example:** *Production ends when cattle are ready to be processed into meat; raw milk into butter, cheese or bottled milk; grapes into wine or juice, etc.*

## Exemption certificates and refunds

To make qualifying purchases, other than motor fuel and diesel motor fuel, without paying sales tax, a farmer or commercial horse boarding operator must fill out Form ST-125, *Farmer's and Commercial Horse Boarding Operator's Exemption Certificate*, and give it to the seller. See below for special rules for purchases of motor fuel and diesel motor fuel.

Any sales tax paid on a purchase that otherwise qualifies for the exemption can be refunded. See Tax Bulletins *How to Apply for a Refund of Sales and Use Tax* (TB-ST-350), and *Sales Tax Credits* (TB-ST-810).

## Machinery, equipment, and supplies

A farmer's or commercial horse boarding operator's purchase of tangible personal property, such as machinery, equipment, and supplies, is exempt from sales tax if the property is used or consumed predominantly (more than 50% of the time) in farm production or in commercial horse boarding operations.

Property that can be purchased exempt from sales tax includes, but is not limited to:

- bale throwers
- barn cleaners
- barn ventilators
- beekeeping supplies
- blowers
- bulk milk tanks
- combines
- conveyors
- electrical systems
- farm wagons and carts
- feed and feed troughs
- fertilizers
- grain bins and tanks
- grain drills
- harvesters
- irrigation pipes and fittings
- livestock bedding
- manure spreaders
- parts and tools for farm equipment
- piping systems
- plants, seeds, and other propagative materials
- plows
- sprayers
- tack
- tractors

## Computers

A computer that will be used predominantly in either farm production or in a commercial horse boarding operation, or in both, can be purchased without the payment of sales tax. This includes a computer used predominantly to:

- turn milking machines on and off;
- direct machinery and equipment used for measuring and delivering feed to livestock;
- turn irrigation systems on and off;
- maintain animal feed, weight, and health records; or
- perform agricultural research.

## Vehicles

Motor vehicles, trailers, ATVs, boats, and snowmobiles that are used predominantly in farm production or in a commercial horse boarding operation, or in both, are exempt from sales and use taxes. In order to be exempt, the vehicle, trailer, ATV, boat, or snowmobile must be used for farm production on property actually farmed or on property actually used in a horse boarding operation, or both. Usage can be measured by hours of use or by miles traveled.

## Building materials

Building materials that will be used to build, add to, improve, install, maintain or repair real property used predominantly in farm production or in a commercial horse boarding operation, or in both, can be purchased without paying sales tax. These tax-free purchases may be made by a farmer or commercial horse boarder, or by a contractor hired to do the work. **Note:** The exemption for purchases of building materials by contractors, subcontractors, or repairmen is available only if the materials become an integral component part of a building, structure, or real property used predominantly in farm production or in a commercial horse boarding operation, or in both.

Examples would be purchases of materials to build or repair:

- animal barns,
- hay and feed storage barns,
- barns or garages to park and store farm production equipment,
- fences,
- silos, and
- greenhouses.

A contractor, subcontractor or repairman should use Form ST-120.1, *Contractor Exempt Purchase Certificate*, to make qualifying exempt purchases.

## Services

Charges for installing, maintaining, servicing, or repairing tangible personal property, or for maintaining, servicing, or repairing real property, used or consumed predominantly in farm production or in a commercial horse boarding operation, or in both, are also exempt from sales and use taxes.

> **Example:** *A commercial horse boarder hires a contractor to repair the roof on a stable used to house horses. This repair service is exempt.*
>
> **Example:** *A farmer hires a contractor to perform maintenance on the farm's irrigation system. This maintenance service is exempt.*
>
> **Example:** *A farmer hires a contractor to install a fence to keeps cows in a pasture. This installation service is exempt from tax.*

## Utilities

Utilities used or consumed in farm production or in a commercial horse boarding operation, or in both, are also exempt from sales and use taxes. This includes:

- non-highway diesel motor fuel (but not motor fuel or highway diesel motor fuel);
- gas (natural gas, propane, etc.);
- electricity;
- refrigeration;
- steam; and
- gas, electric, refrigeration and steam services.

*Non-highway diesel motor fuel* that is used in farm production or in a commercial horse boarding operation, or in both, can be purchased exempt from sales and use taxes by giving the seller Form FT-1004, *Certificate of Purchases of Non-Highway Diesel Motor Fuel or Residual Petroleum Product for Farmers and Commercial Horse Boarding Operations*.

## Motor fuel and highway diesel motor fuel

*Motor fuel* (gasoline) and *highway diesel motor fuel* cannot be purchased without paying sales tax. However, a farmer or commercial horse boarder can use Form FT-500, *Application for Refund of Sales Tax Paid on Petroleum Products*, to claim a refund of sales tax paid on these products when used in farm production or in a commercial horse boarding operation, or in both.

Additionally, a farmer (but not a commercial horse boarder) can use Form FT-420, *Refund Application for Farmers Purchasing Motor Fuel*, to claim a refund of the motor fuel excise tax, the petroleum business tax, and the sales tax on motor fuel (but not diesel motor fuel) used *directly and exclusively* in farm production.

**Note:** A Tax Bulletin is an informational document designed to provide general guidance in simplified language on a topic of interest to taxpayers. It is accurate as of the date issued. However, taxpayers should be aware that subsequent changes in the Tax Law or its interpretation may affect the accuracy of a Tax Bulletin. The information provided in this document does not cover every situation and is not intended to replace the law or change its meaning.

### References and other useful information

**Tax Law:** Sections 1101(b)(19), 1101(b)(20), 1115(a)(6), (15) and (16), 1115(c)(2), and 1115(j)

**Regulations:** Section 528.7

**Memoranda:**
TSB-M-00(8)S, *Farmers and Commercial Horse Boarding Operations*
TSB-M-18(1)S, *Summary of Sales and Use Tax Changes Enacted in the 2018-2019 Budget Bill*

**Bulletins:**
*How to Apply for a Refund of Sales and Use Tax* (TB-ST-350)
*Sales Tax Credits* (TB-ST-810)

# 480-a Forest Tax Law Program Overview

## What It Is

The New York Forest Tax Law Program (commonly called "480-a" after the section of the tax code relating to it) is a property tax reduction program. Participation is voluntary, and you must own at least 50 acres of woods in adjoining properties in New York to be eligible. 480-a lowers your taxes by exempting up to 80% of the assessed value of enrolled acreage from property taxes.

480-a offers the potential for you to save substantially on your property taxes every year. It can also help you look after your woodlot for the future and increase your long-term income from your land. However, it requires commitment to managing your woods for ten years. Consider the benefits and obligations carefully before you sign up. You may want to have a professional forester visit your property and provide a second opinion on whether enrollment makes sense for you prior to committing.

To enroll, you'll need a management plan for your woods prepared by a professional forester and approved by the New York State Department of Environmental Conservation. If your property is inside the New York City Watershed, you can apply to the Watershed Agricultural Council for funding to help offset the cost of getting that plan.

## What You're Signing Up For To Get Your Tax Break

Once you enroll in 480-a, you must commit to following your management plan for ten years. 480-a has an annual recommitment, meaning that each year you receive your tax break, you commit to following your management plan for ten years afterward.

While you are enrolled in 480-a, you may not develop acreage that has had its assessed value exempted. You also may not subdivide your property into areas smaller than 50 acres. When your management plan requires you to harvest trees, you must pay a 6% tax on the value of what you sell. Failure to follow these requirements or your management plan may result in your removal from the program and the assessment of back taxes and penalties.

## Frequently Asked Questions About 480-a

### What Are My Responsibilities While I'm Enrolled?

Please note: Your forester can help you with all of these tasks.

1. Mark and maintain the boundary lines of your enrolled acreage.
2. File an annual commitment form with your Town Assessor and DEC Regional Forester.

3. Comply with your management plan's work schedule for a ten-year period after obtaining each annual exemption.
4. Submit an updated work schedule every five years.
5. When you're going to harvest trees, submit a notice of cutting to your DEC Regional Forester not less than 30 days prior to cutting. You will need to pay a 6 percent tax on the stumpage value to your County Treasurer within 30 days of the receipt of your trees' certification of value from DEC.

What's a Management Plan?

Management plans show the boundaries and size of your woodlot, what kinds and sizes of trees it contains, and what needs to be done to harvest trees. A plan identifies scheduled commercial harvests, noncommercial thinnings, road construction, and other management practices. These practices are listed in a work schedule that shows the work to be done each year for the next 15 years.

Who Writes the Management Plan? Can I Do It?

Because professional judgment is required to prepare a forest management plan, it must be prepared by a qualified forester. You must pay the cost of this service. Landowners in the New York City Watershed can apply for funding to help offset this cost. A directory of foresters who can help you write your plan is available here.

Do I Have to Follow My Management Plan?

Yes. Failure to adhere to your plan's work schedule will result in revocation of the certificate of approval by the Department of Environmental Conservation and the imposition of penalties and roll-back taxes.

Please note: Although you have to follow your plan, DEC will consider changes to your work schedule. If you need to adjust your plan for any reason, consult your forester for advice.

What Are The Penalties for Not Following the Program?

Properties removed from 480-a are subject to 2.5 times the tax savings, plus interest, for up to the past 10 years you've been enrolled in 480-a. When only portions of properties are removed (for example, if you choose to develop on enrolled land), the penalty is 5 times the tax savings, plus interest, for up to the past 10 years.

Can I Sell My Land While I'm Enrolled?

Yes, but the obligation to follow the management plan stays with the property for the remainder of the commitment period. Also, subdivisions of less than 50 acres will be subject to roll-back taxes if established within the commitment period.

What If I Decide I Don't Like 480-a? Can I Get Out Of It?

Each year you receive your tax break, you commit to following your management plan for the next ten years. If you decide to leave the program, you must still follow your plan for ten years after your tax break ends. If you choose not to follow that plan, you may be subject to back taxes and penalties.

# The Farmers' School Property Tax Credit: *How can it work for YOU?*

New York Farm Bureau • 159 Wolf Rd, PO Box 5330, Albany, NY 12203 • 800-342-4143 • http://www.nyfb.org

### What is the Farmer's School Property Tax Credit?

The Property Tax Credit enables farmers to receive a tax credit from the state personal income tax or the corporation franchise tax to reimburse some or all of the school district property taxes paid by the farmer.

### Am I eligible?

- An individual farmer or corporation must be defined as an "eligible farmer."
- The individual or corporation must own qualified agricultural property.
- The individual or corporation must pay eligible school taxes during the year.
- The individual's or corporation's income must be below the income limitation amount.

### Who is an "eligible farmer"?

An individual or corporation that receives at least **2/3 of his or her excess federal gross income from farming**. *Excess* federal gross income is federal gross income, reduced by up to $30,000. ***In other words, take gross income and subtract $30,000. If 2/3 of the remaining amount is from the farm, you generally will qualify.***

### CHANGES IMPROVE BENEFITS TO FARMERS:

New York Farm Bureau has successfully advocated for recent changes to the Farmer's School Property Tax Program that will address agriculture's changing needs.

- Land owned by immediate family members now qualifies for the program.
- Commercial Horse Boarding Operations are eligible for the program.
- Christmas Tree Operations and farms organized as C-corporations are now eligible for the program.
- Acre eligibility has increased from 250 acres to 350 acres.
- The modified adjusted gross income limit has increased from $150,000 to $250,000.

**As an example:** your federal gross income is $75,000. Included in that gross income is $25,000 from your spouse's job, $10,000 from your part-time job and $40,000 **gross income** from the farm. Your excess federal gross income would be $45,000 ($75,000-$30,000). 2/3 of $45,000 is $30,000 so your $40,000 **gross income** from farming would more than meet the 2/3 requirement and you would be considered an "eligible farmer".

Farming is defined as an individual or corporation that cultivates, operates or manages a farm for gain or profit, even though the operation may not produce a profit each year. Also included in the definition of farming are members of a limited liability company, a shareholder of an S or C corporation, and the beneficiary of an estate or trust that is engaged in the business of farming. Many commodities are included in the definition of farming as well, so check the IT-217-I form to be sure.

There may be years when, due to unforeseen circumstances such as crop failures, an eligible farmer does not meet the 2/3 requirement. When this occurs the eligible farmer is now allowed to use an ***average*** gross income from farming in calculating their excess federal gross income. The average gross income from

Over

farming is calculated using the gross income from farming of the respective taxable year and the gross incomes from farming of the two previous consecutive taxable years.

### How is the amount of my deduction determined?

The credit equals 100% of the school taxes paid on qualified agricultural property where the acreage does not exceed the base acreage amount, and 50% of the school taxes paid on acres exceeding the base acreage amount. The base acreage amount for 2006 and thereafter is 350 acres.

### What is defined as qualified agricultural property?

Qualified agricultural property includes land and land improvements in New York State that are used in agricultural production. Also included are structures and buildings that are located on the land and are used or occupied in order to perform agricultural production. In addition, land set aside in federal supply management programs or soil conservation programs are included.

### Is my residential property considered qualified agricultural property?

No, residential property is not qualified agricultural property. This includes your personal house, mobile home, etc. and any buildings associated with the owner's residence (garage, shed). Housing that is provided for essential farm employees (not including the owner's) does meet the definition of qualified agricultural property and can receive the credit.

### What about woodland?

Woodland property that is used for agricultural production or for the production of woodland products used in the farm operation is included as qualified agricultural property. So, woodland used for pasture does qualify, as does woodland adjacent to agricultural property because it provides erosion control or wind protection.

### Does rented land qualify for the credit?

Land that you rent for agricultural purposes does not qualify; only land that you own qualifies for the credit. If you own land that you rent to someone else, and that person uses the land for agricultural purposes, then you may consider those acres as part of your qualified agricultural property.

In the case of a land contract, the buyer will be treated as the owner of the property as long as they are obligated under the land contract to pay the school district property tax and deduct those taxes as a tax expense for federal income tax purposes.

### What is the income limitation amount?

The income limitation reduces or eliminates the credit for higher income taxpayers. The limitation is based on modified adjusted gross income (individuals) or modified entire net income (corporations). If your taxable income is between $200,000 and $250,000 your credit will be reduced by a percentage.

### How do I apply & claim the credit?

You claim the credit on your personal income tax return or the corporation franchise tax return when you file each year. Individuals and estates/trusts complete the Form IT-217-I, *Claim for Farmers' School Tax Credit,* and corporations complete the Form CT-47, titled the same.

### Where can I go for more information?

For tax information you can call 1-800-462-8100 or for forms and publications call 1-800-462-8100. Many of the resources needed for the program can are linked on the NYFB website: www.nyfb.org under the "Farm Management Resources: Tax Link" site.


New York State Department of Taxation and Finance

# Claim for Farmers' School Tax Credit

# IT-217

**Submit this form with Form IT-201, IT-203, or IT-205.**

| Name(s) as shown on return | Identifying number as shown on return |
|---|---|
| | |

**Note: Before completing this form, complete Form IT-201 through line 33, Form IT-203 through line 32, or Form IT-205 through line B.**

## Part 1 – Eligibility *(see instructions)*

If you mark an ***X*** in *a No* box for item A, B, C, or D, **stop**; you do not qualify for this credit.

**A** Did you have qualified agricultural property for tax year 2013? *(see instr., Form IT-217-I)* ..... Yes ☐ No ☐

**B** Were eligible school district property taxes paid on that property during tax year 2013? *(see instructions)* ..... Yes ☐ No ☐

**C** Complete Worksheet A on page 3 of the instructions. Is the amount shown on line 6 of Worksheet A less than $300,000? ..... Yes ☐ No ☐

**D** Form IT-201 and Form IT-203 filers, complete Worksheet C on page 6 of the instructions. Form IT-205 filers, complete Worksheet D on page 9 of the instructions. Is the percentage shown on line 28 of Worksheet C or line 28 of Worksheet D at least 0.6667 (66.67%)? *(see instructions)* ..... Yes ☐ No ☐

**E** If you and one or more related persons *(see instructions)* each owned qualified agricultural property on March 1, 2013, mark an ***X*** here and see the instructions for Part 2, line 5 ..... ☐

**F** If all or part of your qualified agricultural property was converted to nonqualified use during tax year 2013, mark an ***X*** here *(see instructions)* ..... ☐

## Part 2 – Computation of credit *(see instructions)*

| | | | | | |
|---|---|---|---|---|---|
| 1 | **Individuals:** Enter the total acres of qualified agricultural property owned by you during tax year 2013 *(see instructions)* ..... | | | 1 | |
| 2 | **Partners, S corporation shareholders, and beneficiaries of estates and trusts:** Enter the amount from Part 4, line 7, column A ..... | | | 2 | |
| 3 | **Fiduciaries:** Enter fiduciary's share of qualified agricultural property from Part 5, column C ..... | | | 3 | |
| 4 | Add lines 1, 2, and 3 ..... | | | 4 | |
| 5 | Enter total base acreage amount *(see instructions)* ..... | | | 5 | |
| 6 | Subtract line 5 from line 4 *(if zero or less, skip lines 7 and 8, enter 1.0000 (100%) on line 9, and continue on line 10)* ... | | | 6 | |
| 7 | Multiply line 6 by 50% (.5) ..... | | | 7 | |
| 8 | Add lines 5 and 7 ..... | | | 8 | |
| 9 | Divide line 8 by line 4 and round the result to the fourth decimal place ..... | | | 9 | |
| 10 | **Individuals:** Enter the eligible school taxes you paid during 2013 *(see instr.)* | 10 | .00 | | |
| 11 | **Partners, S corporation shareholders, and beneficiaries of estates and trusts:** Enter the amount from Part 4, line 7, column B..... | 11 | .00 | | |
| 12 | **Fiduciaries:** Enter fiduciary's share of eligible taxes from Part 5, column D | 12 | .00 | | |
| 13 | Add lines 10, 11, and 12 ..... | | | 13 | .00 |
| 14 | Multiply line 13 by line 9 ..... | | | 14 | .00 |
| 15 | Enter amount from Worksheet A, line 6, on page 3 of the instructions *(if line 15 amount is $200,000 or less, skip lines 16, 17, and 18, and enter the line 14 amount on line 19; see instr.)* | 15 | .00 | | |
| 16 | Enter the excess of line 15 over $200,000 *(cannot exceed $100,000)*..... | 16 | .00 | | |
| 17 | Divide line 16 by $100,000, and round the result to the fourth decimal place *(cannot exceed 1.0000 (100%))* | | | 17 | |
| 18 | Multiply line 14 by line 17 ..... | | | 18 | .00 |
| 19 | Farmers' school tax credit *(subtract line 18 from line 14; see instructions)* ..... | | | 19 | .00 |

## Part 3 – Partnership, S corporation, and estate or trust information *(see instructions)*

If you were a partner in a partnership, a shareholder of a New York S corporation, or the beneficiary of an estate or trust that **owned** qualified agricultural property during 2013, complete the following information for each partnership, S corporation, or estate or trust. For *Type* column, enter ***P*** for partnership, ***S*** for S corporation, or ***ET*** for estate or trust.

| Name of entity | Type | Employer ID number | Location of property |
|---|---|---|---|
| | | | |
| | | | |

## Part 4 – Partner's, shareholder's, or beneficiary's share of qualified agricultural property and eligible taxes *(see instr.)*

| | | | A – Acres of qualified agricultural property | B – Eligible taxes |
|---|---|---|---|---|
| **Partner** | 1 | Enter your share of acres of qualified agricultural property from your partnership ..... | | |
| | 2 | Enter your share of eligible taxes from your partnership ..... | | .00 |
| **S corporation shareholder** | 3 | Enter your share of acres of qualified agricultural property from your S corporation ..... | | |
| | 4 | Enter your share of eligible taxes from your S corporation ..... | | .00 |
| **Beneficiary** | 5 | Enter your share of acres of qualified agricultural property from the estate or trust ..... | | |
| | 6 | Enter your share of eligible taxes from the estate or trust ..... | | .00 |
| | 7 | **Totals** ..... | | .00 |

**Fiduciaries:** Include the line 7, column A amount, on Part 5, column C, and include the line 7, column B amount, on Part 5, column D.
**All others:** Enter the line 7, column A amount, on Part 2, line 2, and enter the line 7, column B amount, line 11.

## Part 5 – Beneficiary's and fiduciary's share of acres of qualified agricultural property and eligible taxes *(see instr.)*

| A – Beneficiary's name | B – Identifying number | C – Acres of qualified agricultural property *(see instructions)* | D – Eligible taxes *(see instructions)* | E – Acres of qualified agricultural property converted to nonqualified use *(see instructions)* |
|---|---|---|---|---|
| **Totals** | | | .00 | |
| | | | .00 | |
| | | | .00 | |
| **Fiduciary** | | | .00 | |

## Part 6 – Credit recapture on qualified agricultural property converted to nonqualified use

*(Complete this part only if you first claimed a credit for 2011 or 2012. See instructions.)*

| A – Total acres of qualified agricultural property converted to nonqualified use *(see instructions)* | B – Total acres of qualified agricultural property before conversion *(see instructions)* | C – Column A ÷ column B | D – Total credit claimed for 2011 and 2012 *(see instructions)* | E – Total amount of 2011 and 2012 credit to be recaptured *(column C × column D; see instr.)* |
|---|---|---|---|---|
| | | | .00 | E .00 |

Publication 51 (11/97)

New York State Department of Taxation and Finance

## Questions and Answers on New York State's

# Farmers' School Tax Credit

New York State
Department of
Taxation and Finance

**Publication 51.1**
Publication 51 Update
December 2006

# Update to Publication 51
# Questions and Answers on New York State's Farmers' School Tax Credit

**Note: This update supersedes Publication 51.1 dated April 2006. The current version of Publication 51 is dated 11/97.**

Legislation passed by the legislature and signed into law by Governor Pataki during 1998, 1999, 2003, 2005, and 2006 provides new enhancements to the *Farmers' School Tax Credit*. In addition, information is added concerning several issues addressed in the original publication. The law changes and the additional information about the credit are explained below. Except as explained in this update, all other issues addressed in Publication 51 remain valid.

## Legislative Changes

### Part II - Eligible Farmer

For tax years **beginning on or after January 1, 2003**, the statutory definition of *eligible farmer* has been expanded. Taxpayers will meet the definition of *eligible farmer* if their:

- federal gross income from farming for the tax year is at least two-thirds of their excess federal gross income; or

- average of federal gross income from farming for the tax year and the two consecutive tax years immediately preceding that tax year is at least two-thirds of their excess federal gross income for the tax year.

Prior to the amendment, taxpayers met the definition of *eligible farmer* only if their federal gross income from farming for the tax year was at least two-thirds of their excess federal gross income.

The following revisions have been made to question 2 on page 5 and questions 3 and 4 on page 6.

For purposes of question 2, *What is considered farming for purposes of this credit?*, for tax years **beginning in 2006 and after**, a person is also engaged in the business of farming if the person is a shareholder of a New York C corporation that has made a special gross income from farming election on Form CT-47.1, *Election or Termination of Election to Deem Income for Purposes of the Farmers' School Tax Credit.*

In addition, *farming* will include commercial horse boarding operations as defined in section 301(13) of the Agriculture and Markets Law and the growing of Christmas trees, for purposes of transplanting or cutting from the stump, under a managed Christmas tree operation.

For purposes of question 3, *What is considered gross income from farming for an individual?*, and for question 4, *What is gross income from farming for a corporation?*, for tax years **beginning in 2006 and after**, gross income from farming will also include gross income from commercial horse boarding operations as defined in section 301(13) of the Agriculture and Markets Law, to the extent not included in farm income reported on the individual's or corporation's federal income tax return and gross income from the growing of Christmas trees, for purposes of transplanting or cutting from the stump, under a managed Christmas tree operation.

Also for purposes of question 3, for tax years **beginning in 2006 and after**, gross income from farming includes:

• your pro rata share of gross income from farming from a New York C corporation that has made a special gross income from farming election on Form CT-47.1;

• your pro rata share of your partnership's gross income from farming that represents the partnership's pro rata share of gross income from farming from a New York C corporation that has made a special gross income from farming election on Form CT-47.1; and

• your pro rata share of your New York S corporation gross income from farming that represents the S corporation's pro rata share of gross income from farming from a New York C corporation that has made a special gross income from farming election on Form CT-47.1.

**Part III - Qualified Agricultural Property**

For tax years **beginning in 2001 and thereafter**, the statutory definition of *qualified agricultural property* has been expanded to include land set aside or retired under a federal supply management or soil conservation program. (Note: This amendment merely confirms existing Tax Department policy that such property qualifies for the credit: See Part III, question 10, on page 11.)

Also, for tax years **beginning in 2006 and after**, the definition of *qualified agricultural property* includes land that at the time it becomes subject to a conservation easement would have been *qualified agricultural property*. (Note: Prior to this amendment, land that was subject to a conservation easement would have been *qualified agricultural property* **only** if such land was used in agricultural production.)

**Part IV: Eligible Taxes**

The answer to question 1 on page 13 states that only real property taxes levied by a school district on qualified agricultural property **owned** by the taxpayer qualify for the credit. For tax years **beginning in 1999 and thereafter**, in the case of the sale of qualified agricultural property under a land sales contract,* the buyer will be treated as the owner of the property if the following conditions are met:

- the buyer must be obligated under the land sales contract to pay the school district property taxes on the purchased property; and

- the buyer must be entitled to deduct those taxes as a tax expense for federal income tax purposes.

A buyer who meets these conditions will be considered the owner even though legal title to the property (i.e., the deed) has not been transferred to the buyer. Accordingly, the buyer, if an eligible farmer, will be entitled to claim the credit (subject to the credit limitation based on income).

**Note:** If the buyer is treated as the owner under these provisions, the seller may not claim the credit for the same property.

For tax years **beginning in 2005 and after**, eligible school district property taxes levied by a school district on qualified property owned by the taxpayer's father, mother, grandfather, grandmother, brother, or sister qualify for the credit if (1) the taxpayer has a written agreement with the owner(s) that the taxpayer intends to eventually purchase that qualified agricultural property, even if the taxpayer did not actually pay the school district property taxes on the qualified agricultural property, and (2) the owner(s) has given the taxpayer a document stating that the owner(s) is waiving his/her right to claim the credit, if any, on the qualified agricultural property that is subject to the written agreement.

The written agreement does not have to be in any particular legal form but it must be signed by all parties to the agreement and must have been in effect for at least part of the tax year to which the credit relates. The waiver document does not have to be in any particular form, but it can be for only one tax year and must include (1) the name of the owner(s), (2) the name of the relative with whom the owner(s) has entered into a written agreement to sell his/her qualified agricultural property, (3) a statement that the owner(s) is waiving his or her right to claim the farmers' school tax credit, (4) the tax year to which the waiver applies, (5) the date the agreement to sell was entered into, and (6) the signature of the owner(s). The waiver document must be given to the taxpayer even if the owner(s) does not qualify to claim the farmers' school tax credit on the property. Once the waiver is made for a tax year, it cannot be revoked for that tax year, but the owner(s) may decide whether or not to issue a waiver for any subsequent tax year.

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*A land sales contract, commonly referred to as an *installment land contract*, is an agreement to transfer land ownership in exchange for a series of principal and interest payments. The seller does not transfer formal title to the property to the buyer until all or a certain number of payments are made. A land sales contract may also be referred to as *contract for deed, bond for deed, conditional sale of real estate, contract for sale of land*, and *land contract*. A *lease with an option to purchase* type arrangement is not a land sales contract.

