



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF AGRICULTURE  
AND RURAL DEVELOPMENT

GARY MCDOWELL  
DIRECTOR

May 22, 2020

**NOTICE OF SPECIAL MEETING**

**MICHIGAN COMMISSION OF AGRICULTURE  
AND RURAL DEVELOPMENT**

**June 9, 2020**

A Special Meeting of the Michigan Commission of Agriculture and Rural Development will be held remotely on Tuesday, June 9, 2020, at 9:00 a.m., for the purpose of discussing the Generally Accepted Agricultural Management Practices.

The meeting is open to the public and this notice is provided under the Open Meetings Act, 1976 PA 267, MCL 15.261 to 15.275. This meeting is being conducted electronically to protect the health of commission members, staff, and the public due to the Coronavirus by limiting the number of people at public gatherings. To join the meeting, dial by telephone: **1-248-509-0316** and enter the Conference ID: **988 917 574#**. An agenda and other meeting materials related to the meeting are attached.

In accordance with the Commission's Public Appearance Guidelines, individuals wishing to address the Commission may pre-register to do so during the Public Comment period as noted below and will be allowed up to three minutes for their presentation. Documents distributed in conjunction with the meeting will be considered public documents and are subject to provisions of the Freedom of Information Act. The public comment time provides the public an opportunity to speak; the Commission will not necessarily respond to the public comment.

To pre-register to speak during this remote meeting, individuals should contact the Commission Assistant **no later than Fri., June 5** via email at [MDA-Ag-Commission@michigan.gov](mailto:MDA-Ag-Commission@michigan.gov) and provide their name, organization they represent, address, and telephone number. Please also contact the Commission Assistant at that email address to provide input or ask questions on any business that will come before the Commission at the meeting. The Commission Chair will call upon each person when it is time for them to speak and there will be a meeting moderator facilitating participation. All others wishing to speak will be provided two minutes to do so. Instructions on how to be recognized will be provided at the beginning of the meeting.

A handwritten signature in black ink that reads "Gary McDowell".

Gary McDowell  
Director

# MICHIGAN COMMISSION OF AGRICULTURE AND RURAL DEVELOPMENT

## SPECIAL MEETING

### Remote Meeting

Call-in: 1-248-509-0316 and Enter Conference ID: 988 917 574#

**JUNE 9, 2020**

TENTATIVE AGENDA – Revised June 4, 2020

- 9:00 a.m. 1. **Call to Order and Roll Call**
2. **Approval of Agenda (action item via roll-call vote)**
3. **Approval of Minutes** from the January 22, 2020, Commission of Agriculture and Rural Development Meeting (**action item via roll-call vote**)
4. **Next Scheduled Meeting** (information only)
- July 15, 2020, Location: TBD
- 9:05 a.m. 5. **Public Comment on Agenda Items**  
In accordance with the Public Appearance Guidelines in the Commission Policy Manual, individuals wishing to address the Commission must complete a Public Appearance Card and will be allowed up to three minutes for their presentation. This was accomplished through pre-registration for this meeting pursuant to the Meeting Notice. Those not pre-registering will be allowed up to two minutes to present. Documents distributed as part of the meeting will be considered public documents and are subject to provisions of the Freedom of Information Act. The public comment time provides the public an opportunity to speak; the Commission will not necessarily respond to the public comment.
- 9:20 a.m. 6. **Pesticide Utilization and Pest Control 2020 Proposed Generally Accepted Agricultural Management Practices:** Jim Johnson, Division Director, and Ben Tirrell, Right to Farm Program Manager, Environmental Stewardship Division; and Dr. John Wise, Professor-MSU Department of Entomology, Research Extension Coordinator-MSU Trevor Nichols Research Center, and Pesticide Use GAAMP Task Force Chair (**action item via roll-call vote**)
- 9:40 a.m. 7. **Farm Markets 2020 Proposed Generally Accepted Agricultural Management Practices:** Jim Johnson, Division Director, and Ben Tirrell, Right to Farm Program Manager, Environmental Stewardship Division; and Dr. Ron Goldy, Senior Extension Educator-MSU Extension and Farm Markets GAAMP Task Force Chair (**action item via roll-call vote**)
- 10:00 a.m. 8. **Site Selection and Odor Control for New and Expanding Livestock Facilities Proposed 2020 Generally Accepted Agricultural Management Practices:** Jim Johnson, Division Director, and Ben Tirrell, Right to Farm Program Manager, Environmental Stewardship Division; and Dr. Dale Rozeboom, Professor, MSU Animal Science Department and Chair, Site Selection GAAMP Task Force Chair (**action item via roll-call vote**)
- 10:20 a.m. 9. **Adjourn (action item)**

# MICHIGAN COMMISSION OF AGRICULTURE AND RURAL DEVELOPMENT

AgroLiquid  
3055 West M-21  
St. Johns, Michigan

## MEETING MINUTES January 22, 2020

### **PRESENT:**

Brian Pridgeon, Vice Chair, Michigan Commission of Agriculture and Rural Development  
Dru Montri, Secretary, Michigan Commission of Agriculture and Rural Development  
Patricia Bergdahl, Michigan Commission of Agriculture and Rural Development  
Charlie Meintz, Michigan Commission of Agriculture and Rural Development  
Tim Boring, Michigan Commission of Agriculture and Rural Development  
Gary McDowell, Director, Michigan Department of Agriculture and Rural Development

### **CALL TO ORDER AND ROLL CALL**

Vice Chairperson Pridgeon called the meeting of the Commission of Agriculture and Rural Development to order at 9:04 a.m. on January 22, 2020. He introduced new Commissioner Tim Boring, who shared information on his background. Commissioner Montri called the roll with Commissioners Bergdahl, Boring, Meintz, Montri, and Pridgeon, and Director McDowell present.

### **APPROVAL OF AGENDA**

**MOTION: COMMISSIONER MONTRI MOVED TO APPROVE THE MEETING AGENDA FOR JANUARY 22, 2020. SECONDED BY COMMISSIONER MEINTZ. MOTION CARRIED.**

### **APPROVAL OF NOVEMBER 6, 2019, MEETING MINUTES**

**MOTION: COMMISSIONER MEINTZ MOVED TO APPROVE THE NOVEMBER 6, 2019, MEETING MINUTES. SECONDED BY COMMISSIONER BERGDAHL. MOTION CARRIED.**

### **NEXT SCHEDULED MEETING**

The next scheduled meeting is March 25, 2020, to be held in the Lansing area.

### **COMMISSIONER COMMENTS AND TRAVEL**

Commissioners shared information relative to agriculture in their respective areas, as well as details around recent industry meetings they attended. Commissioner Montri noted the issues of technology in agriculture, climate change, and water quality and control are being continually highlighted across the agriculture industry and is interested in how the Commission and the department can remain engaged in those areas.

Commissioners Bergdahl, Boring, Meintz, Montri, and Pridgeon traveled to attend today's meeting. There was no other travel submitted for approval.

**MOTION: COMMISSIONER MONTRI MOVED TO APPROVE THE COMMISSIONERS' TRAVEL. SECONDED BY COMMISSIONER MEINTZ. MOTION CARRIED.**

### **COMMISSIONER ISSUES**

Commissioner Pridgeon advised the Commission is needing to fill its positions of Secretary, Vice Chair, and Chair for 2020.

**MOTION: COMMISSIONER MONTRI MOVED TO NOMINATE COMMISSIONER PRIDGEON AS CHAIR OF THE COMMISSION FOR 2020. COMMISSIONER MEINTZ SECONDED. MOTION CARRIED.**

**MOTION: COMMISSIONER PRIDGEON MOVED TO NOMINATE COMMISSIONER MONTRI AS VICE CHAIR OF THE COMMISSION FOR 2020. COMMISSIONER BORING SECONDED. MOTION CARRIED.**

**MOTION: COMMISSIONER MONTRI MOVED TO NOMINATE COMMISSIONER MEINTZ AS SECRETARY OF THE COMMISSION FOR 2020. COMMISSIONER BERGDAHL SECONDED. MOTION CARRIED.**

### **DIRECTOR'S REPORT**

Director McDowell shared details of internal meetings in which he recently participated and advised the department will be hosting several Agriculture Housing Stakeholder meetings across the state. He provided an update on emerging contaminants and announced the department has hired a Senior Environmental Policy Advisor. The Governor's State of the State address will be given on January 29 and her budget recommendations are expected on February 6.

He detailed the Michigan Department of Agriculture and Rural Development (MDARD) key 2019 accomplishments, and noted priorities for 2020 will include ag housing and labor solutions, climate change, water quality in Michigan's watersheds, online licensing portal and new inspection system, and updating the Food Code and Industrial Hemp laws. Agriculture must be prepared for anticipated crop challenges again in 2020 and the department looks forward to working with the industry and its partners in being proactive in crop preparation.

### **PUBLIC COMMENT (AGENDA ITEMS ONLY)**

There was no public comment relative to agenda items.

### **MICHIGAN'S CENSUS 2020: Kerry Ebersole, Executive Director, Michigan's Census 2020**

Ms. Ebersole shared details around the process and timeline of Michigan's Census 2020, emphasizing federal funding and Congressional seats for the state are determined by the census response. Individuals can respond by mail, telephone, and online as well, which goes live mid-March. Counting everyone who lives in Michigan is critical to the future success of our state and she encouraged everyone to help in sharing the message. Information and materials can be found on the census website at [www.Michigan.gov/census2020](http://www.Michigan.gov/census2020).

Commissioner Montri suggested census information be shared during the department's upcoming Agriculture Stakeholder meetings. The Director concurred.

**CROP DISASTER UPDATE: Joel Johnson, State Director, and Benjamin Belkholm, Agriculture Program Specialist, U.S. Department of Agriculture, Farm Services Agency**

Mr. Belkholm advised their agency has been working diligently over the last year to provide as much assistance as possible to producers. Last year was very difficult for agriculture in Michigan, as climate conditions were compounded by depressed prices. He reviewed the 2019 crop disasters and how FSA is working to mitigate issues producers have been facing, as well as collaborating with MDARD and the Governor's office. He shared details around FSA's numerous assistance, emergency loan, and market facilitation programs, as well as specifics of additional programs available for the 62 Michigan counties that have been approved for some type of disaster assistance.

**MICHIGAN ONION COMMITTEE MEMBERSHIP: Greg Bird, Executive Director, Michigan Onion Committee**

Mr. Bird advised the Michigan Onion Committee (MOC) requests approval by the Commission for reapportionment to decrease its number of committee members from seven to five, in accordance with the Agricultural Commodity Marketing Act, PA 232 of 1965 as amended. He reported the reason being there are insufficient onion growers to support higher membership involvement. The MOC Board of Directors has approved this change, as has Director McDowell.

**MOTION: COMMISSIONER BERGDAHL MOVED TO APPROVE THE REAPPORTIONMENT REQUEST TO DECREASE THE NUMBER OF MICHIGAN ONION COMMITTEE MEMBERS FROM SEVEN TO FIVE. COMMISSIONER BORING SECONDED. MOTION CARRIED.**

**BOVINE TB PROGRAM MEMORANDUM OF UNDERSTANDING WITH U.S. DEPARTMENT OF AGRICULTURE: Dr. Nora Wineland, State Veterinarian and Division Director, Animal Industry Division**

Dr. Wineland reviewed details of the updated Bovine Tuberculosis (TB) Program Memorandum of Understanding (MOU) with the U.S. Department of Agriculture (USDA) and the associated required Zoning Order for the Commission's consideration at their next meeting, as required by PA 466. She explained the changes, which include various required animal testing and public notification activities.

Information on the major changes in Presque Isle County requirements and surveillance requirements in buffer counties (Cheboygan, Crawford, Iosco, Ogemaw, Otsego, and Roscommon) was reviewed. She summarized the recent USDA Bovine TB Program review and resulting recommendations, as well as a TB positive herds report.

Challenges for the program going forward were discussed. The Director advised the department is totally committed to the program and thanked Dr. Wineland and her staff for all of their efforts, especially for their recent positive negotiations with USDA.

**RECESS AND RECONVENE**

Chairperson Pridgeon recessed the meeting at 10:37 a.m. for a brief break. He reconvened the meeting at 10:51 a.m.

**MICHIGAN DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT KEY GOALS AND OUTCOMES: Kevin Bambenek, Business Performance Specialist**

Mr. Bambenek advised MDARD's 90 different mandated programs operate under the standard of performance excellence, which is comprised of the four goals of food safety and human and animal health, environmental sustainability, economic development, and efficient, effective government. He explained the 13 components of the performance framework and various initiatives being undertaken to strengthen the department's operations. He also shared the most recent MDARD scorecard summarizing the department's outcome measures, which are utilized to help drive continuous improvement. The Commission discussed various challenges the department faces daily.

Commissioner Montri asked about the scorecard metric regarding the amount of new investment generated by companies and Commissioner Boring asked about the pesticide complaint investigation measure. Mr. Bambenek will inquire on both and advise the Commission in more detail.

**PROPOSED 2020 GENERALLY ACCEPTED AGRICULTURAL AND MANAGEMENT PRACTICES (GAAMPs): Jim Johnson, Division Director, and Ben Tirrell, Right to Farm Program Manager, Environmental Stewardship Division; and Dr. Janice Swanson, Care of Farm Animals GAAMP Committee Chair**

Mr. Johnson advised RTF Act is very specific in terms of the role the Commission has relative to establishing a set of defined GAAMPs, those standards that are used for determining compliance with the RTF Act. The Act also dictates the GAAMPs be reviewed and approved on an annual basis. The proposed 2020 GAAMPs were introduced in November and today, Commissioners have the opportunity to ask questions and ultimately make a decision about each of the eight GAAMPs as presented. He expressed appreciation to the GAAMP Committees for the extensive amount of work they accomplish reviewing the documents. Mr. Tirrell advised most recommended changes to the GAAMPs were minor edits and updates, with substantial changes for only two.

Mr. Tirrell summarized RTF program actions in response to Commissioner requests made during their November 2019 meeting. Toward obtaining more productive public comment, an initial step of posting a detailed comment form to the RTF website will help capture more concise public input. The topic of siting scientific citations whenever possible within GAAMPs will be discussed during the upcoming meeting scheduled with the GAAMPs Chairs. To address the issue of editing, a comprehensive revision of each GAAMP was completed by staff and those edits will be incorporated going forward.

Dr. Swanson summarized changes recommended for the Care of Farm Animals GAAMP and addressed the question raised at the November meeting relative to timeframe, explaining the language was inserted to give guidance on what to do with animals once they become ill and debilitated. She advised the updated American Veterinary Medical Association (AVMA) Guidelines on Animal Euthanasia were just released and requested being able to change from the 2013 edition mentioned in the GAAMP to the new 2020 edition.

Commissioner Montri questioned the reference on page 12 relating to the increase in mature dairy cows. Dr. Swanson will ask her committee person to double check that

figure and advise the Commission. Commissioner Montri advised formatting of the definitions section is needed, and in the references on next to last page, a reference needs to be added for bumblebees.

Discussion ensued relative to clarification of the terms “can, shall, should, and must.” Dr. Swanson advised keeping desired outcomes in mind, those terms give producers some flexibility in ways to achieve those outcomes. For any basic elements required for care of the animal or having legal connotation, the term “must” will always be used.

Commissioner Boring asked about the inclusion of zero tolerance for pig abuse and neglect in the Swine Section. Dr. Swanson advised it is part of the Pork Quality Assurance Guidelines, noting the GAAMP is currently consistent with industry language recommended for each species. She suggested the committee could develop something useful in this regard for all chapters and will undertake this topic for the GAAMP moving forward.

**MOTION: COMMISSIONER MONTRI MOVED TO APPROVE THE 2020 GENERALLY ACCEPTED AGRICULTURAL AND MANAGEMENT PRACTICES FOR CARE OF FARM ANIMALS WITH CHANGES AS PRESENTED AND DISCUSSED. COMMISSIONER BORING SECONDED. MOTION CARRIED.**

**COMMISSIONER MONTRI MOVED TO AMEND THE MOTION APPROVING THE GENERALLY ACCEPTED AGRICULTURAL AND MANAGEMENT PRACTICES FOR CARE OF FARM ANIMALS WITH CHANGES AS PRESENTED AND DISCUSSED, TO INCLUDE THE INCORPORATION OF UPDATING THE AVMA GUIDELINES ON ANIMAL EUTHANASIA TO THE 2020 VERSION. COMMISSIONER BORING SECONDED. MOTION CARRIED.**

Following discussion, it was suggested two of the GAAMPs be formally deferred to allow for additional review by the Commission and the opportunity for the respective Committee Chair of each to present changes.

**MOTION: COMMISSIONER MONTRI MOVED TO TABLE THE GENERALLY ACCEPTED AGRICULTURAL AND MANAGEMENT PRACTICES FOR FARM MARKETS AND PESTICIDE UTILIZATION AND PEST CONTROL TO THE MARCH COMMISSION MEETING. COMMISSIONER BORING SECONDED. MOTION CARRIED.**

The GAAMP for Manure Management and Utilization was discussed. Commissioner Boring requested any applicable changes that result from EGLE’s (Department of Environment, Great Lakes, and Energy) comprehensive review of the CAFO (Concentrated Animal Feeding Operation) permitting process be considered for incorporation into recommended practices going forward. Commissioner Montri requested continued consideration of cumulative impact on multiple farms for both the Manure Utilization and the Site Selection GAAMPs. Mr. Tirrell advised he will communicate all direction and comment from the Commission to the committees for consideration in their future discussions.

**MOTION: COMMISSIONER MEINTZ MOVED TO APPROVE THE 2020 GENERALLY ACCEPTED AGRICULTURAL AND MANAGEMENT PRACTICES FOR MANURE MANAGEMENT AND UTILIZATION WITH CHANGES AS PRESENTED AND DISCUSSED. COMMISSIONER MONTRI SECONDED. MOTION CARRIED.**

Mr. Tirrell advised the remainder of the 2020 GAAMPs are being recommended with no changes.

