

Urban Livestock Workgroup

Recommendations Report To

**Director Jamie Clover Adams
and
State Senator Joe Hune**

March 15, 2015

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WORKGROUP MEMBERS

Thank you to the members of the Urban Livestock Workgroup (ULW). They selflessly gave their time, energy, and knowledge to address this charge. Many hours of discussion, learning from one another, and collaborative thought went into the development of the recommendations contained in this report.

Name	Role/Organization
James Averill	Chair, State Veterinarian, Michigan Department of Agriculture and Rural Development
Wendy Lockwood Banka	Michigan Small Farm Council/Urban Livestock Farmer
Erin Caudell	Small Commercial Farmer
Natalie Dean	Marshall Community Services Director
Mike Fisher	City of Livonia Law Department / Michigan Municipal League
Senator Joe Hune	State Senator – 22nd District
Jim Johnson	Environmental Stewardship Division Director, Michigan Department of Agriculture and Rural Development
Matt Kapp	Michigan Farm Bureau
Kelly Leach	Small Commercial Farmer
Julie Liberti	Small Livestock Farmer
Mickey Martin	Williamstown Township Supervisor
Dru Montri	Agriculture and Rural Development Commissioner / Michigan Farmers Market Association
Catherine Mullhaupt	Michigan Townships Association
Brad Neumann	Michigan State University Extension

Brian Pridgeon

Traditional Livestock Farmer

Cheryl Strautz

Small Commercial Farmer

Ben Tirrell

Small Commercial Livestock Farmer

Jeff VanderWerff

Small Commercial Farmer

Russ Varner

Small Commercial Livestock Farmer

Senator Rebekah Warren

State Senator – 18th District

Representative Adam Zemke

State Representatives – 55th District

Facilitator: Jo Anna Trierweiler
Assistant Facilitator: Rory Neuner

EXECUTIVE SUMMARY

Michigan is the second most diverse agriculture state in the United States. Food and agriculture is Michigan's second largest industry. For many communities in Michigan food and agriculture is a major economic driver and is a growing industry. Many consumers are placing a higher value on fresh, locally grown foods, and their health. They want to know where their food comes from and how it is raised. This increased interest has led individuals to want to raise livestock in urban/suburban areas.

To address this interest, the Michigan Department of Agriculture and Rural Development (MDARD) invited 21 individuals representing municipalities, associations, farmers (from 7th generation farmers to people who are the first in their families to farm in generations) and legislators to discuss and recommend policy related to raising livestock in urban/suburban areas. **The workgroup's charge was to formulate recommendations to stimulate and support local efforts to address the increased interest in raising livestock in urban/suburban areas for home use and sale to local markets.**

Through a series of five meetings, the workgroup developed the following recommendations:

1. The ULW recommends the development of an Urban Agriculture Act to address, stimulate, and support local efforts and interest in raising livestock in urban/suburban areas.
2. The ULW acknowledges the interconnection of raising livestock and plants. The ULW recommends that the Urban Agriculture Act require the development of guidelines for urban/suburban agriculture.
3. The ULW recommends that the Urban Agriculture Act **give authority** to develop, and approve guidelines for urban/suburban agriculture to the Michigan Commission of Agriculture and Rural Development.
 - a. Through the appointment of a group with diverse representation of race, gender, age, and geographic location across Michigan and at least one member from each of: local government, state government, academia and urban/suburban producers to develop, review, and recommend guidelines.
 - b. The guidelines would be approved on annual basis for the first five years and at least on a biennial basis in the years that follow.
 - c. And the Commission is also empowered to review and approve guidelines on an "as needed" basis.
4. The ULW recommends that the Urban Agriculture Act provide for local zoning authority over agriculture in urban/suburban areas.
5. The majority of the ULW recommends that the bill to establish the Urban Agriculture Act be introduced during the 2015/2016 Legislative session.

The ULW is to be commended for their willingness to openly discuss their opinions in a constructive and professional manner. These members volunteered many hours of their time to help develop policy recommendations for raising livestock in urban/suburban areas.

INTRODUCTION

Many consumers are placing a higher value on fresh, locally grown foods, and their health. They want to know where their food comes from and how it is raised. These increased interests have led individuals to want to raise livestock in urban/suburban areas, by capitalizing on roof tops, vacant lots in areas with urban blight, or the space in their own backyards. Accommodating these interests comes with challenges and requires a balanced approach with consideration for privacy, health, and welfare of all involved.