**Part V: Base Acreage and Related Party Rules**

Under question 2, on page 15, the base acreage amount of 250 acres will now apply to tax years **beginning after 1997 and before 2006**. Previously, this increase was scheduled to take effect for tax years beginning in 1999 and thereafter. For tax years **beginning in 2006 and after**, the base acreage amount is increased to 350 acres.

Also, for tax years **beginning in 2001 and thereafter**, the base acreage amount is increased by acreage enrolled or participating in a federal environmental conservation acreage reserve program pursuant to Title Three of the Federal Agricultural Improvement and Reform Act of 1996. This provision will allow farmers who participate in this program and whose acres of qualified agricultural property exceed the base acreage amount to receive a larger Farmers' School Tax Credit.

**Example:** For tax year 2001, a farmer owns 300 acres of qualified agricultural property. Thirty acres of that property are enrolled or participating in a federal environmental conservation acreage reserve program pursuant to Title Three of the Federal Agricultural Improvement and Reform Act of 1996. Assuming the farmer otherwise qualifies for the Farmers' School Tax Credit, the farmer's base acreage amount for 2001 will be 280 acres (250 + 30). Accordingly, for 2001, the farmer will receive a credit of 100% of the school taxes paid on 280 acres of property and a credit for 50% of the taxes paid on 20 acres of property. Under prior law, the farmer would have only received a 100% credit for the taxes paid on 250 acres of property and a 50% credit for the taxes paid on the remaining 50 acres of property.

**Part VI: Credit Limitation Based on Income**

For tax years **beginning in 2006 and after**, the income limitation for purposes of determining credit eligibility is increased. The phaseout of the credit now occurs if the farmer's modified New York adjusted gross income or modified entire net income is between $200,000 and $300,000, with no credit allowable if the taxpayer's modified adjusted gross income or entire net income is over $300,000. Previously, this phaseout occurred when the farmer's modified New York adjusted gross income or modified entire net income was between $100,000 and $150,000, with no credit allowable if the taxpayer's modified adjusted gross income or modified entire net income was over $150,000.

**Appendix A: Federal Gross Income for Individuals**

Appendix A is revised to provide that for tax years **beginning in 2006 and after**, federal gross income from all sources includes:

• your pro rata share of gross income from a New York C corporation that has made a special gross income from farming election on Form CT-47.1, *Election or Termination of Election to Deem Income for Purposes of the Farmers' School Tax Credit*, and

• your pro rata share of your partnership's gross income and your pro rata share of your New York S corporation gross income that represents the partnership's and S corporation's pro rata share of gross income from a New York C corporation that has made a special gross income from farming election on Form CT-47.1.

Note: This information should be obtained from the New York C corporation, the partnership, and the New York S corporation.

**Appendix B: Federal Gross Income *From Farming* for Individuals**

Appendix B is revised to provide that for tax years **beginning in 2006 and after**, gross income from farming also includes:

• gross income from commercial horse boarding operations as defined in section 301(13) of the Agriculture and Markets Law, to the extent not included in farm income reported on the individual's federal income tax return and gross income from the growing of Christmas trees, for purposes of transplanting or cutting from the stump, under a managed Christmas tree operation,

• your pro rata share of gross income from farming from a New York C corporation that has made a special gross income from farming election on Form CT-47.1, *Election or Termination of Election to Deem Income for Purposes of the Farmers' School Tax Credit*, and

• your pro rata share of your partnership's gross income from farming and your pro rata share of your New York S corporation gross income from farming that represents the partnership's and S corporation's pro rata share of gross income from farming from a New York C corporation that has made a special gross income from farming election on Form CT-47.1.

Note: This information should be obtained from the New York C corporation, the partnership, and the New York S corporation.

**Appendix D: Federal Gross Income *From Farming* for Corporations**

Appendix D is revised to provide that for tax years **beginning in 2006 and after**, gross income from farming also includes gross income from commercial horse boarding operations as defined in section 301(13) of the Agriculture and Markets Law, to the extent not included in farm income reported on the corporation's federal income tax return and gross income from the growing of Christmas trees, for purposes of transplanting or cutting from the stump, under a managed Christmas tree operation.

**Additional Information**

**Part III: Qualified Agricultural Property**

The answer to question 1 on page 10 states that a structure or building is not qualified agricultural property if it is used for the **processing** of agricultural commodities. However, in the case of the production of maple syrup and cider, and the sale of wine from a farm winery, buildings and structures used to process the sap into syrup, the apples into cider, or the grapes into wine **are** considered qualified agricultural property even though the property is used in processing.

## Part VI: Credit Limitation Based on Income

Under question 5 on page 17, for purposes of computing modified New York adjusted gross income, *farm indebtedness* does not include debt, or that portion of the debt, that is secured by the farmer's principal residence, even if the proceeds of the loan are used for farm expenditures.

## Part VII: Credit Recapture

The answer to question 1 on page 19 contains examples showing how the recapture rules apply when qualified agricultural property is converted to nonqualified use. The following additional example illustrates the recapture rules that apply when a farmer acquires additional qualified agricultural property in a year after the year in which the farmer first claimed the credit.

**Example:** A farmer first claims the credit for tax year 1997. The credit is claimed on 100 acres of qualified agricultural property. In 1998, the farmer purchases an additional 100 acres of qualified agricultural property and claims the credit for 1998 on the total 200 acres of qualified agricultural property. On June 1, 2000, the entire property is converted to nonqualified use. In this instance, no credit is allowed for the year 2000. However, since the conversion took place after the end of the second year following the year in which the farmer **first** claimed the credit (1997), the farmer is not required to add back the credit claimed in 1997, 1998, or 1999. This is so even though 100 acres of the converted property were not purchased until 1998, and the credit on that portion of the converted property was first claimed in 1998.

## Part VIII: Disallowance of Deduction for School Taxes

The answer to question 1 on page 21 states that you must include the amount of your credit in your New York adjusted gross income or entire net income in the tax year following the year for which the credit is allowed. However, you **do not** have to make this adjustment if you were required to report the amount of the credit as income on your federal income tax return in the tax year following the year for which the credit is allowed.

## Appendix A: Federal Gross Income for Individuals

Item 8 states that capital gains from federal Schedule D are to be included in federal gross income from all sources. However, if you had capital gain distributions from a mutual fund but were not required to file federal Schedule D for the year, include in federal gross income any capital gain distributions you entered on line 13 of federal Form 1040.

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## Introduction

For tax years beginning after 1996, an eligible farmer may be entitled to an income tax or corporation franchise tax credit for the school district property taxes the farmer pays. The credit is allowed only for school taxes paid on land, structures, and buildings owned by the farmer that are located in New York State and used or occupied for agricultural production. An eligible farmer may be a corporation subject to tax under Article 9-A of the Tax Law (the corporate franchise tax), or an individual or married couple subject to tax under Article 22 of the Tax Law (the personal income tax). In addition, an eligible farmer may be entitled to the credit if the farmer is a partner in a partnership or a shareholder of a New York S corporation that owns property used in agricultural production. Furthermore, an estate or trust or the beneficiaries of an estate or trust may also be eligible for the credit.

The farmers' school tax credit was enacted as part of the Farmer's Protection and Farm Preservation Act of 1996. The credit provides school property tax relief to farmers to help protect and enhance the agricultural industry in New York State and to preserve our valuable open spaces, an important resource for the tourism industry. The credit is allowed against the farmer's income tax or corporation franchise tax, and is fully funded by the state. It is not a real property tax exemption nor is it part of the agricultural assessment program. In addition, since the credit is fully funded by the state, it will not affect the revenue received by local school districts, nor will it shift the school tax burden to the farmer’s neighbors.

The credit provisions were further amended in the 1997-1998 New York State budget. The new amendments, which apply to tax years 1998 and thereafter, will enable more farmers to qualify for the credit.

We have prepared the following questions and answers to provide general information to farmers and tax practitioners concerning the new credit. For purposes of clarity, the questions are generally written in the context of individual farmers. However, the rules apply equally to corporate farmers unless otherwise stated, or unless the context of the question indicates otherwise. Due to the diversity of the agricultural industry, it was not possible to address every situation. Taxpayers who have questions not addressed in this publication should contact the Tax Department. Telephone numbers and addresses are listed on the back cover of this publication.

## Part I: General Information

1. **What is the farmers' school tax credit?**

   The farmers' school tax credit is a tax credit allowed against the personal income tax (Article 22 of the Tax Law) or the corporation franchise tax (Article 9-A of the Tax Law), to reimburse some or all of the school district property taxes paid by farmers.

2. **How do I claim the credit?**

   You claim the credit on your personal income tax return or corporation franchise tax return when you file it each year. Individuals and estates and trusts will compute the credit on Form IT-217, *Claim for Farmers' School Tax Credit.* Corporations will compute the credit on Form CT-47, *Claim for Farmers' School Tax Credit.* These forms will be available in early December of each year. To obtain these forms, see *Need Help* on the back cover of this publication.

3. **For what tax years does the credit apply?**

   The credit applies to income or corporation tax years beginning in 1997 and thereafter.

4. **Who qualifies for the credit?**

   An individual or corporation meeting all the following conditions will qualify for the credit:

   -- The individual or corporation is an eligible farmer (see Part II)

   -- The individual or corporation owns qualified agricultural property during the year (see Part III)

   -- The individual or corporation pays eligible school taxes during the year (see Part IV), and

   -- The individual's or corporation's income is below the income limitation amount (see Part VI).

5. **Does my farm have to be located in an agricultural district or must I apply for a special agricultural assessment in order to qualify for this credit?**

   No. The credit is not part of the agricultural district or agricultural assessment programs. Accordingly, the availability of this credit does not depend on the land's status for agricultural district or agricultural assessment purposes.

6. **Do I have to own a minimum amount of land or have agricultural sales exceeding a certain dollar amount in order to qualify for the credit?**

   No. There are no minimum land or sales requirements to qualify for this credit. However, you must be an eligible farmer as described in Part II, which means that a significant part of your income must be from farming.

7. **Do I have to submit any advance application or certification in order to qualify for this credit?**

   No. If you qualify for the credit, you simply claim the credit when you file your personal income tax return or corporate franchise tax return for the tax year.

8. **Will the amount of credit allowed depend upon the type of soil on my property, as in the case of the special agricultural assessments?**

   No. The amount of credit does not depend on soil types.

9. **Does my local school board have to take any action in order for me to claim the credit?**

No. The credit is a state funded credit allowed under the personal income tax or corporate franchise tax. No action by your local school board is necessary. In addition, because the credit is state funded, the allowance of the credit will not affect the revenue the school district receives, nor will it result in a shift of the school tax burden to your neighbors.

10. **How is the credit computed?**

    The credit equals 100% of the school taxes paid on qualified agricultural property where the acreage does not exceed the base acreage amount (see Part V) and 50% of the school taxes paid on acres in excess of the base acreage amount.

11. **What if the amount of the credit exceeds my personal income tax or corporate franchise tax liability for the year?**

    If the credit exceeds your personal income tax for the year, reduced by any other credits, the excess amount will be refunded to you, without interest. If the credit exceeds your corporation franchise tax for the year, reduced by any other credits, the excess may be refunded to the corporation, without interest, or the corporation may elect to carry the excess over to future tax years.

12. **Our farm is a corporation that is not a New York S corporation. Can the credit be applied against the corporation's fixed dollar minimum tax or alternative minimum tax?**

    No. The credit cannot be applied against those two taxes, but it can be applied against the entire net income tax and the capital based tax.

    **Note:** Although by statute the credit is not allowed against the fixed dollar minimum tax and the alternative minimum tax, before any refund is issued, the Department will apply the credit against those taxes and issue a refund for the net amount. However, if the corporation elects to carryover the credit to succeeding years, the corporation would have to pay the fixed dollar minimum or the alternative minimum tax and would receive a carryover for the credit.

13. **Our farm is a New York S corporation. Does the corporation claim the credit on its franchise tax return or do the shareholders claim their share of the credit on their individual income tax returns?**

    The corporation may not claim the credit. In the case of a New York S corporation that owns qualified agricultural property, the shareholders of the corporation may claim the credit on their personal income tax returns, based upon their shares of the corporation's acres of qualified agricultural property and eligible taxes. However, the individual shareholders must be eligible farmers to claim the credit.

14. **Can partners of a partnership (including members of a limited liability company that is treated as a partnership for federal tax purposes) that owns qualified agricultural property claim their share of the credit?**

    Yes. The partners or members will claim the credit on their personal income tax returns, based upon their share of acres of qualified agricultural property and eligible taxes from the partnership. However, the partner (or member) may claim the credit only if the partner or member is an eligible farmer.

15. **Can an estate or trust, or the beneficiary of an estate or trust, claim their share of the credit?**

    Yes. An estate or trust may claim the credit, based upon its share of the acres of qualified agricultural property and eligible taxes, if

the estate or trust is an eligible farmer. A beneficiary of an estate or trust can claim the credit based on his or her share of the acres and taxes, if the beneficiary is an eligible farmer. In general, the rules relating to individual farmers as discussed in this publication also apply to estates or trusts. However, certain special rules apply to estates or trusts. These rules are discussed in Part IX.

16. **Can a nonresident individual claim the credit if the individual owns qualified agricultural property located in New York State?**

    Yes. The allowance of the credit does not depend upon the resident status of the taxpayer.

## Part II: Eligible Farmer

1. **Who is an eligible farmer?**

   **For tax years beginning in 1997 only,** an eligible farmer is an individual or corporation that receives for the taxable year at least 2/3 of his or her **federal gross income** (see Question 9) from farming. An individual who qualifies for the farmer estimated tax treatment under the federal and state income taxes qualifies as an eligible farmer for 1997.

   **For tax years beginning in 1998 and thereafter,** an eligible farmer is an individual or corporation that receives for the taxable year at least 2/3 of his or her *excess* **federal gross income** from farming (see Question 11).

2. **What is considered farming for purposes of this credit?**

   An individual or corporation (collectively, a person) is engaged in the business of farming if the person cultivates, operates or manages a farm for gain or profit, even though the operation may not produce a profit every year. A person is also engaged in the business of farming if the person is a member of a partnership (including a limited liability company that is treated as a partnership), a shareholder of an S corporation or the beneficiary of an estate or trust that is engaged in the business of farming.

   Farming includes the operation or management of livestock, dairy, poultry, fish, fruit, fur-bearing-animal and vegetable (commonly referred to as truck) farms. Farming also includes the operation and management of plantations, ranches, ranges and orchards. Furthermore, farming includes, but is not limited to, the raising or production of the following commodities:

   -- field crops, including corn, wheat, oats, rye, barley, hay, potatoes and dry beans;
   -- fruits, including apples, peaches, grapes, cherries and berries;
   -- vegetables, whether raised conventionally or hydroponically, including tomatoes, snap beans, cabbage, carrots, beets and onions;
   -- horticultural specialties, including nursery stock, ornamental shrubs and ornamental trees and flowers;
   -- livestock and livestock products, including cattle, sheep, hogs, goats, horses, poultry, farmed deer, farmed buffalo, ostrich, emus, fur-bearing animals, milk and eggs;
   -- aquaculture products, including fish, fish products, water plants and shellfish (provided the aquaculture products are grown and raised as opposed to merely harvested or caught);
   -- honey and beeswax produced from your own bees; and
   -- maple syrup and cider, provided the income from these operations is properly includable on federal Schedule F, *Profit or Loss From Farming.*

   A person who rents farm property to others may also be engaged in the business of farming (see Question 5).

   Forestry and logging, including the growing of Christmas trees, is **not** farming unless the forestry or logging products are used in the operation of a farm or are connected with an otherwise qualifying farm operation as described above (i.e., the income from these operations is properly reportable on federal Schedule F.)

   You are **not** engaged in farming if your principal source of income is from providing agricultural services, such as soil preparation, veterinary services or farm labor. In addition, you are **not** engaged in farming if you manage or operate a farm for

a salary or fee. Furthermore, a person cultivating or operating a farm for recreation or leisure (e.g., a hobby farm) is **not** engaged in the business of farming.

**For tax years beginning in 1998 and after,** the following activities are also considered farming:

-- the production of maple syrup or cider, regardless of whether the income is reportable on federal Schedule F; and
-- the sale of wine from a licensed farm winery as provided for in Article 6 of the Alcoholic Beverage Control Law.

3. **What is considered gross income from farming for an individual?**

Gross income from farming is the total farm income reported on the individual's federal income tax return for the year. This includes:

-- gross farm income from federal Schedule F, *Profit or Loss From Farming;*
-- gross farm rents from federal Form 4835, *Farm Rental Income and Expenses;*
-- your share of partnership or S corporation gross income from farming (this amount will be shown on your federal Schedule K-1);
-- your share of distributable net income of an estate or trust from farming (this amount will be shown on your federal Schedule K-1); and
-- gains from sales of draft, breeding, dairy or sporting livestock shown on federal Form 4797, *Sales of Business Property.* (Note: Gains from the sale of farm equipment or farm real estate are not includable in gross income from fanning even though those gains may be reportable on Form 4797.)

**For tax years beginning in 1998 and after,** gross income from farming also includes:

-- gross income from the production of maple syrup and cider, to the extent that income is not included in the items listed above; and
-- gross income from the sale of wine from a licensed farm winery as provided for in Article 6 of the Alcoholic Beverage Control Law.

Gross income from farming for individuals is also listed in Appendix B.

4. **What is gross income from farming for a corporation?**

Gross income from fanning is the total farm income reported on the corporation's federal income tax return for the year. This includes:

-- gross receipts, less cost of goods sold, attributable to fanning activities;
-- gross rents from the rental of qualified agricultural property (including land and buildings), provided the terms of the rental satisfy the conditions described in Question 5 below;
-- the corporation's share of partnership gross income from farming (this amount will be shown on the federal Schedule K-1 received by the corporation); and
-- gains from sales of draft, breeding, dairy or sporting livestock shown on federal Form 4797, *Sales of Business Property.* (Note: Gains from the sale of farm equipment or farm real estate are not includable in gross income from farming, even though those gains may be reportable on Form 4797.)

**For tax years beginning in 1998 and after,** gross income from farming also includes:

-- gross income from the production of maple syrup and cider, to the extent that income is not included in the items listed above; and

-- gross income from the sale of wine from a licensed farm winery as provided for in Article 6 of the Alcoholic Beverage Control Law.

**Note:** A corporation that has both farm and non-farm income may find it helpful to complete a pro-forma federal Schedule F to determine its gross receipts, less cost of goods sold, from farming.

Gross income from farming for a corporation is also listed in Appendix D.

5. **Does the income which an individual or corporation receives from renting farm property to another person qualify as gross income from farming?**

The answer to this question depends upon how the rental of the property is set up.

**Material Participation**

If the rental is for a fixed amount per month or per year, or a fixed amount per acre (i.e., a cash rental agreement), or if the carrying costs of the property, such as property taxes, interest and insurance, constitute the rent, then the rental income does not constitute gross income from farming **unless** the person participates to a material extent in the operation or management of the farm. This kind of material participation rental income constitutes gross income from farming and is reported for federal purposes on Schedule F. (See Question 6 for information on material participation.) Also, see **Note** below.

**Crop Share**

If the amount of rental is a crop share (shared rental agreement; that is, the amount of rent is based upon the actual production of the land), then rental payments, whether made in cash or in kind, would constitute gross income from farming, regardless of whether you materially participate. For example, you rent your farmland to another person who is growing corn. The rental payment is 20% of the corn produced on the property, or, at your election, a cash payment equal to the market value of 20% of the corn produced. In this instance, the rental income would constitute gross income from farming and is generally reported for federal income tax purposes on Form 4835. Also, see **Note** below.

**Note:** If you receive rental income from the rental of agricultural property (regardless of the type of rental) **and** you materially participate in the operation, the gross rental income you receive is reported on federal Schedule F and you may be subject to federal self-employment taxes.

6. **What does *participates to a material extent* mean for purposes of question 5?**

You *participate to a material extent* if you have an arrangement with your tenant for your participation and you meet one of the following four tests:

**Test No. 1.** You do **any** three of the following: (1) pay or stand good for at least half the direct costs of producing the crop;
(2) furnish at least half the tools, equipment and livestock used in producing the crop;
(3) consult with your tenant ; and (4) inspect the production activities periodically.

**Test No. 2.** You regularly and frequently make, or take an important part in making, management decisions substantially contributing to or affecting the success of the enterprise.

**Test No. 3.** You work 100 hours or more spread over a period of 5 weeks or more in activities connected with crop production.

**Test No. 4.** You do things which, considered in their total effect, show that you are materially and significantly involved in the production of farm commodities.

7. **I work on my neighbor's farm. Are the wages I receive considered gross income from farming?**

   No. Wages you receive as a farm employee are not gross income from farming.

8. **My farm is set up as a corporation, and I receive wages from that corporation. Are those wages gross income from farming?**

   No. Wages you receive from a farm corporation, even if you are the owner of the corporation, are not gross income from farming.

9. **What is federal gross income for purposes of determining whether I am an eligible farmer for tax year 1997?**

   Gross income is income before the deduction of expenses. However, gross income from sales is after the deduction for cost of goods sold.

   For an individual, gross income from all sources is all income you (and your spouse, if you are filing a joint federal return) receive during the tax year in the form of money, goods, property and services that is not exempt from **federal** income tax. For a list of items includable in the gross income of an individual, see Appendix A.

   For a corporation, gross income is all income received by the corporation during the tax year that is not exempt from **federal** tax. For a list of items includable in the gross income of a corporation, see Appendix C.

10. **Do social security retirement benefits constitute gross income?**

    This depends. Only the portion of the social security you receive **that is subject to federal income tax** is considered gross income. The amount of social security subject to federal tax varies with the level of your income from other sources.

11. **What is excess federal gross income for purposes of determining whether I am an eligible farmer for tax years 1998 and after?**

    For an individual, excess federal gross income is federal gross income, computed as discussed in Question 9, reduced by the sum, not to exceed $30,000, of the following items included in federal gross income:

    -- wages, salaries, tips and other employee compensation;
    -- interest and dividends;
    -- pension payments, including social security payments;
    -- those items of gross income that are includable in the computation of net earnings from self-employment for federal income tax purposes.

    **Example:** Your federal gross income for the year is $50,000. Included in gross income is $15,000 of wages, $10,000 of interest and dividends and $25,000 of gross income from farming. (The $25,000 of gross income from farming is included in determining your net earnings from self-employment.) Your excess federal gross income for the year is $20,000 ($50,000-$30,000).

    For a corporation, excess federal gross income is federal gross income, computed as discussed in Question 9, reduced by $30,000.

12. **In addition to growing and harvesting my commodities, I also process those commodities to make them more valuable. Is all the income I receive from the sale of those commodities considered gross income from farming?**

    No. Only the value of the commodities before they are processed constitutes gross income from farming. The value added by the processing is not considered gross income from farming. Processing means doing something to an agricultural commodity beyond what is needed to make it **initially** marketable.

For example, a person operates a dairy farm and also processes and bottles the milk for retail sale. If the person sold the raw milk to a processing plant, it would be worth $14 per hundred weight. However, after pasteurizing and bottling, the person sells the milk for $35 per hundred weight. Only the value of the raw milk ($14) would be considered gross income from farming. The value added by the processing ($21) would not be gross income from farming. However, it would be considered gross income from all sources for purposes of the gross income test.

**Note:** For tax years 1998 and after, gross income from farming includes income from the production of maple syrup and cider, and income from the sale of wine from a licensed farm winery, even though that income is from processed products.

13. **Under federal income tax rules, for purposes of individual estimated taxes, I am considered a farmer for 1997 if two-thirds of my gross income for 1996 or 1997 is from farming. Two-thirds of my gross income for 1996 was from farming, but I did not meet the test for 1997. Does the federal rule apply for purposes of the New York credit?**

    No. New York law specifically provides that two-thirds of your gross income must be from farming for the year for which you are claiming the credit.

    **Note:** For tax years 1998 and after, you may still qualify for this credit even though you are not considered a farmer for estimated tax purposes.

14. **If a married couple files a joint federal income tax return, do they use their separate or joint income in determining the gross income from farming and federal gross income?**

    If you are married and file a joint return, your joint incomes must be used to determine if you are an eligible farmer.

15. **What if a married couple files separate returns?**

    If you file separate returns, only your separate income is used to determine if you are an eligible farmer.

    **Caution:** Although filing separate New York returns may enable you to meet the eligible farmer requirements, a married couple may generally file separate New York returns only if they file separate federal returns. Since many federal and New York tax benefits are eliminated or reduced when separate returns are filed, you may want to figure your federal and state taxes both ways to determine the best way to file. In addition, if you file separate returns and your farm property is owned jointly, your credit may be limited. See Part V.

## Part III – Qualified Agricultural Property

1. **What is qualified agricultural property?**

   Qualified agricultural property includes land and land improvements located in New York State that are used in agricultural production. It also includes structures and buildings (except for buildings used by the taxpayer for residential purposes) that are located on the land and used or occupied to carry out agricultural production. Agricultural production means those activities discussed in Part II**,** Question 2.

   Land used in agricultural production includes land under buildings which are qualified agricultural property, and land in support of a farm operation, such as farm ponds, drainage swamps, wetlands and access roads.

2. **What structures are considered qualified agricultural property?**

   A structure or building qualifies if it is used either (1) in the raising and production for sale of agricultural commodities, or (2) for the storage of agricultural commodities for sale at a future time, or (3) for the storage of supplies or for the storage or servicing of equipment necessary for agricultural production.

   A structure or building is not qualified agricultural property if it is used for (1) the processing of agricultural commodities, or (2) the retail merchandising of agricultural commodities, or (3) the storage of commodities for the personal consumption of the farmer or the farmer's family, or (4) the residence of the farmer or the farmer's immediate family.

   For this purpose, *agricultural commodities* includes those items discussed in Part II, Question 2.

   **Note:** If only a portion of a building or structure is used for qualified purposes, see Question 4.

3. **What is considered processing for purposes of question 2?**

   Processing means doing something to a farm commodity beyond what is needed to make it initially marketable. For example, milk is initially marketable in raw form. Accordingly, buildings used to produce and store the raw milk qualify for the credit. However, if a farmer also pasteurizes the milk and bottles it for sale, that operation is considered processing and the buildings or portions of buildings used for that operation do not qualify. The mere sorting, washing and packaging of fruits and vegetables is not considered processing.

   When the processing carried on in an otherwise qualified building is only incidental to the main use of the building, or the building is used for processing only on a limited basis, the building is treated as qualified property.

4. **What if only a portion of a building or structure is used for qualified agricultural production?**

   If only a portion of a building or structure is used for qualified agricultural production, then only that portion of the structure is qualified agricultural property. Only the school taxes paid on that portion qualify for the credit (see Part IV).

5. **When would a building or structure not qualify because it is being used for retail sales of farm commodities?**

   Any building or structure or portion thereof that is used for the retail sale of an agricultural or horticultural product cannot qualify. For example, a roadside stand or store in which agricultural products are sold to the public would not qualify.

6. **We operate a plant nursery. We raise all our own flowers and plants in greenhouses. Each spring and summer, we open the greenhouses to the public so they can pick out their purchases themselves. Is this considered using the greenhouses for retail sale?**

   No. This activity would be considered incidental to the main function of raising horticultural products in the greenhouses. Accordingly, the greenhouses would be qualified agricultural property.