**MOTION: COMMISSIONER BERGDAHL MOVED TO APPROVE THE 2020 GENERALLY ACCEPTED AGRICULTURAL AND MANAGEMENT PRACTICES FOR CRANBERRY PRODUCTION, IRRIGATION AND WATER USE, NUTRIENT UTILIZATION, AND SITE SELECTION AND ODOR CONTROL FOR NEW AND EXPANDING LIVESTOCK FACILITIES WITH NO CHANGES AS PRESENTED. COMMISSIONER MEINTZ SECONDED. MOTION CARRIED.**

Commissioner Montri advised the Farm Markets GAAMP Committee is meeting on February 10 and will be discussing issues of markets in exclusively residential districts. Committee members Ryan Coffey Hoag and Ron Goldy have invited the Commissioners to speak with them if they have certain metrics or criteria they would like considered.

**FOOD AND AGRICULTURE INVESTMENT FUND REQUEST: Jodi Gruner, Economic and Community Development Specialist, Agriculture Development Division**

Ms. Gruner introduced the PFI Holdco, LLC, Peterson Farm project and Mr. Richard Raffaelli, Chief Financial Officer. The project represents an \$18.5 million investment in the blueberry, cherry, and apple commodities. It will provide value-added processing for over 400 processors, relocate facility capacity from other states, and create 50-70 new jobs. Mr. Raffaelli provided background on their company and details surrounding this project that will increase processing capacity capabilities for the Michigan fruit industry.

Ms. Gruner advised MDARD staff recommends the Michigan Commission of Agriculture and Rural Development approve a Food and Agriculture Investment Fund performance-based grant of \$135,000 for PFI Holdco, LLC.

**MOTION: COMMISSIONER BERGDAHL MOVED TO APPROVE A FOOD AND AGRICULTURE INVESTMENT FUND PERFORMANCE-BASED GRANT OF \$135,000 FOR PFI HOLDCO, LLC, AS PRESENTED. SECONDED BY COMMISSIONER MEINTZ. MOTION CARRIED.**

**PESTICIDE PROGRAMS UPDATE: Mike Philip, Division Director, and Brian Verhougstraete, Pesticide Section Manager, Pesticide and Plant Pest Management Division**

Mr. Philip introduced Brian Verhougstraete who provided an overview of the Pest Program Section. He detailed the various programs within the section which operate with compliance as the goal. He also discussed challenges and issues of the program going forward in continuing to protect human, animal, and environmental health as they ensure pesticides are used in a safe and legal manner.



Mr. Verhougstratete addressed Commissioner Boring's earlier question relative to the Scorecard measure on pesticide complaint investigation. He advised the primary reason for not meeting that goal is the division has been building an inspection and enforcement system that has pulled some resources from inspection activities.

**BUDGET UPDATE: Maria Tyszkiewicz, Chief Budget/Financial Officer**

Ms. Tyszkiewicz reviewed recent action on the Fiscal Year (2020) budget, including the restoration of \$4.0 million General Fund/General Purpose (GF/GP) for the Food and Agriculture Investment Program. She explained several supplemental changes that reduced regulatory departmental programs by \$1.0 million GF/GP. The FY 2021 Governor's recommended budget is expected the first week of February.

**LEGISLATIVE UPDATE: Nathan Kark, Director of Policy Development and Legislative Affairs**

Mr. Kark referred to the MDARD Legislative Update provided to the Commissioners and discussed the status around bills of interest to the department, noting the Animal Industry Act was signed into law in December.

Commissioner Montri advised it would be helpful to include mention in the report when MDARD has a position on a particular piece of legislation. Mr. Kark advised he would integrate those notations in the future.

**PUBLIC COMMENT**

**Mr. Ronald DeCook, East Lansing**, reviewed a Drummond Island recreational development project on which he is working and complimented Mr. Peter Anastor and Nathan Kark for all of their assistance in guiding them through the various processes.

**ADJOURN**

**MOTION: COMMISSIONER MEINTZ MOVED TO ADJOURN THE MEETING. COMMISSIONER BORING SECONDED. MOTION CARRIED.**

There being no further business, the meeting adjourned at 12:52 P.M.

Attachments:

- A) *Agenda*
- B) *Agriculture and Rural Development Commission Meeting Minutes November 6, 2019*
- C) *Director McDowell – Issues of Interest Report*
- D) *Everything You Need to Know About the 2020 Census Presentation*
- E) *Census – Counting for Dollars Flyer*
- F) *Farm Service Agency Updates Presentation*
- G) *Michigan Onion Committee Request for Reapportionment Documents*
- H) *TB Program Update Presentation*
- I) *Draft Bovine TB Zoning Order*
- J) *MDARD Vision and Mission Flyer*
- K) *MDARD December 2019 Scorecard*
- L) *2020 Draft GAAMPs*
- M) *2020 GAAMPs Public Input Meeting Report and Public Comments*
- N) *PFI Holdco, LLC (Peterson Farms) Memo and Terms Sheet*
- O) *Pesticide Section Overview Presentation*
- P) *MDARD Budget Update*
- Q) *Legislative Status – January 2020*



# Generally Accepted Agricultural and Management Practices for Pesticide Utilization and Pest Control

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**June 2020**

Michigan Commission of  
Agriculture & Rural Development  
PO BOX 30017  
Lansing, MI 48909

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In the event of an agricultural pollution emergency such as a chemical/fertilizer spill, manure lagoon breach, etc., the Michigan Department of Agriculture & Rural Development (**MDARD**) and/or Michigan Department of Environment, ~~al Quality~~ **Great Lakes, and Energy (EGLE)** should be contacted at the following emergency telephone numbers:

Michigan Department of Agriculture & Rural Development: 800-405-0101

Michigan Department of Environment, ~~al Quality~~ **Great Lakes, and Energy (EGLE)**  
Pollution Emergency Alerting System (PEAS): 800-292-4706

If there is not an emergency, but you have questions on the Michigan Right to Farm Act, or items concerning a farm operation, please contact the:

Michigan Department of Agriculture & Rural Development (MDARD)  
Right to Farm Program (RTF)  
P.O. Box 30017  
Lansing, Michigan 48909  
(517) 284-5619  
(877) 632-1783-Toll Free  
(517) 335-3329 FAX

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## PREFACE

The Michigan legislature passed into law the Michigan Right to Farm Act (PA 93 of 1981, as amended), which requires the establishment of Generally Accepted Agricultural and Management Practices (GAAMPs). These practices are written to provide uniform, statewide standards and acceptable management practices based on sound science. These practices can serve producers in the various sectors of the industry to compare or improve their own managerial routines. New scientific discoveries and changing economic conditions may require necessary revision of the practices.

The GAAMPs that have been developed are as follows:

- 1) 1988 - Manure Management and Utilization
- 2) 1991 - Pesticide Utilization and Pest Control
- 3) 1993 - Nutrient Utilization
- 4) 1995 - Care of Farm Animals
- 5) 1996 - Cranberry Production
- 6) 2000 - Site Selection and Odor Control for New and Expanding Livestock Facilities
- 7) 2003 - Irrigation Water Use
- 8) 2010 - Farm Markets

These practices were developed with industry, university and multi-governmental agency input. As agricultural operations continue to change, new practices may be developed to address the concerns of the neighboring community. Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation under the Right to Farm Act.

This GAAMP does not apply in municipalities with a population of 100,000 or more in which a zoning ordinance has been enacted to allow for agriculture provided that the ordinance designates existing agricultural operations present prior to the ordinance's adoption as legal non-conforming uses as identified by the Right to Farm Act for purposes of scale and type of agricultural use.

The Web site for the GAAMPs is <http://www.michigan.gov/righttofarmgaamps>.

## I-INTRODUCTION

American agricultural producers have been able to meet the demands of the public for food through the use of improved agricultural technology. For the past 50 years, agricultural technology has included the use of pesticides and other pest management techniques. Virtually all agricultural commodities produced in Michigan may be threatened by serious pest problems and treated with pesticides to prevent or overcome insect, disease, nematode, vertebrate, or weed pests. Currently, agricultural pesticides, as broadly defined by the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), are utilized for livestock and crop protection and production.

The use of pesticides has, however, caused environmental and human safety concerns. These include the appearance of pesticide contamination in surface and groundwater in Michigan, destruction of beneficial or non-target organisms, appearance of resistant pest species, and pest population resurgence. Strategies for managing pests continue to be developed to reduce undesirable pesticide effects.

Agricultural producers in Michigan are encouraged to adopt practices that utilize pesticides only as needed. Such practices employ the appropriate use of all available information, methods, and technologies to achieve the desired commodity quality and yield while minimizing ~~any~~ adverse effects on non-target organisms, humans, and the environment. Such practices include, but are not limited to, Integrated Pest Management (IPM), organic production methods, or sustainable agriculture. These practices normally involve environmental and biological monitoring such as scouting, trapping, use of pest prediction models, etc., to help producers determine when pest populations reach the economic action threshold and selection and use of safe and effective control measures. These may include, but are not limited to, biological, chemical (biopesticides and reduced risk pesticides), cultural, mechanical, regulatory-controls (e.g. inspections, quarantines, fumigation, sanitation, etc.), and other pest management methods.

Agricultural producers who comply with pesticide labels and labeling, relevant state and federal laws, Michigan State University (MSU) pesticide recommendation bulletins, and follow pertinent sections of these Generally Accepted Agricultural and Management Practices (GAAMPs) for Pesticide Utilization and Pest Control, will meet provisions of PA 93 of 1981, as amended, the Right to Farm Act, which is administered by the Michigan Department of Agriculture & Rural Development (MDARD).

A farm or farm operation that conforms to these and other applicable current GAAMPs adopted under the Michigan Right to Farm Act (PA 93 of 1981, as amended) shall not be found to be a public or private nuisance. This protection also covers farm operations that existed before a change in the land use or occupancy of land within one mile of the boundaries of the farmland, if before that change, the farm would not have been a

nuisance. Likewise, this conditional protection applies to any of the following circumstances:

- a. A change in ownership or size.
- b. Temporary cessation or interruption of farming.
- c. Enrollment in governmental programs.
- d. Adoption of new technology.
- e. A change in type of farm product being produced.

## ~~II.~~ PESTICIDE UTILIZATION AND PEST CONTROL PRACTICES

### PESTICIDE LABELS

All pesticides intended for sale bear labels mandated by law that contain their legal and authorized uses and information on how to store, mix, apply, and dispose of the product and container. In addition to labels, manufacturers also provide supplemental labeling, which includes other specific use directions. Everyone using pesticides must follow label and labeling instructions.

~~4.~~ Pesticide labels and labeling contain specific information that constitutes the legal parameters for pesticide use. Labels and product information may contain the following:

~~2.1.~~ \_\_\_\_\_ Trade name, common name, chemical name, inert ingredients of toxicological concern, formulation, U.S. Environmental Protection Agency (EPA) registration number, amount of active ingredient per unit, and net contents of the package.

~~2.~~ \_\_\_\_\_ Manufacturer or formulator name, address and telephone number, and EPA establishment number.

~~3.~~ \_\_\_\_\_

~~3.~~ \_\_\_\_\_ Required signal words and precautionary statements by toxicity category:

- a. ~~Class I~~—Danger-Poison includes skull and crossbones; poisonous if swallowed. Do not breathe vapor. Do not get in eyes, on skin, or on clothing.
- b. ~~Class II~~—Warning may be fatal if swallowed. Do not breathe vapors. Do not get in eyes, on skin, or on clothing.
- c. ~~Class III~~—Caution harmful if swallowed. Avoid breathing vapors. Avoid contact with skin.

- d. ~~Class IV~~—Caution no caution statement required.
4. Use classification:
    - a. Restricted use - requires applicator certification to purchase and use.
    - b. ~~Unclassified~~ (~~G~~general use) - applicator certification not required.
  5. Statement of practical treatment: includes first aid for human exposure.
  6. Precautionary statements: includes worker safety rules, environmental hazards, endangered species, physical hazards, and the statement "KEEP OUT OF REACH OF CHILDREN."
  7. General information about the pesticide.
  8. Information on storage and disposal of the pesticide and container.
  9. Application procedures (may include equipment, volume, pressure requirements, weather, adjuvants, mixing, cleaning, field preparation, etc.).
  10. Pests controlled.
  11. ~~Specific use recommendations~~Directions for Use, including but not limited to: site, maximum allowable rate, timing, crop and pest life stage, rotational restrictions, minimum number of days between last application and harvest, etc.
  12. Worker Protection Standard (WPS) Agricultural Use Requirements - Reentry interval, and/or restricted entry interval.
  - ~~13.~~—Use restrictions (Examples: depth to groundwater, soil types, sensitive sites, setbacks, etc.).
  - ~~13.~~
  - ~~14. Reference to Federal Worker Protection Standard of 1992.~~
  14. Reference to State Management Plans for Groundwater Protection.
  15. Endangered Species Act guidance for protection of endangered species.
  - ~~15-16.~~ Pesticide Resistance action group number.

***For detailed information on specific label requirements, refer to MSU Extension Bulletins E- 3007 kit Private Pesticide Applicator Core Training Manual and***



## **Michigan Addendum and E-3008 kit Commercial Pesticide Applicator Core Training Manual kits with Michigan Addendum.**

### CERTIFICATION

Purchasers and applicators of restricted-use pesticides must comply with the certification requirements of the 1994 Michigan Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended (PA 451), Part 83 and detailed in Regulation 636 "Pesticide Applicators." This requires studying training manuals prepared by MSU Extension and passing an examination administered by MDARD.

Recertification is required every three years and may be obtained by one of two methods. The private applicator may study a training manual (Extension Bulletin E-3007kitp) and pass an examination, or attend classes accredited by MDARD for continuing education credits and obtain sufficient credits for the specific category of certification. Both methods ensure that additional information was provided to applicators in the safe and effective use of restricted-use pesticides.

For more information about the certification process and a current listing of approved pesticide applicator certification training seminars can be found at [https://www.michigan.gov/mdard/0,4610,7-125-1569\\_16988\\_35289---,00.html](https://www.michigan.gov/mdard/0,4610,7-125-1569_16988_35289---,00.html) <http://www.mda.state.mi.us/schedule/schedule.html> ~~[www.mda.state.mi.us/industry/schedule.html](http://www.mda.state.mi.us/industry/schedule.html)~~ or [www.canr.msu.edu/ipm/pesticide\\_education\\_safety](http://www.canr.msu.edu/ipm/pesticide_education_safety) ~~[http://www.ipm.msu.edu/pesticide\\_education\\_safety](http://www.ipm.msu.edu/pesticide_education_safety)~~.

The listing for the pesticide certification exams can be found by following these steps: Go to <https://www.michigan.gov/pestexam> ~~[www.michigan.gov/mda](https://www.michigan.gov/mda)~~, Click Enter as Guest ~~on Licensing; Click on Pesticides; Click on Pesticide Application Certification; Click on Examination Process and Examination Schedule; Click here to go to map of the State of Michigan; and Click on a county highlighted or region to find date(s) and time(s) or region.~~

### APPLICATION EQUIPMENT, METHODS, AND PESTICIDE FORMULATIONS

There are many types of pesticide application equipment and many pesticide formulations. Application methods for particular formulations may be specified on the label. To prevent degradation of water resources (and therefore, to comply with federal and state laws) the applicator should choose a method that is accurate in applying the pesticide to the target.

A person applying pesticides may employ any equipment or method of application not contrary to the "Directions for Use" on the pesticide label or labeling. ~~A person applying pesticides may employ any method of application not prohibited by the pesticide label or labeling. Innovative application methods and equipment not specifically prohibited on a label or labeling are encouraged if they can improve the accuracy of application to the target and/or reduce total active ingredient or spray volume used.~~

Generally accepted methods of pesticide application include, but are not limited to, the following equipment, methods, and formulations:

EQUIPMENT	METHOD	FORMULATION
airplane/helicopter	aerial	aerosol
air assisted applicator	banding	aqueous suspension
air blast sprayer	chemigation	bait
backpack sprayer, duster	controlled droplet application (cda)	control release formulation
controlled droplet applicator	dips & drenches	dispersible granule
electrostatic sprayer	dusting	dry flowable
fabric mesh & other products impregnated with pesticides	early pre-plant (epp)	dry soluble
fogger	foliar spray	emulsifiable concentrate
fumigation equipment	hopperbox treatment	emulsifiable solution
granular applicator	granular surface application	encapsulated
ground sprayer	impregnated on fertilizer	flowable
hand gun	In furrow	gas
hand sprayer	Injection	granule
hopperbox application	pre-emergence (pre)	Liquid
incorporation into asphalt	pre-transplant	oil solution
injector	Pre-plant incorporated (ppi)	pellet
irrigation equipment (chemigation)	post-directed	ready to use
low volume applicator	post-emergence (post)	soluble granules
mister	post-transplant	soluble powder
recycling sprayer	ropewick	water dispersible granule
roller	seed treatment	wettable powder
speed treated	ultra low volume (ulv)	<u>suspension concentrate</u>
spreader		<u>soluble liquid</u>
transplanter & seeder		<u>water soluble packet</u>
wick		<u>microencapsulated</u>

## EQUIPMENT USE AND CALIBRATION

The operator shall inspect and maintain all pesticide application equipment to ensure the proper and safe operation of equipment, as well as, the appropriate rate and distribution of application. Equipment must be correctly calibrated at least annually, and leaks minimized to apply specific materials and formulations of pesticides at the intended rate and distribution pattern.

***For detailed information on specific label requirements refer to MSU Extension Bulletin E-3007kitp.***

## WORKER AND HANDLER SAFETY

Any person applying or handling pesticides or working in pesticide treated areas must be knowledgeable in the safe use and handling of pesticides. Everyone must use safety equipment specified on pesticide labels.