Food and agriculture is one of Michigan's largest industries. In some parts of the state, agriculture is a major engine driving the local economy. As more and more people value the benefits of fresh, locally grown foods, the industry is creatively stepping up to meet market demand and provide specialty products. As an example, the number of farmers markets in Michigan has grown from 90 in 2001 to more than 300 today.

There have also been pressures to residentially develop previously vacant and/or agricultural lands to meet market demand for low density housing. Accommodating these three market forces, (1) the interest in raising livestock in urban/suburban areas, (2) the need for housing, commerce, manufacturing, and other land uses, and (3) supporting Michigan's food and agriculture industry comes with challenges, and requires careful consideration, and a well-planned approach.

The Michigan Right to Farm Act (RTFA) was passed in 1981 (and amended several times since, most recently in 1999) to give farmers protection from nuisance suits. All states have some form of RTFA. In most states, these laws codify the "coming to the nuisance defense," which means if the farm or farm operation existed before a change in the land use in the immediate area the farm or farm operation is protected from a lawsuit challenging it as a nuisance. The 1999 amendment expanded the RTFA to preempt local regulation of farm operations that meet the RTFA.

There has been considerable debate in Michigan regarding who has legal protection under RTFA. At an April 28, 2014, special meeting of the Michigan Commission of Agriculture and Rural Development, Commissioners voted to approve the 2014 Site Selection GAAMP (Generally Accepted Agricultural Management Practices). Their decision created an additional Category 4 for Site Selection.

Category 4 Sites are defined as locations that are primarily residential and do not allow agricultural uses by right 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 local ordinances designed for that purpose. By authorizing urban livestock options in this way it also requires the local government to allow any other agricultural uses the GAAMPs would allow, causing some local units considering this option to hold back.

People interested in raising livestock felt the changes to the Site Selection GAAMP threatened RTFA protection and undermined food production in urban/suburban areas, which lead Senator Joe Hune to ask the Michigan Department of Agriculture and Rural Development to continue the discussion on raising livestock in urban/suburban areas. In response to the Senator Hune's request, Director Jamie Clover Adams created two Urban Livestock Workgroups, one focusing on technical issues and a second on policy. This report is the result of the policy-oriented urban livestock workgroup.

CHARGE and DEFINITIONS

The Michigan Department of Agriculture and Rural Development invited individuals representing municipalities, associations, and farmers (from 7th generation farmers to people who are the first in their families to farm in generations) to research and discuss policy issues. The group's charge was to **formulate recommendations that will stimulate and support local efforts to address the increased interest in raising livestock in urban and suburban areas for home use and sale to local markets.**

The ULW reviewed and discussed each key word in the charge in order to develop a uniform interpretation of each word. Below are the results of their discussion.

- **Stimulate** - Encourage development of or increased activity.
- **Support** - Give assistance to; enable to function or act.
- **Local** – belonging or relating to a particular area or unit of government.
- **Effort** – the result of an attempt.
- **Address**—Accommodate, deal with or treat.
- **Livestock** – those species of animals used for human food and fiber or those species used for service to humans.
- **Urban and Suburban** - Areas where residential, commercial, and/or industrial is the primary use.
- **Local market** – ability to sell and/or purchase goods and services from within the area.

RECOMMENDATIONS

1. The Urban Livestock Workgroup (ULW) recommends that a comprehensive **Urban Agriculture Act** be developed to address, stimulate, and support local efforts and interest in raising livestock in urban/suburban areas.
 - i. **Majority report:** A majority (minimum of 75%) of the ULW were in favor of an act.
 - ii. **Minority report:** *A minority of the ULW felt strongly that some legislative acts could easily impede rather than stimulate efforts to advance urban agriculture, and that only an act that actually advances the interests of urban livestock agriculture should be enacted as the result of these recommendations.*
2. The ULW recognizes that the charge was narrowly focused on raising livestock in urban/suburban areas and strongly acknowledges the interconnectedness of raising livestock and other aspects of agriculture (fruits, vegetables, and bees). Therefore the ULW recommends that the Urban Agriculture Act require the **development of guidelines** for urban/suburban agriculture to stimulate and support agriculture in these areas.
3. The ULW recommends that the Urban Agriculture Act **give authority** to develop, and approve guidelines for urban/suburban agriculture to the Michigan Commission of Agriculture and Rural Development.
 - a. The Michigan Commission of Agriculture and Rural Development will establish a group to develop, review, and recommend guidelines. The group will be comprised of representatives from: local government, state government, academia and other subject matter experts, and urban/suburban producers with an appropriately diverse representation of race, gender, age, and geographic location across the state.
 - i. **Majority report:** *A majority (minimum of 75%) of the ULW felt that over 50 percent of the membership should be individuals from regulatory and scientific backgrounds while still having urban/suburban producer(s) presence. Reason being the guidelines need to be based on most current scientific knowledge of raising livestock in urban/suburban areas.*
 - ii. **Minority report:** *A minority of the ULW did not agree on the group's composition. There were members that strongly believed that the group's composition should be made up of at least 50 percent urban/suburban producers. With the stated reason that urban/suburban producers are the ones implementing the guidelines and that they would have the clearest understanding of the logistics of implementing the guidelines.*