7. **Residential property is not qualified agricultural property. What is residential property in the case of an individual farmer?**

   Residential property includes a house, mobile home, etc., and any other buildings associated with it, such as a garage or shed, that are used by the farmer or his or her individual family for residential purposes.

8. **What is residential property in the case of a corporate farmer?**

   Property described in Question 7 that is held by a corporation is considered used for residential purposes if it is used as a residence by any of the executive officers of the corporation.

9. **Does housing provided to regular or essential farm employees meet the definition of qualified agricultural property?**

   Yes. Regular employees are those who are usually and customarily hired for raising and producing a farm product. Essential employees are those without whose help a necessary aspect of farm production could not take place (such as workers hired to plant or harvest a crop). Employees are regular or essential as long as their duties are primarily connected with farming operations rather than processing, retail sale or other non-farm operations. Housing for the farm owner and the immediate family of the farm owner does not qualify. However, separate housing for children or other relatives of the farmer will qualify if these persons are regular or essential employees of the farm operation **and** if they don't have an ownership interest in the farming operation.

10. **Part of my farmland has been set aside or retired under a federal supply management or soil conservation program. Is that property qualified agricultural property?**

    Yes.

11. **I own several pieces of agricultural property that are not connected or adjacent to each other. Are all these parcels qualified agricultural property?**

    All parcels that are located in New York State and used in agricultural production are considered as one farm even if they are not connected or adjacent to each other. However, only the parcels that are actually used in producing agricultural products qualify. Parcels that are held for investment or other non-farm purposes do not qualify.

12. **A group of eligible farmers form a partnership to construct and operate a storage facility for the partners' produce. The structure is located on property owned by the partnership. However, the partnership itself does not raise any produce. Is this property qualified agricultural property?**

    No. The law provides that qualified agricultural property means land used in agricultural production and structures located **on that land** that are used to carry out that production. In this case, the land on which the building is located is not being used for agricultural production by the partnership. Accordingly, the school taxes paid on the land and storage facility structure would not qualify for the credit.

13. **Part of my farm property consists of woodland. Does all or a part of that woodland constitute qualified agricultural property?**

    If the woodland property is actually used in agricultural production or for the production of woodland products that are used in the farm operation, the property would qualify. For example, woodland used for pasturing cattle would qualify. Furthermore, the woodland property would qualify if it is an adjunct to agricultural property, such as in providing erosion control or wind protection to the agricultural property.

14. **I own farm property that I rent to another person. The other person actually uses the property for agricultural production. Is this property qualified agricultural property for me?**

    Yes. Accordingly, if you are an eligible farmer, you may claim a credit for the taxes paid on the property. However, the person that rents the property from you may not claim the credit because he or she does not own the property.

## Part IV: Eligible Taxes

1. **What type of property taxes qualify for this credit?**

   Only real property taxes levied by a school district on qualified agricultural property (see Part III) **owned** by the taxpayer qualify for the credit. Property taxes levied by towns, villages, cities or other municipal governments do not qualify for the credit.

2. **What are real property taxes levied by a school district?**

   Real property taxes levied by a school district include all property taxes, special ad valorem levies and special assessments levied by a school district. Included are taxes levied by a school district for the support of local libraries. Penalties and interest are not included.

3. **I am an eligible farmer but I rent qualified agricultural property from another person. My rental agreement provides that I must pay the school district property taxes on that property. Can I claim the credit for those taxes?**

   No. Only school district property taxes paid on qualified agricultural property **owned** by an eligible farmer qualify for the credit. This is true even if the rental payment is based upon the amount of taxes paid on the land, or the rental agreement requires the lessee to actually pay the taxes. However, the person from whom you rent the land may claim the credit for these taxes if that person is an eligible farmer. (See Part III, Question 14).

4. **In 1996, I did not pay my school taxes on my qualified agricultural property. However, in 1997 I paid both the back taxes for 1996 and the current taxes for 1997 on that property. Are both the 1996 and 1997 taxes eligible for the credit?**

   Yes. The law only requires that the taxes be paid in tax years 1997 or thereafter to qualify for the credit.

5. **I own agricultural property jointly with my spouse. What amount of taxes paid on the property may I include in computing my credit?**

   If you file a joint return with your spouse, you may include the total taxes paid on the jointly held qualified agricultural property in computing the credit. However, the joint incomes of you and your spouse will be used to determine if you are an eligible fanner (see Part II) or whether you are subject to the credit limitation based on income (See Part VI).

   If you and your spouse jointly own qualified agricultural property but file separate New York returns, you may include only one-half of the taxes paid on qualified agricultural property in computing your credit, unless you **both** agree to an unequal division. If you both agree, you may divide the taxes any way you wish. You must also divide the acres of qualified agricultural property in the same manner as you divide the eligible taxes. In addition, the related party rules (see Part V) may limit the credit if separate returns are filed.

6. **What if I purchase a farm during the year or purchase additional farmland during the year. How do I determine the amount of taxes paid during the year?**

   The documents that were prepared when you closed on the property usually indicate the amount of school taxes paid by the seller that are prorated to the purchaser. This will occur when you purchase property after the date when the school tax bills are issued. You may include your prorated amount of school taxes in determining your credit for the year of purchase. You may also include any school taxes which you paid directly to the school district during the year.

7. **I started my farm operation during the year. May I claim all the school taxes paid during that year for purposes of the credit, or is some proration required?**

   You may claim all the taxes you actually paid during the year in computing the credit. No proration is required even if you operated your farm for only part of the year.

8. **My school tax bill only shows the total taxes paid on all my real property, including my personal residence and other nonqualified property. How can I determine the amount of the total taxes applicable to my personal residence or other nonqualified property?**

   Your local assessor should be able to tell you the value of your residence and other nonqualified property because this information is often required for agricultural assessment purposes. If this information is not currently available, your local assessor may be willing to make the determination for you. In general, an assessor's determination of the value of the residence and other nonqualified property will be accepted by the Tax Department.

9. **What if my local assessor cannot supply this information, or what if I do not agree with the value assigned by the assessor. Do I have any other options?**

   Yes. You may hire a private appraiser to determine the values to be assigned to your residence or other non-qualified property. In addition, you may use any other reasonable method, such as basing the value on the recent sale price of similar property in your residence area, to determine the value. However, in these cases, you must be able to substantiate how you determined the value.

10. **What is considered the residence for purposes of determining its value?**

    Your residence includes the house, mobile home, etc., and any other buildings associated with it, such as garages and storage sheds, that are used for residential purposes. Your residence also includes any land abutting it that is used for residential purposes, such as lawns and gardens.

11. **Only a portion of one of my buildings is qualified agricultural property. Using the methods described in Questions 8 and 9 above, I can only determine the value of the entire building. How do I determine the value of the portion of the building that is qualified agricultural property?**

    You may allocate the total value of the building between the qualified and nonqualified portions using any reasonable method. Reasonable methods would include, but are not limited to, methods based upon the percentage of square footage or time used for each purpose.

12. **Our farm is located in two different school districts. Can we claim the credit for the taxes paid to both districts on our qualified agricultural property?**

    Yes. The credit does not depend on which school district you pay your taxes to.

13. **If I am a partner in a partnership, a shareholder of a New York S corporation, or the beneficiary of an estate or trust that owns qualified agricultural property, may I claim a credit for my share of the eligible taxes paid by the entity?**

    Yes. However, you may claim the credit only if you are an eligible fanner (see Part II).

## Part V: Base Acreage and Related Party Rules

1. **What is the base acreage?**

   The base acreage is used to determine the amount of the credit. The credit equals the total eligible taxes paid on qualified agricultural property where the acreage does not exceed the base acreage amount, and 50% of the eligible taxes paid on acres in excess of the base acreage amount. However, this credit amount is subject to the credit limitation based on income (see Part VI).

2. **What are the base acreage amounts?**

   The base acreage amounts are 100 acres for tax years beginning in 1997, 175 acres for tax years beginning in 1998, and 250 acres for tax years beginning in 1999 and thereafter.

3. **Can the base acreage amount be applied to any property I choose, such as the property that contains the farm buildings?**

   No. The base acreage must be applied proportionately to all acres of qualified agricultural property owned by the farmer. For example, if a farmer owns 500 acres of qualified agricultural property in 1997, when the base acreage is 100 acres, the farmer would get a full credit for one-fifth of the school taxes paid on the property (including the school taxes paid on farm buildings located on the land). Note: The farmer would also get a credit for 1997 for 50% of the remaining four-fifths of the taxes paid on the property.

4. **What are the related party rules?**

   The base acreage of an eligible farmer may be limited if the farmer and a related person each own qualified agricultural property on March 1 of the taxable year. In this case, a single base acreage limitation applies to all Of the related persons, and can be divided among them in whatever manner they elect.

   A different division can be elected each year. If the farmer and the related person(s) fail to elect a division of the base acreage, it will be divided equally among them.

   **Example:** For 1997, when the base acreage is 100, the farmer and a related person elect to allocate the base acreage 60% to the farmer and 40% to the related person. The farmer is allotted 60 acres of the base acreage, and the related person is allotted 40. If they do not elect, 50 acres is allotted to each. For 1998, when the base acreage is 175, they elect to allocate the base acreage 80% to the farmer and 20% to the related person, in which case the farmer is allotted 140 acres and related person is allotted 35 acres. If they do not elect, 87½ acres is allotted to each.

5. **Who is a related person to an individual farmer?**

   If you are an individual farmer, your related persons include:

   -- your spouse (if you and your spouse are filing a joint return, it is not necessary to allocate the single base acreage limitation amount (e.g., 100 acres in 1997) between yourselves);
   -- any "C" corporation (a corporation that is not a New York S corporation) that is subject to the Article 9-A franchise tax and of which you and your spouse, if you are married, collectively own more than 50% of the stock; and
   -- any estate or trust in which you, and your spouse, if you are married, collectively own more than 50% of the beneficial interest.

   To determine whether you own more than 50% of the stock of a corporation, stock owned by a corporation, partnership or estate or trust in which you have an ownership interest is deemed to be owned by you in proportion to your interest.

**Example 1:** You and your spouse are filing separate New York State returns for the year. You and your spouse, either individually or jointly, each owned qualified agricultural property on March 1 of the tax year. You and your spouse are related persons and must allocate the base acreage amount between yourselves.

**Example 2:** You owned qualified agricultural property on March 1, 1997. Your spouse also owns 75% of the stock in a "C" corporation that also owned qualified agricultural property on March 1, 1997. You and the corporation are related persons.

6. **Who is a related person if the farmer is a corporation?**

   If the farmer is a corporation, a related person to the corporation includes:

   -- another corporation subject to the corporation franchise tax (Article 9-A) where both corporations are members of the same controlled group as defined in section 267(f) of the Internal Revenue Code;
   -- an individual, estate or trust that owns more than 50% of the corporation's stock;
   -- another corporation subject to tax under the Article 9-A franchise tax if the same person owns more than 50% of the value of the outstanding stock of each corporation; and
   -- an estate or trust of which the corporation owns, directly or indirectly, more than 50% of the capital, profits or beneficial interest.

   **Example:** Corporation A and Corporation B each own qualified agricultural property on March 1, 1997. The same individual owns 100% of the stock of both corporations. Corporations A and B are related persons.

7. I **am an eligible farmer and own qualified agricultural property individually. I also belong to a farming partnership that owns qualified agricultural property. Do I get 200 base acres in 1997, 100 for my own property and 100 for the partnership property?**

   No. Each eligible farmer is entitled to only one base acreage amount of 100 acres. Your own acreage and your share of the partnerships acreage are added together to determine the acreage in excess of the 100 acres.

8. **Do partners in a partnership, shareholders of New York S corporations or estates and trusts and their beneficiaries have to divide the allowable base acreage amount (e.g., 100 acres for 1997) among themselves?**

   No. Each individual taxpayer is entitled to his own base acreage amount. For example, if a partnership has three partners, each partner is entitled to a base acreage amount of 100 acres for 1997.

   However, the base acreage amount of 100 acres may be limited if any of the partners, shareholders or beneficiaries are subject to the related party rules (see Question 4). For example, a husband and wife are shareholders of a New York S corporation that owns qualified agricultural property. Since a husband and wife are related parties, they are entitled to a single base acreage amount of 100 acres in 1997.

## Part VI: Credit Limitation Based on Income

1. **What is the credit limitation based upon income?**

   The income limitation reduces or eliminates the credit for higher income taxpayers. The limitation is based on New York adjusted gross income (individuals) or entire net income (corporations) for tax years beginning in 1997. The limitation is based on modified adjusted gross income (individuals) and modified entire net income (corporations) for tax years beginning in 1998 and after.

2. **How does the credit limitation apply for tax year 1997?**

   For individuals, the amount of credit allowable, after applying the base acreage limitation, is further limited if the farmer's New York adjusted gross income is between $100,000 and $150,000. If the farmer's New York adjusted gross income is $150,000 or more, no credit is allowable. Married taxpayers filing a joint return use their joint New York adjusted gross income to determine the limitation. Married taxpayers filing separate returns use their separate New York adjusted gross incomes.

   For a corporation, the limitation is the same as for individuals, except that the limitation is based upon the corporation's entire net income (before any allocation to out-of-state operations).

3. **How does the credit limitation work for tax year 1997 when my adjusted gross income or entire net income is between $100,000 and $150,000?**

   If your New York adjusted gross income (individuals) or entire net income (for corporations) is between $100,000 and $150,000, your credit must be reduced by a percentage. The percentage is determined by a fraction, whose numerator is the amount (limited to $50,000) by which the adjusted gross income or entire net income exceeds $100,000, and whose denominator is $50,000.

   **Example:** An eligible farmer, after application of the base acreage limitation, is entitled to a potential credit of $10,000. The farmer has New York adjusted gross income of $130,000. The numerator of the fraction is $30,000 and the denominator is $50,000, resulting in a percentage of 60%. Accordingly, the potential credit of $10,000 must be reduced by $6,000 ($10,000 X 60%), resulting in an allowable credit of $4,000.

4. **How does the credit limitation apply for tax years 1998 and after?**

   The credit limitation works the same way as described in Questions 2 and 3, except that modified New York adjusted gross income or modified entire net income is used in place of New York adjusted gross income or entire net income, respectively.

5. **What is modified New York adjusted gross income and modified entire net income?**

   For individuals, *modified New York adjusted gross income* means New York adjusted gross income for the tax year reduced by the amount of principal paid on farm indebtedness during the year.

   For corporations, *modified entire net income* means entire net income for the tax year (before any allocation to out-of-state operations), reduced by the amount of principal paid on farm indebtedness during the tax year.

   *Farm indebtedness* means debt incurred or refinanced which is secured by farm property, where the proceeds of the debt are used for expenditures incurred in the business of farming.

**Example:** The farmer in the Question 3 example made principal payments on farm indebtedness of $10,000 during 1998. Accordingly, the farmer's modified New York adjusted gross income is $120,000. For 1998, the numerator of the fraction is therefore $20,000, resulting in a percentage of 40% ($20,000/$50,000). The potential credit of $10,000 must be reduced by 40% ($4,000), resulting in credit of $6,000.

6. **I am married filing a joint New York income tax return. Must I include my spouse's income in determining the income limitation?**

   Yes. If you file a joint return, both spouses' incomes must be included in determining the limitation.

7. **What if my spouse and I elect to file separate returns?**

   If you file separate New York returns, only the farmer's separate income will be used to determine the income limitation. In general, filing separate returns will only be beneficial for purposes of the credit limitation if your joint New York adjusted gross income (1997) or joint modified adjusted gross income (1998 and after) exceeds $100,000.

   **Caution:** In most instances, a married couple may file separate New York returns only if they file separate federal returns. Since many federal and state tax benefits are eliminated or reduced when separate returns are filed, you may want to figure your federal and state taxes both ways to determine the best way to file.

8. **I am a nonresident who owns qualified agricultural property in New York. How do I determine my New York adjusted gross income or modified New York adjusted gross income for purposes of the limitation?**

   Your New York adjusted gross income or modified New York adjusted gross income is determined as if you (and your spouse, if filing a joint return) were a New York State resident for the entire tax year. That is, your income from **all** sources will be used to determine if you are subject to the limitation.

9. **If the farming business is a partnership or S corporation, is the income limitation determined using the income of the partnership or corporation?**

   No. Each partner or shareholder will determine their limitation based upon the income reported on their own returns. Of course, the partner's or shareholder's share of income from the partnership or corporation will be included in the computation.

## Part VII: Credit Recapture

1. **Do I have to recapture all or part of the credit if my qualified agricultural property is converted to nonqualified use?**

   If qualified agricultural property is converted to nonqualified use, the following rules apply:

   -- No credit is allowed for the year in which the property is converted. This is true even though the property may have been qualified property for part of the year. No proration of the credit is permitted.

   -- If the conversion takes place before the end of the second tax year following the year in which you **first** claimed a credit, the entire credit claimed on the converted property in the two previous years must be added back in the year of the conversion.

      If the property is converted after the end of the second tax year following the year in which the credit is first claimed, there is no recapture and no addback is made.

   **Example 1:** A farmer first claims the credit for tax year 1997. On August 1, 1999, all the farmer's qualified property is converted to nonqualified use. In this instance, no credit will be allowed for 1999, and the entire amount of the credits claimed for 1997 and 1998 must be added back in 1999.

   **Example 2:** A farmer first claims the credit for tax year 1997. On June 1, 2000, the entire property is converted to nonqualified use. In this instance, no credit is allowed for the year 2000. However, since the conversion takes place after the end of the second year (1999) following the year in which the credit was first claimed (1997), the farmer is not required to add back the credit claimed in previous years.

2. **What constitutes a conversion to nonqualified use?**

   Conversion means an outward or affirmative act changing the use of agricultural land. The idling, nonuse or sale of the land is not by itself a conversion.

   **Example 1:** A farmer sells 100 acres of land to a developer. The developer actually builds a housing development on the land, and as a result the land is no longer used for agricultural production. This would be considered a conversion to nonqualified use.

   **Example 2:** A farmer discontinues farming, but continues to hold the land for investment purposes. Neither the farmer nor anyone else uses the land for agricultural production. This would not constitute a conversion to nonqualified use. Note: Even though this is not a conversion, the farmer cannot claim a credit in years after the year farming operations discontinue because the land is no longer used for agricultural production. However, if the individual qualifies as an eligible farmer in the last year of operation, the individual may claim the credit for that last year.

   **Example 3:** You sell your qualified agricultural property to another person. That person continues to use the property for agricultural production. No recapture is required as long as the property continues to be used for agricultural production, and you may also claim the credit for your share of the taxes paid in the year of sale, if you continue to qualify as an eligible farmer for that year. However, if the property is converted before the end of the second year after **you** first claimed the credit, recapture would be required. In addition, the person who purchased the property will also have to recapture the credit he claimed on the property if the conversion takes place before the end of the second year after he claimed the credit.

3. **What if I convert only a part of my qualified agricultural property?**

   If you convert only a part of your qualified agricultural property, the following rules apply:

   -- In the year of conversion, no credit will be allowed for the portion of the property converted.

   -- If the conversion takes place before the end of the second year following the year in which you first claimed the credit, the credit allowed on the converted property for the previous tax years must be added back in the year of conversion.

4. **How do I determine the amount of credit allowed in prior years on the part of the property that is converted?**

   The amount of credit that must be recaptured is that portion of the credit that bears the same ratio to the total credit as the amount of land converted bears to the total amount of qualified land before the conversion.

   **Example:** You own 500 acres of qualified agricultural property and convert 100 acres of that property during the recapture period. You must recapture (add back) one-fifth (100/500) of the credit claimed for the previous years.

5. **How do I determine the taxes paid on my remaining qualified property when only a portion of the land is converted?**

   If you continue to own the property after the conversion to nonqualified use, and the taxes on the converted property are included as part of your total tax bill (i.e., the converted property is not on a separate deed), you may allocate the total taxes to the converted land on the basis of the amount of acreage converted to total acreage covered by the tax bill.

   If the converted land is sold, the closing documents will show the amount of school taxes reimbursed to you by the buyer. You must reduce your current year's tax paid by the amount of these reimbursed taxes in determining the credit.

6. **Are there any exceptions to the recapture rule even though a conversion may have taken place?**

   Yes. Recapture is **not** required if the property is converted to nonqualified use by reason of an "involuntary conversion." An involuntary conversion is a conversion because of casualty or natural disaster, theft, or by condemnation (or by agreement under a threat of condemnation), such as when a governmental agency takes your land under the eminent domain rules.

   **Example:** The state takes by eminent domain 20 acres of your farmland to be used for a new highway. The condemnation is an involuntary conversion and no recapture is required. However, you may not claim the credit for that land in the year of the conversion.

7. **I qualified for the credit in 1997. In 1998, I still farm the same land, but I do not qualify for the credit because I do not meet the gross income test or because my income exceeds the credit limitation amount. Am I required to recapture any part of the credit claimed in 1997?**

   No. This is not considered a conversion, and no credit recapture is required.

8. I **am a partner in a partnership (or a shareholder of a New York S corporation) that owns qualified agricultural property. In the previous year, I claimed my share of the credit attributable to the partnership (or corporation). In the current year, I sell my interest in the partnership or my stock in the corporation. Is this sale considered a conversion requiring recapture?**

   No. The sale by itself is not a conversion provided the partnership or corporation continues to use the land for agricultural production.

## Part VIII: Disallowance of *Deduction* for School Taxes

1. **I deduct my school taxes on agricultural property as an expense of doing business for federal income tax purposes. Do I have to make an adjustment for state income tax purposes since I am receiving a credit for all or part of those taxes?**

   Yes. You must include the amount of the credit in your New York adjusted gross income or entire net income in the tax year following the year for which the credit is allowed. For example, for tax year 1997 you claim a farmers' school tax credit of $5,000. You must include the $5,000 in your New York adjusted gross income or entire net income for tax year 1998.

## Part IX: Estates and Trusts and Their Beneficiaries

1. **Can an estate or trust that is engaged in the business of farming claim the credit on its fiduciary income tax return?**

   Yes, provided the estate or trust is an eligible farmer. However, if an estate or trust distributes all or part of its income currently, its acres of qualified agricultural property and eligible taxes must be allocated entirely or in part to its beneficiaries.

2. **How does the estate or trust allocate its acres of qualified agricultural property and eligible taxes among itself and the beneficiaries?**

   If the estate or trust does not distribute any of its income currently (i.e., the trust is an accumulating trust), then the entire amount of acres of qualified agricultural property and eligible taxes is allocated to the estate or trust and is used to compute the estate's or trust's credit.

   If the estate or trust distributes all or part of its income currently, the acres of qualified agricultural property and eligible taxes must be allocated between the estate or trust and its beneficiaries. These amounts are allocated on the same basis as the income of the estate or trust is allocated.

   **Example:** A trust distributes 75% of its income to the beneficiaries and retains the other 25%. The trust would allocate 75% of its acres of qualified agricultural property and eligible taxes to the beneficiaries and 25% to itself. If the trust qualifies as an eligible farmer, it computes its credit based on its 25% share of acres and taxes. In addition, if the beneficiaries individually qualify as eligible farmers, they will compute their credit based on their 75% share of the acres and taxes. (For the base acreage amounts applicable to estates and trusts and their beneficiaries, see Part V, Question 8).

   **Note:** Any beneficiary who qualifies as an eligible farmer may claim the credit based upon his or her share of acres and taxes, even if the estate or trust or some of the other beneficiaries do not qualify to claim the credit on their share. Likewise, the estate or trust, if it qualifies as an eligible farmer, may claim the credit on its share of acres and taxes even if the beneficiaries do not qualify to claim the credit on their shares.

3. **How does an estate or trust determine if it is an eligible farmer?**

   An estate or trust uses the same rules applicable to individual farmers. (See Part II.)

4. **How does an estate or trust compute its New York adjusted gross income for purposes of the credit limitation based on income?**

   The New York adjusted gross income of an estate or trust is its federal adjusted gross income increased or decreased by its net share of New York addition and subtraction modifications. For more information, see the Form IT-205-I, *Instructions for Form IT-205, Fiduciary Income Tax Return.*

## Appendix A
## Federal Gross Income for Individuals

Federal gross income from all sources for individuals is the sum of the following:

1) Wages, salaries, tips, etc.
2) Taxable interest.
3) Dividends.
4) Taxable refunds of state and local taxes.
5) Alimony received.
6) Gross business income from federal Schedule C.
7) Gross receipts from federal Schedule C-EZ.
8) Capital gains from federal Schedule D. Include only short and long-term gains. You cannot net losses against the gains. However, reduce your total gains reported on Schedule D by the amount of any gains from partnerships, S corporations, estates and trusts, and gain from Form 4797 that are reported on Schedule D.
9) Gains on sales of business property from federal Form 4797. You cannot offset losses against the gains.
10) Taxable IRA distributions, pensions, annuities and social security benefits.
11) Gross rental income from federal Schedule E. This is the total rents received before any deduction for expenses.
12) Gross royalty income from federal Schedule E.
13) Your taxable net income from an estate or trust from federal Schedule E.
14) Income from a REMIC reported on federal Schedule E.
15) Gross farm rental income from federal Form 4835.
16) Gross farm income from federal Schedule F.
17) Your distributive share of gross income from a partnership or limited liability company treated as a partnership for federal tax purposes.
18) Your pro-rata share of gross income from an S corporation
19) Unemployment compensation
20) "Other income" reported on federal From 1040, not reported with any of the items listed above.

## Appendix B
## Federal Gross Income *From Farming* for Individuals

1) Gross farm income from federal Schedule F.
2) Gross farm rents from federal Form 4835.
3) Your distributive share of a partnership's gross income from farming. A partnership includes a limited liability company that is treated as a partnership for federal income tax purposes.
4) Your share of distributable net income from farming of an estate or trust.
5) Your pro-rata share of an S corporation's gross income from farming.
6) Gains (not losses) from sales of draft, breeding, dairy or sporting livestock shown on federal Form 4797. (Note: Gains from the sale of farm equipment or farm real estate are not includable in gross income from farming even though those gains may be reportable on Form 4797.)

For tax years beginning in 1998 and after, gross income from farming also includes:

7) Gross income from the production of maple syrup and cider, to the extent that income is not included in items 1-6 above.
8) Gross income from the sale of wine from a licensed farm winery as provided for in Article 6 of the Alcoholic Beverage Control Law.

## Appendix C
## Federal Gross Income for Corporations

Federal gross income from all sources for a corporation is the sum of the following:

1) Gross profit from federal Form 1120 or 1120-A.
2) Dividends, interest, gross rents and gross royalties from federal Form 1120 or 1120-A.
3) Long and short term capital gains from Schedule D (Form 1120). Include only gains from Schedule D. Losses cannot be netted against gains. Do not include any gain included in Schedule D that was carried forward from federal Form 4797.
4) Other income (not loss) includable on federal Form 1120 or 1120-A (do not include the corporation's share of income from a partnership).
5) The corporation's share of the gross income from a partnership or limited liability company treated as a partnership.
6) Gains from federal Form 4797. You cannot offset losses against gains.

## Appendix D
## Federal Gross Income *From Farming* for Corporations

1) Gross receipts, less cost of goods sold, attributable to farming activities.
2) Gross rents from the rental of qualified agricultural property (including land and buildings), provided the terms of the rental satisfy the conditions described in Part II, Question 5.
3) The corporation's share of partnership gross income from farming. A partnership includes a limited liability company treated as a partnership for federal tax purposes.
4) Gains (not losses) from sales of draft, breeding, dairy or sporting livestock shown on federal Form 4797. (Note: Gains from the sale of farm equipment or farm real estate is not gross income from farming, even though gains may be reportable on Form 4797.)