The Federal Worker Protection Standard ~~of 1992~~as revised in 2015 protects employees involved in the production of agricultural products on farms, forests, greenhouses, and nurseries from occupational exposure to agricultural pesticides. For both handlers and workers, the standard requires training, notification, and information on the proper use of protective equipment. Handlers include those who apply, load, mix, transport, clean and repair pesticide application equipment, etc. Workers include persons who may physically come in contact with pesticides in treated areas while performing tasks related to production and harvesting of agricultural plants. Both need to be trained on the recognition of pesticide poisoning symptoms, how to avoid exposure, and emergency assistance, as well as, be provided personal protective equipment and transportation for medical assistance. Handlers need additional training. Employers are required to provide the training, personal protective equipment, decontamination sites, transportation, central notification points, field posting for the duration of the restricted-entry intervals, and maintain pesticide application records for ~~three~~two years. For specific information concerning this law, refer to the EPA-prepared book, "[How to Comply With the 2015 Revised Worker Protection Standard For Agricultural Pesticides](#)" "[What Owners and Employers Need To Know](#)".~~The Worker Protection Standard for Agricultural Pesticides, How to Comply, What Employers Need to Know.~~"(<https://www.epa.gov/pesticide-worker-safety/agricultural-worker-protection-standard-wps>)

Enforcement of the standard occurs in two phases. Label specific requirements will be enforceable when they appear on pesticide labels. These requirements include:

1. Using label-specified personal protective equipment;
2. Obeying label-specific restrictions on entry to treated areas during the restricted-entry intervals; and

3. Obeying the requirement on labels that provide oral warnings and/or treated area posting.

The generic requirements of worker protection standards enforced as of January 1, 1995, include:

1. Providing decontamination supplies
2. Annual Training of workers and handlers
3. Providing certain notification and information
4. Cleaning, inspecting, and maintaining personal protective equipment
5. Respirator medical evaluation and fit testing
- 4-6. Application exclusion zones
- 5-7. Emergency assistance.

#### ALTERNATIVE PEST MANAGEMENT TECHNIQUES

Growers may use alternatives to pesticides to manage pests. These may include, but are not limited to, audible cannons, ultra-sonic and audio sound equipment, strobe lights, firearms, balloons, scarecrows, streamers, netting, traps and fences for wildlife management, tillage for weed control, controlled burning, traps for pest management, transgenic plants, introduced or managed biological control agents, mechanical controls, resistant varieties, cover crops, crop vacuums, flammers, mulching, composting, crop rotation, pheromones for mating disruption and trapping, weather monitoring equipment for pest prediction, etc. All such techniques should be used according to dealer and/or manufacturer recommendations and must be used according to federal and state agency recommendations and/or regulations.

#### PROTECTION OF THE ENVIRONMENT

Agriculture involves management of biological systems to produce food, feed, fur, and fiber. Pesticides and other pest management practices cause a specific effect in a biological system.

For agriculture to be sustained at biologically and economically sound production levels, growers should recognize their responsibility to be stewards of the soil and the environment. Growers should be aware of environmentally sensitive conditions in their production system and adjust management practices to ensure future productivity and environmental integrity. For example, growers should limit use of highly or moderately leachable pesticides in areas with coarse-textured soils or high water tables.

([https://efotg.sc.egov.usda.gov/references/public/MI/Integrated\\_Pest\\_Management\\_\(AC](https://efotg.sc.egov.usda.gov/references/public/MI/Integrated_Pest_Management_(AC)

) (595) CPS.pdf :

[https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1044470.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044470.pdf) ;  
[https://www.canr.msu.edu/ipm/index?Reference=Natural+Resources+Conservation+Service+\[NRCs\]+Technical+Guide+595+Pest+Management+Standard,+MSU+pesticide+recommendations,+etc.](https://www.canr.msu.edu/ipm/index?Reference=Natural+Resources+Conservation+Service+[NRCs]+Technical+Guide+595+Pest+Management+Standard,+MSU+pesticide+recommendations,+etc.))

A person applying pesticides in agricultural production should follow label instructions and use good judgment to avoid adverse effects to human health and the environment. A pesticide applicator should make a determined effort to:

1. Assess pest populations and apply pesticides only when needed to manage these pests during the vulnerable or appropriate stage of their life cycle.
2. Avoid directing a pesticide application beyond the boundaries of the target site.
3. Avoid the potential for drift or runoff. (See page 10 - #2. Pesticide Drift for information regarding a drift management plan.)
4. Avoid applications that would result in exposure of persons within or adjacent to the target site, except when such pesticides have approved use patterns permitting treatment of populated areas for specific pest management programs. (e.g., gypsy moth, mosquito, etc.)
5. Avoid applications that would lead to contamination of aquifers (PA 451 of 1994 as amended, Part 87, and Part 31, Rule 2203) or runoff to surface waters (~~Reference NRCs Technical Guide 595 Integrated-~~ Pest Management Standard.(Code 595))
6. Utilize safety measures including backflow safety devices when applying pesticides through irrigation systems.

## AGRICULTURE POLLUTION EMERGENCIES

The Michigan Department of Agriculture & Rural Development has a toll-free, 24-hour hotline available for reporting agricultural pesticide, fertilizer, and manure spills. The **MDARD Agriculture Pollution Emergency (APE) Hotline, (800) 405-0101**, is designed to improve response time and provide appropriate technical assistance, reducing the environmental risk associated with an agricultural chemical spill.

Users of agricultural pesticide, fertilizer, and manure products should report all un-contained spills or releases to the MDARD APE Hotline. MDARD has the responsibility to initiate response activities to immediately stop or prevent further releases at agrichemical spill sites and will do so through possible interaction and assistance from the Michigan Department of Environmental [Great Lakes and Energy \(EGLE\) Quality \(MDEQ\)](#). The main goal of the MDARD Spill Response Program is to clean up all agrichemical spills quickly and completely and get the recovered material out to where it can be used for its intended purpose. This goal is accomplished through providing

immediate response, technical assistance, a common sense approach to clean up, and utilization of legal land application of recovered materials.

[This 24-hour hot line should be used for reporting accidental agricultural pesticide, fertilizer and manure spills. \(Chemical spills not agriculture-related should be referred to the Michigan Department of Environment, Great Lakes, and Energy's Pollution Emergency Alerting System \(PEAS\) number, 1-800-292-4706.\) \(https://www.michigan.gov/mdard/0,4610,7-125-1572-310812--,00.html \)](https://www.michigan.gov/mdard/0,4610,7-125-1572-310812--,00.html)

## EXCESS SPRAY MIXTURES AND RINSATES

Use excess mixtures or rinsates on labeled application sites at or below labeled rates as listed on the label. Excess pesticide mixtures include, but are not limited to: leftover solution when spraying is done; haul-back solutions from a spraying job interrupted by weather, and equipment breakdown. All rinsates, including pesticide container rinsate, should be put in the sprayer as part of the mixing solutions.

## MIXING AND LOADING

Pesticides should be mixed and loaded according to label directions in a manner that does not harm individuals, animals, or the environment. The greatest risk occurs when handling pesticide concentrates. Follow these practices to reduce risk:

1. Pesticide mixing and loading areas should be located in such a manner as to reduce the likelihood of a spill or overflow contaminating a water supply. Acceptable areas may include temporary or permanent sites, which are described in MSU Extension Bulletin ~~E-2335 and~~ E-3007kitp.
2. Review the label before opening the container so that you are familiar with current mixing and usage directions. If two or more pesticides are to be mixed, they must be compatible and mixed in the proper order.
3. Measure accurately. Keep all measuring devices in the pesticide storage area to avoid their being used for other purposes. Measuring containers or devices should be rinsed and the rinse water put into the spray tank.
4. Avoid back-flow when filling a spray tank to prevent water source contamination. The simplest technique is an air gap where the fill hose does not come in contact with the tank water. Back-flow prevention devices may also be used. (Reference MSU Extension Bulletin E-3007 kitp).
5. A sprayer ~~should~~must be monitored while it is being filled.
6. Mix only the amount you plan to use immediately. Pesticides should be applied as soon as possible to maintain product effectiveness and reduce the potential for accidental discharge.

7. Clean up spills immediately. Material spilled during mixing or loading may be applied to labeled sites at or below labeled rates. All spills to the soils and/or waters of Michigan must be reported to the state of Michigan according to the Natural Resources and Environmental Protection Act of 1994. Spills exceeding reportable quantities, under SARA Title III, must be reported to the appropriate agencies (~~Reference MSU Extension Bulletin E-2575 "Emergency Planning for the Farm" - currently being revised~~) (~~Reference MSU Extension Bulletin E-2575 "Emergency Planning for the Farm" - currently being revised available at [http://www.maeap.org/uploads/files/Farmstead/E2575\\_Emergency\\_Plan\\_on\\_the\\_Farm.pdf](http://www.maeap.org/uploads/files/Farmstead/E2575_Emergency_Plan_on_the_Farm.pdf)~~) as well as the Michigan Department of Agriculture & Rural Development, APE Hotline, (800) 405-0101.

## APPLICATION AND STANDARDS FOR USE

~~The~~ The 1994 Act 451, Part 83, Pesticide Control and Pesticide Use Regulation 637 ([https://www.michigan.gov/mdard/0,4610,7-125-1569\\_16988-209407--,00.html](https://www.michigan.gov/mdard/0,4610,7-125-1569_16988-209407--,00.html)) contains components that are applicable to private applicators using pesticides for agricultural operations, including but not limited to the following.

### 1. Spill Kits

Any person who mixes, loads, or otherwise uses pesticides shall have immediate access to a spill kit. The spill kit requirement does not apply to a person who used single containers of use dilution pesticides in a quantity that is less than 16 ounces.

Spill kits should contain materials appropriate to the material being applied and equipment being used.

### 2. Pesticide Drift

All pesticide applications are required to be made in a manner that minimizes off-target drift. When pesticide off-target drift is anticipated due to the nature of the application, a Drift Management Plan shall be utilized by the applicator to minimize the occurrence and adverse effects of off-target drift.

The Drift Management Plan shall include drift minimization practices. Such practices may include, but are not limited to, any of the following:

- a. The use of the largest spray droplets that are created by a combination of special nozzles, pressures, and particulating agents to accomplish the objectives of the applications.
- b. The use of specialized equipment that is designed to minimize off-target drift.
- c. The use of the closest possible spray release to the target.

- d. The use of the lowest effective rates of application of the pesticide.
- e. The establishment of a no-spray buffer zone. The buffer zone may be treated with non-powered equipment.
- f. The identification of the maximum wind speed and direction under which applications can be made.
- g. The use of wind shields or windbreaks to contain spray drift or deflect spray drift away from sensitive areas.
- h. Other specific measures stated in the plan that are effective in minimizing the incidence of off-target drift.

A Drift Management Plan shall be in writing, and MDARD will consider the presence and use of a written Drift Management Plan as a factor in determining appropriate enforcement action in the event of drift. Pesticide off-target drift does not include the off-target movement of a pesticide by means of erosion, volatilization, or windblown soil particles after the application of a pesticide.

## RECORD KEEPING

Farm operators ~~should~~must maintain accurate records of all agricultural crop applications of pesticides for at least three years, and preferably five years.

The federal pesticide recordkeeping regulations, the federal worker protection standards, and the Michigan Right to Farm current GAAMPs all have requirements related to pesticide recordkeeping. The following table is intended to clarify which data are required for each. The federal recordkeeping regulations and worker protection standards are laws. Right to Farm GAAMPs are voluntary guidelines.

### **USDA Record Keeping Regulations (Redkp)**

The data required by these regulations must be kept by private pesticide applicators for each restricted use pesticide application.

### **Worker Protection Standards (WPS)**

The information listed in the table must be posted for at least 30 days after the end of the restricted-entry interval (REI), or, if there is no REI, for at least 30 days after the end of the application.

### **Michigan Right to Farm (RTF)**

A portion of the Right to Farm document addresses pesticide recordkeeping. By following these voluntary guidelines, producers can reduce their liability.



## Table Comparing Record Keeping Requirements for Private Pesticide Applicators

Federal Recordkeeping Regulations (Redkp), Worker Protection Standards (WPS), Michigan Right to Farm (RTF)

Data to Record	Redkp	WPS	RTF
Month/day/year	x	x	x
Time of application		x	
Pesticide brand/product name	x	x	x
Pesticide formulation			x
EPA registration number	x	x	x
Active ingredient(s)		x	
Restricted-entry interval (REI)		x	
Rate per acre or unit			x
Crop, commodity, stored product, or site that received the application	x		x
Total amount of pesticide applied	x		x
Size of area treated	x		x
Applicator's name	x		x
Applicator's certification number	x		x
Location of the application	x	x	x
Method of application			x
Target pest			x
Carrier volume per acre			x

Developed by the Michigan State University Pesticide Education Office

Commercial applicators ~~have 30 days to~~ **must** send a copy of records required by USDA to clients within 30 days of application. If a medical emergency occurs ~~before~~ within 30 days, commercial applicators must provide the necessary information immediately upon request.

For federally restricted use pesticides (RUP), records must incorporate all information required by Title XIV of the Federal Food, Agriculture, Conservation and Trade Act Subtitle H, Section 1491, Pesticide Record Keeping.

### TRANSPORT OF PESTICIDES

A person transporting pesticides will do so in such a manner as to avoid discharge into the environment, human exposure, and contamination of animal feed and human food.

### DISPOSAL OF UNUSED PESTICIDES

Michigan residents may dispose of unused and unwanted pesticides through the Michigan Clean Sweep Program. The Michigan Agriculture Environmental Assurance Program (MAEAP), in cooperation with county and local units of government, has established permanent Clean Sweep sites located throughout the state. More information can be found here: [https://www.michigan.gov/mdard/0,4610,7-125-2390\\_45388-11759--,00.html](https://www.michigan.gov/mdard/0,4610,7-125-2390_45388-11759--,00.html)

Individual Michigan residents may dispose of pesticides by taking them to one of these Clean Sweep sites where they will be collected, packaged for shipping, and disposed of

properly. There is no charge for this service. Program costs are covered by MAEAP and a grant from the EPA, and services are provided by the local cooperators.

## DISPOSAL OF PESTICIDE CONTAINERS

Always dispose of containers in a way that minimizes impact on the environment and is consistent with the label specifications. It is desirable to use reusable, returnable, or recyclable containers when available. Pesticide containers should be emptied completely, rinsed when appropriate, and in general rendered into a non-hazardous waste.

1. Triple rinse or use other recommended practices, such as pressure rinsing to clean all glass, metal, or plastic containers to render them non-hazardous waste (, MSU Extension Bulletin E-2784 and E-3007kitp)  
[https://archive.lib.msu.edu/DMC/extension\\_publications/e2784/E2784-2002.PDF](https://archive.lib.msu.edu/DMC/extension_publications/e2784/E2784-2002.PDF)).
2. After rinsing, puncture metal and plastic containers. They can then be recycled or buried in a sanitary landfill approved under PA 451 of 1994, as amended, Part 115.
3. Michigan has had an agriculture plastic pesticide container recycling program in operation since 1992. This program allows for the grinding and recycling of clean plastic containers. For more information on this program, contact MDARD at (517) 284-5612 or visit: [https://www.michigan.gov/mdard/0,4610,7-125-1599\\_25432-310935--,00.html](https://www.michigan.gov/mdard/0,4610,7-125-1599_25432-310935--,00.html)
3. .
4. Dispose of rinsed glass containers in a sanitary landfill approved under PA 451 of 1994, as amended, Part 115.
5. Open burning of pesticide containers is prohibited by state statute, PA 451 of 1994, as amended, Part 55.

## ON FARM STORAGE AND CONTAINMENT OF PESTICIDES

All pesticides ~~should~~must be stored in a manner that maintains environmental quality, ensures human and animal safety, and preserves product and container integrity. (Reference MSU Extension Bulletin E-2335, E-3007kitp, and NRCS [Practice Standard 309, Agrichemical Handling Facility Agricultural Containment Facilities --702](#)). Legal storage requirements are on pesticide labels.  
[https://archive.lib.msu.edu/DMC/extension\\_publications/e2335/E2335-1996.PDF](https://archive.lib.msu.edu/DMC/extension_publications/e2335/E2335-1996.PDF) ;  
[https://efotg.sc.egov.usda.gov/references/public/MI/Agrichemical\\_Handling\\_Facility\\_\(NO\)\\_309\\_CPS\\_9-16.pdf](https://efotg.sc.egov.usda.gov/references/public/MI/Agrichemical_Handling_Facility_(NO)_309_CPS_9-16.pdf) )

1. Bulk pesticide storage site - A site should be selected that minimizes potential for contamination of surface or groundwater by drainage, runoff, or leaching. Locate the storage site an adequate distance away from wells, surface water, and other

sensitive areas. For purposes of these practices, a bulk storage area is an area where pesticides are stored over 15 days in a single container greater than 55 gallons (liquid) or 100 pounds (dry material).

- a. Bulk pesticide storage areas should be located a minimum of 150 feet from any single-family residential water well or a minimum of 50 feet with secondary containment for the pesticide storage; 800 feet from a Type IIB or III public water supply, or a minimum of 75 feet with secondary containment of the pesticide storage; and a minimum of 200 feet from surface water. Dairy farms and farms with employees generally have Type III public water supply. If an existing bulk storage area is located closer than 150 feet from a single-family residential water well, 800 feet from a public water supply, or less than 200 feet from surface water, appropriate security measures should be taken to prevent pesticide contamination of surface water or groundwater.
- b. The pesticide storage set-back distance from any Type I community public water supply or Type II non-community public water supply well is 2,000 feet, if the public water supply does not have a well-head protection program. If there is a well-head protection program, the facility must be located outside the delineated well-head protection area. For more information on well set-back distances from pesticide storages, contact the Michigan Department of Agriculture and Rural Development Environmental Stewardship Division engineering staff.

These set-back distances pertain to bulk pesticide storage sites and facilities and do not include application sites. A storage facility is a place for the safe keeping of pesticides. An application site is where pesticides can be used according to label specifications.

2. Storage facility - Pesticides should be stored in a facility that is securable to prevent unauthorized access (~~Reference MSU Extension Bulletin E-2784, MSU Extension Bulletin E-2335 and~~ MSU Extension Bulletin E----3007kitp).
  - a. Keep all pesticides out of the reach of children, pets, livestock, and unauthorized people.
  - b. Within the storage area, store pesticides in a manner to prevent cross contamination with other pesticides or accidental misuse. Store pesticides away from food, feed, potable water supplies, veterinary supplies, seeds, and protective equipment.
  - c. The storage facility should be ventilated to reduce dusts and fumes.
  - d. Keep pesticides cool, dry, and out of direct sunlight. Consider freeze protection; ~~as required by labels~~ as necessary.

- e. Post the pesticide storage area with highly-visible, weather-proof signs that indicate that pesticides are stored there. Also post "NO SMOKING" signs.
- f. Store pesticides only in their original labeled containers, or containers appropriate for pesticide storage that are properly labeled.
- g. Have absorbent materials, such as cat litter box filler or sawdust and clean-up equipment immediately available. A fire extinguisher approved for chemical fires should also be easily accessible.
- h. The storage of combustible and flammable chemicals may require special storage requirements. Contact your local fire chief and refer to [the Standard 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages, National Fire Prevention Association \(NFPA\) Code 395](https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=395) for further information. (<https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=395> )

## PESTICIDE USE RECOMMENDATIONS AND TECHNICAL ASSISTANCE

Michigan State University Extension provides education and recommendations on correct and effective use of pesticides on most agricultural commodities grown in Michigan (See Appendix II).

Growers meet pesticide rate standards for GAAMPs if they apply pesticides at or less than legal labeled rates. Pesticide uses for commodities not included in MSU recommendations but in accordance with their respective labels or labeling will also meet the application rate requirements of these GAAMPs.

The Natural Resources Conservation Service ([NRCS](#)) ~~role is to provide technical and financial assistance to agricultural producers. Its Field Office Technical Guide (FOTG) provides the standards, which establish elements of conservation planning designed to maintain soil productivity and protect the environment. Financial assistance may be available through USDA Farm Bill programs.~~ (~~NRCS~~) ~~role is to provide technical assistance to agricultural producers. Its Field Office Technical Guide (FOTG) provides the standards, which establish minimal acceptable elements of conservation plans designed to maintain soil productivity and protect the environment.~~

Financial assistance may be available through USDA Farm Bill programs. The Michigan Agriculture Environmental Assurance Program (MAEAP) provides for technical assistance for agricultural producers to facilitate improvement of their practices that may impact groundwater and surface water.

Spill Response Program - This program helps reduce environmental impacts associated with pesticide, fertilizer, and manure spills. If a spill occurs, agri-chemical users **must** call MDARD's 24-hour hotline at (800) 405-0101. This gives access to information,

technical assistance, and in some cases, financial assistance for dealing with the control, containment, and cleanup of a spill. MAEAP provides funding for this program.

Clean Sweep Program - Individuals can bring unwanted pesticides to one of Michigan's Clean Sweep sites for proper disposal at little or no cost to the ~~mselves landowner~~. The Michigan Agriculture Environmental Assurance Program (MAEAP)MAEAP, along with the Environmental Protection Agency and local agencies, pays for the disposal of these pesticides. A list can be found at: [https://www.michigan.gov/mdard/0,4610,7-125-2390\\_45388-11759--,00.html](https://www.michigan.gov/mdard/0,4610,7-125-2390_45388-11759--,00.html)<http://www.michigan.gov/mdard> or by contacting MDARD at 517-284-5612..<http://www.michigan.gov/mdard>.

The Michigan Certified Crop Adviser (CCA) program is a nationally-recognized, voluntary certification program developed through the collaborative effort of the public sector and the agriculture industry to ensure high standards for crop advisers. It is intended for anyone who makes nutrient, pesticide, crop, or environmental recommendations to producers. This includes esing dealers, distributors, applicators, consultants, manufacturers, allied industries, and state and federal government agency personnel. The CCA program is administered by state boards in association with the American Society of Agronomy, which handles similar programs for specialists in agronomy, crop consulting, weed science, and other agricultural disciplines. In Michigan, the Michigan Agri-Business Association manages the program.

~~**NOTE: APPENDICES ARE PROVIDED FOR INFORMATION  
PURPOSES. APPENDICES**~~

**APPENDIX I: REFERENCES ON STATE AND FEDERAL LAWS AND REGULATIONS**

~~**REFERENCES ON STATE AND FEDERAL LAWS AND REGULATIONS**~~

State and Federal Laws and Regulations: A person applying agricultural pesticides in Michigan must comply with all relevant state and federal laws and regulations. These include, but are not limited to:

1. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1947, as amended. This is the basic federal law regulating pesticide registration and use in the United States. A new part of this law requires states to implement a state management plan for specific pesticides that may contaminate groundwater. Pesticide applicators are required to adhere to state components of this plan.
2. Federal Worker Protection Standard of 1992. This regulation was written by U.S. Environmental Protection Agency (EPA) governing the protection of employees on farms, forests, nurseries, and greenhouses from occupational exposures to agricultural pesticides. They are intended to reduce the risk of pesticide poisoning and injuries among agricultural workers and pesticide handlers through appropriate exposure reduction measures. The regulations expand the requirements for insuring warnings about pesticide applications, use of personal protective equipment, and restriction on entry to treated areas. New requirements are added for decontamination, emergency assistance, maintaining contact with handlers of highly toxic pesticides, and pesticide safety training. (<https://www.epa.gov/pesticide-worker-safety/agricultural-worker-protection-standard-wps> )
3. Federal Record Keeping. Authorized by the 1990 Federal Food, Agriculture, Conservation and Trade Act (Farm Bill), new requirements are being developed for record keeping of federally restricted use pesticides (RUP) by certified applicators.
4. The Superfund Amendments and Reauthorization Act (SARA) of 1986 Title III: Emergency Planning and Community Right-to-Know. This federal law provides mechanisms to prepare for chemical emergencies. Persons storing pesticides that are considered to be extremely hazardous by EPA above "Threshold Planning Quantities", must notify the State Emergency Response Commission within MDEMichigan Department of Environment, Great Lakes and Energy (EGLE)~~MDEQ~~, the Local Emergency Planning Committee and the local fire chief that they store at least one of these chemicals above threshold at some time. The location of the storage facility and name and telephone number of a responsible person must be reported also. If there is a spill or release of one of

these chemicals above the "Reportable Quantity", the same organizations must be notified. MSU Extension Bulletin E-2575 contains information to help farmers comply with the law.

5. The Endangered Species Act (ESA) of 1973, as amended. This federal law protects endangered species and their habitats from the adverse effects of pesticides. Pesticide labels ~~will~~ contain information on endangered species and restricted use areas.
6. National Fire Prevention Association (NFPA) Standard Code 30A95. The Michigan State Fire Marshall has adopted the NFPA Code 395, which regulates the storage of combustible and flammable liquid chemicals with a flash point below 200° F on the farm. If you construct a new chemical storage facility, contact your local building inspector to be sure you are in compliance with the code's construction, diking, and location requirements. The code sets requirements for the amount and location of stored chemicals; the type, construction and size of containers and fire prevention devices that need to be incorporated into structures. (Code 30A, according to the NFPA website: <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=395>)
7. The Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended.
  - a. Part 31, Water Resources Protection (formerly PA 245 of 1929, the Michigan Water Resources Commission Act, as amended). This part provides broad substantive bases for protection and conservation of surface and groundwater resources of the state.
  - b. Part 55, Air Pollution Control (formerly PA 348 of 1965, Air Pollution Control, as amended). ~~MDEGLE~~~~MDEQ~~ has statutory authority, powers, duties, functions, and responsibilities for rule making and issuance of permits and orders for air pollution control including burning of pesticide containers. The Part provides for control of air pollution that may be in the form of a dust, fumes, gas, mist, odor, smoke, or vapor, in quantities that are or can become injurious to human health or welfare, animal life, plant life, or to property, or that interfere with the enjoyment of life or property.
  - c. Part 83, Pesticide Control (formerly PA 171 of 1976, Michigan Pesticide Control Act, as amended). This part regulates registration, distribution, labeling, storage, disposal, and application of pesticides in Michigan. The Act was amended in 1993 to allow MDARD to respond to incidents of confirmed groundwater contamination.

Applicator Certification Regulation 636 and Pesticide Use Regulation 637 were established as a requirement of Part 83 Pesticide Control, PA 451

of 1994, the Natural Resources and Environmental Protection Act, as amended to provide regulation for pesticide use.

- d. Part 87, Groundwater and Freshwater Protection (formerly PA 247 of 1993, Michigan Groundwater and Freshwater Protection Act, as amended). This establishes the necessary legal authorities to develop and implement voluntary, proactive management practices for pesticides and fertilizers that are protective of groundwater. The Act provides for technical assistance, grants, and research and demonstration projects that will be available to agricultural producers so they can change current practices that may be impacting groundwater. The Act also establishes a statewide advisory committee and regional groundwater stewardship teams that will work directly with producers.
  - e. Part 111, Hazardous Waste Management (formerly PA 64 of 1979, the Hazardous Waste Management Act, as amended). This part protects public health and the natural resources of the state from harmful effects of hazardous wastes. When pesticides are not used according to label directions, are out of condition, or are suspended or canceled, they may become hazardous wastes and have strict transportation, treatment, storage, and disposal requirements. This also includes pesticide containers that are not triple rinsed or power washed.
  - f. Part 115 Solid Waste Management (formerly PA 641 of 1978, the Michigan Solid Waste Management Act, as amended). This part provides for proper design and licensing of non-hazardous landfills and provides disposal requirements for various types of wastes. It lists over 60 approved licensed landfills that can accept properly rinsed pesticide containers. The ~~MDEGLEMDEQ~~ Environmental Resource Management Division number is (517) 373-2730.
  - g. Part 201, Environmental Response (formerly PA 307 of 1982, the Environmental Response Act, as amended). This part provides for the identification, risk assessment, and priority evaluation of environmental contamination and provides for response activity at certain facilities and sites. This Act also provides an exemption from liability for farmers if they follow the pesticide label and Generally Accepted Agricultural and Management Practices. Any spills or discharges of polluting material (including pesticides) that may potentially reach any surface or ground water must be controlled and reported to the ~~MDEGLEMDARD~~'s Pollution Emergency Hot Line at (800)-405-0101, or the MDEQ's PEAS at (800) 292-4706.
8. PA 154 of 1974, the Michigan Occupational Safety and Health Act (MIOSHA), as amended. The Michigan Department of Community Health and Michigan Department of Labor and Economic Growth jointly enforce this law to protect workers who handle or during normal working conditions might be exposed to



pesticides. Employers are required to develop and implement a written employee training program as well as insure that all pesticides or other hazardous chemical containers are properly labeled. For hazardous chemicals other than pesticides, the employer is required to have Material Safety Data Sheets available for employee review. In case of pesticide, labeling information may be furnished if Material Safety Data Sheets are unavailable. Copies of Material Safety Data Sheets for pesticides are normally available from pesticide manufacturers or distributors. Additionally, farmers are advised to cooperate with their local fire department and local emergency planning committees in furnishing requested information.

9. PA 399 of 1976, the State of Michigan Safe Drinking Water Act, as amended. An Act to protect the public health; to provide for supervision and control over public water supplies; to provide for the classification of public water supplies; and to provide for continuous, adequate operation of privately owned, public water supplies. This act sets forth standard isolation distances from any existing or potential sources of contamination and regulates the location of public water supplies with respect to major sources of contamination.
10. PA 368 of 1978, the Michigan Public Health Code, as amended. An Act to protect and promote the public health; to codify, revise, consolidate, classify, and add to the laws relating to public health; to provide for the prevention and control of diseases and disabilities; and to provide for the classification, administration, regulation, financing, and maintenance of personal, environmental, and other health services and activities.

## APPENDIX II: REFERENCES ON AGENCY RECOMMENDATIONS

### **REFERENCES ON AGENCY RECOMMENDATIONS**

Michigan State University pesticide use and pest control recommendations are contained in, but not limited to, the following publications and computer programs available from the MSU Educational Materials Distribution Center at <http://www.bookstore.msueshop.msu.edu> or by calling (517) 353-6740 or from the local MSU Extension office:

E\_- 0154     2019 Michigan Fruit Management Guide

E\_- 0312     2019 Midwest Vegetable Production Guide for Commercial Growers  
~~Insect, disease, and nematode control for commercial vegetables~~

E\_- 0434     2019 Weed control guide for field crops

E\_- 0433     2019 Weed control guide for vegetable crops

~~E-1582     Insect, nematode and disease control in Michigan field crops.~~

~~E-2178     Chemical Control of Insects, Diseases, Weeds and Nematodes for Commercial Turf Managers~~

E\_- 2676     Christmas Tree Pests Manual

~~NCR-251     Effective Herbicide Use on Christmas Tree Plantations~~

~~NCR 521     Control of Diseases on Commercial Greenhouse Crops~~

~~E-2696     Insect Control for the Greenhouse Industry     Poster~~

E-3245     Minimizing Pesticide Risk to Bees in Fruit Crops

MSU Extension bulletins and other resources relevant to these Generally Accepted Agricultural and Management Practices can be obtained through the MSU Educational Materials Distribution Center at this Web site <http://www.bookstore.msueshop.msu.edu> or from the local MSU Extension office.

~~E-2182     Reading a Pesticide Label (English and Spanish)~~

~~E-2575     Emergency Planning for the Farm~~

E-3007 kitp Private Pesticide Applicator Core Training Manual and Michigan Addendum  
(Order from: <https://npsecstore.com/pages/michigan>)

~~E-3007 kitp~~ ..... Spanish National Applicator Core Training Manual & Michigan Private Applicator Addendum  
~~Private Pesticide Applicator Core Training Manual and Michigan Addendum~~

E-3008 kitc ..... Commercial Pesticide Applicator Core Training Manual and Michigan Addendum  
(Order from: <https://npsecstore.com/pages/michigan>)

~~E-3008 kite~~ ..... Commercial Pesticide Applicator Core Training Manual and Michigan Addendum (also available in Spanish)

~~E-2215~~ ~~Using Pesticides Safely: A Guide for the Applicator~~

~~E-2335~~ ~~On-Farm Agrichemical Storage and Handling~~

~~E-2784~~ ~~Safe Transport, Storage, and Disposal of Pesticides~~

E – 2579 Commodity Fumigation: Training Manual, Commercial & Private Applications

E – 2342 Recordkeeping System for Crop Production

E – 2343 Field File Folders: Recordkeeping System for Crop Prod

Useful USDA Natural Resources Conservation Service publications include:

~~Technical Guide 595-Integrated Pest Management Standard~~(code 595)

~~NRCS Practice Standard 309, Agrichemical Handling Facility~~  
~~Agrichemical Containment Facility Practice 702~~  
([https://efotg.sc.egov.usda.gov/references/public/MI/Agrichemical\\_Handling\\_Facility\\_\(NO\)\\_309\\_CPS\\_9-16.pdf](https://efotg.sc.egov.usda.gov/references/public/MI/Agrichemical_Handling_Facility_(NO)_309_CPS_9-16.pdf))

Useful Worker Protection Standard Publications include:

How to Comply With the 2015 Revised Worker Protection Standard For Agricultural Pesticides” “What Owners and Employers Need To Know”

Resources for revised WPS publications:  
National Pesticide Safety Education Center:  
<https://npsecstore.com/pages/michigan>  
Pesticide Educational Resources Collaborative:  
[pesticideresources.org//index.html](http://pesticideresources.org//index.html)

~~The Worker Protection Standard for Agricultural Pesticides – How to Comply, What Employers Need to Know~~

~~Protect Yourself From Pesticides – Guide for Agricultural Workers~~

~~Protect Yourself From Pesticides – Guide for Pesticide Handlers~~

~~Protect Yourself From Pesticides – Safety Poster~~

~~Protect Yourself from Pesticides: Safety Training for Agricultural Workers – Flip Chart~~

~~Pesticide Handlers and the Worker Protection Standard: EPA-Approved Pesticide Safety Training for Your Pesticide Handlers. Available in English and Spanish. VT 048-EN, VT 048-SP.~~

~~Pesticide Safety for You and Your Family's Health. EPA-Approved Pesticide Safety Training for Your Workers. Available in English and Spanish. VT 046-EN, VT 046-SP.~~

These may be available at ~~the MDARD office, local MSU Extension office, or at~~ the EPA National Agricultural Compliance Assistance Center located at 901 North 5<sup>th</sup> Street, Kansas City, KS 66101, (888) 663-2155,  
Web site: <https://www.epa.gov/agriculture/about-epas-national-agriculture-center>  
[www.epa.gov/agricultureagcenter@epa.gov](mailto:www.epa.gov/agricultureagcenter@epa.gov)

**Web-site for MSUE Bulletins:** <http://www.bookstore.msueshop.msu.edu>

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# Generally Accepted Agricultural and Management Practices for Farm Markets

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**June 2020**

Michigan Commission of Agriculture & Rural  
Development  
PO BO 30017  
Lansing, MI 48909



In the event of an agricultural pollution emergency such as a chemical/fertilizer spill, manure lagoon breach, etc., the Michigan Department of Agriculture & Rural Development and/or Michigan Department of Environmental ~~Quality, Great Lakes, and Energy~~ should be contacted at the following emergency telephone numbers:

Michigan Department of Agriculture & Rural Development: 800-405-0101

Michigan Department of Environmental ~~Quality, Great Lakes, and Energy~~: 800-292-4706

If there is not an emergency, but you have questions on the Michigan Right to Farm Act, or items concerning a farm operation, please contact the:

Michigan Department of Agriculture & Rural Development (MDARD)

Right to Farm Program (RTF)

P.O. Box 30017 Lansing, Michigan 48909

517-284-5619

877-632-1783

517-335-3329 FAX

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## **PREFACE**

The Michigan legislature passed into law the Michigan Right to Farm Act (Act 93 of 1981, as amended) which requires the establishment of Generally Accepted Agricultural and Management Practices (GAAMPs). These practices are written to provide uniform, statewide standards and acceptable management practices based on sound science. These practices can serve producers in the various sectors of the industry to compare or improve their own managerial routines. New scientific discoveries and changing economic conditions may require necessary revision of the ~~P~~practices. The GAAMPs are reviewed annually and revised as considered necessary.