For tax years beginning in 1998 and after, gross income from farming also includes:

5) Gross income from the production of maple syrup and cider, to the extent that income is not included in Items 1-4.
6) Gross income from the sale of wine from a licensed farm winery as provided for in Article 6 of the Alcoholic Beverage Control Law.

**Note:** A corporation that has both farm and non-farm income may find it helpful to complete a pro-forma federal Schedule F to determine its gross receipts, less cost of goods sold, from farming.

## Need help?


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**Text Telephone (TTY) Hotline** (for persons with hearing and speech disabilities using a TTY): If you have access to a TTY, contact us at (518) 485-5082. If you do not own a TTY, check with independent living centers or community action programs to find out where machines are available for public use.

**Persons with disabilities:** In compliance with the Americans with Disabilities Act, we will ensure that our lobbies, offices, meeting rooms, and other facilities are accessible to persons with disabilities. If you have questions about special accommodations for persons with disabilities, call the information center.

# Appendix J
Environmental Management Programs and Information

## Appendix J Includes:

- Ten Regenerative Agricultural Practices Every Grower Should Follow

- Climate Change Facts: Farming Success in an Uncertain Climate

- Cover Cropping for Pollinators and Beneficial Insects

- What is Permaculture?

- The 12 Design Principles of Permaculture

- Erie County Soil and Water Conservation District Agricultural Best Management Practices

- Agrivoltaics: Coming Soon to a Farm Near You?

- Growing Crops Under Solar Panels? - Now There's a Bright Idea

- Thinking about a Solar Lease? Five Things to Consider

- Erie County Solar Siting Map

# 10 Regenerative Agriculture Practices Every Grower Should Follow

Posted on 28 Apr 2020 at 08:35h in Agriculture, Business, News, PhycoTerra, Press Release, Regenerative Agriculture by Heliae Development

Worrying about bad crops due to poor soil should be a thing of the past. Modern farming that uses regenerative agriculture techniques have found greater success through 10 simple, but highly effective, practices.  Learn about these practices, along with benefits to soils, crops, the environment, and the positive economic benefits.

1. **Reduced or No-till Farming Practices**
2. **Cover Cropping**
3. **Composting**
4. **Increasing Crop Diversity**
5. **Organic Annual Cropping**
6. **PhycoTerra® Soil Microbe Food**
7. **Animal Integration**
8. **Managed Grazing**
9. **Silvopasture**
10. **Agroforestry**

Within these practices, PhycoTerra® Soil Microbe Food, developed by Heliae® Agriculture, plays a vital foundational role in bringing out the best in the abundance and diversity of microbes in your soils, driving soil health and regeneration of agricultural lands. We are excited to partner with you on this journey! [/vc_column_text][/vc_column][/vc_row]

PARTNER WITH PHYCOTERRA®, POWERED BY HELIAE

# What is Regenerative Agriculture?

In 2014, a senior UN Food and Agriculture Organization (FAO) official addressed a forum marking World Soil Day. It was announced that if current topsoil degradation rates continue unchecked, all topsoils would be depleted in 60 years. As it takes 1,000 years to generate 3 centimeters of topsoil naturally, action needs to be taken now to avoid this from occurring. This announcement also pointed out that sustaining topsoil is not enough. We need to adopt practices that can regenerate soils to meet the food needs of an ever-growing world population. Regenerative agricultural practices are instrumental in helping us meet these challenges.

***At its core, regenerative agriculture is a holistic approach designed not just to sustain soils but also to regenerate them, improving soil health as the central foundation.***

## Relation to Soil Health

Our recommended practices center around soil health. Soil health starts with adopting regenerative practices that encourage abundance and diversity of soil microbes. It is these soil microbes that drive processes resulting in a rich cascade of beneficial soil health and structure effects including; improved soil aggregation, water penetration, increased water retention, improved nutrient retention, and availability to plants, decreased soil erosion, reduce agricultural run-off, increased $CO_2$ capture from air and sequestration to soil. All these together promote more vigorous and

productive crops, while also regenerating rapidly depleted soils.  These are not just ideals.

The principles behind regenerative agriculture  are sound, and the results are surprisingly strong as outlined in a series of peer-reviewed agriculture journals described by Washington State University's Natural Center for Sustaining Agriculture and Natural Resources.

LEARN ABOUT THE FUTURE OF SOIL HEALTH

## Adopting Regenerative Practices on your Farm

Using the described practices, you will increase biodiversity both above and below the ground.  This will serve to enrich your soils, sequester $CO_2$ from the atmosphere into your lands while at the same time increasing crop resilience to climate instability and improving resource utilization, crop quality, and yield.

These positive effects will have a lasting positive environmental, social, and economic impact on farming communities around the world. *"The number one priority in regenerative organic agriculture is soil health. Soil health is intrinsically linked to the total health of our food system. Soil health affects everything from plant health to human wellbeing and the future of our planet."* (https://rodaleinstitute.org/why-organic/organic-basics/regenerative-organic-agriculture/).  The time to correct the global degradation of soils around the world is now!

TAKE ACTION BY CONTACTING US

# 10 Best Regenerative Practices

## #1 – Reduced or No-till Farming Practices

**Key Point**: Fewer disruptions to soil allows more diverse soil microbes that provide

better soil structure for your plants to grow.

When soils are left undisturbed, abundance and diversity of soil microbes increase, driving improved soil microbiome communities and soil structure. These improvements provide both ecological benefits as well as resiliency to crop stressors, crop quality, and ultimately yield.

Ecologically, these practices improve soil structure, reducing both wind and water erosion of soils, reduce agricultural run-off into watersheds, and aid in soil carbon sequestration. On the farm, as some regenerative agriculture theories suggest, growers adopting reduced or no-till practices may see many changes that will benefit their bottom lines economically while rebuilding their soils for future generations. Changes you will see with reduced or no-till practices include increased water penetration and retention, greater soil nutrient retention and availability to crops, less soil crusting, and increased soil organic matter over time. All of these contribute greatly to crop vigor, resiliency to crop stressors, and ultimately, crop yield. Additionally, there are cost reduction opportunities for growers, including reduced tilling soils, reduced requirements for fertilizers, and more efficient use of water resources. Altogether, reduced or no-till practices are key regenerative agriculture practices that will provide valuable benefits in both the near term as well as rebuilding soils for generations to come.

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## #2 – Cover Cropping

**Key Point:** By allowing continual plant and root growth in your soil, you are providing the soil with better nutrients to reinvigorate other plants.

Promoting more continual plant and root growth in soils is also a key to soil health and regenerative agriculture. Cover cropping, as some regenerative agriculture theories state, systems can fix $CO_2$ from the atmosphere, sequestering carbon as organic matter in the soils, feed carbon plant root exudates into the soil that promote soil biology, add nutrients to soils, and reduce soil erosion.

Many crops can be used depending on locations and soil needs. Cover crops can be excellent scavengers of excess nutrients left in the soil after crop harvest. They can incorporate the nutrients into their biomass, store, and then recycle excess nutrients until needed at the beginning of the next planting season. Cover cropping will also reduce potential fertilizer leaching into watersheds and groundwater and help to reduce agricultural run-off. Leguminous cover crops can be used to fix nitrogen from the atmosphere into the soil, reducing the need for nitrogen fertilizers the next season.

In some permanent crop systems, cover crops can be interspersed between rows. Keeping soils covered reduces the risk of possible soil erosion, suppresses weeds, and can even provide pollinator habitat. Cover cropping is a key tool that can help to sequester carbon from the atmosphere into soils, recycle nutrients, reduce the need for synthetic fertilizers, reduce agricultural run-off, and promote better soil biology and structure. This is a key tool that can add value to your bottom line while also regenerating your soils for optimal crop productivity and health.

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## #2 – Composting

## #3 – Composting

**Key Point:** Using compost to rebuild depleted soils allows for natural and sustainable growth.

Building soil organic is essential for rebuilding depleted soils. Composted biological materials such as crop residue, food waste, and animal waste to build soil organic matter are crucial in regenerative agriculture. These materials contain carbon, that when incorporated into soils breaks down slowly, building stable organic matter. The conversion into stable organic matter takes time.

Compositing can accelerate the decomposition of these materials, creating compost products that can be more immediately available for soil microbes and plants to utilize. Composting processes can be driven by bacteria, fungi, earthworms, nematodes, and other organisms. In addition to adding carbon/organic matter back into soils, composts provide fertilizer value to your soils and crops in forms that are available over more extended periods than conventional fertilizers.

*References:*


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## #4 – Increasing Plant Diversity

**Key Point:** Historically, areas that grew a variety of plants and crops built healthier soil naturally before large scale farming focused more on specialized areas for the same crops year in and year out. Crop rotation plays a critical role in trying to mimic the natural diversity of native plant balances.

Before modern, large scale, intensive agricultural practices, native plant and soil ecosystems co-evolved naturally to achieve a balance that could support a vast diversity of plants grown in the same soil. These perennial crops built stable organic matter in our soils over millennia. This diversity of plants produces a variety of carbon plant exudates that supply carbon to soil biological organisms, as well as a diversity of contributions to soil nutrient profiles.

With the advent of larger-scale annual monoculture, this diversity disappeared, creating imbalances in our soils. The imbalances led to the need for increasing specific nutrients in the form of fertilizers, the degradation of healthy balanced soil biology, degradation of soil structure, and rapid depletion of soil organic matter. Crop rotation plays a critical role in trying to mimic the natural diversity of native plant balances in a way that mimics in part, some of the original benefits that native plant diversity can bring to the soils. When thinking about crop rotations, it is important to consider how one crop can benefit the next rotation from a nutritional standpoint, but also the diversity within a crop type (ex. warm-season grass crops which could include corn, sorghum, Sudan grass).

Crop rotations adding to the diversity of crops, will add to the diversity of soil microorganisms and create soils that assure crop resiliency and optimum yield over time. This practice of incorporating plant diversity also aids in the development of soil microbiome diversity, key to soil health and regenerative agricultural practices.

*References:*


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# # 5 – Organic Annual Cropping

**Key Point:** By focusing less on industrial-scale production, yearly crops can help organically strengthen the soil.

With the advent of industrial-scale agriculture and mass production of inexpensive fertilizers, many connections with sustainable agriculture fundamentals (such as soil health and biodiversity), fell to the wayside. It has since taken on a secondary role in expanding the agricultural product to meet the growing demands of feeding an ever-increasing world population. While these efforts were, and still are, critical, it has become clear our annual cropping systems must change to regenerate soils at the same time we are meeting these significant global challenges. The previous practices are critical to achieving these goals.

There are also other practices developed over the past 30 years with the organic agricultural movement. Throughout this movement, we have learned that industrial-scale organic annual cropping is possible without compromising yield or quality. Many of these now traditional organic practices can play an integral role in annual cropping, reintroducing practices that rebuild soil health and reduce the requirements they need for synthetic fertilizer pesticides. Although the organic industry is rapidly growing and now estimated to be a $43bil market, only 1% (one percent) of all farmland in the United States is in organic production. Overcoming the challenge of adapting organic practices on farmlands has many problems, both economically and politically. Still, as more and more farms adapt organic growing practices that support the regeneration of soils, this represents a considerable opportunity. Often growers have concerns about the 3-year transition period and how they can remain productive and profitable during this period. PhycoTerra® Organic production helps accelerate crop productivity during this transition, reducing economic risk, while accelerating the benefits of healthy biodiverse soils.

## #6 – PhycoTerra® Soil Microbe Food

**Key Point:** Our product provides a complex carbon food that feeds and provides a strong foundation for soil health.

While the core of regenerable agriculture is soil health, carbon, microbial abundance, and diversity play a role in the health and

and diversity play a role in the health and sustainability of our soils. Without these, we would be farming in a soil devoid of all the essential benefits that living soil ecosystems provide. While the previous practices are critical, PhycoTerra® products can assure the maximum benefits of these practices. PhycoTerra® Soil Microbe Food provides a complex carbon food source that is immediately available to soil microbes upon application to fields.

PhycoTerra® products are based on a unique microalgae strain, isolated from soils. Whether from land or the sea, microalgae serve as a foundational carbon food source, fixing $CO_2$ from the atmosphere, to provide the carbon building blocks of the planet's living organisms. These products are available as very fine suspension of single-celled microalgae that are pasteurized and have a two-year shelf life.

### Composition of PhycoTerra® Soil Microbe Food

While PhycoTerra® provides immediately available carbon that is utilized by microbes to increase their abundance in soil, the complex composition of PhycoTerra® Soil Microbe Food also assures a dramatic increase in soil microbial diversity. All the previously described practices have their foundation in sequestering more carbon in oil to drive microbial abundance and diversity. By combining these practices with PhycoTerra®, you can ensure these foundational changes will be optimized to deliver the strongest possible effects on your soil health.

By improving soil health, the resiliency of crops to various stresses is improved. This is important as crops are continually being expected to perform under more and more extreme environmental challenges. Another advantage of healthy soils is with increasing resource limitations with key crop resources, such as water, soils can better retain for more effective crop utilization.

PhycoTerra® products serve a key in the foundational level of regenerative agriculture, a complex food that increases the abundance and diversity of soil microorganisms. With this in mind, PhycoTerra® Products will accelerate the rates of changes that each regenerative agricultural practice is designed to provide.

## #7 – Animal Integration

**Key Point:** As some regenerative agriculture theories claim, reintroducing livestock to agricultural crops, instead of keeping them separate, gives natural opportunities for nutrient cycling.

For as long as time, livestock and agricultural crops have co-existed in mutually beneficial relationships. With the increasing industrialization of agriculture, livestock production has separated physically from crop production in forms such as concentrated animal feed operations. These types of operations can result in many challenges, including treatment and disposal of animal wastes, water quality, animal health, and risk of contaminating watersheds and aquifers.

Integrating animal grazing with crop production makes sense in many ways—animal grazing after annual crop harvest aids in the conversion of high carbon residues to low carbon organic manure. Grazing on cover crops can allow more nutrient cycling from crop to soil and carbon sequestration into your soils. This practice will mitigate many of the challenges and risks associated with concentrated animal feeding operations.

It is believed that these benefits to soil health, animal health, and the environment make animal integration a key practice for regenerative agricultural practices.

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## #8 – Managed Grazing

**Key Point:** As some regenerative agriculture theories claim, animals help speed forage growth through carefully selected grazing.

In managed grazing, divisions of a forage field are created. The divisions can be created using portable fences. The animals can then be shifted between the divisions periodically depending on the number of animals, the speed of forage growth, and the size of the divisions. Animals are then shifted between divisions periodically to allow recovery and re-growth of a division prior to animal rotation. This practice will reduce soil erosion, improve water penetration, and reduce run-off, while at the same time provide quality livestock nutrition. Additionally, this practice will provide all the benefits of the continual plant and root growth to soil health and sequester carbon to build organic matter in the soil.

Managed rotational grazing is a critical regenerative agriculture practice that will improve soil health, nutrient and carbon cycling, grazing crop quality, animal health, and water retention while reducing soil erosion and run-off.

*References:*


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- *file:///C:/Users/mmiller/Downloads/Silvopasture_Information_Sheet_381.pdf*


## #9 – Silvopasture

**Key Point:** As some regenerative agriculture theories claim, livestock grazing and tree growth create opportunities for accelerated cycling of nutrients.

Silvopasture is the integration of livestock grazing and trees grown on the same land. Essentially, it establishes grazing within a managed tree product operation. Silvopasture creates additional benefits beyond traditionally managed grazing though; this practice creates additional revenues and cost reductions for the tree operations. Native perennial forage crops are often planted between the trees. Animals obtain nutrition from the forage crops and accelerate the cycling of nutrients and carbon to the soils. This practice can also provide shade in hot summer and protection from wind and elements to the animals. The tree operation benefits

protection from wind and elements to the animals. The tree operation benefits nutritionally from the manures, from improved soil health and from the additional cash flow of the integrated livestock operation.

This synergistic regenerative agriculture practice improves soil health, provides animal and plant nutrition, and provides an additional revenue stream for tree operations.

*References:*

- *https://www.fs.usda.gov/nac/practices/silvopasture.php*

## #10 – Agroforestry

**Key Point:** Cropped in between trees, agroforestry allows for a wider variety of crops to be yielded during a season.

While agroforestry includes silvopasture, the practice employs a broader array of tools with the goal of altering large agriculture landscapes in ways that provide broad environmental, social, and economic impacts. In addition to silvopasture, agroforestry incorporates cropping between the rows of trees, forest farming, riparian forest buffers between crops fields watersheds, and windbreaks.

When combined in a deliberate planned and managed fashion, these practices increase plant diversity, soil health, reduce agricultural run-off, guard against soil erosion, and provide habitat for native flora and fauna to thrive. Economically these practices provide additional revenue streams by employing practices such as forest farming, growing a second crop between rows of a tree crop, utilizing wildlife that thrives in riparian forest buffers, and allows for the integration of grazing with tree operations.

*Reference:*

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CORNELL UNIVERSITY COLLEGE OF AGRICULTURE AND LIFE SCIENCES

# CLIMATE CHANGE FACTS

CORNELL COOPERATIVE EXTENSION

## FARMING SUCCESS IN AN UNCERTAIN CLIMATE

Climate preparedness makes good business sense. The Earth's climate is always in flux, but today's pace of change is far beyond what previous generations of farmers have had to face. Climate change is already posing new challenges, such as increased risk of flooding, summer heat stress, and more intense pest and weed pressures.

Some farmers are beginning to plan to minimize the risks and capitalize on opportunities. In New York, there will be plenty of both. Making business decisions on future scenarios is always a hair-raising endeavor, even more so with the complication of trying to discern between normal weather variability and long-term climate shifts. Many of the commodities that currently dominate the New York agricultural sector, like dairy products, apples, cabbage, and potatoes, are not well suited for the warming trends predicted for this century. However, there will be profitable opportunities to experiment with new crops or new crop varieties as temperatures rise and the growing season lengthens.

### FLOODING

More precipitation is occurring in heavy rainfall events (more than 2 in / 48 hrs), and this trend is expected to continue.

**Flooding Challenges:**

- Springtime flooding can delay planting
- Root damage and reduced yield due to flooding
- Soil compaction from use of heavy machinery on wet soils
- Soil loss from erosion during heavy rain events
- Contamination of waterways from agricultural run-off

**Flooding Solutions:**

- Increase soil organic matter for better drainage with practices such as reduced tillage, cover cropping, and use of composts or other organic amendments
- Invest in tile or other drainage systems for problem fields
- Shift to more flood tolerant crops
- Buy or lease new acreage with better drainage
- Shift planting dates to avoid wet conditions

## DROUGHT

New York does not face the severe water shortages predicted for some other regions, but the risk of short-term summer drought is expected to increase over this century. Warmer temperatures and longer growing seasons will increase crop water demand, while summer rainfall will remain about the same or possibly decline.

**Drought Challenges:**

- Declining and more variable yields of rain-fed crops
- Decline in quality of high-value fruit and vegetable crops

**Drought Solutions:**

- Increase irrigation capacity, particularly for high-value crops
- Shift to drought-tolerant crop varieties
- Shift plant dates to avoid dry periods

## HEAT STRESS

The growing season across the state has already increased on average by 8 days. The number of summer heat stress days (e.g., exceeding 90°F) is expected to increase substantially, while winters grow milder. These changes will create both opportunities and challenges for farmers.

**New Crops for a New Climate**

The increase in average temperatures and longer growing season will allow experimentation with new crops, varieties, and markets. Peaches, melons, tomatoes, and European red wine grapes are a few examples of longer growing season crops that will be favored by a warming climate.

**Heat Stress Challenges:**

- Warmer summer temperatures have been shown to lower yields for certain varieties of grain crops (field corn, wheat, and oats) by speeding the development cycle and shortening the period during which grain heads mature
- Hot daytime or nighttime temperatures during critical phases of plant development can reduce yield and quality of even those crops considered heat-adapted
- Potatoes, cabbage, snap beans, apples, and other heat-sensitive plants will be more challenging to grow
- Warmer and more variable winters can ironically increase the chance of frost and freeze damage for perennial fruit crops by inducing premature leaf-out and interfering with cold-mediated winter hardening

**Heat Stress Solutions:**

- Shift planting dates to avoid heat stress during critical periods of plant development
- Explore new varieties of heat-resistant crops, and be prepared to diversify production to reduce reliance on heat-sensitive crops
- Capitalize on the opportunity to grow longer season crops. For example, some field corn growers are already experimenting with new longer growing-season varieties

## INSECT INVASIONS AND SUPER WEEDS

Interactions between climate, crops, insects, and disease are complex, but evidence suggests that climate change will require New York farmers to invest in earlier and more intensive pest and weed management. Anticipating the challenge of increased weed and pest pressure will allow for better control and more cost-effective management.

**Insect Challenges:**

- Spring populations of insect pests will expand, as survivorship rates of marginally over-wintering insect species increase, and migratory insects arrive earlier
- A longer growing season means more insect generations per season, requiring increased intensity of management

**Case-Study: Brown Marmorated Stink Bug**

If not for its diminutive size, the brown marmorated stink bug (BMSB) could be the subject of a 1950's horror movie. Described as "the bug from hell" after BMSB ate $37 million of the 2010 MD apple crop, the hungry bugs will munch on anything from orchard crops, to corn and soybeans. First introduced in PA during the '90s, BMSB are teeming northward, taking advantage of recent warm winters and long summers. BMSB was first sighted in NY in 2008, increasing yearly since then. Some pesticides have proven effective against BMSB, but control has been limited.

**Weed Challenges:**

- Warmer weather and increasing concentrations of carbon dioxide in the atmosphere favor weed growth over crop plants in many cases
- Weeds will have to be controlled for longer and weed seed production will be greater
- Certain weed species currently restricted to the warmer south are migrating northward, such as kudzu, while some familiar weed species, e.g. lambsquarters, are projected to become stronger competitors
- Pressure to use chemical control methods will increase as pest and weed infestation intensifies, but studies have shown the climate change may reduce the efficacy of certain commonly used pesticides (pyrethroids, spinosad) and herbicides (e.g. Glyphosphate)

**Insect and Weed Management Solutions:**

- Improved rapid response plans and regional monitoring efforts will allow for targeted control of new weeds and pests before they become established
- Enhanced monitoring and implementation of integrated pest management (IPM) will help farmers balance pest and weed control while avoiding the economic, environmental and health-related costs of increased chemical application

## CHANGE IN THE DAIRY AND LIVESTOCK INDUSTRIES

Heat stress can have devastating consequences for livestock. Keeping cool in the heat of the next century will be critical for maintaining the milk production levels that have made dairy the dominant industry in New York's agricultural sector.

**Livestock Challenges:**

- Heat stress associated with hotter summers will create dangerous and unhealthy conditions for livestock, reducing productivity and reproductive capacity
- Availability and cost of animal feed will fluctuate as climate affects crops like corn grain and silage
- New costs will be incurred from investments to improve cooling capacity of livestock facilities

**Heat Stress and Dairy**

- Even moderately warm temperatures, e.g. above 75°F, when combined with moderate humidity, can lead to milk production decline
- In 2005, unusually warm temperatures reduced milk production 5 to 15 lbs per cow per day for many dairies (leading to losses of 8 to 20%)
- The frequency of heat-stress events is expected to increase with climate change

**Livestock Solutions–Low Cost:**

- Reduce over-crowding and improve barn ventilation
- Minimize heat exposure, e.g. feed during the cool part of the day and maximize shade
- Increase water availability and adjust diet (more fat, less protein)

**Livestock Solutions–Moderate to High Cost:**

- Improve cooling capacity with additional fans, sprinkler or mister systems, and ventilation renovations
- Insulate under barn roofs to buffer extreme heat and save on cooling costs
- Build new barns with adequate cooling capacity for future heat loads

**When is it Time to Make a Change?**

This will be the critical question for farmers. Climate scientists can provide useful information to help determine when a poor season or two is due to just "normal" bad weather, and when it is due to a shift in the climate that will likely be here to stay. At Cornell, we are working on new decision tools that will allow farmers to examine different future climate scenarios for their region, impacts these might have on crops and livestock, and evaluate various options for timing adaptation investments to minimize negative effects or take advantage of opportunities brought about by climate change.

Prepared by: David Wolfe, Jeff Beem-Miller, Lauren Chambliss, Allison Chatrchyan, and Holly Menninger. Designed by DragonFishStudio.com

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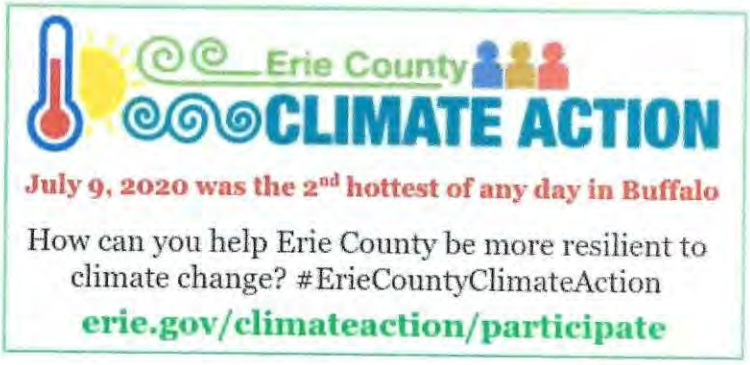
# Climate Change and Agriculture

John Whitney, Agriculture Educator, CCE Erie County

If you have been following the issues of climate change and associated extreme events, regardless of your position on the cause or magnitude of changes in weather and climate variations from historical trends and norms, you know that agriculture is considered both to have a role in accelerating climate change and potentially to be a major part of the solution.




It is generally accepted that modern agriculture, food processing, and distribution are all contributors to the greenhouse gases that are understood to be contributing to accelerating climate change. The World Future Council, one of many organizations working to address the issue, suggests that agriculture is directly responsible for 14% of total greenhouse gas emissions. Importantly, rural land use decisions and changes "have an even larger impact." Globally, deforestation both for harvest and often for clearing for agriculture and development accounts for an additional 18% of carbon emissions. www.worldfuturecouncil.org/how-does-agriculture-contribute-to-climate-change/

State and Federal environmental and regulatory agencies are working to balance agricultural production and food supply goals with environmental protection and real threats to agricultural production, forest resources and rural economies with regional, state and national and global greenhouse gas reduction goals. These are overlapping goals since the risks of climate change include:

- More frequent and severe storms
- Rising average temperatures
- Extremes and shifts in precipitation patterns
- More floods and forest fires.

Cornell Cooperative Extension has responded to the need for better information and subject matter guidance both by supporting research on the topic and, with respect to agriculture, by organizing the "Cornell Climate Smart Farming" program. This voluntary initiative is intended to help farmers in New York and the Northeastern U.S. to:

- Increase agricultural productivity and farming incomes sustainably
- Reduce greenhouse gas emissions from agricultural production through adoption of best management practices, and increased energy efficiency and use of renewable energy
- Increased farm resiliency to extreme weather and climate variability through adoption of best management practices for climate change adaptation.

The program's web page is: www.climatesmartfarming.org. The Extension team includes Elizabeth Buck, Vegetable Specialist with the Cornell Vegetable Program. While this is a regional team, Elizabeth is based out of the CCE Erie office. General questions to the team can be addressed to: climatesmartsolutions@gmail.com or directly to Elizabeth at: emb273@cornell.edu.