The GAAMPs that have been developed are as follows:

- 1) 1988 - Manure Management and Utilization
- 2) 1991 - Pesticide Utilization and Pest Control
- 3) 1993 - Nutrient Utilization
- 4) 1995 - Care of Farm Animals
- 5) 1996 - Cranberry Production
- 6) 2000 - Site Selection and Odor Control for New and Expanding Livestock Facilities
- 7) 2003 - Irrigation Water Use
- 8) 2010 - Farm Markets

These practices were developed with industry, university, and multi-governmental agency input. As agricultural operations continue to change, new practices may be developed to address the concerns of the neighboring community. Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation under the Right to Farm Act.

~~This GAAMP does not apply in municipalities with a population of 100,000 or more in which a zoning ordinance has been enacted to allow for agriculture provided that the ordinance designates existing agricultural operations present prior to the ordinance's adoption as legal non-conforming uses as identified by the Right to Farm Act for purposes of scale and type of agricultural use.~~

The Web site for the GAAMPs is <http://www.michigan.gov/gaampsrighottofarm>.

## INTRODUCTION

~~Over the past 20 years fFarmers have are increasingly developeding value-added products as a means to maintain or increase profits. One aspect of this trend has beenexample is direct marketing of farm products to consumers resulting in an expansion in agricultural tourism (agritourism), including farm markets. As farm operations engage in more on-site retail activity, conflicts have arisen regarding oversight of these emerging on-farm businesses.~~

~~Since the mid-20th century, farmers sold commodities in bulk to wholesale buyers. As farming returns declined, some farms were not situated to continue operations selling exclusively into wholesale markets. Many farmers sought a means to capture more value from their production through activities that included providing transportation to deliver their commodities to wholesale buyers, installing packing operations to provide more retail-ready produce to wholesale buyers, etc. Some farmers recognized the financial opportunities of selling directly to consumers. In doing so, they were able to maintain their farming operations and the benefits of those operations to local communities, including economic activity, provision of jobs, open space, carbon sequestration, water filtration, fresh produce, plants, etc. As the consumer trend toward buying locally produced products continues, so does the importance of direct marketing to local communities. Farm markets and roadside stands are an important component of direct marketing, adding value by offering customers a visit to the farm and the opportunity to purchase products from the people who grew them.~~

~~As farmers look for ways to keep their businesses economically viable, many have chosen to shift their operations from a farmer-to-processor to a direct market business model. This includes selling raw and value-added products directly to the consumer through on-farm establishments, farmers markets, and other agricultural outlets. This allows farms to take advantage of consumer interest in agritourism, the “buy local” movement, and a desire for a connection with farmers and food production. These activities have far-reaching economic impacts. Many regions have capitalized on the growth of farm markets by developing regional farm market and culinary trails, and tourism promotion based on authentic culinary experiences offered by local farm markets. Farm markets provide the opportunity for visitors to meet a farmer, learn about modern agricultural practices, and gain access to fresh, local, nutritious food. Finally, farm markets and the associated farm, help maintain green space adding to the quality of life. Thriving farmland enhances the beauty of communities, retains residents and attracts visitors. As farm operations engage in direct sales and on-farm activities, conflicts have arisen regarding oversight of these businesses.~~

~~The Michigan is a Right to Farm (RTF) state ~~Act~~ and the RTF Act defines a “farm operation” as meaning the operation and management of a farm or a condition or activity that occurs at any time as necessary on a farm in connection with the commercial production, harvesting, and storage of farm products. This definition includes, but is not limited to, marketing produce at roadside stands or farm markets. Farm markets offer farm~~

related experiences and farm products through a variety of agritourism activities. The experience in turn promotes sale of more farm products and provides an added income stream to support the farm business, the farm family, and surrounding communities; and keeps farmland in production.

Although the RTF Act includes farm markets in the definition of a farm operation, this definition does not define a farm market or describe specific marketing activities. These GAAMPs for Farm Markets were developed to provide guidance as to what constitutes an on-farm market and farm market activities.

## **DEFINITIONS**

**Affiliated** – “Affiliated” means a farm under the same ownership or control (e.g. leased) as the farm and does not need to be on the same parcel of land.

**Expanding Farm Market** – An addition to an existing farm market that increases the square footage of the farm market.

**Farm** – A “farm” means the land, plants, animals, buildings, structures, including ponds used for agricultural or aquacultural activities, machinery, equipment, and other appurtenances used in the commercial production of farm products.

**Farm Market** – A farm market is a year-round or seasonal location where transactions and marketing activities between farm market operators and customers take place. While the location must take place on property controlled by the affiliated farm, it does not have to be a physical structure such as a building. Fresh products as well as processed products may be sold at the farm market. At least 50% of the products offered must be produced on and by the affiliated farm measured by retail floor space during peak production season, or 50% of the average gross sales for up to the previous 5 years or as outlined in a business plan. Processed products will be considered as produced on and by the farm if at least 50% of the product’s primary or namesake ingredient was produced on and by the farm, such as apples used in apple pie, maple sap in maple syrup, strawberries in strawberry jam, etc.

~~**Farm Market** – A “farm market” is a place or an area where transactions between a farm market operator and customers take place and is considered part of a farm operation. This includes roadside stands. It does not necessarily mean a physical structure such as a building and is considered part of a farm operation. At least 50 percent of the products marketed and offered for sale at a farm market (measured as an average over the farm market’s marketing season or up to a five-year timeframe) must be produced on and by the affiliated farm. Farm products may be processed more extensively into a form that adds value and makes them more marketable for direct customer sales in accordance with Michigan laws, and then sold at the affiliated farm market, as long as allowed by local, state and federal regulations. A farm market may operate seasonally or year-round. Farm markets may include marketing activities and services to attract and entertain customers and facilitate retail trade business transactions, when allowed by applicable local, state, and federal regulations.~~

**Farm Product** – A “farm product” means those plants and animals useful to humans produced by agriculture and includes, but is not limited to, forages and sod crops, grains and feed crops, field crops, dairy and dairy products, poultry and poultry products, cervidae, livestock (including breeding and grazing), equine, fish and other aquacultural products, bees and bee products, berries, herbs, fruits, vegetables, flowers, seeds, grasses, nursery stock, trees and tree products, mushrooms and other similar products, or any other product which incorporates the use of food, feed, fiber, or fur as determined by the Michigan Commission of Agriculture & Rural Development.

**50 Percent of the Products Marketed** – For purposes of determining the percentage of products being marketed, the primary measure will be 50 percent of the retail space used to display products offered for retail sale during the affiliated farm’s marketing season. If measurement of retail space during the marketing season is not feasible, then the percent of the gross sales dollars of the farm market will be used.

At least 50 percent of the gross sales dollars of products sold at the farm market need to be from products produced on and by the affiliated farm. For processed products, at least 50 percent of the products’ main ‘namesake’ ingredient must be produced on and by the affiliated farm. For example, the apples used in apple pie, maple sap in maple syrup, strawberries in strawberry jam, etc.

**Affiliated** — “Affiliated” means a farm under the same ownership or control (e.g. leased) as the farm market, whether or not the farm market is located on the property where production occurs. However, the market must be located on land where local land use zoning allows for agriculture and its related activities.

**Marketing** – Promotional and educational activities at the farm market incidental to farm products with the intention of selling more farm products. These activities include, but are not limited to, farm tours (walking or motorized), demonstrations, cooking and other classes utilizing farm products, and farm-to-table dinners.

**Processed** – A farm product or commodity that has been converted into a product for direct sales. may be processed, in accordance with state and federal laws, to convert it into a value-added product that is more marketable for direct sales. Processing may include, but is not limited to, packing, washing, cleaning, grading, sorting, pitting, pressing, fermenting, distilling, packaging, cutting, cooling, storage, canning, drying, freezing, or otherwise preparing the product for sale. ~~These activities can be used to extend a farm market’s marketing season beyond its production season.~~

**Farm** – A “farm” means the land, plants, animals, buildings, structures, water resources (including ponds used for agricultural or aquacultural activities), machinery, equipment, and other appurtenances used in the commercial production of farm products.

**Farm Product** – A “farm product” means those plants and animals useful to humans produced by agriculture and includes, but is not limited to, forages and sod crops, grains and feed crops, field crops, dairy and dairy products, poultry and poultry products, cervidae, livestock (including breeding and grazing), equine, fish and other aquacultural products, bees and bee products, berries, herbs, fruits, vegetables, flowers, seeds, grasses, nursery stock, trees and tree products, mushrooms and other similar products, or any other product which incorporates the use of food, feed, fiber, or fur as determined by the Michigan Commission of Agriculture & Rural Development.

~~**Community Supported Agriculture or CSA**— A CSA is a marketing strategy in which a farm(s) produce(s) farm products for a group of farm members or subscribers who pay in advance for their share of the harvest. Typically, the farm members receive their share once a week, sometimes coming to the farm to pick up their share; other farms deliver to a central point(s).~~

~~**U-Pick Operation**— A U-pick operation is a farm that provides the opportunity for customers to harvest their own farm products directly from the plant. Also known as pick-your-own or PYO, these are forms of marketing farm products to customers who go to the farm and pick the products they wish to buy.~~

## **PHYSICAL CHARACTERISTICS OF A FARM MARKET**

### **Use of space**

A farm market may be a physical structure such as a building or tent, or simply an area where a transaction between a customer and a farmer is made. The farm market must be located on property owned or controlled (e.g. leased) by the producer of the products offered for sale at the market. A new or expanding farm market greater than 120 square feet must meet a minimum setback of 165 feet from all non-farm residences and all new or expanding farm markets are not authorized under this GAAMP on platted lots within a subdivision created under the Michigan Land Division Act (Act 288 of 1967, MCL 560.101, et seq.) or preceding statutes and on condominium units within a condominium (sometimes referred to as “site-condos”) created under the Michigan Condominium Act (Act 59 of 1978, MCL 559.101, et seq.); however, farm markets are permitted in such areas if authorized by association rules or pursuant to a local ordinance designed for that purpose, unless prohibited by association rules. A farm market should have a written site plan for potential MDARD review that preempts local government regulations. The property on which the farm market is located does not have to be the land on which the products offered for sale are produced. For example, a farmer with a farm located far from normal-traffic patterns may acquire control of land near a more heavily travelled road on which to locate the market. However, the market must be located on property where local land use zoning allows for agriculture and its related activities.

### **Buildings**

If the farm market is housed in a physical structure ~~such as a building or structure~~ as defined and regulated by the Stille-Derossett-Hale Single State Construction Code Act (Act 230 of 1972), the structure must comply with the Stille-Derossett-Hale Single State Construction Code Act (Act 230 of 1972), including road right-of-way areas and ingress and egress points.

~~230 of 1972), the structure must comply with the Stille-Derossett-Hale Single State Construction Code Act (Act 230 of 1972). The placement of the structure must comply with local zoning ordinances, including set-backs from property lines and road right-of-way areas.~~

## **Parking and Driveways**

Parking and driveway surfaces may be vegetative, ground, pavement, or other suitable material. However, other parking and driveway requirements must comply with all applicable ~~local, state, and federal~~ regulations.

## **Vehicle ~~Access Ingress and Egress~~**

~~Any farm market and affiliated parking operating along a public road must obtain all appropriate ingress and egress permits. If access and egress to the parking areas is from roads that are under the jurisdiction of the Michigan Department of Transportation (MDOT), a permit from MDOT must be obtained. Examples of these roadways include U.S. Routes (US 127, US 10, etc.), State of Michigan routes (M-57, M-66 etc.), or interstate business connections (BR I-94, BR US 31, etc.). Information about permits can be obtained from any one of the many MDOT Transportation Service Centers. Likewise, farm markets located adjacent to county or local roads must comply with the access and egress requirements for the appropriate governmental agency.~~

~~MDOT issues an "Individual Application and Permit For Use of State Trunkline Right of Way", Form 2205. Further information regarding the general driveway permit process can be found at the following website:~~

~~<http://www.michigan.gov/mdot/0,1607,7-151-9623-26662-26679-27267-48606-182161--,00.htm>~~

## **Signage**

~~The operator of the farm market must comply is responsible for contacting the Michigan Department of Transportation (MDOT), county, and/or township government regulatory authority to determine applicable sign regulations and must comply with all applicable local, state and federal regulations for signs. A minimum of one roadside sign is allowed pursuant to local sign ordinance setbacks, lighting, height and size requirements.~~

~~For further information concerning this GAAMP you may contact the Michigan Department of Agriculture and Rural Development or Michigan State University Extension.~~

## **MARKETING CHARACTERISTICS OF A FARM MARKET**

~~At least 50 percent of the products offered for sale at a farm market must be produced by the farm that is owned or controlled by the person who owns and controls the farm market. The sale of non-farm products at a farm market may be regulated by other governmental bodies. This means that 50 percent or more of the retail space during the marketing season must be devoted to products produced on and by the farm. If measurement of retail space during the marketing season is not feasible, then the determination will be based on 50 percent of the gross sales of products at the farm market. The farm market operator is responsible for collecting and maintaining documentation of products produced on and by his/hertheir farm operation, and the percentage of the retail space used to display products~~

offered for retail sale within their farm market; and when applicable, maintain records of gross sales for products sold at their market.

The determination of retail space used to display products offered for retail sale and/or gross sales of products should be made during the usual marketing season for the farming operation. The marketing season is typically during the production season, and may be extended by the sale of farm processed products.

Farm markets may utilize CSA's and U-pick operations as a marketing strategy. The operators of farm markets often conduct other activities and services designed to attract and entertain customers while they are at the farm market, and broaden goods and services offered for sale to the public. The activities in the table below are beyond the scope of these management practices, and may be regulated by other governmental bodies.

Farmers who plan to conduct these activities are responsible for obtaining and maintaining regulatory approval from appropriate government agencies. This is not considered an all-inclusive list.

**TABLE OF ACTIVITIES REGULATED BY OTHER AUTHORITIES**

<u>On Farm Activity</u>	<u>On Farm Activity typically regulated by:</u>		
	<u>Federal</u>	<u>State</u>	<u>Local</u>
Bakery		MDARD if selling only	Health Dept. if on-site food consumption
Bed & Breakfasts (B & B)			Health Dept. for on-site food consumption, local regulation
Beer Breweries	ATTB	MDARD/MLC	Local regulation
Bonfires			Local regulation
Camping			Local regulation
Carnival Rides		DLRA	Local regulation
Cider Mill (non-alcoholic)		MDARD if selling only	Health Dept. if on-site food consumption
Concerts			Local regulation
Cooking Demos			Health Dept. if on-site food consumption
Corn Mazes			Local regulation
Distilleries	ATTB	MDARD/MLC	Local regulation
Festivals			Health Dept. for on-site food consumption, local regulation
Fishing Pond			Local regulation
Food Service			Health Dept. for on-site food consumption
Haunted Barns/Trails			Local regulation



Hunting Preserves		DNR/MDARD	
Mud Runs			Local regulation
Petting Farms	USDA		Health Department
Play-scapes			Local regulation
Processing/bottling -Dairy		MDARD	Health Dept. if on-site food consumption, local regulation
Processing – Meat	USDA	MDARD	Health Department

## REFERENCES

### ~~Abbreviations used in this document:~~

<del>MDARD</del>	<del>Michigan Department of Agriculture &amp; Rural Development</del>
<del>RTF or RTFA</del>	<del>Right to Farm Act (Act 93 of 1981, as amended)</del>
<del>DNR</del>	<del>Michigan Department of Natural Resources</del>
<del>ATTB</del>	<del>Alcohol and Tobacco Tax and Trade Bureau</del>
<del>MLC</del>	<del>Michigan Liquor Control Commission</del>
<del>DLRA</del>	<del>Department of Licensing and Regulatory Affairs</del>

State of Michigan. *Report of Recommendations*. Report of the Michigan Agricultural Tourism Advisory Commission. Commission report of Governor Granholm. January, 2007.

State of Michigan. *Agricultural Tourism Local Zoning Guidebook and Model Zoning Ordinance Provisions*. Report of the Michigan Agricultural Tourism Advisory Commission. Commission report of Governor Granholm. January, 2007.

Michigan Commission of Agriculture & Rural Development. *Final Report to the Michigan Commission of Agriculture & Rural Development*. Report of the Michigan Farm Market Task Force. Task Force report to the Michigan Commission of Agriculture & Rural Development. September, 2008.

State of Michigan. Michigan Department of Transportation. Directory of Offices by Region.  
[http://www.michigan.gov/mdot/0,1607,7-151-9623\\_26662\\_26679\\_27267\\_48606-182161--\\_00.html](http://www.michigan.gov/mdot/0,1607,7-151-9623_26662_26679_27267_48606-182161--_00.html).

~~Community Supported Agriculture in Michigan, [www.csafarms.org](http://www.csafarms.org).~~

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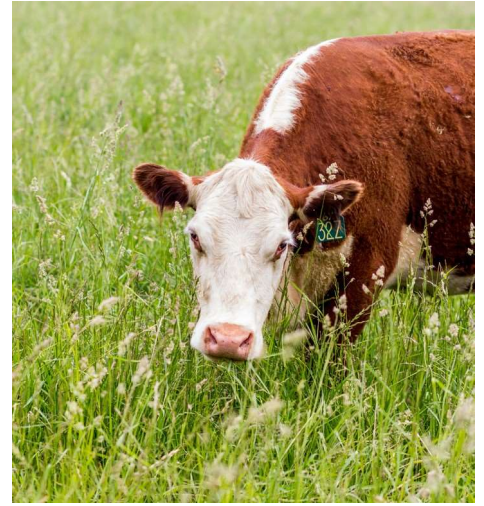
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# Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Facilities

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**January–June 2020**

Michigan Commission of Agriculture & Rural  
Development  
PO BOX 30017  
Lansing, MI 48909



In the event of an agricultural pollution emergency such as a chemical/fertilizer spill, manure lagoon breach, etc., the Michigan Department of Agriculture & Rural Development and/or Michigan Department of Environment, Great Lakes, and Energy should be contacted at the following emergency telephone numbers:

Michigan Department of Agriculture & Rural Development: 800-405-0101 Michigan Department of Environment, Great Lakes, and Energy: 800-292-4706

If there is not an emergency, but you have questions on the Michigan Right to Farm Act, or items concerning a farm operation, please contact the:

Michigan Department of Agriculture & Rural Development (MDARD) Right to Farm Program (RTF)  
P.O. Box 30017 Lansing, Michigan 48909  
517-284-5619  
517-335-3329 FAX  
(Toll Free) 877- 632-1783

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## PREFACE

The Michigan legislature passed into law the Michigan Right to Farm Act (Act 93 of 1981) which requires the establishment of Generally Accepted Agricultural and Management Practices (GAAMPs). GAAMPs for Site Selection and Odor Control for New and Expanding Livestock Facilities are written to fulfill that purpose and to provide uniform, statewide standards and acceptable management practices based on sound science. These practices can serve producers in the various sectors of the industry to compare or improve their own managerial routines. New scientific discoveries and changing economic conditions may require necessary revision of these GAAMPs.

The GAAMPs that have been developed are as follows:

- 1) 1988 Manure Management and Utilization
- 2) 1991 Pesticide Utilization and Pest Control
- 3) 1993 Nutrient Utilization
- 4) 1995 Care of Farm Animals
- 5) 1996 Cranberry Production
- 6) 2000 Site Selection and Odor Control for New and Expanding Livestock Facilities
- 7) 2003 Irrigation Water Use
- 8) 2010 Farm Markets

These practices were developed with industry, university, and multi-governmental agency input. As agricultural operations continue to change, new practices may be developed to address the concerns of the neighboring community. Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation under the Right to Farm Act.

This GAAMP does not apply in municipalities with a population of 100,000 or more in which a zoning ordinance has been enacted to allow for agriculture provided that the ordinance designates existing agricultural operations present prior to the ordinance's adoption as legal nonconforming uses as identified by the Right to Farm Act for purposes of scale and type of agricultural use.

The website for the GAAMPs is <http://www.michigan.gov/righttofarm>.

## INTRODUCTION

Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Facilities will help determine the suitability of sites for livestock production facilities and livestock facilities and the suitability of sites to place or keep livestock. These GAAMPs provide a planning process that can be used to properly plan new and expanding facilities and to increase the suitability of a particular site thus enhancing neighbor relations.

These GAAMPs for Site Selection and Odor Control for New and Expanding Livestock Facilities are written to provide uniform, statewide standards and acceptable management practices based on sound science. They are intended to provide guidance for the construction of new and expanding livestock facilities and livestock production facilities and/or the associated manure storage facilities for the placement and keeping of any number of livestock.

### FARM PLANNING AND SITE DEVELOPMENT

The GAAMPs for site selection and odor control for new and expanding livestock facilities are intended to fulfill three primary objectives:

- 1) Environmental Protection
- 2) Social Considerations (neighbor relations)
- 3) Economic Viability

When all three of these objectives are met, the ability of a farm operation to achieve agricultural sustainability is greatly increased.

Farm planning involves three broad phases: Collection and analysis (understanding the problems and opportunities); decision making; and implementation. Collection and analysis includes: determining objectives, inventorying resources, and analyzing data. Decision support includes formulating alternatives, evaluating alternatives, and making decisions. The final step is implementation.

Producers should utilize recognized industry and university professionals in the evaluation of the economic viability and sustainability of constructing new or expanding existing livestock production facilities and livestock facilities. This evaluation should be comprehensive enough to consider all aspects of livestock production including economics, resources, operation, waste management, and longevity.

The decision to site a livestock production facility or livestock facility can be based on several objectives including: preserving water quality, minimizing odor, working within existing land ownership constraints, future land development patterns, maximizing convenience for the operator, maintaining esthetic character, minimizing conflicts with adjacent land uses, and complying with other applicable local ordinances.



The environmental objectives of these GAAMPs focus specifically on water quality protection and odor control, and how environmental and management factors affect the suitability of sites for livestock production. The suitability of a particular site for a livestock production facility or livestock facility depends upon a number of factors; such as the number of animal units (size); the species of animals; predominant wind directions; land base for use; topography of the surrounding land; adjacent land uses; the availability of Class A roads for feed and product movement; soil types; hydrology; and many others.

Site selection is a complex process, and each site should be assessed individually in terms of its proposed use. These GAAMPs are written in recognition of the importance of site-specificity in siting decisions. While general guidelines apply to all siting decisions, specific criteria are not equally applicable to all types of operations and all locations. In addition to the guidelines provided in these GAAMPs, the United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) technical references, including the Agricultural Waste Management Field Handbook (AWMFH) and the electronic Field Office Technical Guide (eFOTG), are excellent sources for information and standards related to the siting of livestock facilities.

It is recognized that there is potential risk for surface or groundwater pollution, or conflict over excessive odors from a livestock facility. However, the appropriate use of technologies and management practices can minimize these risks, thus allowing the livestock facility to operate with minimal potential for excessive odor or environmental degradation. These measures should be incorporated into a Site Plan and a Manure Management System Plan, both as defined in Section V, which are required for all new and expanding livestock facilities.

Groundwater and surface water quality issues regarding animal agriculture production are addressed in the current "Generally Accepted Agricultural and Management Practices for Manure Management and Utilization" as adopted by Michigan Commission of Agriculture & Rural Development (MCARD) and are not duplicated here. The GAAMPs for Manure Management and Utilization cover runoff control and wastewater management, construction design and management for manure storage and treatment facilities, and manure application to land. In addition, the GAAMPs for Manure Management and Utilization stress the importance of each livestock production facility developing a manure management system plan that focuses on management of manure nutrients and management of manure and odors.

These GAAMPs are referenced in Michigan's Natural Resources and Environmental Protection Act (NREPA), PA 451 of 1994, as amended. NREPA protects the waters of the state from the release of pollutants in quantities and/or concentrations that violate established water quality standards. In addition, the GAAMPs utilize the nationally recognized construction and management standard to provide runoff control for a 25-year, 24-hour rainfall event.

While these GAAMPs establish basic set-back standards for livestock facilities of all sizes, existing land uses, development patterns, the cost-benefit of an investment in animal housing, as well as the sustainability of farm animal production should all be analyzed before construction of a livestock facility and bringing farm animals to a site.

## DEFINITIONS

AS REFERENCED IN THESE GAAMPs:

Adjacent Property – An adjacent property is land owned by someone other than the livestock facility owner that borders the property on which a proposed new or expanding livestock facility will be located.

Animal Units - Animal units are defined as listed in (Table 1) of these GAAMPs.

Distances between a Livestock Production Facility and Non-Farm Residences - The distance from a livestock production facility and a residence is measured from the nearest point of the livestock production facility to the nearest point of the residence.

Expanding Livestock Production Facility - An addition to a livestock production facility to increase the holding capacity where animals will be confined at a site that presently has livestock production facilities contiguous to the construction site. A new or expanded manure storage structure built to accommodate an expansion in animal units within three years from construction of the manure storage will also be considered an expanding livestock production facility.

Institutional Controls - Institutional controls are those land or resource use restrictions required by state or federal environmental laws to reduce or restrict exposure to hazardous substances, to eliminate a potential exposure pathway, to assure the effectiveness and integrity of contaminant or exposure barriers, to provide for access, or to otherwise assure the effectiveness and integrity or response activities taken in response to environmental contamination. Institutional controls include, but are not limited to, local ordinances or state laws and regulations that limit or prohibit the use of contaminated groundwater, prohibit the raising of livestock, prohibit development in certain locations, or restrict property to certain uses.

Livestock – For purposes of the Site Selection GAAMPs, livestock means those species of animals used for human food, fiber, and fur, or used for service to humans. Livestock includes, but is not limited to, cattle, sheep, new world camelids, goats, bison, privately owned cervids, ratites, swine, equine, poultry, and rabbits. For the purpose of the Site Selection GAAMPs, livestock does not include dogs and cats. Site Selection GAAMPs do not apply to aquaculture and bees.

Livestock Farm Residence - A residence on land owned/rented by the livestock farm operation and those residences on farms affiliated by contract or agreement with the livestock production facility.

Livestock Facility – Any facility where livestock are kept regardless of the number of animals. This does not include pasture land.

Livestock Production Facilities - All facilities where livestock are kept with a capacity of 50 animal units or greater and/or the associated manure storage facilities. Sites such as loafing areas, confinement areas, or feedlots, which have livestock densities that preclude a predominance of desirable forage species are considered part of a livestock production facility. This does not include pastureland. Any livestock production facilities within 1,000 feet of each other and under common ownership constitute a single livestock production facility.

Migrant Labor Housing Camp – For purpose of this GAAMP, a migrant labor housing camp owned by a livestock producer applying for Site Selection GAAMP approval will be considered a farm residence.

New Livestock Production Facilities - All facilities where livestock will be kept and/or manure storage structures that are built at new sites and are not part of another livestock production facility, including facilities at sites that ~~is~~ are 1) expanding the holding capacity for livestock by 100 percent or greater and the resulting holding capacity will exceed 749 animal units, or 2) any construction to expand existing holding capacity within three years of completion of new construction documented in an MDARD final verification letter and the resulting holding capacity will exceed 749 animal units.

Non-Farm Residence - A residence that is habitable for human occupation and is not affiliated with the specific livestock production system.

Offsite Manure Storage Facility - A manure storage facility constructed at a site that is not adjacent to a livestock production facility.

Pasture Land - Pasture land is land that is primarily used for the production of forage upon which livestock graze. Pasture land is characterized by a predominance of vegetation consisting of desirable forage. Heavy-use areas within pastures are part of the pasture land. Examples of heavy-use areas include animal travel lanes and small areas immediately adjacent to shade, feed, water, supplement or rubbing stations.

Primarily Residential – Sites are primarily residential if there are more than 13 non-farm residences within 1/8 mile of the site or have any non-farm residence within 250 feet of the livestock facility.

Property Line Setback – Property line setback is the distance from the livestock production facility to the property line measured from the facility to the nearest point of the facility owner's property line. If a producer owns land across a road, the road or right of way does not constitute a property line. Right of way setbacks for public roads, utilities, and easements apply.

**Table 1. Animal Units**

<b>Animal Units</b>	50	250	500	750	1,000
<b>Animal Type<sup>1</sup></b>	<b>Number of Animals</b>				
Slaughter and Feeder Cattle	50	250	500	750	1,000
Mature Dairy Cattle	35	175	350	525	700
Swine <sup>2</sup>	125	625	1,250	1,875	2,500
Sheep and Lambs	500	2,500	5,000	7,500	10,000
Horses	25	125	250	375	500
Turkeys	2,750	13,750	27,500	41,250	55,000
Laying Hens or Broilers	5,000	25,000	50,000	75,000	100,000

<sup>1</sup>All other animal classes, types or sizes (eg. Nursery pigs) not in this table, but defined in the Michigan Right to Farm Act or described in Michigan Commission of Agriculture and Rural Development Policy, are to be calculated as one thousand pounds live weight equals one animal unit.

<sup>2</sup>Weighing over 55 pounds.

## **DETERMINING ACCEPTABLE LOCATIONS FOR LIVESTOCK FACILITIES**

All potential sites for new and expanding livestock facilities can be identified by four general categories. These are:

- Category 1. These are sites normally acceptable for livestock facilities and generally defined as areas that are highly agricultural with few non-farm residences.
- Category 2. These are sites where special technologies and/or management practices could be needed to make new and expanding livestock facilities acceptable. These areas are predominantly agricultural but also have an increased number of non-farm residences.
- Category 3. These are sites that are generally not acceptable for new and expanding livestock production facilities due to environmental concerns or other neighboring land uses.
- Category 4. These are sites that are not acceptable for new and expanding livestock facilities and livestock production facilities.

**Livestock facilities in Categories 1, 2 or 3 with less than 50 animal units are not required to go through the site review and verification process, and conform to the provisions of these GAAMPs. However, these operations are required to conform to all other applicable GAAMPs.**

Category 1 Sites: Sites normally acceptable for livestock facilities.

Category 1 sites are those sites which have been traditionally used for agricultural purposes and are in an area with a relatively low residential housing density. These sites are located where there are five or fewer non-farm residences within  $\frac{1}{4}$  mile from a new livestock facility with up to 749 animal units, and within  $\frac{1}{2}$  mile from a new livestock facility with 750 animal units or greater.

If the proposed site is within Category 1, it is recognized that this is a site normally acceptable for livestock facilities. As shown in Table 2, if the proposed site is within Category 1 and has a capacity of 50 to 499 animal units, MDARD will review and verify the producer's plans at the producer's request. If the proposed site is within Category 1 and has a capacity of 500 or more animal units, the producer must follow the MDARD site selection review and verification process as described in Section V. Category 1 sites with less than 1000 animal units which are able to meet the property line setbacks as listed in Tables 2 and 3, as appropriate, and which meet the other requirements of these GAAMPs, are generally considered as acceptable for Site Selection Verification. An Odor Management Plan (OMP) will not be required for these sites in most circumstances. It is however, recommended that all producers develop and implement an OMP in order to reduce odor concerns for neighboring non-farm residents.

A request to reduce the property line setbacks, as listed in Tables 2 and 3, will require the development of an OMP for verification. All verification requests for Category 1 sites with 1000 animal units or greater will require the development and implementation of an OMP to specify odor management practices that will provide a 95 percent odor annoyance-free level of performance as determined by the Michigan Revised OFFSET 2018 odor model (Kiefer, 2018). For new livestock facilities, a property line setback reduction shall only be considered for a proposed site in advance of MDARD site suitability approval. MDARD may grant a property line setback reduction of up to fifty percent of the applicable setback distance (Tables 2 and 3) when requested based upon the Odor Management Plan. In all cases, the minimum setback will be 250 feet for new livestock facilities. Any reduction beyond this minimum will require a signed variance by the property owners within the original setback distance affected by the reduction. Factors not under direct control of the operator will be considered if an alternative mitigation plan is provided. Local land use may be considered by MDARD in granting setback reductions.

**Table 2. Category 1 Site Setbacks, Verification and Notification – New Operations**

<b>Total Animal Units <sup>1</sup></b>	<b>Number of Non-Farm Residences within Specified Distance</b>	<b>Property Line Setback<sup>2</sup></b>	<b>MDARD Site Review and Verification Process <sup>3</sup></b>
50-499	0-5 within ¼ mile	250 ft	Yes
500-749	0-5 within ¼ mile	400 ft	Yes
750-999	0-5 within ½ mile	400 ft	Yes
1000 or more	0-5 within ½ mile	600 ft	Yes

<sup>1</sup> Facilities in Category 1 with less than 50 animal units are not required to go through the site review and verification process to be considered in conformance with the provisions of these GAAMPs.

<sup>2</sup> May be reduced or increased based upon the Odor Management Plan.

<sup>3</sup> To achieve approval and MDARD verification, all livestock facilities must conform to these and all other applicable GAAMPs.

For expanding livestock facilities, a variance for property line setback reduction shall only be considered for a proposed site in advance of MDARD site suitability approval. MDARD may grant a property line setback reduction of up to fifty percent of the setback distance in the following table when requested based upon the Odor Management Plan. The minimum setback will be 125 feet for expanding livestock facilities. Any reduction beyond this minimum will require a signed variance by the property owners that are within the original setback distance affected by the reduction. Local land use may be considered by MDARD in granting setback reductions. Expanding livestock facilities cannot utilize a property line setback less than the property line setback established by structures constructed before 2000 unless the established property line setback is greater than those distances identified in Table 3, in which case setbacks identified in Table 3 and the process detailed above will be used for determining conformance for new or expanding structures.

**Table 3. Category 1 Site Setbacks, Verification and Notification – Expanding Operations**

<b>Total Animal Units <sup>1</sup></b>	<b>Number of Non-Farm Residences within Specified Distance</b>	<b>Property Line Setback<sup>2</sup></b>	<b>MDARD Site Review and Verification Process <sup>3</sup></b>
50-249	0-7 within ¼ mile	125 ft	Yes
250-499	0-7 within ¼ mile	200 ft	Yes
500-749	0-7 within ¼ mile	200 ft	Yes
750-999	0-7 within ½ mile	200 ft	Yes
1000 or more	0-7 within ½ mile	300 ft	Yes

<sup>1</sup> Facilities in Category 1 with less than 50 animal units are not required to go through the site review and verification process to be considered in conformance with the provisions of these GAAMPs.

<sup>2</sup> May be reduced or increased based upon the Odor Management Plan.

<sup>3</sup> To achieve approval and MDARD verification, all livestock facilities must conform to these and all other applicable GAAMPs.

**Category 2 Sites: Sites where special technologies and/or management practices may be needed to make new and expanding livestock facilities acceptable.**

Category 2 sites are those where site-specific factors may limit the environmental, social, or economic acceptability of the site for livestock facilities and where structural, vegetative, technological, and management measures may be necessary to address those limiting factors. These measures should be incorporated into a Site Plan and a Manure Management System Plan, both as defined in Section V, which are required for all new and expanding livestock production facilities seeking verification. Due to the increased density of non-farm residences in Category 2 sites, an OMP is required for all proposed new and expanding livestock production facilities with 50 animal units or more.

Tables 4 and 5 show how Category 2 sites are defined and lists setbacks and verification requirements. As an example, a proposed site for an expanding livestock facility (Table 5) with 500 animal units and between eight and 20 residences within ¼ mile of the facility, would have a setback of 200 feet from the owner’s property line, and would be required to have a site verification request approved by MDARD. For new livestock facilities, a property line setback reduction shall only be considered for a proposed site in advance of MDARD site suitability approval. MDARD may grant a property line setback reduction of up to fifty percent of the setback distance in the

following table when requested based upon the Odor Management Plan. The minimum setback will be 250 feet for new livestock facilities. Any reduction beyond this minimum will require a signed variance by the property owners that are within the original setback distance affected by the reduction. Local land use may be considered by MDARD in granting setback reductions.