Locally, Erie County's Department of Environment and Planning is leading the "Erie County Community Climate Change Task Force" as Erie County's green initiative to develop an equity-centered Community Climate Action Plan to identify and promote actions to reduce greenhouse gas emissions and to help communities


adapt to the changing climate. See: https://www.erie.gov/climateaction/. In addition to developing the Climate Action Plan, the Task Force is developing resources to help build awareness and participation with the goal of achieving "equitable climate action for a healthy and resilient Erie County."

The plan will directly address agriculture by identifying local contributions and impacts and in looking to the agricultural sector and associated land uses as part of practical solutions. CCE-Erie is participating in the Task Force and planning activities, both to help ensure that agriculture issues are considered and incorporated and to help promote the public outreach efforts.

Over the coming months and years, farms will be hearing much more about this topic including the likelihood of financial incentives and payments associated with climate smart farming practices both to reduce emissions and for soil conservation efforts to continue erosion reduction and carbon sequestration efforts. ■

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Available at: www.sare.org/cover-cropping-for-pollinators or order free hard copies at (301) 779-1007.

SARE
Sustainable Agriculture Research & Education

# Cover Cropping for Pollinators and Beneficial Insects

**Doug Crabtree uses many tools to make his Montana farm bee friendly**. – *Photo by Jennifer Hopwood;* **Phacelia is an attractive pollinator cover crop.** – *Photo by John Hayden;* **Clover fixes nitrogen and provides bee forage.** – *Photo by Judson Reid*

DOUG AND ANNA CRABTREE'S VILICUS FARM RESTS on more than 2,000 acres in northern Montana, and it is a model of how cover crops can be a foundation of pollinator and beneficial insect management. Like many farmers, their approach to cover cropping began with an interest in soil health and quickly grew to encompass much broader goals as they recognized the additional benefits cover crops could provide.

"We want to implement pollinator conservation at the field-level scale," Doug says. "Anyone can create a small wildflower strip, but as we scale up, we need conservation areas distributed across the entire operation."

While the Crabtrees have established permanent native wildflower strips around many of their fields to provide a skeleton of habitat throughout the farm, extensive cover crop rotations provide the muscle that makes their operation a rich landscape for bees and other beneficial insects.

This commitment to cover cropping is having clear and positive impacts. Flax, sunflower and safflower are just a few of the Crabtrees' regular crops that either require or strongly benefit from insect pollination. And, because of their commitment to integrating habitat for wild pollinators throughout their holdings, the Crabtrees have never needed to bring honey bee hives onto the farm for pollination. Instead, a walk through their fields quickly reveals an abundance of wild bumble bees, longhorn bees, sweat bees and more—all supported by the farm's habitat. A farm's ability to support its own pollinator community provides security, especially if managed honey bee hives become scarce or expensive.

In addition to supporting the pollinator community, cover crops have many traditional uses on a farm. These range from preventing erosion and improving soil health to managing weeds and serving as an additional source of income when part of a double-crop system. With cover

crops planted on more than 10 million acres annually, many farmers already appreciate the role diverse agroecosystems play in improving crop productivity. In the 2012 and 2013 growing seasons, corn yields increased 9 percent and 3.1 percent, respectively, when following a cover crop, and soybean yields increased 10 percent and 4.3 percent, according to a two-year survey of farmers conducted by North Central Region SARE and the Conservation Technology Information Center (CTIC). While the CTIC-SARE survey revealed that 38 percent of cover crop users already choose plants in order to support pollinators [1], cover crops reap many additional benefits.

Flowering cover crops can fulfill their original purpose as a conservation practice while at the same time providing valuable forage for wild bees and beneficial insects. This added benefit can be significantly enhanced with some fine-tuning of management practices and thoughtful plant selection.

This bulletin will help you use cover crops to encourage populations of pollinators and beneficial insects on your farm while you address your other resource concerns. It begins with a broad overview of pollinator and beneficial insect ecology, then describes cover crop selection and management, how to make cover crops work on your farm, and helpful and proven crop rotations. It will also touch on the limitations of cover crops and pesticide harm reduction, among other topics.

**Cover crop mixes can offer multiple benefits. This mix of sunn hemp and radishes in South Dakota provides livestock grazing, pollinator forage and brooding cover for pheasants.**
*– Photo by Ben Lardy, USDA NRCS in cooperation with Pheasants Forever Inc.*

## Basic Pollinator Ecology

IN ADDITION TO THE DOMESTICATED EUROPEAN HONEY bee, roughly 4,000 species of wild bees can be found in the United States. Among these, honey bees and bumble bees are social animals, living in complex family units with a single queen, female workers (the daughters of the queen) and a few male bees called drones. In contrast, most wild bees (except for bumble bees) are solitary animals, with each female locating and provisioning her own nest.

Honey bees and wild bees alike are considered important agricultural pollinators, and both groups of bees share many of the same habitat requirements necessary to thrive. Both require reliable and abundant pollen and nectar resources throughout the growing season. In the case of honey bees, nectar demands can be significant, requiring large-scale flowering habitats to produce surplus honey.

In addition to the availability of food, honey bees and wild bees require protection from pesticides. While large doses of pesticides may be directly lethal to bees, smaller doses can result in sublethal impacts, such as reduced reproduction or foraging. Interestingly, research suggests that diverse pollen and nectar resources may help improve the overall health of bees and increase their chances of detoxifying low doses of some pesticides.

Along with food availability and pesticide protection, wild bees have a third habitat requirement: undisturbed areas for nesting. In the case of many wild bee species, the preferred nesting areas are undisturbed soils. These soil-nesting wild bees excavate underground tunnels and provision them with pollen clumps, onto which they lay their eggs. Other wild bee species nest in the hollow stems of plants, including the stems of some trees, shrubs, large grasses and even large wildflowers. A few species, including bumble bees, typically nest in the abandoned underground burrows of small rodents, or in other similar cavities.

With appropriate plant selection and proper management, flowering cover crops can support the habitat requirements of bees through pollen and nectar resources to maximize their health and reproductive potential, an abundance of nectar to produce surplus honey, a refuge from insecticides, and sometimes enhanced nesting opportunities for wild bee species.

## Other Beneficial Insects

THE NATURAL ENEMIES OF CROP PESTS THAT SOMETIMES inhabit farms include a diverse range of predatory beetles, aphid-eating flower flies, lacewings, small solitary parasitic wasps and many others.

In addition to preying upon crop pests, most of these predatory and parasitoid insects either need or benefit from alternative food sources during at least one stage of their life. In some cases that alternative food source is nectar or

pollen. Consequently, like pollinators, many of these natural pest enemies also benefit from flowering cover crops.

A SARE-funded group of University of California researchers demonstrated that mixed species of flowering cover crops in vineyards increased beneficial insect populations [2]. The increase in beneficial insects, brought about by a mix of annual buckwheat, lacy phacelia, sweet alyssum, bishops weed and wild carrot, resulted in fewer pests, such as the vine mealy bug.

In other cases, cover crops can support beneficial insect populations even when they do not flower. Some predators and parasitoids do not feed on nectar and pollen, but rather need a continuous supply of prey insects to maintain their local populations at an effective level. So when cash crops are absent, non-flowering cover crops can support pests to the extent that they become a stable food source for beneficial insects. For example, ground beetles, which are generalist predators of slugs, caterpillars and grasshopper eggs, can be sustained by leaving some areas unmowed or by creating a "beetle bank" of perennial grasses outside crop fields. Beetles can overwinter in this augmented habitat and their prey can breed in it. Thus, these grassy refuges can keep the beetle population high by providing both habitat and a food source outside the cropping period.

Similarly, even if prey insects found in cover crops are not pests of your cash crops, they can still be an important food resource for predator and parasitoid insects that will switch their prey preference once cash crop pests become available.

Finally, like pollinators, predatory beneficial insects need protection from insecticide applications and vegetative structures for egg-laying or overwintering. Well-managed cover crop systems can help meet these habitat requirements.

### PERENNIAL COVER FOR ORCHARDS AND VINEYARDS

FAST-GROWING ANNUAL COVER CROP SPECIES SUCH AS RYE AND CRIMSON CLOVER ARE the most common choice for rotation with annual field crops. However, in perennial farm systems such as orchards and vineyards, longer-term ground cover may be desired. In these settings, the ground cover may have multiple demands placed upon it, including erosion control, nutrient management, and pest and disease suppression. As long as these perennial ground covers are combined with a thoughtful and careful approach to pesticide use, pollinator conservation can be very compatible with other goals.

For example, perennial turf grass in orchards can be enhanced for pollinators simply by tolerating non-invasive weeds such as violets or dandelions. To go a step further and actively increase pollen and nectar resources, such perennial turf grass systems can be over-seeded with various low-growing perennial clovers. Where these approaches are used, it is critical that insecticides not be over-sprayed and allowed to drift down onto flowering plants in the ground cover. Some farmers with these types of ground covers simply mow them to remove flowers before spraying. Although a mowed ground cover without flowers may significantly reduce the landscape value for pollinators, it is preferable to killing bees that might otherwise move on to areas where no spraying is taking place.

In perennial crop systems where no insecticides are used, ground cover options may be even more diverse and expansive. In such cases it may be possible to establish an entirely native grassland, meadow or diverse prairie as an understory. These systems typically provide maximum benefits to pollinators and other beneficial insects, and they are well adapted to the local climate and do not require routine mowing or irrigation.

# Cover Crops On Your Farm

BEYOND SUPPORTING BEE AND BENEFICIAL INSECT populations, cover crops can reduce your costs for herbicide, insecticide and fertilizer, and improve overall soil health [3]. Many cover crops can be included in a double-crop system or used as animal forage. Cover crops can be integrated into most crop or crop-livestock systems, including no-till, conventional till, rotational no-till and livestock grazing or haying systems. In the CTIC-SARE survey, farmers who plant cover crops identified these top five reasons for doing so (in order): increase soil organic matter, reduce soil erosion, reduce soil compaction, manage weeds and provide a nitrogen source [1].

The economic benefits associated with cover crops can be both significant and realized in year one. On a Georgia cotton farm, a grower reduced costs by $200 per acre by implementing conservation tillage and cover cropping. His cover crop cocktail combined crimson clover, an excellent nectar plant and nitrogen source; and rye, a soil-builder and nitrogen scavenger. Between the savings on fertilizer from the clover's nitrogen enrichment and

**Strips of flowering cover crops such as lacy phacelia and sweet alyssum (pictured) can manage vineyard pests such as the vine mealy bug by supporting beneficial insects.**
*– Photo by Miguel Altieri*

**Cotton growing in a system using cover crops and conservation tillage. A cover crop mix of rye and crimson clover can improve the profitability of cotton because the clover adds nitrogen to the soil and the rye attracts beneficial insects.**
*– Photo by Stephen Kirkpatrick, USDA NRCS*

reduced insecticide costs thanks to beneficial insect activity, this farmer observed that many pests were no longer a problem in his fields [3]. Similarly, a Pennsylvania vegetable farmer cut pesticide costs by 40 percent (saving $125 per acre) by using a combination of cover crops [4], and a North Dakota farmer saw net profits on his barley harvest increase by $109 per acre on cover cropped fields. He was also able to harvest his cover crops as forage for his cattle [5].

There are many tools available to farmers as they weigh the economics of adding cover crops to their system. The USDA Natural Resources Conservation Service's (NRCS) *Cover Crop Economics Decision Support Tool* (see Resources) provides a number of cropping system scenarios that explore the costs and benefits of cover crops over time. While some systems, like a soybean/corn rotation in the absence of cost share, only became profitable in the long run, other systems realized a net profit in the first year, such as a cotton/corn rotation that led to a net profit increase of $38.50 per acre [6]. All of the default scenarios were immediately profitable with a modest cost share. A webinar explaining how to use this tool is available through the www.conservationwebinars.net portal.

While a 2005 survey in the Corn Belt found that more than half of all farmers said they would use cover crops if they received cost-share funds [7], the more recent CTIC-SARE survey found that farmers are increasingly likely to try cover crops without any sort of financial assistance. This survey found that 63 percent of farmers said they had never received cost-share funds, and only 8 percent restricted their cover cropping to times when they received funding [1]. Although cost-share programs improve the profitability of cover crops, many farmers who use them—perhaps the majority—look beyond the balance sheet when assessing their value. It seems that financial assistance can open the door to cover cropping, but many farmers with experience cover cropping do not require it [1]. The less easily quantified conservation benefits of cover crops, such as their role in soil health and pollinator promotion, are the important consideration for many.

## Opportunities to Use Cover Crops

ONE OF THE FIRST STEPS WHEN INCORPORATING COVER crops in your system is identifying available niches. You may already have periods in your cropping systems which are open to cover crops. Common niches for cover crops include during the winter fallow, during a summer fallow between cash crops, during a small-grain rotation or during a full year of improved fallow [3]. Cover crops are often used in a corn/soybean rotation, with specialty crops or following small grains [1].

Cover crops sown after the cash crop in the winter fallow niche serve multiple purposes. They both prevent soil erosion and—if they are nitrogen scavengers—can prevent nutrient leaching [3]. Available cover crop niches will vary with the local climate and the cash crops in your rotation. For example, in Minnesota, many growers plant cover crops after corn harvest in September for winter cover [8]. Meanwhile, in North and South Carolina, cover crops are often used to absorb excess nutrients after manure applications [9].

John and Nancy Hayden grow 30 varieties of tree fruit and berries at The Farm Between in Jeffersonville, Vt., and maintain a pollinator sanctuary of perennials, trees and brush piles on their property. Even with such an abundance of flowering plants and habitat, they identified a need for summer cover crops. "We notice in July and August here in the Northeast there's a dearth of floral resources," John says. "So for us, it was seeing if we can fill a gap that we can't with our perennials using annual cover crops."

The next step in getting the most out of your cover crop is to identify your conservation needs. You may need to break up a plow pan (daikon radish), prevent nutrient leaching (non-legumes, cereals), boost soil fertility with a green manure (legumes), out-compete weeds with a fast-growing plant (buckwheat), provide forage for livestock (crimson clover, canola, cereals), manage nematodes (brassicas), or prevent erosion (cowpea, clovers). Increasingly, farmers are turning to cover crops in "prevented planting" situations—that is, when the soil is too wet to plant in the spring [1].

The Haydens used a 2013 SARE grant to evaluate three cover crop options—phacelia, buckwheat and a commercial bee forage mix—for their ability to support bumble bees and suppress weeds in vegetable beds where weed pressure had built up [10]. The phacelia and buckwheat established well,

suppressed weeds and attracted pollinators, but the commercial mix was outcompeted by weeds and did not establish well. "The phacelia we liked a lot," John says. "We were able to see that bumble bees had a statistically significant preference for phacelia over buckwheat."

Ideally, your cover crop will be dual-purpose. It should both serve as a conservation practice and also boost beneficial insect populations. Your cover crop mixture must include flowering legumes or forbs to accomplish this objective. See Plant Selection for an in-depth discussion of choosing plants for multiple objectives.

**As a cover crop, fast-growing buckwheat is commonly used to suppress weeds. When allowed to flower, it can provide excellent forage for wild pollinators.**
*– Photo by John Hayden*

## Planting and Managing Your Cover Crops

COVER CROPS CAN EITHER BE SOWN AFTER HARVEST OF a cash crop, or they can be sown into a standing crop (over-seeding). Typically, drilling uses fewer seeds than broadcast seeding and promotes more uniform stand establishment. It can be done post-harvest or into a standing crop, and is the technique most commonly used by farmers in the CTIC-SARE survey [1]. Other farmers aerially over-seed cover crops into a standing crop. Over-seeding is most commonly used to give cover crops a head start before the winter in regions with a short growing season. The CTIC-SARE survey found that the median seed cost in the Midwest was $25 per acre in 2013 [1].

As you decide when to terminate your cover crop, the goal is to do so sufficiently in advance of your cash crop for cover crops to decompose, release nutrients and recharge soil moisture [11, 12]. You need to weigh these demands against the need to minimize the amount of time your fields are bare. Appropriate termination time for cover crops varies by region.

At the time of this writing, federal crop insurance programs have developed region-specific requirements for cover crop termination. These rules are intended to reduce yield losses of cash crops due to water use by previously planted cover crops. They require the termination of cover crops in advance of cash crop planting, from at least 35 days before planting to up to five days after planting, depending on the region. For more information, see Balancing Insect Conservation with USDA Crop Insurance Rules on page 9.

Cover crops can be terminated by mowing, tillage, herbicides, harvesting, rolling or winter kill. An herbicide burn down is the most common termination strategy, followed by tillage and winter kill [1]. You may also opt to graze or hay your cover crop for winter forage. The best option will vary depending on plant selection and growth stage. Deep tillage should be avoided, as it tends to counteract many of the benefits provided by cover crops. These range from improved soil tilth to increased populations of over-wintering beneficial insects.

If pollinators are to benefit from your cover crop planting, you must give it time to flower. This is not a problem for management of legumes or brassicas. Their conservation benefits are maximized after they bloom. Management of some other plantings can be a little trickier, as is the case for buckwheat. Buckwheat must flower for a minimum of 20 days to build up beneficial insect populations [3]. At the same time, buckwheat should be mowed seven to 10 days after flowering to prevent it from reseeding [3]. Because buckwheat is one of the best cover crops for bees and beneficial insects, and because it kills so easily with mowing, it may be advisable to put off cover crop termination until beneficial insects are established, with the expectation of having to mow a field twice to achieve cover crop termination. Note, however, that this practice could result in unwanted buckwheat (weeds) in subsequent crops. Alternatively, a farmer could stagger planting and mowing row by row to lengthen the bloom period while still preventing buckwheat from reseeding.

When the Haydens used buckwheat as a summer cover crop, they allowed it to flower extensively and go to seed, and did not follow it with a fall crop. With unfavorable conditions for germinating through the fall and winter, volunteer buckwheat was not a problem come spring. "From our experience, reseeding would only be a problem if you were planting another crop the same season," John Hayden says. "Neither phacelia nor buckwheat presented any problems with volunteers the year after planting."

Another cover crop practice that may require some additional tweaking to benefit bees and beneficial insects is planting for green manure. Green manure is tilled into the soil to increase soil organic matter in the vegetative stage or at flowering. This practice can be made more insect-friendly by allowing the green manure crop to flower for a few days before tilling, but still tilling before seed set.

# Plant Selection

THE PLANTS THAT BEST FIT YOUR NEEDS WILL VARY BY location and purpose. Different cover crops have different strengths. Flowering broadleaf species are a must when selecting cover crops for pollinators. Grass cover crops do not provide nectar and their pollen typically has lower protein content than the pollen of broadleaf plants, thus making them only marginally attractive to bees. A flowering plant/grass blend may be an ideal solution in situations where a grass crop is needed to achieve other management priorities, such as preventing nutrient leaching.

You have more flexibility when selecting plants in support of predator and parasitoid insects for pest management, with certain grass cover crops supporting alternate prey (such as aphids) to help sustain the beneficial insects when cash crops are absent.

**Cover Crop Services and Examples of Suitable Pollinator-Friendly Plants [1, 13]**

| Conservation Service | Pollinator-Friendly Cover Crops |
|---|---|
| Nitrogen source | alfalfa, white clover, red clover, cowpea, lupin, partridge pea, sunn hemp, vetch |
| Nitrogen scavenger | phacelia, canola, sunflower |
| Erosion control | canola, cowpea, crimson clover, white clover |
| Forage value | crimson clover, canola, white clover, forage radish |
| Weed management | buckwheat, canola, cowpea, sunn hemp, sunflower |
| Nematode management | canola, other brassicas and mustards |
| Reducing compaction | canola, radish, lupines, brassicas and mustards |

Avoid cover crops that serve as alternate host plants for crop diseases and those that support large numbers of crop pests. An alternate host is another species, different from the cash crop, which serves as a reservoir for the pest or is necessary for the pest to complete its life cycle. For example, if you are growing a brassica vegetable crop, do not cover crop with another brassica, as it would support similar pests.

However, cover crops that support low levels of crop pests may be valuable in some cases, as they can provide a consistent food source for beneficial predators. This is well documented in the case of pecan orchards with a clover understory [14]. The legumes attract aphids, which are followed by beneficial insects. When the clover dies back and the aphid population drops, the beneficial insects are driven up into the trees. These insects, in search of other foods, manage pests on the developing pecans [14].

Be sure the cover crop you choose is adapted to local conditions. A good first step is to look around you and see what works for other farmers. Red clover and crimson clover are popular cover crops for nitrogen fixation east of the Mississippi River [3]. Red clover is a low-bloat legume that is excellent forage for grazing animals. Clover is also a high-value honey plant. Rapeseed and other brassicas are used for pest and nematode management in fields (biofumigation). Cowpeas, another legume, are exceptionally heat and drought tolerant. They also have extra-floral nectaries—or nectar-producing glands at leaf stems—which attract beneficial insects. These plants are used for erosion control across the Southeast and coastal California [3]. They are also used for weed suppression in the Deep South. Buckwheat is useful as a rapid-growing smother crop in much of the United States [3], and it is the premier cover crop for attracting beneficial insects.

Of course, buckwheat is not ideal for every situation. Hoping to use buckwheat as a nectar source for predators of the glassy-winged leafhopper, a vineyard pest [15], SARE-funded University of California-Riverside Extension specialists found that the plant struggled to grow during the hot, dry southern California summer. Sustaining the cover crop with irrigation turned out to be an expensive proposition, and actually increased populations of the blue-green sharpshooter, another local vineyard pest. Ultimately the buckwheat did in fact increase predator numbers to help manage glassy-winged leafhoppers, but that benefit became more difficult to justify when balanced against unexpected challenges.

Finally, when considering plants, a strong case can be made for the role of diversity. Using a SARE grant, a graduate student researcher in Florida [16] found significant differences in wild bee abundance and diversity based upon the number of crops present on a farm. At one end of the spectrum, the farm with the fewest number of bees (five species) grew only two crops and mowed directly up to the field edges. The farm with the greatest abundance of bees (14 species) grew nine crop species and maintained open, unmowed buffer areas around the farm. Interestingly, both farms were relatively similar in size. While not explicitly demonstrated in the study, it seems likely that multi-species cover crop mixes are a relatively simple way to expand plant diversity on a farm, with probable benefits to bee abundance and diversity.

## Cover Crop Cocktails

MIXTURES OF COVER CROPS, OR COCKTAILS, HAVE synergy—they generally work better than each single species could alone. In fact, a planting of legumes and grasses can result in an overall increase in available nitrogen [17]. Legumes build up soil nitrogen quickly, but their residue also decomposes quickly, releasing nutrients. A small grain does not add soil nitrogen, but it is an excellent nutrient scavenger. Additionally, its residue decays over a longer period of time, providing a slow-release mechanism for soil nutrients. Small grains are also useful for controlling erosion, preventing nutrient leaching and suppressing winter weeds. Mixing the fertilizing effects of the flowering legume with the soil-building small grain can be a winning combination for winter cover [1, 18].

A pollinator-oriented cocktail may include a mix of plants that have different strengths and which flower at different times. Buckwheat, rapeseed, lupines, phacelia, sunn hemp, cowpeas, partridge pea, sunflowers and many clovers are all cover crops that are also beloved by bees and beneficial insects. Stacking these pollinator plants in one field can lengthen the bloom period. For example, if rapeseed blooms in early spring and is harvested in May or June, then it can be followed by the late-summer blooming sunflower, which can then be over-seeded with a winter legume/small grain mix. The rapeseed serves to manage nematodes, the sunflowers mine nutrients and bring them to the surface, while the legume/grain mix adds nitrogen and prevents winter erosion. This is just one path using an all-pollinator rotation for season-long flowers. All of these plants except the small grain have flowers highly preferred by pollinators and other beneficial insects.

## Common and Suggested Rotations

THERE ARE A NUMBER OF ROTATIONS THAT WORK WELL with common crops, and there is likely to be a proven cover crop rotation that works with your system. The NRCS *Cover Crop Economics Decision Support Tool*, released in 2014, comes pre-loaded with example scenarios to help farmers think about the economics of including cover crops in their system. For example, in a three-year corn/soybean/corn rotation with fall cover crops every year, including a winter cover crop of cereal rye following corn and a cocktail of cereal rye/crimson clover/brassica following soybeans had long-term benefits in terms of fertilizer and pesticide savings, with no reduced yield [6]. In another scenario,



*Photos, from left to right:* **Teff grain, phacelia and a fava bean flower**

### COVER CROP COCKTAIL EXAMPLES

The following examples represent cover crop cocktails for various regions and seasons. They include pollen and nectar-rich plant species that support a diversity of bees and other beneficial insects, as well as vegetative structure that insects may use for egg laying or hibernation. Flowering will vary depending on season, planting date and region; these mixes can provide multiple benefits even when terminated before all species have flowered.

**Sample Cool Season Cocktail (formulated for one acre at 10-15 seeds per sq. ft.)**

| Species | Percent of Mix | Quantity (pounds per acre) |
|---|---|---|
| Phacelia | 8 | 0.2 |
| Crimson clover | 8 | 0.3 |
| Radish (daikon) | 8 | 0.6 |
| Hairy vetch | 8 | 2.2 |
| Field pea | 8 | 17 |
| Turnip | 8 | 0.2 |
| Fava bean | 2 | 29 |
| Rye | 25 | 6 |
| Oat | 25 | 7 |
| **Totals** | **100 percent** | **62 pounds per acre** |

**Sample Warm Season Cocktail (formulated for one acre at 15-20 seeds per sq. ft.)**

| Species | Percent of Mix | Quantity (pounds per acre) |
|---|---|---|
| Buckwheat | 16 | 7 |
| Soybean | 16 | 34 |
| Sunflower | 16 | 3.5 |
| Cowpea | 16 | 28 |
| Sudangrass | 12 | 2.5 |
| Millet | 12 | 1.5 |
| Teff | 12 | 0.1 |
| **Totals** | **100 percent** | **77 pounds per acre** |

**Sample Tropical Cocktail (formulated for one acre at 15-20 seeds per sq. ft.)**

| Species | Percent of Mix | Quantity (pounds per acre) |
|---|---|---|
| Buckwheat | 12 | 7 |
| Sunn hemp | 12 | 7 |
| Sunflower | 12 | 3.5 |
| Cowpea | 12 | 26 |
| Yellow sweet clover | 12 | 0.5 |
| Teff | 12 | 0.1 |
| Sudangrass | 14 | 3.5 |
| Millet | 14 | 2.5 |
| **Totals** | **100 percent** | **50 pounds per acre** |

## NATIVE AND NEARLY NATIVE COVER CROP MIXES

EXTENSIVE RESEARCH DEMONSTRATES THAT NATIVE PLANTS FOSTER MORE abundant and diverse pollinator populations than non-native plant species. Similarly, other benefits of native plants, such as their adaptation to local climate conditions, are well understood. However, the vast majority of cover crop options consist of non-native plants. There are some exceptions, described below.

Phacelia (*Phacelia tanacetifolia*), a vigorous-growing annual native to California, and common sunflower (*Helianthus annuus*), a native of western prairie and desert states, are two species that continue to be more common in cover crop applications. Both are also extremely attractive to honey bees and a variety of native bees. While phacelia (first used as a cover crop in Europe) is sometimes planted as a single-species cover crop, both it and sunflower are increasingly used as part of diverse cover crop cocktails. While those cocktails still do not resemble true native plant communities, the inclusion of these plants within their native range may provide special benefits to local pollinator species.

More work is needed to identify and increase the availability of promising native plant species. Across eastern, southern and Midwestern states, for example, partridge pea (*Chameacrista fasciculata*), a native annual prairie legume, shows particular promise. In addition to its ability to fix nitrogen, partridge pea attracts large numbers of pollinators and beneficial insects with both flowers and extra-floral nectaries (nectar-producing glands located at leaf stems). The abundant biomass production, trailing vetch-like growth habit and low-cost commercial availability also make partridge pea an attractive cover crop choice for warm-season applications.

While additional research is needed, farmers looking to experiment with local native plants as cover crops might seek out readily available, low-cost wildflower species and begin including them in cocktail seed mixes at a low rate. Annual species such as California poppy (*Eschscholzia californica*), Douglas meadowfoam (*Limnanthes douglasii*) and plains coreopsis (*Coreopsis tinctoria*) may soon take their place alongside crimson clover and buckwheat in creating diverse cover crop seed mixes that blur the lines between agriculture and ecology.

## SPECIAL CONCERNS: TERMINATION AND RESIDUE MANAGEMENT FOR GOOD BUGS

WHILE NECESSARY TO PREPARE FOR CASH CROP planting, the process of terminating a cover crop can be very detrimental to pollinators and beneficial insects, especially when the cover crop is actively flowering when terminated. The risks to insects from cover crop termination include direct mortality, such as being crushed by cultivation or roller-crimping equipment; and indirect harm, such as the rapid loss of available food sources. Even when adult insects are not present and active in cover crops, nest sites, eggs and hibernating adults may all be present in the crop canopy or upper soil surfaces.

Adopting cover crops for pollinators takes careful planning and consideration. To reduce some of the impact of cover crop termination, we recommend the following:

- Where possible, wait until most of the cover crop is past peak bloom before termination.
- If waiting until peak bloom is not possible, consider leaving strips of the cover crop standing to prevent the crash of beneficial insect populations. With buckwheat, for example, stagger planting and mowing row by row (or groups of rows) to lengthen the bloom period while still preventing buckwheat from reseeding.
- Terminate with as little physical disturbance as possible. For example, roller-crimping may be less disruptive to pollinator nests in the soil than cultivation.
- Maintain permanent conservation areas on the farm to sustain beneficial insects in the absence of the cover crop.
- Leave as much cover crop residue as possible to protect beneficial insect eggs and any hibernating adults.
- Minimize insecticide use in the cash crops that follow cover crops to avoid harm to beneficial insects that may still be nesting in crop residue. At a minimum you should follow a comprehensive integrated pest management (IPM) plan that includes specific risk mitigation strategies that protect pollinators and beneficial insects.

**Including native flowering species in a cover crop mix can help attract pollinators and beneficial insects, as in this South Dakota field.**
*– Photo by Mieko Alley, USDA NRCS*

a two-year cotton/corn rotation that included winter cover crops of crimson clover following cotton and a cereal rye/crimson clover/brassica cocktail following corn provided immediate financial and environmental savings [6]. Brassicas, such as mustards, oilseed radishes, tillage radishes, canola and others, are often part of vegetable rotations because of their role in managing soil pests.

There are other examples of successful rotations. In Ohio, a typical corn/soybean rotation might include the cover crops cereal rye, wheat, cowpea and sunn hemp [19]. Brassicas are also an option for a winter cover crop. In Missouri, it is possible to double-crop buckwheat or sunflowers after harvesting a winter crop of canola or wheat in early summer [20]. After winter wheat, Michigan State University Extension recommends the soil-improving cocktail of annual ryegrass/red clover/hairy vetch/oilseed radish to add nitrogen, reduce compaction and improve tilth [21]. Alternatively, the cocktail of crimson clover/annual ryegrass provides many of these same benefits, minus the soil aeration, and is also excellent pasture [21].

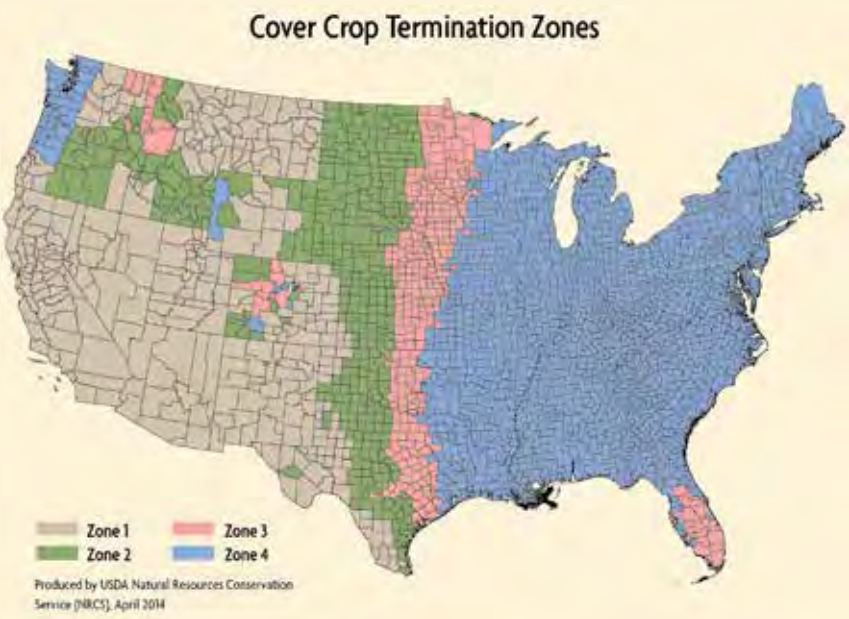
A new, cost-efficient rotation is meadowfoam (*Limnanthes alba*), a winter annual, following seed grasses. Grown in northern California and Oregon, meadowfoam over-winters as a rosette. Its dense flowers attract pollinators and beneficial insects in the spring. This emerging species is useful as both a cover crop and an oilseed. The oil produced is highly shelf stable, and is quite valuable to the cosmetics industry. However, seeds can be hard to find.

# Balancing Insect Conservation with USDA Crop Insurance Rules

THE USDA'S NRCS, RISK MANAGEMENT AGENCY (RMA) and Farm Service Agency (FSA) came together in 2014 to develop standardized termination recommendations for non-irrigated cover crops in four different regions or zones in the United States [12]. They sought recommendations that would achieve optimal balance between conservation benefits and soil water conservation for cash crops, and would provide consistent guidance for cover crop policy across the three agencies. For the purpose of crop insurance, cover crops must be terminated according to these recommendations in order for the following crop to receive insurance coverage. California and the Intermountain West (zone 1) require the longest gap between cover crops and a cash crop, with a recommended cover crop termination date at least 35 days before planting. For much of the country's bread basket, the Central Plains (zone 2), farmers should terminate the cover crop at least 15 days before planting. In the eastern prairie states and south Florida (zone 3), cover crops can be terminated at planting. Finally, in the eastern states (zone 4), growers can terminate cover crops up to five days after planting, but before cash crop emergence.

A major challenge of these rules is the loss of pollen and nectar resources when cover crops are terminated before they have fully bloomed. Even when partial bloom occurs, rapid termination of that bloom results in boom and bust conditions for insects. To mitigate some of the impact of early termination, consider supplementing cover crops with other pollen and nectar resources such as hedgerows, permanent wildflower meadows, or other high-quality natural areas. Similarly, consider leaving small sections of the field (even a single outer row) in the cover crop, rather than terminating it entirely. Even such small sections can help sustain pollinators in the absence of other forage sources.

For current guidance on cover cropping and federal crop insurance, consult your local NRCS office or crop insurance program agent, or see "NRCS Cover Crop Termination Guidelines" [12] in the References section.



**Relative Value of Cover Crop Species to Bees and Other Beneficial Insects**

| Cover Crop | Life Cycle | Seeding Rate (pounds/acre single species) | Seeding Depth (inches) | Honey Bee Value | Wild Bee Value | Beneficial Insect Value (predators and parasitoids) | Alternative Host of Crop Pests | Notes |
|---|---|---|---|---|---|---|---|---|
| **GRASSES** | | | | | | | | |
| **Annual ryegrass** | Annual | 10-20 | ½ | None | None | Low | Unknown | Probably only useful to beneficial insects when included as part of a diverse seed mix |
| **Barley** | Annual | 60-125 | 1½ | None | None | Low | Oat and Russian wheat aphids, various small grain diseases | Best adapted to dry, cool (but not cold) climates |
| **Millet (foxtail, proso and pearl)** | Annual | 5-25 | ½ | None | None | Low | Unknown | Seeding rates for foxtail millet can be reduced to the lower end of the described range |
| **Oats** | Annual | 60-120 | 1½ | None | None | Low | Oat and Russian wheat aphids, various small grain diseases | Cool-season plant; limited cold tolerance with most varieties subject to winter kill in cold climates |
| **Rye, cereal** | Annual | 60-120 | 1 | None | None | Low | Russian wheat aphids, various small grain diseases | Potentially allelopathic to other crops |
| **Sorghum/ sudangrass** | Annual | 10-40 | 1 | None | None | Moderate | Corn aphids | Attractiveness to grass-specific aphids may make this a useful insectary plant for attracting aphid predators (in non-grass crop systems); lower end of seeding rates are appropriate for sorghum and sorghum-sudangrass hybrids; potentially allelopathic to other crops |
| **Teff** | Annual | 5-10 | ¼ | None | None | Low | Unknown | Seed may have limited availability |
| **Triticale** | Annual | 60-120 | 1 | None | None | Low | Russian wheat aphids, various small grain diseases | Potentially allelopathic to other crops |
| **LEGUMES** | | | | | | | | |
| **Alfalfa** | Perennial | 10-25 | ¼ | High | High | Moderate | Pea aphids | Top honey plant, also attractive to large numbers of diverse wild bees |
| **Birdsfoot trefoil** | Perennial | 5-10 | ¼ | Moderate | Moderate | Moderate | Spittlebugs, alfalfa plant bugs, potato leafhoppers and others | Can be weedy and invasive |
| **Clover, berseem** | Annual | 8-20 | ¼ | High | High | Moderate | Likely a host for various leafhoppers, true bugs and generalist aphids | Best adapted to Mediterranean climates |
| **Clover, crimson** | Annual | 15-25 | ¼ | High | High | Moderate | Pea aphids, tarnished plant bugs | Grows very well in combination with cereal rye and other cool season grasses |
| **Clover, kura** | Perennial | 5-15 | ¼ | High | High | Moderate | Various leafhoppers, true bugs and generalist aphids | Poor seedling vigor and slow to establish; considered a top honey plant |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Clover, red** | Perennial | 5-20 | ¼ | Moderate | High | Low | Various leafhoppers, true bugs and generalist aphids | Typically short-lived; high value for bumble bees |
| **Clover, rose** | Annual | 10-25 | ¼ | Moderate | High | Moderate | Various leafhoppers, true bugs and generalist aphids | Excellent bumble bee plant |
| **Clover, strawberry** | Perennial | 5-15 | ¼ | High | High | Moderate | Unknown | Can be weedy and invasive |
| **Clover, subterranean** | Annual | 10-20 | ¼ | None | None | Low | Pea aphids, tarnished plant bugs | Flowers are inconspicuous and do not attract pollinators |
| **Clover, white** | Perennial | 5-15 | ¼ | High | High | Moderate | Various leafhoppers, true bugs and generalist aphids | Considered a top honey plant |
| **Chickpea** | Annual | 80-120 | 1½ | Low | Low | Low | Pea borers, wireworms | Beneficial insects are attracted to extrafloral nectaries |
| **Cowpea** | Annual | 30-90 | 1 | High | High | High | Various stink bugs, leaf-footed bugs, aphids | Extensive extra-floral nectaries attract large numbers of beneficial parasitoid wasps as well as other beneficial insects |
| **Fava bean** | Annual | 80-160 | 3 | Low | Moderate | Moderate | Unknown | |
| **Lablab** | Annual | 30-40 | 1-4 | Moderate | Moderate | Moderate | Unknown | Vining growth habitat; more common in subtropical climates |
| **Lupin** | Annual | 40-120 | 1-2 | Low | Moderate | Moderate | Unknown | |
| **Medic** | Annual (a few species are perennial) | 10-20 | ½ | Low | Low | Low | Alfalfa weevils, pea aphids, tarnished plant bugs | Small, nondescript flowers attract few beneficial insects |
| **Partridge pea** | Annual | 10-20 | ¼-¾ | Moderate | High | High | Various leafhoppers | Extensive extra-floral nectaries attract large numbers of beneficial parasitoid wasps |
| **Pea, field** | Annual | 50-100 | 2 | Low | Low | Low | Tarnished plant bugs | |
| **Sainfoin** | Perennial | 40-80 | ½ | High | High | Moderate | Unknown | Considered a top honey plant |
| **Soybean** | Annual | 35-120 | 1 | Moderate | Moderate | Moderate | Wireworms, bean leaf beetles, potato leafhoppers and various others | |
| **Sunn hemp** | Annual | 20-40 | ¾ | Moderate | High | Moderate | Unknown | Attracts wild carpenter and leafcutter bees in tropical farm systems; supports parasitoids of corn earworm in the Pacific Islands region |
| **Sweet clover** | Biennial | 6-20 | ½ | High | High | High | Unknown | Considered a top honey plant; may be weedy or invasive in some areas |
| **Vetch** | Annual; perennial | 15-30 | ½-2½ | Moderate | High | High | Pea aphids, tarnished plant bugs, two-spotted spider mites | Standard options include common vetch, hairy vetch and purple vetch; may be weedy or invasive in some areas |

**Relative Value of Cover Crop Species to Bees and Other Beneficial Insects cont.**

| Cover Crop | Life Cycle | Seeding Rate (pounds/acre single species) | Seeding Depth (inches) | Honey Bee Value | Wild Bee Value | Beneficial Insect Value (predators and parasitoids) | Alternative Host of Crop Pests | Notes |
|---|---|---|---|---|---|---|---|---|
| **FORBS/BROADLEAVES** | | | | | | | | |
| **Beet** | Biennial | 6-10 | 1 | Low | Low | Low | Unknown | Wind-pollinated flowers are only marginally attractive to bees |
| **Buckwheat** | Annual | 30-80 | 1 | High | High | High | Tarnished plant bugs | Top honey plant with nectar flow typically occurring in the morning; shallow flowers attract parasitoid wasps |
| **Canola** | Annual | 3-10 | ½ | High | High | High | Flea beetles | Excellent honey plant |
| **Chicory** | Perennial | 3-5 | ½ | Low | Low | Low | Unknown | Flowers are considered self-fertile and attract few insects |
| **Flax** | Annual | 25-50 | ¾-1½ | Moderate | Moderate | Moderate | Unknown | Reports of bee attractiveness vary; probably most valuable to pollinators as part of a diverse mix |
| **Kale** | Biennial | 3-10 | ½ | High | High | High | Cabbage loopers, flea beetles, cabbage aphids | Aphid-susceptible varieties likely support the more predatory insects such as lady beetles and lacewings; rapid-blooming varieties most beneficial to bees |
| **Mustard, tame** | Annual | 5-20 | ½ | High | High | High | Flea beetles | Can be weedy and invasive in California |
| **Phacelia** | Annual | 5-15 | Surface | High | High | High | Tarnished plant bugs | Major honey bee nectar plant; produces volunteer seedlings in moderate climates |
| **Radish** | Biennial | 8-20 | ¼ | High | High | High | Club root of brassicas, flea beetles, cabbage aphids, root maggots | Deep-rooted varieties are promoted for reducing compaction and adding soil organic matter; not tolerant of prolonged freezing |
| **Safflower** | Annual | 25-35 | 1 | Moderate | Moderate | Moderate | Sunflower head moths, tarnished plant bugs, wireworms | Relatively drought tolerant with surprisingly deep tap roots (in some cases exceeding 8 feet) |
| **Sunflower** | Annual | 4-6 | ½ | High | High | High | Sunflower head moths, various beetles, tarnished plant bugs | Both flowers and extra-floral nectaries attract huge numbers of pollinators and beneficial insects, in most cases outweighing any risk of attracting pests |
| **Turnip** | Biennial | 2-12 | ½ | High | High | High | Club root of brassicas, flea beetles, cabbage aphids, wireworms, cabbage loopers | Turnips tend to be more cold tolerant than radishes, allowing them to flower in the spring unless terminated |

# Limitations of Cover Crops

YOU MAY BE ASKING YOURSELF, "IF COVER CROPS ARE so great, why doesn't everyone use them?" While some farmers may not know where to start, perhaps the greater barrier to adoption is that the financial and environmental benefits of cover cropping oftentimes accrue gradually [22, 23, 24], while the startup costs in time and money are immediate. State and federal agricultural incentive programs which offset this initial investment can be very successful in encouraging the use of cover crops [22].

Of course, not all systems are equally suited to cover cropping. In some cases, existing long-season cash crop rotations may not be compatible with cover crops. In other regions, a cover crop's water usage may hurt cash crop yields [23]. This impact can be mitigated to some extent by terminating a cover crop well prior to establishing a cash crop, allowing soil water to recharge. Additionally, over the long term, cover crops increase soil organic matter, soil water infiltration and soil water capacity. Initial declines in available water are often offset by later, long-term increases [23].

Other limitations of cover crops include expenditures for new equipment, more complicated management practices and time spent seeding and terminating cover crops rather than managing cash crops [23]. It is important to run the figures for your own operation to decide if cover crops are right for you. Should you decide that the benefits outweigh the drawbacks, plan to ease into cover cropping, starting with a small area and gradually expanding your cover cropped land as you get the hang of it.

**John Hayden tested a summer cover crop of buckwheat for its ability to suppress weeds and attract bumble bees, an important pollinator on his Vermont fruit farm. It worked well, and after going to seed did not return in the spring as a weed.** *– Photo by Nancy Hayden*

# Beyond Cover Crops

ALTHOUGH COVER CROPS CAN PROVIDE SIGNIFICANT pollen and nectar resources for bees, they do have constraints. For example, because most cover crop species have a short bloom period, single species cover crops typically offer a feast-or-famine situation for bees. A shortage of food is followed by abundance, followed by another shortage. Under such circumstances wild pollinators may have trouble sustaining their populations. (Honey bees may be more resilient under such conditions due to their ability to store food reserves.)

Moreover, because most cover crop plants are non-native species, their attractiveness to wild native bees may be highly variable. The cover crops highlighted in this bulletin will attract mostly generalist species of wild bees that are relatively common in most landscapes. Less common species of native bees often require more permanent plant communities comprised primarily of native plant species. In general, to maximize the diversity and abundance of beneficial wild insects, flowering cover crops should be combined with the restoration and maintenance of permanent, high-quality, pesticide-free native plant habitat in other areas of the farm. Adding pollinator hedgerows, establishing pollinator plantings on marginal lands and borders, and other practices to boost habitat can all fit into other USDA conservation practices.

Regarding pollinator borders specifically, two SARE-funded research projects in Michigan demonstrated the value of permanent native wildflower strips adjacent to crops. In one of these studies [25], researchers found that corn borer egg parasitism was measurably higher in fields adjacent to perennial native wildflower strips. In the other study [26], researchers found that blueberries planted adjacent to perennial wildflower strips had berries that were 22-40 percent heavier, due to enhanced pollination by wild bees.

# Insecticides and Insect Conservation

*You can reduce risk to pollinators and beneficial insects by implementing IPM on your farm and only applying insecticides when the threshold for economic damage has been crossed.*

INSECTICIDES SHOULD NOT BE APPLIED TO COVER CROPS where pollinator and beneficial insect conservation is a priority. In most cases it is unnecessary, regardless of your cover crop objectives. Both organic and conventional pesticides can harm pollinators and other beneficial insects. Cover crops are themselves often used to break pest cycles and manage nematodes, and can help reduce your overall use of insecticides.

However, where cover crops are planted in rotation with insecticide-treated cash crops, the residual impact of cash crop insecticides may still be a concern. You can reduce risk to pollinators and beneficial insects by implementing IPM on your farm and only applying insecticides when the threshold for economic damage has been crossed. You can also start your course of treatment with the least harmful insecticide that will accomplish your management need. You can reduce harm to good bugs from insecticides by following label instructions, avoiding the application of insecticides to flowering plants, spraying at dawn or dusk and by using chemicals that have low residuals and do not accumulate in the soil or plant.

Unfortunately for beneficial insect conservation, there are a number of widely used systemic insecticides with persistent chemical residues in soil and plant matter. Systemic insecticides are those which are absorbed into the plant tissue and move through the vascular system of the plant, making most parts of it toxic to insect pests. In some cases the insecticide may even be present in flower nectar, resulting in the lethal or sublethal poisoning of bees and other pollinating insects.

The most common class of systemic insecticides currently in use is neonicotinoids. These include the active ingredients imidacloprid, thiamethoxam, clothianidin, acetamiprid, thiacloprid and dinotefuran. These insecticides may be applied in crop fields as foliar sprays, root drenches and as seed treatments (the latter commonly used for corn and soybeans). They can persist in the soil and crop residue for multiple years, and can be reabsorbed by later crops that were not treated. Due to a growing body of research demonstrating the potential risk posed to pollinators and beneficial insects from neonicotinoid insecticides [27, 28, 29, 30, 31], and our knowledge of neonicotinoid crop residues, farmers should avoid planting cover crops in rotation with neonicotinoid-treated cash crops where possible, especially when bee and beneficial insect conservation is a goal. Instead, producers should focus their conservation efforts on other areas of the farm which are untreated.

Following the precautionary principle means that we should not put beneficial insect habitat on lands contaminated by systemics—that is to say, in the absence of scientific proof that residue from previous use of systemic insecticides does not harm pollinators, it is safer to assume that it does. Growers of conventional corn and soybeans could instead focus their insect conservation efforts on hedgerows, roadsides and other areas not sprayed with systemic insecticides. They could also make their preference for untreated seed known to their supplier. In 2014 the Environmental Protection Agency (EPA) confirmed that there is little to no benefit from pre-treating soybeans; if enough growers request untreated seeds, then it is likely more will become available.

Similarly, cover crops should not be directly treated with any class of insecticide. An exception would be in the case of a cover crop being used for another primary purpose, such as livestock forage, where it must be protected from catastrophic pest damage. However, treatment of cover crops with insecticides is rare. Furthermore, it is critical to protect cover crops from adjacent insecticide drift. Any use of insecticides should fully adhere to label recommendations.

### Avoiding Pest Increases

WHILE ADDITIONAL RESEARCH IS NEEDED, THERE IS strong evidence that diverse cover crop cocktails will routinely reduce pests, by increasing populations of beneficial predatory and parasitoid insects. In contrast, single-species cover crops may increase populations of undesirable crop pests, by providing a more limited range of resources than plantings which can support a diverse population of predators.

To further reduce the possibility of increasing crop pests, use caution when considering cover crops that are closely related to cash crop species. For example, if brassicas such as broccoli or cabbage are primary cash crops, minimize the use of cover crops such as turnip, radish or mustard, all of which may host the same pests and diseases as the cash crops.

During their SARE-funded project, the Haydens observed that the pure stand of phacelia provided habitat for the tarnished plant bug, a pest of tree fruits and berries. “From what we have learned, we will continue to plant multi-functional cover crops timed to bloom in July and August,” Nancy Hayden says. “Our seeding mix will include buckwheat and phacelia, as well as mustard and annual white sweet clover."

### RESEARCH CASE STUDY: USING COVER CROPS TO INFLUENCE NATURAL PREDATION OF COTTON PESTS

AMONG LARGE-SCALE FIELD CROPS, COTTON IS high on the list for susceptibility to multiple major pests. Cotton bollworm, tobacco budworm, cotton aphid, tarnished plant bug and various stink bugs are some of the biggest offenders for cotton growers in the Southeast. Any management strategy that can make a dent in the populations of these pests without relying on insecticides is good news.

One such successful strategy came about through a SARE-funded research project in Georgia [32] that investigated the use of cover crops to increase the number of insect predators that prey upon some of those pests. This research was based on the fact that many beneficial insects need alternate food sources, such as nectar, to sustain themselves when prey are absent. These beneficial insects also typically need vegetation on which to lay eggs or hibernate over the winter. In this study, researchers hypothesized that various cover crops might provide those habitat requirements.

Starting with standard cotton fields where cover crops were not used, the researchers compared pest and beneficial insect populations to those in cotton fields where cover crops of crimson clover, cereal rye and a legume mix were used in rotation and as intercropping cover. For a few beneficial insects like the predatory minute pirate bug, there was not a significant population difference between traditional cotton fields and those with cover crops. However, most pest and beneficial insect population responses strongly indicated that cover crops had a measureable and positive impact on pest management. For example, predatory big-eyed bug numbers were demonstrably higher in cotton fields following a crimson clover cover crop. Aphid-eating lady beetles also seemed to move directly from cover crops into cotton.

In the case of pests, researchers also found that cotton bollworm and tobacco budworm were the only two pests that exceeded economic thresholds in both the cover cropped fields and the regular cotton fields. Interestingly however, the pests exceeded those damage thresholds more often in regular cotton fields than those where crimson clover and rye cover crops were used.

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# Resources

*SARE's Cover Crops Topic Room*
This online collection of educational materials was developed out of decades of SARE-funded cover crop research. www.sare.org/cover-crops.

*Attracting Native Pollinators*
Illustrated with hundreds of color photographs and dozens of specially created illustrations, this book provides rich detail on creating and managing pollinator habitat. www.xerces.org/store/#books.

*The USDA-NRCS Cover Crop Economics Decision Support Tool*
This user-friendly economic assessment tool helps determine the costs and benefits of incorporating cover crops into a crop rotation. www.nrcs.usda.gov/wps/portal/nrcs/detailfull/il/soils/health.

*Manage Insects on Your Farm: A Guide to Ecological Strategies.*
A guide on how to apply ecological pest management principles to your farming system. www.sare.org/manage-insects.

*Managing Cover Crops Profitably, 3rd Edition*
This definitive book explores how and why cover crops work and provides all the information needed to build cover crops into any farming operation. www.sare.org/mccp.

*Bees and Cover Crops*
This four-page Penn State bulletin describes the use of flowering cover crops for native pollinator conservation. www.sare.org/native-bees-and-flowering-cover-crops.

*Habitat Management in Vineyards*
This University of California manual provides practical steps for managing pests by improving biodiversity at the field and landscape levels. www.sare.org/habitat-management-in-vineyards.

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ABOUT US, FAQS

# What is permaculture?


Permaculture is essentially about designing sustainable environments with the focus being on how we provide our needs in a way that works with nature's processes and ecology. Based on the words Permanent (as in sustainable) and Culture (including agri-culture), Permaculture addresses all aspects of human culture, not only food production but how we build, how we organise ourselves and how we utilise all our resources including the human resource.

*Djanbung Gardens – a living learning permaculture centre*

The Permaculture concept was originally created by two Australins, Bill Mollison and David Holmgren in the 1970s. Since then permaculture has spread all over the word training many thousands in sustainable design, landuse, community development and sustainable living.

The following explanation is from The PDC Handbook by Robyn Francis

**Permaculture** encourages the restoration of balance to our environment through the practical application of ecological principles.  In the broadest sense, Permaculture refers to land-use systems which utilise resources in a sustainable way.