**Table 4. Category 2 Site Setbacks, Verification and Notification – New Operations**

<b>Total Animal Units<sup>1</sup></b>	<b>Number of Non-Farm Residences within Specified Distance</b>	<b>Property Line Setback<sup>2</sup></b>	<b>MDARD Site Review and Verification Process<sup>3</sup></b>
50-249	6-13 within ¼ mile	250 ft	Yes
250-499	6-13 within ¼ mile	300 ft	Yes
500-749	6-13 within ¼ mile	400 ft	Yes
750-999	6-13 within ½ mile	500 ft	Yes
1000 or more	6-13 within ½ mile	600 ft	Yes

<sup>1</sup> Facilities in Category 2 with less than 50 animal units are not required to go through the site review and verification process to be considered in conformance with the provisions of these GAAMPs.

<sup>2</sup> May be reduced or increased based upon the Odor Management Plan.

<sup>3</sup> To achieve approval and MDARD verification, all livestock facilities must conform to these and all other applicable GAAMPs.

For expanding livestock facilities, a property line setback reduction shall only be considered for a proposed site in advance of MDARD site suitability approval. MDARD may grant a property line setback reduction of up to fifty percent of the setback distance in the following table when requested based upon the Odor Management Plan. The minimum setback will be 125 feet for expanding livestock facilities. Any reduction beyond this minimum will require a signed variance by the property owners that are within the original setback distance affected by the reduction. Local land use may be considered by MDARD in granting setback reductions. Expanding livestock facilities cannot utilize a property line setback less than the property line setback established by structures constructed before 2000 unless the established property line setback is greater than those distances identified in Table 5, in which case setbacks identified in Table 5 and the process detailed above will be used for determining conformance for new or expanding structures.



**Table 5. Category 2 Site Setbacks, Verification and Notification – Expanding Operations**

<b>Total Animal Units <sup>1</sup></b>	<b>Number of Non-Farm Residences within Specified Distance</b>	<b>Property Line Setback <sup>2</sup></b>	<b>MDARD Site Review and Verification Process <sup>3</sup></b>
50-249	8- 20 within ¼ mile	125 ft	Yes
250-499	8- 20 within ¼ mile	200 ft	Yes
500-749	8- 20 within ¼ mile	200 ft	Yes
750-999	8- 20 within ½ mile	250 ft	Yes
1000 or more	8- 20 within ½ mile	300 ft	Yes

<sup>1</sup> Facilities in Category 2 with less than 50 animal units are not required to go through the site review and verification process to be considered in conformance with the provisions of these GAAMPs.

<sup>2</sup> May be reduced or increased based upon the Odor Management Plan.

<sup>3</sup> To achieve approval and MDARD verification, all livestock facilities must conform to these and all other applicable GAAMPs.

**Category 3 Sites: Sites generally not acceptable for new and expanding livestock production facilities.**

Category 3 sites are generally not suitable for livestock production facilities. They may be suitable for livestock facilities with less than 50 animal units. Any proposed site with more than the maximum number of non-farm residences specified in Table 4 for a new operation, and Table 5 for an expanding operation is a Category 3 or a Category 4 site. New livestock production facilities are not acceptable for that site. However, expanding livestock production facilities may be acceptable if the farm submits an Odor Management Plan and site verification approval is determined by MDARD. Additional odor reduction and control technologies, and management practices may be necessary to obtain site verification approval.

**Category 4 Sites: Sites not acceptable for new and expanding livestock facilities and livestock production facilities under the Siting GAAMPs.**

Category 4 Sites are locations that are primarily residential and are not acceptable under the Siting GAAMPs for livestock facilities or livestock production facilities regardless of the number of animal units. However, the possession and raising of animals may be authorized in such areas pursuant to a local ordinance designed for that purpose.

### **Additional Considerations for all Livestock Facilities**

1. Sites where institutional controls have been adopted to prohibit livestock agriculture are not acceptable for new and expanding livestock facilities if all of these are true:
  - a) The institutional controls were approved by the Michigan Department of Environment, Great Lakes, and Energy pursuant to the Natural Resources and Environmental Protection Act (NREPA), MCL 324.101 et seq., or the United States Environmental Protection Agency pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act or the Resource Conservation and Recovery Act; and
  - b) The institutional controls are necessary to protect human or animal health.
  - c) Unacceptability has been confirmed by a vote of the Michigan Commission of Agriculture and Rural Development.

### **Additional Considerations for all Livestock Production Facilities**

The following circumstances or neighboring land uses constitute conditions that are considered unacceptable for construction of new and expanding livestock production facilities or may require additional setback distances or approval from the appropriate agency, as indicated, to be considered acceptable.

1. Wetlands - New and expanding livestock production facilities shall not be constructed within a wetland as defined under MCL 324.30301 (NREPA, PA 451 of 1994, as amended).
2. Floodplain - New and expanding livestock production facilities and manure storage facilities shall not be constructed in an area where the facilities would be inundated with surface water in a 25-year flood event.

*The following circumstances require minimum setback distances in order to be considered acceptable for construction of category 1, 2 or 3 new livestock production facilities. In addition, review and approval of expansion in these areas is required by the appropriate agency, as indicated.*

#### 3. Drinking Water Sources

Groundwater protection - New livestock production facilities shall not be constructed within a ten-year time-of-travel zone designated as a wellhead protection area as recognized by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), pursuant to programs established under the Michigan Safe Drinking Water Act, PA 399 of 1976, as amended.

An expanding livestock production facility may be constructed with review and approval by the local unit of government administering the Wellhead Protection Program.

Where no designated wellhead protection area has been established, construction of new and expanding livestock production facilities shall not be closer than 2000 feet to a Type I or Type IIa public water supply and shall not be closer than 800 feet to a Type IIb or Type III public water supply. A new or expanding livestock production facility may be located closer than these distances, upon obtaining a deviation from well isolation distance through EGLE or the local health department. New and expanding livestock production facilities should not be constructed within 75 feet of any known existing private domestic water supply (wellhead).

Surface water protection - New and expanding livestock production facilities shall not be constructed within the 100-year flood plain of a stream reach where a community surface water source is located, unless the livestock production facility is located downstream of the surface water intake.

4. High public use areas - Areas of high public use or where a high population density exists, are subject to setbacks to minimize the potential effects of a livestock production facility on the people that use these areas. New livestock production facilities should not be constructed within 1,500 feet of hospitals, churches, licensed commercial elder care facilities, licensed commercial childcare facilities, school buildings, commercial areas, parks, or campgrounds. Existing livestock production facilities may be expanded within 1,500 feet of high public use areas with appropriate MDARD review and verification. The review process will include input from the local unit of government and from people who utilize those high public use areas within the 1,500 foot setback.
5. Migrant Labor Housing Camp – New and expanding livestock production facilities shall be located a minimum of 500 feet from any existing migrant labor housing facilities, unless a variance is obtained from the United States Department of Labor.

## OFFSITE MANURE STORAGE FACILITIES

**Table 6. Site Setbacks, Verification, and Notification – New or Expanding Operations**

Storage Surface Area at Operational Volume Elevation, sq. ft.		Property Line Setback, ft.	MDARD Site Review and Verification Process
Liquid Manure		Solid Manure	
Pond-type storage	Fabricated structure-type storage, i.e. reinforced concrete or steel		
≤4,200	≤2,000	≤26,000	250 <sup>1</sup>
>4,200	>2,000	>26,000	TBD <sup>2</sup>
			Upon Producer Request
			Yes

<sup>1</sup>May be reduced up to 50% or increased based upon the Odor Management Plan.

<sup>2</sup>Distance to be determined based upon the Odor Management Plan but no less than 250 feet.

## DEVELOPING A SITE PLAN AND A MANURE MANAGEMENT SYSTEM PLAN

### Site Plan

A Site Plan is a comprehensive layout for a livestock production facility, and includes:

- A site map, including the following features (to scale):
  - ~ Property lines, easements, rights-of-way, and any deed restrictions.
  - ~ Public utilities, overhead power lines, cable, pipelines, and legally established public drains.
  - ~ Positions of buildings, wells, septic systems, culverts, drains and waterways, walls, fences, roads, and other paved areas.
  - ~ Location, type, and size of existing utilities.
  - ~ Location of wetlands, streams, and other bodies of water.
- Existing land uses for contiguous land.
- Names and addresses of adjacent property owners.
- Basis of livestock production facility design.
- Size and location of structures.

- A soils map of the area where all livestock production facilities are located.
- Location and distance to the non-farm residences within ½ mile.
- Location and distance to the nearest primarily residential area.
- Topographic map of site and surrounding area.
- Property deed restrictions.

### Manure Management System Plan<sup>1</sup>

The Manure Management System Plan (MMSP) describes the system of structural, vegetative, and management practices that the owner/operator has chosen to implement on the site for all proposed new and existing facilities. Items to address in the MMSP are described in the GAAMPs for Manure Management and Utilization. The MMSP for a site verification request will include these additional components:

- Planning and installation of manure management system components to ensure proper function of the entire system.
- Operation and Maintenance Plan: This written plan identifies the major structural components of the manure management system, and includes inspection frequency, areas to address, and regular maintenance records.
- Odor Management: Odor management and control is a primary focus relating to the social consideration objectives of these GAAMPs. For new and expanding livestock production facilities, an Odor Management Plan may be required (refer to Category 1 and Category 2 to determine whether an OMP is required for your facility) as part of the Manure Management System Plan for conformance with these GAAMPs. Appendix A includes a detailed outline for development of an effective OMP.
- Manure Storage Facility Plan: Construction plans detailing the design of manure storage components must be submitted to MDARD for review and approval. Structures should be designed in accordance with appropriate design standards. Construction plans should include the design standards utilized, design storage volume, size, and layout of the structure, materials specifications, soil conditions in the structure area, site suitability, subsurface investigation, elevations, installation requirements, and appropriate safety features. The plans will be reviewed for conformance with appropriate specifications. Structures should be designed and constructed by competent individuals or companies utilizing generally accepted standards, guidelines, and specifications (e.g. NRCS, Midwest Plan Service.).

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<sup>1</sup> Due to your particular circumstances, a Comprehensive Nutrient Management Plan (CNMP) may be required, as referenced in Appendix C.

Other items that may accompany the Manure Management System Plan include the following:

- Emergency Action Plan - Through development of an Emergency Action Plan, identify the actions to take and contacts to be made in the event of a spill or discharge.
- Veterinary Waste Management Plan - Identify the processes and procedures used to safely dispose of livestock-related veterinary wastes produced on the farm.
- Conservation Plan - Field-specific plan describing the structural, vegetative and management measures for the fields where manure and other by-products will be applied.
- Mortality Management Plan - Identify the processes and procedures used to safely dispose of the bodies of dead animals (Bodies of Dead Animals Act, PA 239 of 1994, as amended).

### **SITE REVIEW AND VERIFICATION PROCESS**

Producers with facilities that require MDARD verification in Categories 1, 2, or 3 should contact the MDARD and begin the site selection review and verification process prior to the construction of new livestock facilities or livestock production facilities, and expansion of existing livestock facilities or livestock production facilities. Producers with new and expanding livestock facilities that have a total capacity less than 50 animal units may also request siting verification from MDARD. The MDARD site review and verification process will use criteria applicable to the holding capacity for the number of animal units of the proposed facility. The references to local unit of government in this section are intended to notify the township and county in which the farm operation is located.

To begin the review and verification process, contact the Michigan Department of Agriculture & Rural Development, Right to Farm Program at (877) 632-1783. This toll free number is operational during normal business hours. The following steps outline this process:

1) Application for Siting Verification:

A request to begin the site review and verification process can be made by submitting a letter from the responsible party to the MDARD, Right to Farm Program. This letter should outline the proposed new construction or expansion project, any areas of concern, agencies and individuals the producer is already working with, and the proposed timeline. The responsible party must also submit a complete site verification request. A request application and a checklist are available at [www.michigan.gov/gaamps](http://www.michigan.gov/gaamps). The checklist will assist you in identifying environmental or social areas of concern. If special technologies or management practices are to be implemented for the successful operation of the livestock production facility, these must be included in the siting request package.

Producers may also utilize recognized industry, university, and agency professionals in the development of their siting request, site plan, and manure management system plan.

Upon submitting a site verification request to MDARD, the producer must individually notify all non-farm residences identified in Tables 2 through 5 and listed in the Site Selection GAAMPs verification checklist (available at: [http://www.michigan.gov/documents/MDA\\_SitingChecklist\\_116499\\_7.pdf](http://www.michigan.gov/documents/MDA_SitingChecklist_116499_7.pdf)) under Appendix A “Certification of Notification of Non-Farm residences that the producer has made application for site verification with MDARD. Documentation that notification has occurred is required as part of the site verification request application.

2) Siting Request Review:

Upon receipt of the siting request package, MDARD will send an acknowledgement letter to the producer. This acknowledgement letter will also be sent to the local unit of government to inform them of the proposed livestock production facility siting request.

MDARD will review the completed siting requests upon receipt. The review will determine whether the siting request information submitted conforms to these GAAMPs. MDARD will conduct preliminary site visits to proposed new and expanding livestock production facilities. This site visit will take place upon receipt of the complete siting request package and will focus on addressing conformance with the plan components, identifying areas of concern, and verifying information submitted in the siting request. If deficiencies in the siting request are identified, MDARD will communicate those to the producer for further modification. At the request of the producer, a preliminary site visit could be conducted prior to submission of the complete siting request package.

3) Site Suitability Determination:

MDARD will determine if the siting request is in conformance with the GAAMPs for Site Selection and Odor Control for New and Expanding Livestock Production Facilities. This determination will be conveyed to the responsible party on MDARD letterhead and will be known as “Site Suitability Approval.” This approval will also be copied to the local unit of government, and construction must begin within three years from the date of approval by MDARD. The start of construction is defined as the physical movement of soil or installation of permanent structures. An additional two-year extension to begin construction after three years from the date of the initial approval may be requested in writing to MDARD.

4) Construction Plan Submittal and Review:

Design plans for the manure storage structures must be submitted to MDARD for review and approval and should be submitted prior to construction. If the plans are found to be in accordance with the required specifications, a letter indicating “Approval of Design Plans” will be sent to the owner. MDARD

will conduct construction site inspections for quality assurance as needed to determine whether the structures are being built according to the accepted plans. The owner should notify MDARD one month prior to beginning the installation of the manure storage facility.

5) Final Inspection:

MDARD will conduct a final inspection, preferably, prior to animal population. The completed project must be reviewed by MDARD to assure conformance with these GAAMPs. The facility must be completed in conformance with the verification request that has been approved by MDARD. Once the facility has been constructed and found in conformance with these GAAMPs, a final verification letter will be sent to the producer. This letter will be copied to the local unit of government.

Appeal of Site Suitability Approval Determination:

The Site Suitability Determination decision by the Michigan Department of Agriculture and Rural Development may be appealed as per Michigan Department of Agriculture and Rural Development Commission Policy number 12. This policy can be found at [http://www.michigan.gov/mdard/0,4610,7-125-1572\\_2878---,00.html](http://www.michigan.gov/mdard/0,4610,7-125-1572_2878---,00.html) or in Appendix E.



## APPENDICES

### **Appendix A: Michigan Odor Management Plan**

The goal of an effective Odor Management Plan is to identify opportunities and propose practices and actions to reduce the frequency, intensity, duration, and offensiveness of odors that neighbors may experience, in such a way that tends to minimize impact on neighbors and create a positive attitude toward the farm. Because of the subjective nature of human responses to certain odors, recommending appropriate technology and management practices is not an exact science. Resources to help identify appropriate management practices to minimize odors are available at:  
<http://www.animalagteam.msu.edu>

An Odor Management Plan shall include these six basic components:

1. Identification of potential sources of significant odors.
2. Evaluation of the potential magnitude of each odor source.
3. Application and evaluation of odor nuisance potential using Michigan Revised OFFSET 2018 (Kiefer, 2018).
4. Identification of current, planned, and potential odor control practices.
5. A plan to monitor odor impacts and respond to odor complaints.
6. A strategy to develop and maintain good neighbor and community relations.

Note that items 1, 2, and 4 of the Odor Management Plan components may be addressed in tabular format as demonstrated in the example Odor Management Plan (Appendix B).

Component Details:

1. Identify and describe all potential significant sources of odor associated with the farm. Odor sources may include:
  - Animal housing
  - Manure and wastewater storage and treatment facilities
  - Feed storage and management
  - Manure transfer and agitation

Land application areas are addressed in the MMSPP.

2. Evaluate the magnitude of each odor source in relation to potential impact on neighbors and other community members.

Odor magnitude is a factor of both the type and size of the source.

Michigan Revised OFFSET 2018 is one means of estimating odor source magnitudes and potential impacts from animal production facilities. Use the Michigan Revised OFFSET 2018 odor emission values to rank each potential odor source on your farm. Note that some odor sources are not considered in this tool.

For odor sources not addressed by Michigan Revised OFFSET 2018, a subjective potential odor magnitude evaluation of high, medium, or low, relative to other odor sources on the farm should be conducted.

3. Analyze potential odor impact on neighboring residences and other non-farm areas with Michigan Revised OFFSET 2018, utilizing the 95 percent odor annoyance-free level. The intent of utilizing the model is to have no non-farm residences for new facilities or no new non-farm residences for expanding facilities to fall within the 5% odor footprint. Evaluate the conclusions as follows:
  - Identify specific odor impact on neighboring residences, utilizing Michigan Revised OFFSET 2018 results and other site-specific odor impact considerations.
  - Assess the magnitude of potential odor-based conflict.
  - Develop an appropriate conflict abatement strategy for each odor-sensitive area of concern which may include:
    - Signed letter from property owner consenting to approval of the new or expanded facility.
    - Description of intensified community relations practices for these homes or other odor sensitive areas.
    - Explanation of specific variables in Michigan Revised OFFSET 2018 that may reduce the concern, such as, variables in terrain, wind velocity, facility layout, variation of facility from typical, and odor management practices not credited in Michigan Revised OFFSET 2018.
4. Identify management systems and practices for odor control including:
  - Practices currently being implemented.
  - New practices that are planned for implementation.
  - Practices that will be considered, if odor concerns arise.