From a philosophy of cooperation with nature and each other, of caring for the earth and people, it presents an approach to designing environments which have the diversity, stability and resilience of natural ecosystems, to regenerate damaged land and preserve environments which are still intact.

**Permaculture** is a practical concept applicable from a balcony to the farm, from the city to the wilderness, enabling us to establish productive environments providing our food, energy, shelter, material and non-material needs, as well as the social and economic infrastructures that will support them.

**Permaculture** is a synthesis of ecology and geography, observation and design. Permaculture encompasses all aspects of human environments and culture, urban and rural, and their local and global impact.  It involves ethics of earth care because the sustainable use of land cannot be separated from lifestyle and philosophical issues.

**Permaculture** draws from the wisdoms and practices of sustainable indigenous and traditional cultures and enriches this knowledge with insights from contemporary earth and design sciences.

**Permaculture** is design – a conscious process involving the placement and planning of elements, things and processes in relationship to each other. As such it is a way of thinking, and it is our thought patterns that determine our actions, so permaculture becomes a way of living.

Robyn Francis 1993

Find out more about permaculture by exploring this site, read this article by Robyn Francis, or look at the topics covered by the PDC (Permaculture Design Course) to gain a quick insight into the breadth of what permaculture encompasses. Browse by Tag to find articles about your area of interest.

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**ROBYN FRANCIS**

Love all things permaculture - been living, teaching and designing it since 1983, started Djanbung Gardens 1994, love sharing the inspiration and the thrill of people 'getting it'

and feeling empowered to make a difference in the world. I also love to sing, write music, cook, and dabble in creative crafty pursuits when I have time.

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# The Twelve Design Principles Of Permaculture

By Steve Thomas-Patel · September 7, 2021

Share:

## Permaculture is a system of design that follows twelve principles.

The three tenets of permaculture are:

- Care for the planet

- Care for people
- Fair share

The idea is to look at the entire ecosystem and our place in it, and realize the effects of everything we do. We strive to achieve the three tenets. In working toward those three tenets, we follow 12 basic design principles. These are those principles:

1. Observe and Interact

2. Catch and Store Energy

3. Obtain a Yield

4. Apply Self-Regulation and Feedback

5. Use and Value Renewables

6. Produce no waste

7. Design from Patterns to Details

8. Integrate don't segregate

9. Use small, slow solutions

10. Use and value diversity

11. Use edges and value the marginal

## 1. Observe and Interact

Designing for permaculture means starting with observation. No matter where you are working, there is something there to begin with. At the very least, there is sun, air and land.

The land has some sort of shape. The soil has some qualities, whether it is available nutrients or a lack of available nutrients. Another major concern is water. How you use and manage water is always an important consideration in a permaculture landscape.

Permaculture is about limiting inputs such as your own work energy. Good observation lets us understand what the space already provides in order to get the most out of it. Our goal is to work with nature, not against it.

## 2. Catch and Store Energy

Energy is provided in many forms. The most abundant is sunlight. There is also wind and water. A permaculture system may include advanced power systems like solar or hydro. But for many of us, this might just mean harvesting gravity to deliver water from tanks. Or optimizing the placement of our plants. Plants are the original solar cells, turning light energy into edible sugars.

## 3. Obtain a Yield

Yield is a flexible term. It means getting something out of your space. The most obvious yield is food. Food is tangible and measurable and offers obvious benefit. Other yields can be happiness, serenity, mental health. Gardening provides great psychological benefits.

I would also argue the yield doesn't have to go to people. The earth has suffered great loss in recent years due to habitat destruction. I put as much value on providing habitat to the animals as I do on people.

## 4. Apply Self-Regulation and Feedback

Changes in permaculture should be made as slowly as possible. A small change can have a dramatic effect on surrounding systems. Ideally, one or two changes are made at a time and the effects are observed before another change is made. We want to understand whether and how our goals are fulfilled by our changes.

## 5. Use and Value Renewables

Our ease of access to utilities can make it feel like water and power are infinite. But there are costs to using them beyond the monthly bill. Water should be captured when it can be, such as with rain barrels or buckets in the shower. Use trees where shade is needed, deciduous trees can provide shade to a house in summer and allow heat through in winter, saving on electric bills.

## 6. Produce no waste

It seems like everything we do creates waste. Every ecommerce purchase comes wrapped in cardboard or plastic or both. 20% of waste that ends up in landfills are food that could be composted and added to our gardens. At the very least, compost your own household waste, perhaps even take in your neighbors. Recycle anything that can be recycled. Cardboard boxes can be composted, fed to worms or used in lasagna mulching.

## 7. Design from Patterns to Details

Use your observations of the existing features to be lazy. If water tends to pool in certain places, use that. Perhaps plant marsh loving plants there. Or dig channels and add rocks to spread the water around.

## 8. Integrate don't segregate

Traditional agriculture taught even us home gardeners to plant in monocultures, planting like with like. This seems to make things easier on us and human beings. It simplifies our problems. It also makes things easier on pests and diseases that tend to specialize on a small number of plants, or at least family of plants.

Biological systems do best when there is diversity. If your tomato plants are spread out, disease may take over one, but not reach over the okra and cucumbers to reach

the next tomato plant down the way.

## 9. Use small, slow solutions

Taking on too much at once is a recipe for failure. It's better to start a small garden and grow it out over time than to plant many gardens and become overwhelmed.

## 10. Use and value diversity

Use diversity to control pest populations and attract different birds and other predators. An enjoyable garden is much more interesting when it has many different types of plants instead of the same one planted over and over again.

## 11. Use edges and value the marginal

This is perhaps one of the most impactful observations recognized in permaculture. Things happen on the edges. Treetops are not packed full of leaves from core to stemtip. Most leaves are at the edges of the canopy. If you observe birds in a tree, they hang out near the edges.

Edges are where fertility is. A tree may protect the space within it's canopy, and other plants will thrive around the edges of it. Plants, whether wanted or not, thrive in a circle around the birdbath. Dips in the ground create opportunities for life due to the sheltering or the way water collects there.

## 12. Creatively use and respond to change

When we plan we often get a picture in our mind of some ideal of how we want our land to look. Even if we could achieve that perfectly in our implementation, it would only be temporary.

Any look of the land is only a snapshot, since everything is in constant change. The sun is always moving, winds are shifting, bugs are moving seeds, attacking plants. Plants are defending, water is flowing. Plants are growing, dying, or coming in or out of dormancy.

Our neighbors may unexpectedly prune a tree we relied on for shade. You can gripe over the change and make yourself miserable over things you can't control, or you can be embrace it or even be excited about it.

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*Erie County Soil and Water Conservation District*

## Agricultural Best Management Practices

Best Management Practices (BMPs) are farming methods that assure optimum plant growth and minimize adverse environmental effects. Some BMPs should be used on all cropping systems, whereas others are designed for specific circumstances. Some general examples of BMPs:

- Access Road Improvement
- Alternate Water Supply
- Barnyard Runoff Management Systems
- Conservation Tillage
- Constructed Wetland
- Contour Farming
- Cover and Green Manure Crop
- Critical Area Protection
- Crop Rotation
- Diversion
- Fencing
- Filter Strip
- Integrated Pest Management
- Irrigation Water Management
- Milking Center Wastewater Treatment
- Mulching - Vineyards, Orchards, Small Fruits
- aNutrient Management
- Nutrient/Sediment Control System
- Pasture Management
- Pathogen Management
- Pesticide Management
- Riparian Buffer Zone
- Silage Leachate Control
- Strip Cropping
- Terrace
- Waterway

No single set of BMPs applies in all situations. The BMPs presented here are for management on a wide variety of agricultural lands across the state. The best set of practices for a specific cropping situation will depend on individual circumstances. Ask your soil and water conservation district for assistance in planning and implementing new BMPs.

See the NYS Soil and Water Conservation Committee's "Agricultural Best Management Practice Systems Catalogue"

# Agrivoltaics: Coming Soon to a Farm Near You?



**Leer en español:** Agrovoltaica: ¿Próximamente en un campo cerca de usted?

## In 2020, U.S. renewable energy production (and consumption) hit a record high. The increase was mainly driven by more solar and wind.

Despite this, renewable energy still only accounts for 12% of total U.S. energy consumption. Meeting the goal of "a net-zero emissions economy by 2050", will require much more. According to a recent U.S. Department of Energy report, *Solar Futures Study*, "it is now possible to envision—and chart a path toward—a future where solar provides 40% of the nation's electricity by 2035." In that future, farmers and farmland will play a key role. One issue with renewable power is that it requires far more land per unit of power produced than fossil fuels. While many may favor renewable energy in the U.S. – that sentiment often changes when projects are proposed close to home. An energy system built on renewables – like solar or wind – would mean locating sites and infrastructure a lot closer to where those resources are either abundant and/or easily distributed. And, in many cases, this would mean areas that have not yet seen energy production or infrastructure in their own community backyards before.

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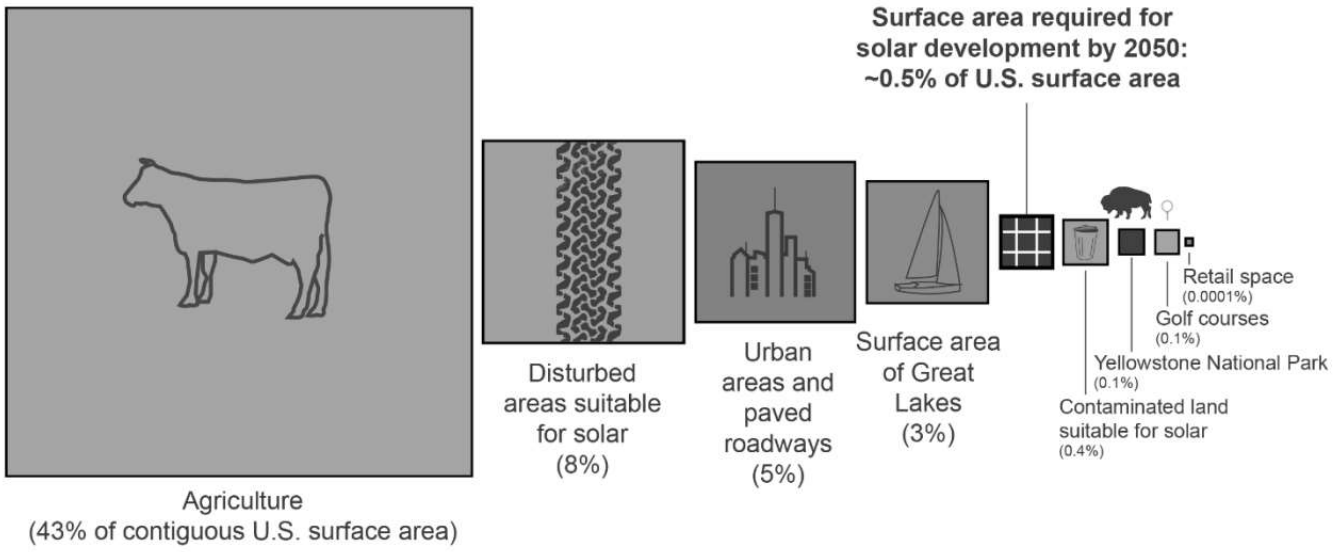


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## The idea is called: Agrivoltaics

Agrivoltaics is the use of land for both agriculture and solar photovoltaic energy generation. It's also sometimes referred to as *agrisolar*, *dual use solar*, *low impact solar*. S*olar grazing* is a variation where livestock graze in and around solar panels. This system looks at agriculture and solar energy production as compliments to the other instead of as competitors. By allowing working lands to stay working, agrivoltaic systems could help farms diversify income. Other benefits include energy resilience, and a reduced carbon footprint.

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## Agrivoltaics in the Northeast

The largest agrivoltaics site in the U.S. is on a blueberry farm in Rockport, Maine. This new 10-acre, 4.2-megawatt project is the first of its kind in the state, and will offer critical insights and experience. Researchers from University of Maine Cooperative Extension are evaluating the impact of panel installation on the blueberry plants. They will also see how the crop fares over time under the solar array.

Another form of agrivoltaics seen across the Northeast integrates livestock and pastures. This concept is commonly referred to as 'solar grazing.' It has taken off in recent years as a win-win-win for farmers, solar companies, and the environment. Traditionally, the grasses that would grow up between solar panels need to be mowed to prevent the plants from shading the panels and reducing their efficiency. However, when sheep can be used, the high maintenance costs associated with mowing are eliminated for the solar company. At the same time, local shepherds can benefit from an added revenue stream to graze their

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**Check out some of these news stories on solar grazing from around the Northeast:**

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- How To Have Your Solar Farm And Keep Your Regular Farm, Too [New Jersey]
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Researchers and farmers around the country are currently experimenting and collecting data on what crops, pollinator plants, and/or livestock situations work best with photovoltaic setups. Agrivoltaic systems can offer farmers many exciting opportunities. How agricultural systems perform, and how project economics shake out is still to be determined. Also to be seen is how states and communities will decide to address policy regulations and/or zoning laws based on this dual land use option.

## Agrivoltaics Research

The U.S. Department of Energy is supporting solar development and agriculture with their InSPIRE program. This program is managed by the National Renewable Energy Laboratory (NREL). It seeks to improve the mutual benefits of solar, agriculture, and native landscapes. Currently, there are 22 projects sites across the U.S. These bring together a wide array of researchers, farmers, and industry partners.

**NREL research projects located in the Northeast:**

- University of Massachusetts Amherst: Researchers are studying the effects of co-locating solar energy panels and agriculture operations at up to eight different farms across the state. This research will help farmers and communities make informed decisions about solar.

- Cornell University: Researchers are looking at the benefits of pollinator-friendly plantings on solar farms. One goal is to see if wildflower plantings on solar sites can increase pollinator populations. Another is to see if wildflower plantings on solar farms encourage pollinators to visit crop flowers. Other Cornell research is looking at how sheep grazing may influence pollinator habitat and sequestration of soil carbon.

**Other regional agrivoltaic research projects of note:**

- Rutgers University: In June 2021 the Dual-use Solar Act was passed in New Jersey. This act set up a pilot program "to enable a limited number of farmers to have agrivoltaic systems on their property while the technology is being tested, observed and refined." Funds also went to the New Jersey Agricultural Experiment Station to build and study agrivoltaic systems on their research farms.

- University of Vermont: This past fall, UVM Extension's Center for Sustainable Agriculture put on a workshop called, Solar Energy in Vermont's Working Landscape. The event brought together experts and stakeholders to address existing practices and barriers to solar grazing adoption as well as requirements for long-term success in the state. Before this, the Center's pasture program worked with Vermont Agency of Agriculture, Food & Markets and Two Rivers-Ottauquechee Regional Commission. They developed guides for how to "balance the needs of community and farm-scale energy needs with a shared commitment to protecting agricultural lands."

While a lot of research is underway, many questions about agrivoltaic systems persist. Various research and demonstration sites around the country are working to find answers to questions like: *What are the long-term impacts of solar energy infrastructure on soil quality? What crops, in what regions, are best suited for photovoltaic systems? How can both crop and energy systems be optimized? How will livestock (and wildlife) interact with solar energy equipment? What types of business agreements will work best between a solar developer or company and agricultural producer or landowner?*

## Funds are available for renewable energy

**USDA pilot program**

## Looking for more information on agrivoltaics?

### Online Resources

- National Renewable Energy Laboratory
- UMass Amherst | Clean Energy Extension
- American Solar Grazing Association
- AgriSolar Clearinghouse
- Jack's Solar Garden

### Guides, Factsheets, and Webinars

- Farmer's Guide to Going Solar
- A Guide to Solar Energy in Vermont's Working Landscape
- Guide to Farming Friendly Solar
- Solar PV and Agriculture Factsheets
- Agrivoltaics (Dual-Use Solar) Webinar

### Media

- Beneath Solar Panels, the Seeds of Opportunity Sprout
- Solar Power and Birds
- Growing Crops Under Solar Panels? Now There's a Bright Idea
- Grassland bird survey poses obstacle for large-scale solar project in Middlebury
- How to Save a Plant Podcast: Sheep + Solar, A Love Story
- Solar Farms Shine a Ray of Hope on Bees and Butterflies
- At Solar Farms, Sheep come back for Mower
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- This Colorado 'solar garden' is literally a farm under solar panels

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MATT SIMON SCIENCE OCT 14, 2021 7:00 AM

# Growing Crops Under Solar Panels? Now There's a Bright Idea

**In the new scientific (and literal) field of agrivoltaics, researchers are showing how panels can increase yields and reduce water use on a warming planet.**

COURTESY OF AARON BUGAJ

**IN JACK'S SOLAR** Garden in Boulder County, Colorado, owner Byron Kominek has covered 4 of his 24 acres with solar panels. The farm is growing a huge array of crops underneath them—carrots, kale, tomatoes, garlic, beets, radishes, lettuce, and more. It's also been generating enough electricity to power 300 homes. "We decided to go about this in terms of needing to figure out how to make more money for land that we thought should be doing more," Kominek says.

Rooftops are *so* 2020. If humanity's going to stave off the worst of climate change, people will need to get creative about where they put solar panels. Now scientists are thinking about how to cover canals with them, reducing evaporation while generating power. Airports are filling up their open space with sun-eaters. And space doesn't get much more open than on a farm: Why not stick a solar array in a field and plant crops underneath? It's a new scientific (and literal) field known as agrivoltaics—agriculture plus photovoltaics—and it's not as counterintuitive as it might seem.

Yes, plants need sunlight, but some need less than others, and indeed get stressed by too many photons. Shading those crops means they will require less water, which rapidly evaporates in an open field. Plus, plants "sweat," which cools the panels overhead and boosts their efficiency.

"It is a rare win-win-win," says Greg Barron-Gafford, an earth system scientist at University of Arizona who's studying agrivoltaics. "By growing these crops in the shade of solar arrays, we reduce the amount of that intense sunlight that bakes off the water and stresses out the plant." Barron-Gafford is among the recipients of a new $10 million grant from the USDA's National Institute of Food and Agriculture to research agrivoltaics for different regions, crops, and climates.

Barron-Gafford has been running experiments to quantify several variables—like growth, water use, and energy production—to determine which crops might benefit most. For instance, he's grown salsa ingredients—cilantro, peppers, and tomatoes—and found that they grow just as well, if not better, under solar panels than in the open. They also only use half the water. ("Think if you spilled your water bottle in the shade versus the sun," says Barron-Gafford.) He also found that the panels significantly reduce air temperatures, which would benefit farmworkers tending to

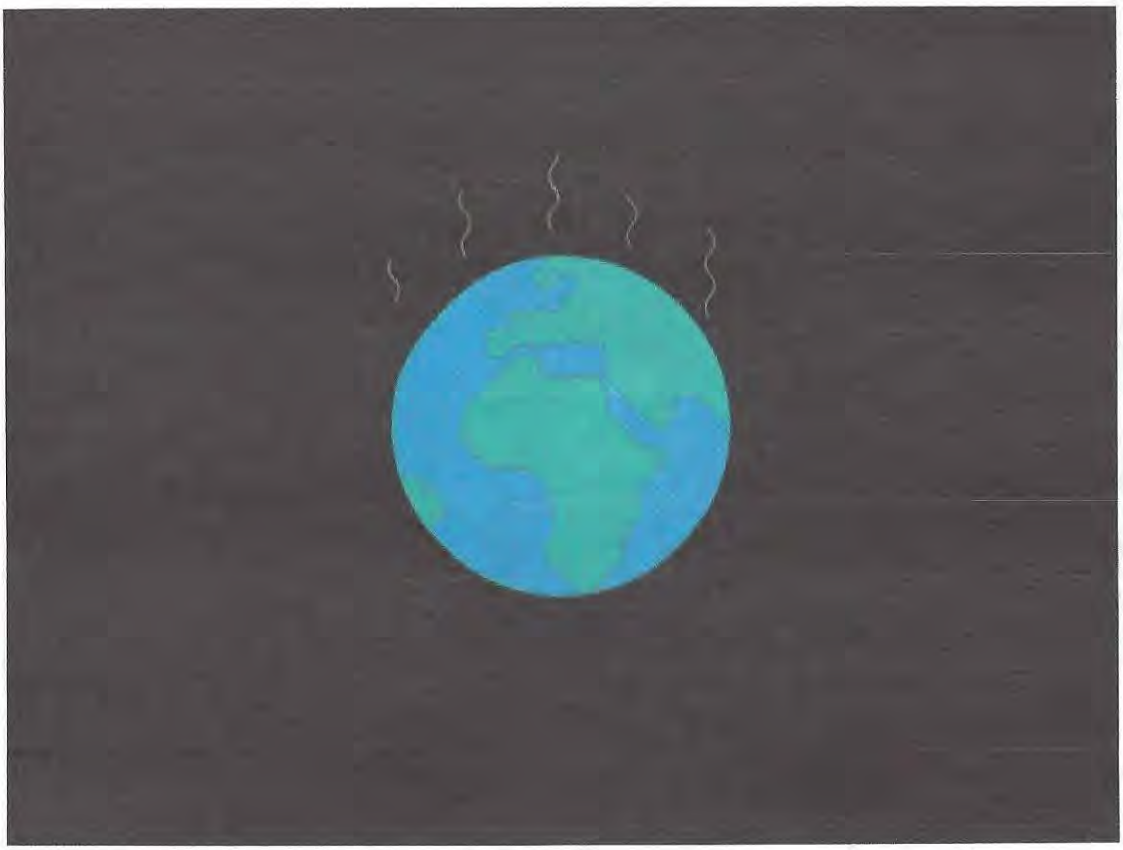
the plants. His work suggests that the panels might act as a protective bubble to shield crops from extreme heat associated with climate change, which overwhelms crops and decreases their yields.

COURTESY OF GREG BARRON-GAFFORD

Heavy precipitation that can damage crops is also on the rise, since a warmer atmosphere holds more moisture. "In times when there is extreme heat or extreme precipitation, by protecting plants in this manner, it can actually benefit them," says Madhu Khanna, an economist at the University of Illinois, Urbana-Champaign, who also won funding from the USDA's new agrivoltaics grant. "So that's another factor that we want to look at."

Khanna will be studying what the ideal solar array might be for a particular crop, for instance, if it needs bigger or smaller gaps between panels to let sunlight pass through. Height, too, is an issue: Corn and wheat would need taller panels, while shrubby soybeans would be fine with a more squat variety.

Thanks to those gaps, crops grown under solar panels aren't bathed in darkness. But, generally speaking, the light is more diffuse, meaning it's bouncing off of surfaces before striking the plants. This replicates a natural forest environment, in which all plants, save for the tallest trees, hang out in the shade, soaking up any sunbeams that break through.



**The WIRED Guide to Climate Change**

The world is getting warmer, the weather is getting worse. Here's everything you need to know about what humans can do to stop wrecking the planet.

BY KATIE M. PALMER AND MATT SIMON

Barron-Gafford has found that a forestlike shading under solar panels elicits a physiological response from plants. To collect more light, their leaves grow bigger than they would if planted in an open field. He's seen this happen in basil, which would increase that crop's yield. Barron-Gafford has also found that the pepper *Capsicum annuum*, which grows in the shade of trees in the wild, produces three times as much fruit in an agrivoltaic system. Tomato plants also grow more fruit. This is likely due to the plants being less stressed by the constant bombardment of sunlight, to which they're not evolutionarily adapted.

But every crop is going to be different, so scientists have to test each to see how they react to shade. "For example, we probably wouldn't recommend that somebody plant summer squash directly in the deepest shade, directly under a panel," says Mark Uchanski, a horticultural scientist at Colorado State University who's studying agrivoltaics and tested that exact scenario. "The better location for that might be further out toward the edges where it's more likely to get a little bit more sun, because we did see a yield decrease in that case."

While setting up the panels entails some up-front costs, they might actually make farmers some money, as Kominek told Grist in this 2020 story before his panels were in place. They'd produce energy to run the farm, and the farmer can sell any surplus back to a utility. And since some plants—like those salsa ingredients in Barron-Gafford's experiments—will use less water, that can reduce irrigation expenses. "If we can actually allow farmers to diversify their production and get more out of the same land, then that can benefit them," says Khanna. "Having crops and solar panels is more beneficial for the environment than solar panels alone."

This kind of setup also cools the solar panels in two ways: Water evaporating from the soil rises up towards the panels, and plants release their own water. This is dandy for the panels' efficiency, because they actually perform worse when they get too hot. They generate an electric current when the sun's photons knock electrons

out of atoms, but if they overheat, the electrons get overexcited and don't generate as much electricity when they're dislodged.

COURTESY OF GREG BARRON-GAFFORD

And as with putting solar panels above canals, using farmland pulls off the neat trick of not taking up any extra land. To deploy a traditional solar array, you'd need to clear space first. But canals and agricultural fields are already in use. "It's this big macro-trigger to kind of get people to the table and think about: What does rural economic development look like, and what's the future of agriculture?" says Andrea Gerlak, a social scientist at the University of Arizona, who's working with Barron-Gafford on the deployment of agrivoltaics. "If it allows smart agriculture, sustainable agriculture, and it uses less water, it's this big trigger to get people talking."

But agrivoltaics won't work for every farm. Solar panels remain a significant investment, especially on a field-sized scale. Maneuvering around them with heavy harvesting equipment will also be a challenge, so Khanna says the arrays should be designed as flexible systems. "The idea would be that you have these panels that are not just going to be fixed at a given angle and stationary," says Khanna. "They'll actually be able to rotate and become vertical, and let the equipment pass through."

Kominek adds that the United States is seeing a massive transfer of farmland from an older generation to a younger one, which has to decide what to do with their inheritance. Faced with the difficulties of drought and heat, the temptation might be to say, "To hell with crops," and cover a farm entirely with solar panels. But he and Barron-Gafford don't think it has to be an either-or proposition.

"The question for policymakers and landowners is, are we going to be taking out a lot of arable land—land where we could have chickens, cows, vegetables, perennials, and other things—and just putting in solar panels and having weeds grow underneath them?" Kominek asks. "Or are we going to create regulations that help to keep that soil active, to help it keep doing productive things, like it has been doing over the previous decades or centuries?"

Barron-Gafford also points out that agrivoltaics need not be limited to the kinds of crops people eat. A farmer might let native grasses grow wild under the panels, providing food for livestock, which would also benefit from the shade. Or they might promote the growth of plants for native pollinators like bees. With the right management, that land could pull double duty as a synthetic forest—just because it's shaded, doesn't mean life can't flourish underneath.

"I think everything likes a little bit of shade," says Kominek. "There's quite a variety of crops that enjoy it. And when it's 100 degrees outside, *I* enjoy the shade."