There are numerous odor reduction practices available; however, not all have been proven equally effective. Some practices may reduce odor from one part of the system, but increase it in another. For example, long-term manure storage will reduce the frequency of agitation of the storage thus producing less frequent odor events, but will likely result in greater intensity and offensiveness of each odor event.

Each farm situation is unique and requires site-specific identification and implementation of odor reduction practices to suit the practical and economic limitations of a specific farm. MDARD will consider mitigating factors that are under the direct control of the operator. Factors not under direct control of the operator will be considered if an alternative mitigation plan is provided.

Simple changes in management, such as, but not limited to, improving farmstead drainage, collecting spilled feed, and regular fan maintenance will reduce overall farmstead odor.

“Practices that will be considered, if odor concerns increase” should include only those odor management practices that the producer would seriously consider implementing, if the need arose.

Improved management, as well as, the adoption of new technologies to control odor offer a means for reducing odor from livestock production facilities and manure storage facilities, thus broadening the potential area within which livestock production facilities may be appropriately sited. Odor reduction technologies continue to evolve. Current technologies include, but are not limited to, vent bio-filters, manure storage covers, and composting.

Each technology presents different challenges and opportunities. These should be considered during the planning process for a new or expanding animal livestock facility.

5. Describe the plan to track odor impact and the response to odor concerns as they arise.
  - Outline how significant odor events will be recognized and tracked including potential impact on neighbors and others. For example, one could record odor events noticed by those working on and/or cooperating with the farm. If odor is noticeable to you, your family, or employees, then it is likely noticeable to others.
  - Explain how an odor complaint will be addressed.
  - Indicate the point at which additional odor control measures will be pursued.
6. Identify the strategy to be implemented to establish and maintain a working relationship with neighbors and community members.

Elements of a community relations plan may include:

- Conducting farming practices that result in peak odor generation at times that will be least problematic for neighbors.
- Notifying neighbors of when there will be an increase in odors.
- Hosting an annual neighborhood farm tour to provide information about your farm operation.
- Sending a regular farm newsletter to potentially affected community members.
- Keeping the farmstead esthetically pleasing.
- Supporting community events and causes.

## **Appendix B: Example Dairy Odor Management Plan**

*The Odor Management Plan includes the following text and tables and output from Michigan Revised OFFSET, which is not shown here.*

### **Overview**

The existing 1,200 cow facility is expanding to 1,700 cows. The proposed expansion involves the addition of another 500 cow freestall barn, expansion of the primary sand- laden manure storage, and the addition of another earthen storage for milking center wastewater. All of the additional facilities are located to the south and west of the existing facility.

### **Odor Source Identification & Assessment**

Refer to attached Odor Source Assessment table.

### **Odor Management Practices**

Refer to attached Odor Management Practices table.

### **Potential Odor Impact Analysis**

Michigan Revised OFFSET 2018 has identified two non-farm residences that are definitely within the odor impact zone prior to the expansion and three additional homes that are likely impacted (see Michigan Revised OFFSET 2018 output). An additional five homes are added to the odor awareness zone as a result of the proposed expansion.

The potentially odor-impacted homes are at the following addresses:

(List addresses and homeowner names in order of proximity to odor source.)

All homeowners, with the exception of one, have signed a letter acknowledging the proposed expansion and indicating that they do not object to it proceeding. The lone exception is the residence at *(list address)*. This resident was reluctant to sign a letter, but has verbally accepted the expansion. He is also a livestock producer whose odor awareness zone from Michigan Revised OFFSET 2018 would likely overlap the dairy farms. He also has a working relationship with the Example Dairy as a producer of corn grain for dairy feed.

Of the other homes in the odor awareness zone, three are currently or very recently have been active dairy farmers themselves. Another is a landlord of property that is rented and included in the farm CNMP/MMSP.

The three remaining homes are the most distant from the center of the odor awareness zone and furthest from the specific area of the facility expansion.

## **Odor Tracking and Response**

Tracking of odor concerns includes two approaches:

1. All farm employees and some routine farm service providers will be asked to report noticeable offensive odor events as they come and go from the farm and travel the community.
2. The intent is to establish and maintain an effective, open line of communication with immediate neighbors so that they too will be comfortable reporting odor events to example dairy.
3. Response to odor complaints or events reported by neighbors will include investigation of the primary odor incident source on the farm. For example, is it associated with storage agitation, field application, or no specific farm activity? The farm will report back to the person reporting the odor event within 24 hours, or as soon as possible thereafter. Included in the response will be the reason for the odor event, an acknowledgement of the concern, steps – if any – to be taken to prevent it in the future, and a thank you for bringing it to the farm's attention.

If a pattern is identified among odor event complaints by neighbors, an outside observer, such as MSU Extension or MDARD, will be asked to provide an objective analysis of the situation. If the concern is confirmed to be legitimate by a second objective observer, actions will be taken to further control odor per, or comparable to, odor management practices identified in the Odor Management Plan.

## **Community Relations**

In order to develop and maintain a positive relationship with the entire community, the following steps are planned:

1. Keeping the farmstead area esthetically pleasing will continue to be a high priority.
2. Each spring, a farm newsletter will be sent to all appropriate community members describing farm activities, personnel, and management.
3. A community picnic and farm tour will be held at least semi-annually for all in the immediate community and manure application areas.
4. Example Dairy Farm will make itself available to local schools for farm visits as field trips or school projects as appropriate.
5. We will seek to participate in local community events and youth activities, such as the local town festival and youth athletic teams.
6. Additional opportunities to strengthen community relations will be considered whenever they arise.
7. Notify potentially impacted neighboring residences at least 24 hours in advance of manure application.

(The above list of community relations practices may be longer than most farms find necessary, but it provides several examples that farms might consider.)

**Odor Source Assessment – proposed facility**

Potential Odor Source	Description	Odor Emission Number <sup>1</sup>	Odor Control Factors <sup>2</sup>			Odor Emission Factors <sup>1,3</sup>		
			current	planned	potential	current	planned	potential
Large Manure Storage	Sand Land Manure storage for center-drive through barns (170 x 340)	13	0.5 + NV			168.9		
Freestall Barns	Freestall barns (187,104 sq. ft.)	6		NV		112.3		
Milking Center Wastewater	Earthen storages for milking center wastewater. Is recycled to flush holding and treatment areas (49,600 sq. ft.)	13	NV		0.1	50.4		5.0
Run Off Storage	Collects rain runoff from open lot and silage pads (90 x 120)	13	NV			14		
Outside Lots	Outside concrete housing lot (16,200 sq. ft.)	4			NV	6.5		
Settling Basins	Holding area flushed material settling area prior to pumping of liquid to milking center wastewater storage (30 x 60)	28	NV	NV	NV	5		
Bedded Open Housing Barns	Maternity & sick pens (22,620 sq. ft.)	2				4.5		
Open Lot Manure storage	Short-term manure storage (70 x 20)	13	0.5 + NV			.9		
Agitation	Agitation of manure storages	Medium				M	M	M
Land Application	Field application of liquid manure	High	NV			M	M	M
Silage & Feed Storage	Concrete pad and bunker silos (300 x 350)	Medium	NV			L	L	L

1. Michigan Revised OFFSET value if available or High, Medium, Low for sources not addressed in Michigan Revised OFFSET
2. NV = No Value available in Michigan Revised OFFSET; however, a defensible odor control factor is applicable per Odor Management Practices table.
3. Odor Emission Factors are equal to the odor emission number, multiplied by the surface area (ft<sup>2</sup>) and odor control factor, divided by 10,000.

**Odor Management Practices**

Odor Source	Odor Management Practices & Reduction Factor		
	Current	Planned	Potential
Large Manure Storage	<ol style="list-style-type: none"> <li>1. Approximately eight months of potential storage results in agitation being required only 2-3 times per year.</li> <li>2. The natural plant fiber in the manure results in a crusting of the manure. (OCF = 0.5)</li> </ol>		
Freestall Barns		<ol style="list-style-type: none"> <li>1. Plans include the planting of a tree shelterbelt the length of the freestall barns, parlor, and treatment area.</li> </ol>	
Milking Center Wastewater	<ol style="list-style-type: none"> <li>1. Fills from bottom</li> <li>2. Long term storage facilitates minimal disturbance of only about two times per year.</li> </ol>		<ol style="list-style-type: none"> <li>3. Impermeable synthetic cover (OCF = 0.1)</li> </ol>
Run Off Storage	<ol style="list-style-type: none"> <li>1. Long-term storage, disturbed only 1-2 times per year</li> </ol>		
Outside Lots			<ol style="list-style-type: none"> <li>1. Lot could be reduced in size.</li> </ol>
Settling Basins	<ol style="list-style-type: none"> <li>1. Cleaned out frequently, about every ten days, minimizing anaerobic production of odors.</li> </ol>	<ol style="list-style-type: none"> <li>2. Plans include the planting of tree shelterbelt between the basins and the road/property line.</li> </ol>	
Bedded Barns			
Open Lot Manure Storage	<ol style="list-style-type: none"> <li>1. Storage is emptied frequently so that anaerobic activity is limited.</li> <li>2. Storage crusts (OCF = 0.5)</li> </ol>		
Agitation			
Land Application	<ol style="list-style-type: none"> <li>1. Manure is injected or incorporated whenever field conditions permit.</li> <li>2. Weekend and holiday application is avoided.</li> </ol>		
Silage & Feed Storage	<ol style="list-style-type: none"> <li>1. Silage piles are covered with plastic with clean water diverted off of the pile.</li> <li>2. Forages harvested at recommended moisture.</li> <li>3. Concrete pad is mechanically swept at least once per week.</li> </ol>		

## **Appendix C: Comprehensive Nutrient Management Plan**

A Comprehensive Nutrient Management Plan (CNMP) is the next step beyond a Manure Management System Plan (MMSP). All efforts put towards an MMSP may be utilized in the development of a CNMP as it is founded on the same eight components as the MMSP, with a few significant differences. Some of the “optional” sub-components of an MMSP are required in a CNMP. Examples include veterinary waste disposal and mortality management. In addition, the “production” component is more detailed regarding management of rainwater, plate cooler water, and milk house wastewater. Thorough calculations are also needed to document animal manure production.

Another difference between an MMSP and a CNMP is in the “Utilization” component. With an MMSP, nutrients need to be applied at agronomic rates and according to realistic yield goals. However, with a CNMP, a more extensive analysis of field application is conducted. This analysis includes the use of the Manure Application Risk Index (MARI) to determine suitability for winter spreading, and the Revised Universal Soil Loss Equation (RUSLE) to determine potential nutrient loss from erosive forces, and other farm specific conservation practices. More detail regarding the timing and method of manure applications and long term cropping system/plans must be documented in a CNMP.

Additional information on potential adverse impacts to surface and groundwater and preventative measures to protect these resources are identified in a CNMP. Although the CNMP provides the framework for consistent documentation of a number of practices, the CNMP is a planning tool not a documentation package.

Odor management is included in both the MMSP and CNMP.

Implementation of an MMSP is ongoing. A CNMP implementation schedule typically includes long-term changes. These often include installation of new structures and/or changes in farm management practices that are usually phased in over a longer period of time. Such changes are outlined in the CNMP implementation schedule, providing a reference to the producer for planning to implement changes within their own constraints.

As is described above, a producer with a sound MMSP is well on their way to developing a CNMP. Time spent developing and using a MMSP will help position the producer to ultimately develop a CNMP on their farm, if they decide to proceed to that level or when they are required to do so.



## WHO NEEDS A CNMP?

1. Some livestock production facilities receiving technical and/or financial assistance through USDA-NRCS Farm Bill program contracts.
2. A livestock production facility that a) applies for coverage with the MDEQ's National Pollutant Discharge Elimination System (NPDES) permit, or b) is directed by MDEQ on a case by case basis.
3. A livestock farm that is required to have a CNMP as a result of NPDES permit coverage that desires third party verification in the MDARD's Michigan Agriculture Environmental Assurance Program (MAEAP) Livestock System verification.

For additional information regarding the permit, go to: [www.michigan.gov/deq](http://www.michigan.gov/deq).

For additional information regarding MAEAP, go to: [www.maeap.org](http://www.maeap.org) or telephone 517-284-5609.

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## **Appendix D: Manure Storage Facility Plan**

Construction plans detailing the design of manure storage components must be submitted to MDARD for review and approval. Structures must be designed and constructed in accordance with appropriate design standards (e.g. Michigan NRCS eFOTG Waste Storage Facility (No.) 313 or Midwest Plan Service MWPS-36 Concrete Manure Storages Handbook), that are current at the time of approval of this GAAMP.

Plans must include the following information:

- Design Standards utilized.
- Design storage volume as justified by nutrient utilization plan, runoff volume, precipitation volume, and freeboard.
- Size of structure, including length, width, and depth.
- Materials to be utilized for the construction of the structure, this should include specifications for concrete mixes, flexible membranes, and soil data, as appropriate.
- Subsurface Investigation information to include an adequate representation of soil borings based upon the surface area of the structure. The borings must extend to a depth of at least two feet below the bottom of the structure, and must indicate the depth to high water and any seeps encountered. The soils must be classified according to the Unified Soil Classification System (ASTM D2487 or ASTM D2488).
- For a compacted earth-lined structure permeability test or Plasticity Index (PI) and Atterberg Limits must be submitted for the soil samples.
- Isolation distance from the structure to the drinking water well and isolation reduction criteria worksheet if applicable.
- Method of solids removal to be utilized.
- Elevation of structure relative to surrounding area must be included.
- Construction requirements.
- Appropriate safety features (e.g. fencing, safety signs, ladders, or ropes).
- If a treatment system (e.g. anaerobic digester or gasification) will be utilized, all associated design plans and specifications must be submitted.
- Where substantial changes to the original plans occurred during construction, as built plans must be submitted for review.

Structures should be designed and constructed by individuals or companies qualified in the appropriate area of expertise for that work.

## **Appendix E: Michigan Commission of Agriculture and Rural Development Policy No. 12**

Policy Title: **APPEALS FROM MDARD'S SITE SUITABILITY DETERMINATIONS**

Under the Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Facilities (Site Selection GAAMP), farms may request a site suitability determination from MDARD. MDARD's site suitability determinations are sent to the farmer and the local unit of government and posted on MDARD's RTF website. MDARD's site suitability determination can be appealed to MDARD's Director as provided below.

### **A. Who can request to appeal MDARD's site suitability determination**

The following people or entities can request to appeal MDARD's site suitability determination:

- The owner of the proposed livestock facility.
- A person with property within one-half mile of the site of the proposed livestock facility.
- The local unit of government in which the site for the proposed livestock facility is located.
- Local unit of government which is within one-half mile of the proposed livestock facility.

### **B. Timing of a request to appeal**

A request to appeal must be filed within 30 days from the date MDARD's site suitability determination is posted on MDARD's Right to Farm Siting website.

### **C. Contents of a request to appeal**

A request to appeal MDARD's site suitability determination is made by sending a written description of the appeal including all documentation supporting the appeal to MDARD's Director through the Commission email at [MDA-Ag-Commission@michigan.gov](mailto:MDA-Ag-Commission@michigan.gov).

The request to appeal must identify with specificity the section or requirement in the Site Selection GAAMPs that the requestor believes MDARD failed to or improperly applied when it made its site suitability determination.

The request for appeal must include relevant facts, data, analysis, and supporting documentation for the appellant's position.

A request to appeal that does not identify with specificity the manner in which MDARD failed to or improperly applied the Site Selection GAAMPs or does not provide supporting documentation will be denied. The Director will notify the Site Selection GAAMPs Chair, as well as the Commission of Agriculture and Rural Development of this decision. MDARD will send a letter to the entity who submitted the request to appeal stating the reason the request has been denied. A denial of a request to appeal is a final agency decision on MDARD's site suitability determination.

A request to appeal that meets the requirements of this section will be approved and will proceed through the appeal process outlined below. MDARD shall make all determinations regarding requests to appeal within 14 days after the close of the 30-day appeal window.

#### **D. Appeal process**

Once MDARD approves a request to appeal, the following process will be initiated:

1. MDARD will ask the Chairperson of the Site Selection GAAMPs Committee to convene a panel of recognized professionals to review MDARD's site suitability determination. The panel of recognized professionals may include, but are not limited to, personnel from the following: conservation districts, industry representatives, Michigan Department of Environment, Great Lakes, and Energy, professional consultants and contractors, professional engineers, the United States Department of Agriculture - Natural Resources Conservation Service, university agricultural engineers, and other university specialists and shall contain no less than three recognized professionals.
2. Within 28 days, the panel of recognized professionals shall review MDARD's site suitability determination and consider the information provided by the Appellant. The panel of recognized professionals shall create a written report to be considered at the Commission's next scheduled public meeting.
3. The Commission will consider the panel of recognized professionals report, oral or written comments from the appellant(s), and other public comments regarding MDARD's site suitability determination.
4. The Commission shall make a recommendation to the MDARD Director. The Commission's recommendation can take one of three forms: (i) approve MDARD's site suitability determination; (ii) reverse MDARD's site suitability determination; or (iii) send the case back to the panel of recognized professionals or MDARD staff with instructions to consider certain factors or issues that were not sufficiently considered during the panel's initial review, including a timeframe for providing the information to the Commission. In the event of a tie vote by the Commission, the matter

- shall be submitted to the Director without a recommendation from the Commission.
5. The Director shall issue a written final decision regarding the site suitability determination within 14 days of the Commission's recommendation/ submission.
  6. Following the Director's final decision, the farmer, appellant, and local unit of government will be sent MDARD's final decision and the final decision will be posted on the MDARD RTF Siting website.

Approved in St. Johns, Michigan

May 15, 2019

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