# Agrivoltaics: Coming Soon to a Farm Near You?

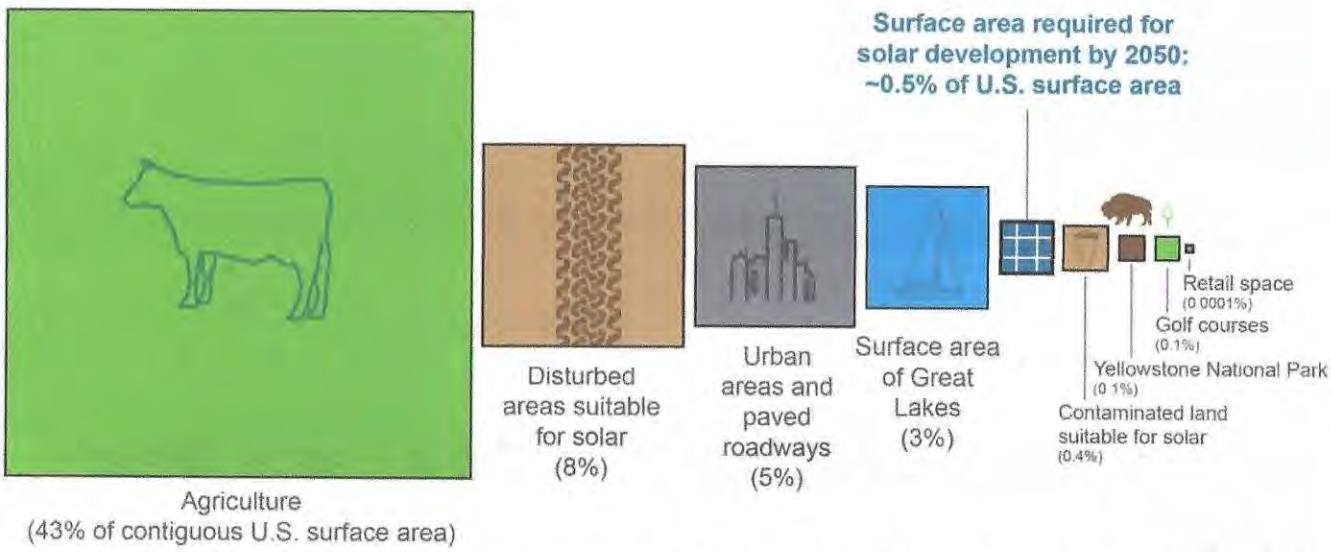


## In 2020, U.S. renewable energy production (and consumption) hit a record high. The increase was mainly driven by more solar and wind.

Despite this, renewable energy still only accounts for 12% of total U.S. energy consumption. Meeting the goal of "a net-zero emissions economy by 2050", will require much more. According to a recent U.S. Department of Energy report, *Solar Futures Study*, "it is now possible to envision—and chart a path toward—a future where solar provides 40% of the nation's electricity by 2035." In that future, farmers and farmland will play a key role. One issue with renewable power is that it requires far more land per unit of power produced than fossil fuels. While many may favor renewable energy in the U.S. – that sentiment often changes when projects are proposed close to home. An energy system built on renewables – like solar or wind – would mean locating sites and infrastructure a lot closer to where those resources are either abundant and/or easily distributed. And, in many cases, this would mean areas that have not yet seen energy production or infrastructure in their own community backyards before.

### How much land is needed?

According to the *Solar Futures Study*, a lot of land will be needed. By 2050, ground-based solar could need about 0.5% of the land in the contiguous U.S. To put this into perspective, about 5% of land is already in urban areas and roads and another 0.1% in golf courses. Agriculture occupies about 43% of the lower forty-eight states surface area. The report points to prioritizing disturbed lands (8% of land) and dual-use land opportunities. Examples of disturbed lands include invasive species-impacted lands, non-vegetated lands such as quarries or gravel pits, and lands identified as contaminated but remediated for some forms of reuse. Agriculture will be an important dual-use case.

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The U.S. Department of Energy is supporting solar development and agriculture with their InSPIRE program. This program is managed by the National Renewable Energy Laboratory (NREL). It seeks to improve the mutual benefits of solar, agriculture, and native landscapes. Currently, there are 22 projects sites across the U.S. These bring together a wide array of researchers, farmers, and industry partners.

**NREL research projects located in the Northeast:**

- University of Massachusetts Amherst: Researchers are studying the effects of co-locating solar energy panels and agriculture operations at up to eight different farms across the state. This research will help farmers and communities make informed decisions about solar.

- Cornell University: Researchers are looking at the benefits of pollinator-friendly plantings on solar farms. One goal is to see if wildflower plantings on solar sites can increase pollinator populations. Another is to see if wildflower plantings on solar farms encourage pollinators to visit crop flowers. Other Cornell research is looking at how sheep grazing may influence pollinator habitat and sequestration of soil carbon.

**Other regional agrivoltaic research projects of note:**

- Rutgers University: In June 2021 the Dual-use Solar Act was passed in New Jersey. This act set up a pilot program "to enable a limited number of farmers to have agrivoltaic systems on their property while the technology is being tested, observed and refined." Funds also went to the New Jersey Agricultural Experiment Station to build and study agrivoltaic systems on their research farms.

- University of Vermont: This past fall, UVM Extension's Center for Sustainable Agriculture put on a workshop called, Solar Energy in Vermont's Working Landscape. The event brought together experts and stakeholders to address existing practices and barriers to solar grazing adoption as well as requirements for long-term success in the state. Before this, the Center's pasture program worked with Vermont Agency of Agriculture, Food & Markets and Two Rivers-Ottauquechee Regional Commission. They developed guides for how to "balance the needs of community and farm-scale energy needs with a shared commitment to protecting agricultural lands."

While a lot of research is underway, many questions about agrivoltaic systems persist. Various research and demonstration sites around the country are working to find answers to questions like: *What are the long-term impacts of solar energy infrastructure on soil quality? What crops, in what regions, are best suited for photovoltaic systems? How can both crop and energy systems be optimized? How will livestock (and wildlife) interact with solar energy equipment? What types of business agreements will work best between a solar developer or company and agricultural producer or landowner?*

## Funds are available for renewable energy

USDA pilot program

## Looking for more information on agrivoltaics?

### Online Resources

- National Renewable Energy Laboratory
- UMass Amherst | Clean Energy Extension
- American Solar Grazing Association
- AgriSolar Clearinghouse
- Jack's Solar Garden

### Guides, Factsheets, and Webinars

- Farmer's Guide to Going Solar
- A Guide to Solar Energy in Vermont's Working Landscape
- Guide to Farming Friendly Solar
- Solar PV and Agriculture Factsheets
- Agrivoltaics (Dual-Use Solar) Webinar

### Media

- Beneath Solar Panels, the Seeds of Opportunity Sprout
- Solar Power and Birds
- Growing Crops Under Solar Panels? Now There's a Bright Idea
- Grassland bird survey poses obstacle for large-scale solar project in Middlebury
- How to Save a Plant Podcast: Sheep + Solar, A Love Story
- Solar Farms Shine a Ray of Hope on Bees and Butterflies
- At Solar Farms, Sheep come back for Mower
- How To Have Your Solar Farm And Keep Your Regular Farm, Too
- Renewable energy growing among Vermont's animals and crops
- Sheep get to work maintaining Newfield solar array
- This Colorado 'solar garden' is literally a farm under solar panels

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# Growing Interest in Agrivoltaics



A new study from the College of Agricultural, Consumer and Environmental Sciences (ACES) at the University of Illinois, presents possible solutions and highlights the current challenges of application of agrivoltaics, based on historical data of agricultural land use and current zoning and taxation laws.

"Even if states are promoting policies supportive of the nexus of agriculture and renewable energy, there will often be local pushback," Guarino says. "Especially in rural areas, there can be a lot of **opposition to bringing in new technology on agricultural land,** which is highly valued. For the farmers working that land, it's usually a generational thing, so they are emotionally invested as well. That kind of social tension evolves into legal challenges for agrivoltaics."

Grazing presents yet another way to **lower the costs** of maintaining the solar field, instead of hiring a mowing company, making the sheep do all the work. Moreover, the conversion factor of agricultural land to renewable energy field is **more socially accepted**, since the land doesn't loose its "fertile" properties.

The paper, "Emerging agrivoltaic regulatory systems: A review of solar grazing," is published in the *Chicago-Kent Journal of Environmental and Energy Law*.

**SCAPES**

**Agrivoltaics Project**

1101 W. Peabody, Suite 350 (NSRC)

MC-635

Urbana, IL 61801

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- 7.2.3France
- 7.2.4Germany
- 7.2.5Denmark
- 7.2.6Croatia
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# Agrivoltaics

**Agrivoltaics, agrophotovoltaics, agrisolar**, or **dual-use solar** is the simultaneous use of areas of land for both solar photovoltaic power generation and agriculture.[1] The coexistence of solar panels and crops implies a sharing of light between these two types of production,[2] so the design of agrivoltaic facilities may require trading off such objectives as optimizing crop yield, crop quality, and energy production. However, in some cases crop yield increases due to the shade of the solar panels mitigating some of the stress on plants caused by high temperatures and UV damage.[3]

The technique was originally conceived by Adolf Goetzberger and Armin Zastrow in 1981,[4] and the word *agrivoltaic* was coined in 2011. Today, agrivoltaic practices and the relevant law vary from one country to another. In Europe and Asia, where the concept was first pioneered, the term *agrivoltaics* is applied to dedicated dual-use technology, generally a system of mounts or cables to raise the solar array some five metres above the ground in order to allow the land to be accessed by farm machinery, or a system where solar paneling is installed on the roofs of greenhouses. The shade produced by such a system can reduce production of some crops, but such losses may be offset by the energy produced. Many experimental plots have been installed by various organisations around the world, but no such systems are known to be commercially viable outside China and Japan. The most important factor in the economic viability of agrivoltaics is the cost of installing the photovoltaic panels. It is calculated that in Germany, the subsidising of such projects' electricity generation by a bit more than 300% (feed-in tariffs (FITs)) can make agrivoltaic systems cost-effective for investors and thus may be part of the future mix of electricity generation.

By 2019, some authors had begun using the term *agrivoltaics* more broadly, so as to include any agricultural activity among existing conventional solar arrays. As an example, sheep can be grazed among conventional solar panels without any modification. And some small projects in the US where beehives are installed at the edge of an existing conventional solar array have been called agrivoltaic systems.[5] Likewise, some conceive agrivoltaics so broadly as to include the mere installation of solar panels on the roofs of barns or livestock sheds.[2]

Agricultural land is the most suitable for solar farms in terms of efficiency: the most profit/power can be generated by the solar industry by replacing farming land with fields of solar panels, as opposed to using barren land. This is primarily because photovoltaic systems in general decrease in efficiency at

higher temperatures, and farmland has generally been created in areas with moisture -the cooling effects of vapour pressure is an important factor in increasing panel efficiency. It is thus expected that future growth of solar power generation will increase competition for farmland in the near future. Assuming a median power potential of 28 $W/m^2$ as claimed by the California SolarCity power company, one report roughly estimates that covering less than 1% of the world's cropland with conventional solar arrays could generate all the world's present electricity demands.[6]

Sheep under solar panels in Lanai, Hawaii

## History

Adolf Goetzberger, founder of the Fraunhofer Institute in 1981, together with Armin Zastrow, theorised about dual usage of arable land for solar energy production and plant cultivation in 1982, which would address the problem of competition for the use of arable land between solar energy production and crops.[4][7] The light saturation point is the maximum amount of photons absorbable by a plant species: more photons will not increase the rate of photosynthesis. Recognising this, Akira Nagashima also suggested combining photovoltaic (PV) systems and farming to use the excess light, and developed the first prototypes in Japan in 2004.[8]

Tomatoes under solar panels in Dornbirn, Austria

The term "agrivoltaic" may have been used for the first time in a 2011 publication.[9] The concept has been called "agrophotovoltaics" in a German report,[10][11] and a term translating as "solar sharing" has been used in Japanese.[8] Facilities such as photovoltaic greenhouses can be considered agrivoltaic systems.

## Methods

There are three basic types of agrivoltaics that are being actively researched: solar arrays with space between for crops, stilted solar arrays above crops, and greenhouse solar arrays.[1] All three systems have several variables used to maximize solar energy absorbed in both the panels and the crops. The main variable taken into account for agrivoltaic systems is the tilt angle of the solar panels. Other variables taken into account for choosing the location of the agrivoltaic system are the crops chosen, panel heights, solar irradiance and climate of the area.[1]

## System designs

In their initial 1982 paper, Goetzberger and Zastrow published a number of ideas on how to optimise future agrivoltaic installations.[4]

- orientation of solar panels in the south for fixed or east–west panels for panels rotating on an axis,
- spacing between solar panels for sufficient light transmission to ground crops,
- elevation of the supporting structure of the solar panels to homogenize the amounts of radiation on the ground.

Experimental facilities often have a control agricultural area. The control zone is exploited under the same conditions as the agrivoltaic device in order to study the effects of the device on the development of crops.

## Fixed solar panels over crops

The most conventional systems install fixed solar panels on agricultural greenhouses, above open fields crops or between open fields crops. It is possible to optimize the installation by modifying the density of solar panels or the inclination of the panels.

## Integrated systems

A standalone solar panel integrated system using a hydrogel can pull in water vapor (usually at night) to produce fresh water to irrigate crops which can be enclosed beneath the panel (alternatively it can cool the panel).[12][13]

Pilot plant at Heggelbach Farm in Germany, where different crops are grown under PV modules

## Dynamic agrivoltaic

The simplest and earliest system was built in Japan using a rather flimsy set of panels mounted on thin pipes on stands without concrete footings. This system is dismountable and lightweight, and the panels can be moved around or adjusted manually during the seasons as the farmer cultivates the land. The spacing between the solar panels is wide in order to reduce wind resistance.[8]

Some newer agrivoltaic system designs use a tracking system to automatically optimize the position of the panels to improve agricultural production or electricity production.

In 2004 Günter Czaloun proposed a photovoltaic tracking system with a rope rack system. Panels can be oriented to improve power generation or shade crops as needed. The first prototype was built in 2007 in Austria.[14] The company REM TEC deployed several plants equipped with dual-axis tracking systems in Italy and China. They have also developed an equivalent system used for agricultural greenhouses.

In France, Sun'R and Agrivolta companies are developing single-axis tracking systems. According to them, their systems can be adapted to the plant needs. The Sun'R system is east–west axis tracking system. According to the company, complex plant growth models, weather forecasts, calculation and optimization software are used. The device from Agrivolta is equipped with south-facing solar panels that can be removed by a sliding system. A Japanese company has also developed a tracking system to follow the sun.[15]

In Switzerland, the company Insolight is developing translucent solar modules with an integrated tracking system that allows the modules to remain static. The module uses lenses to concentrate light onto solar cells and a dynamic light transmission system to adjust the amount of transmitted light and adapt to agricultural needs.[16]

The Artigianfer company developed a photovoltaic greenhouse whose solar panels are installed on movable shutters. The panels can follow the course of the sun along an east–west axis.[17]

In 2015 Wen Liu from the University of Science and Technology in Hefei, China, proposed a new agrivoltaic concept: curved glass panels covered with a dichroitic polymer film that selectively transmits blue and red wavelengths which are necessary for photosynthesis. All other wavelengths are reflected and concentrated on solar cells for power generation using a dual tracking system. Shadow effects arising from regular solar panels above the crop field are eliminated since the crops continue to receive the blue and red wavelength necessary for photosynthesis. Several awards have been granted for this new type of agrivoltaic, among others the R&D100 prize in 2017.[18]

The difficulty of such systems is to find the mode of operation to maintain the good balance between the two types of production according to the goals of the system. Fine control of the panels to adapt shading to the need of plants requires advanced agronomic skills to understand the development of plants. Experimental devices are usually developed in collaboration with research centers.

### Greenhouses with spectrally selective solar modules

Potential new photovoltaic technologies which let through the colors of light needed by the interior plants, but use the other wavelengths to generate electricity, might one day have some future use in greenhouses. There are prototypes of such greenhouses.[19][20][21]

### Other

Sheep can be allowed to graze around solar panels, and may sometimes be cheaper than mowing.[22] "Semi-Transparent" PV Panels used in AgriVoltaics,increase the spacing between Solar Cells and use clear backsheets enhance food production below. In this option, the fixed PV Panels enable the east–west movement of the sun to "spray sunlight" over the plants below.. thereby reducing "over-exposure" due to the day long sun.. as in transparent greenhouses... as they generate electricity above.

## Effects

The solar panels of agrivoltaics remove light and space from the crops, but they also affect crops and land they cover in more ways. Two possible effects are water and heat.

In northern latitude climates, agrivoltaics are expected to change the microclimate for crops in both positive and negative manners with no net benefit, reducing quality by increasing humidity and disease, and requiring a higher expenditure on pesticides, but mitigating temperature fluctuations and thus increasing yields. In countries with low or unsteady precipitation, high temperature fluctuation and fewer opportunities for artificial irrigation, such systems are expected to beneficially affect the quality of the microclimate.[23]

### Water

In experiments testing evaporation levels under solar panels for shade resistant crops cucumbers and lettuce watered by irrigation in a California desert, a 14–29% savings in evaporation was found,[1] and similar research in the Arizona desert demonstrated water savings of 50% for certain crops.[24]

### Heat

A study was done on the heat of the land, air and crops under solar panels for a growing season. It was found that while the air beneath the panels stayed consistent, the land and plants had lower temperatures recorded.[1]

## Advantages

Photovoltaic arrays in general produce much less carbon dioxide and pollutant emissions than traditional forms of power generation.

Dual use in land for agriculture and energy production could alleviate competition for land resources and allow for less pressure to convert natural areas into more farmland[4] or to develop farmland or natural areas into solar farms.

Initial simulations performed in a paper by Dupraz *et al.* in 2011, where the word 'agrivoltaics' was first coined, calculated that the land use efficiency may increase by 60–70% (mostly in terms of usage of solar irradiance).[1][9]

Dinesh *et al.*'s model claims that the value of solar generated electricity coupled to shade-tolerant crop production created an over 30% increase in economic value from farms deploying agrivoltaic systems instead of conventional agriculture.[25] It has been postulated that agrivoltaics would be beneficial for summer crops due to the microclimate they create and the side effect of heat and water flow control.[26]

## Disadvantages

A disadvantage often cited as an important factor in photovoltaics in general is the substitution of food-producing farmland with solar panels.[6][23] Cropland is the type of land on which solar panels are the most efficient.[6] Despite allowing for some agriculture to occur on the solar power plant, agrivoltaics will be accompanied by in drop in production.[23] Although some crops in some situations, such as lettuce in California, do not appear to be affected by shading in terms of yield,[1][6] some land will be sacrificed for mounting structures and systems equipment.[23]

Agrivoltaics will only work well for plants that require shade and where sunlight is not a limiting factor. Shade crops represent only a tiny percentage of agricultural productivity.[1] For instance, wheat crops do not fare well in a low light environment and are not compatible with agrivoltaics.[1] A simulation by Dinesh *et al.* on agrivoltaics indicates electricity and shade-resistant crop production do not decrease significantly in productivity, allowing both to be simultaneously produced. They estimated lettuce output in agrivoltaics should be comparable to conventional farming.[1]

Agrivoltaic greenhouses are inefficient; in one study, greenhouses with half of the roof covered in panels were simulated, and the resulting crop output reduced by 64% and panel productivity reduced by 84%.[27]

A 2016 thesis calculated that investment in agrivoltaic systems cannot be profitable in Germany, with such systems losing some 80,000 euro per hectare per year. The losses are caused by the photovoltaics, with the costs primarily related to the high elevation of PV panels (mounting costs). The thesis calculated governmental subsidies in the form of feed-in tariffs could allow agrivoltaic

plants to be economically viable and were the best method to entice investors to fund such projects, where if the taxpayer paid producers a minimum additional €0.115 euro per kWh above market price (€0.05 in Germany) it would allow for the existence of future agrivoltaic systems.[23]

It requires a large investment, not only in the solar arrays, but in different farming machinery and electrical infrastructure. The potential for farm machinery to damage the infrastructure can also drive up insurance premiums as opposed to conventional solar arrays. In Germany, the high installation costs could make such systems difficult to finance for farmers based on convention farming loans, but it is possible that in the future governmental regulations, market changes and subsidies may create a new market for investors in such schemes, potentially giving future farmers completely different financing opportunities.[23]

Photovoltaic systems are technologically complex, meaning farmers will be unable to fix some things that may break down or be damaged, and requiring a sufficient pool of professionals. In the case of Germany the average increase in labour costs due to agrivoltaic systems are expected to be around 3%.[23] Allowing sheep to graze among the solar panels may be an attractive option to extract extra agriculture usage from conventional solar arrays, but there may not be enough shepherds available,[22] minimum wages are too high to make this idea commercially viable, or profit generated from such a system is too low to compete with conventional sheep farmers in a free market.

# Agrivoltaics in the world

## Asia

### Japan

Japan was the first country to develop of open field agrivoltaics when in 2004 Akira Nagashima developed a demountable structure that he tested on several crops. Removable structures allow farmers to remove or move facilities based on crop rotations and their needs.[8] A number of larger facilities with permanent structures and dynamic systems, and with capacities of several MW, have since been developed.[28][29][30] A 35 MW power plant, installed on 54 ha, started operation in 2018. It consists of panels two metres above the ground at their lowest point, mounted on steel piles in a concrete foundation. The shading rate of this plant is over 50%, a value higher than the 30% shading usually found in the Nagashima systems. Under the panels farmers will cultivate ginseng, ashitaba and coriander in plastic tunnels; ginseng was selected because it requires deep shape. The area was previously used to grow lawn grass for golf courses, but due to golf becoming less popular in Japan, the farming land had begun to be abandoned.[31] A proposal for a solar power plant of 480 MW to be built on the island of Ukujima, part of which would be agrivoltaics, was tendered in 2013. The construction was supposed to begin in 2019.[32]

To obtain permission to exploit solar panels over crops, Japanese law requires farmers to maintain at least 80% of agricultural production. Farmers must remove panels if the municipality finds that they are shading out too much cropland. At the same time, the Japanese government gives out high

# Thinking About a Solar Lease? 5 Things You Should Consider

Katelyn Walley-Stoll, Farm Business Management Specialist with Cornell Cooperative Extension's Southwest New York Dairy, Livestock, and Field Crops Program

Rural landowners across the Southwest New York Region, and New York State in general, have been receiving invitations from solar companies to lease their land for utility scale solar arrays. While this has been around for several years, the general trend of increasing renewable energy sources has spurred lots of conversations about the potential benefits, pitfalls, and logistics of hosting solar arrays on your property.

One thing to note is that solar leases are rarely something landowners should feel pressured to rush right into. Careful consideration, consultation with legal counsel, and an evaluation of the role such a lease would play into a farm business plan are all important steps before signing on the dotted line. Here are 5 things to consider as you think about leasing your land for solar.

1. **The Benefits of Solar Leases**: Solar energy is an important part of reducing carbon emissions and meeting statewide, national, and global efforts of increasing renewable energy sources. As a landowner, a solar lease can also provide a steady income stream, ranging from $250 - $2500/acre/year. While this isn't as profitable on a per acre basis as other production options, for unused or marginal land, solar leases can help diversify farm revenues. There are several companies in our area recruiting land parcels for solar development, which could work to your advantage! Research and contact developers in your area for the best lease rates and agreements.

2. **Solar Leases and Your Farm Business Plan**: Having a farm business plan in place is so much more than a dusty binder sitting on a shelf in the farm office. A business plan tells you where you're going, why you're doing what you're doing, and what other types of opportunities you'd like to explore. Depending on your farm's business plan, stage in the business life cycle, and succession planning goals, solar may help spur new growth or hinder new investment opportunities. A solar lease can affect how you might use that land in the future, which could include mortgages, property sale, production diversification, expansion, or generational use.

3. **You'll Need Legal Counsel:** Lease agreements are living documents that can be adapted to meet your needs. This could range from including provisions that protect actively farming around the solar arrays (apiaries, small ruminant grazing and market garden production), hunting, right of ways, insurance and liability concerns, and more. Leases can range in length from 20 to 40+ years, and it's important to have a sound and fair lease in place from the beginning. There's very little chance of changing the lease terms once it's in place.

4. **Effect on Property Taxes:** If you're currently receiving an Agricultural Assessment, or other property tax reduction, taking the land out of production agriculture and into a solar array may require paying some of those reductions back and conversion penalties (you can typically negotiate that the solar company pays these costs). A solar array can sometimes increase the value of your property and your tax obligations. Once the land is in a lease, the solar developer should also be responsible for any real property taxes, PILOT payments, etc. There is a renewable energy tax

exemption that will protect increases for a 15 year period, but this often expires before the lease does – and many towns in our region have opted out of this program. Be sure to research potential tax implications prior to negotiating the lease agreement.

5. **"THE UGLY"**: You may have heard some horror stories related to array construction, maintenance, and disassembly. Much of this can be negotiated with sound legal counsel who is familiar with solar arrays into your lease agreement. However, things do (and probably will) happen and you should be prepared to handle these issues on your property. Some areas of concern include:

- Construction debris during the installation phase, traffic, and potential interruptions to your farming practices.

- Dismantling the solar equipment at the end of the lease and the oversight of that process, which should be laid out in very specific terms in the lease. Be sure to include specifications of the quality of the property (returning it back to production).

- Security, assurances, and/or bonds in place to cover the termination of the lease and equipment in the case of developer bankruptcy or missed payments.

- Company transitions with the nature of the renewable energy industry, your lease will likely change hands several times and you will need to navigate those ownership changes.

- Local zoning approvals may be a breeze or a community uproar depending on your area and could delay a potential project.

- Solar leases and their potential impact on our agricultural industry can be both and exciting and an intimidating topic of conversation. While the situation will vary from farm to farm, developer to developer, and community to community – the most important thing will be reaching out to sound legal counsel to negotiate a fair agreement and reflecting on your farm's business goals.

For more information, visit any of these great resources below:

- Leasing Your Farmland For Wind and Solar Energy Development from New York Farm Bureau.

- Utility Scale Solar – What You Should Know by Timothy X. Terry from Cornell PRO-DAIRY

- Landowner Considerations for Solar Land Leases from NYSERDA

- Solar Installations in Agricultural Districts from NYSERDA

- Solar Leasing Workshop Materials from CCE Herkimer County

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**Proposed Solar Farm Parcels**

**Vacant or Undeveloped Parcels Meeting Initial Criteria***

*Parcel Criteria:

o 20 acres or greater
o Within 0.5 Miles of an existing electric transmission line
o Not a wetland
o Is Vacant or Undeveloped*

o'Vacant or Undeveloped' parcels includes these Tax Parcel Property Class Descriptions :

- ☐ Null
- ☐ Abandoned ag
- ☐ Agricultural Com vac w/imp
- ☐ Field crops
- ☐ Feed sales
- ☐ Flood contrl
- ☐ Forest s480
- ☐ Forest s480a
- ☐ Forest s532b
- ☐ Fuel Store & Dist
- ☐ Gas Trans Impr
- ☐ Greenhouse
- ☐ Horse farm
- ☐ Ind vac w/imp
- ☐ Livestock
- ☐ Nursery
- ☐ Orchard crop
- ☐ Parking lot
- ☐ Res vac land
- ☐ Rural vac>10
- ☐ Rural vacant
- ☐ Vacant farmland
- ☐ Vacant w/imprv
- ☐ Vacant comm
- ☐ Vacant industrial
- ☐ Vacant Land
- ☐ Vacant rural
- ☐ Landfill

**Portion of Undeveloped Parcel that is Wetland or Structure (does not meet criteria)**

**Substation**

**Electric Transmission Line**

**Half Mile from Electric Transmission Line**

**Cluster of High Agricultural Soils Values**

**Wetland (State or Federal)**

**Cropland**

**Ag Parcel**

N

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Miles
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**PREPARED BY THE ERIE COUNTTY OFFICE OF GIS -- NOV, 2019**

SITING STUDY
UNDEVELOPED PROPERTIES WITHIN 0.5MILES OF
ELECTRIC TRANSMISSION LINES
**ERIE COUNTY, NEW YORK**