- b. Michigan Commission of Agriculture and Rural Development will review and approve the guidelines on an annual basis for the first five (5) years and at least biennially after the five year period. In addition, the Commission shall be empowered to develop, review, and approve guidelines on an “as needed” basis.
4. The ULW recommends that the Urban Agriculture Act provide for local (county, township, city, or village) zoning authority over agriculture in urban/suburban areas.
 - i. **Majority report:** *A majority (a minimum of 75%) of the ULW voted in favor of local authority without state preemption for following reasons:*
 - a. *Recognizing that urban/suburban livestock uses are different from the agricultural uses protected by the Right to Farm Act’s preemption of local zoning authority, a new act that does not preempt local zoning will enable local units to allow for urban/suburban livestock in residential areas.*
 - b. *Allow for local regulation in order to balance local interests through use of the existing local processes. (Committees and public hearings).*
 - c. *Honor Home Owner Association (HOA) and other similar private housing contracts without preemption.*
 - d. *Allowing for local zoning parallels the methodology established under the existing Right to Farm Act’s Site Selection Generally Accepted Agriculture Management Practices Category 4, which allows local units to authorize and regulate livestock uses in primarily residential areas.*
 - ii. **Minority report:** *A minority of the ULW strongly advocated for a partial preemption approach:*
 - a. *State preemption based on a set minimum by livestock type and state-level Guidelines that define practices that must be adhered, with enforcement by local units of government.*
 - b. *Amend the Michigan Planning Enabling Act (PA 33 of 2008, as amended, being MCL 125.3801 et seq.) to require all jurisdictions that adopt a master plan to consider and plan for plant and animal production for commercial and non-commercial purposes at least somewhere in their jurisdiction. This action still allows communities to tailor solutions to their own situation without a ‘one size fits all’ approach that outright state preemption would put forth.*
 - c. *Amend the Michigan Zoning Enabling Act (PA 110 of 2006, as amended, being MCL 125.3101 et seq.) to require that small livestock (or agriculture) be listed as a ‘use by right’ (<http://www.extension.org/pages/26509/permitted-uses-aka-use-by-right#.VPCA2y5lJmM>) or ‘special land use’ (<http://www.extension.org/pages/26488/special-exceptions#.VPCBOC5lJmM>) in at least one residential zoning district within a zoned jurisdiction. A ‘use by right’ is one that can be established without a special review and approval process. A ‘special land use’ is one that is generally appropriate in the zoning district in which it is listed, but is not necessarily appropriate on every property in the district.*
 - d. *A smaller minority of the ULW strongly advocated for outright preemption with adherence to state-level guidelines*

5. The ULW recommends that an Urban Agriculture Act bill, as outlined above, be introduced within the 2015/2016 Legislative session.
 - i. **Majority report:** *A majority of the ULW felt that getting a bill introduced was a major step forward as the legislative process might not ensure adoption in a specific session, but the ULW's recommendations are important to introduce because they represent a process and consensus that deserves legislative consideration.*
 - ii. **Minority report:** *A minority of the ULW did not agree with the timeline. There were members that would rather recommend that the Urban Act be signed into law during the 2015/2016 Legislative session.*

In regards to the fourth recommendation, local enforcement of the Urban Agriculture Act, concern was voiced that this recommendation required further discussion in order to establish the merits and pitfalls of the different preemption approaches. The deadline was approaching there was not enough time for further discussion. It was noted that the ULW's Report is a part of the emerging policy discussion and that there will be many more opportunities for further public input and discussion.

PROCESS and TIMELINE

The Urban Livestock Workgroup met a total of five times between September 2014 and February 2015. Each meeting took place at Constitution Hall in Lansing. The following highlights identify the focus and key outcomes from each meeting.

Meeting #1 – September 16, 2014

Focus

The focus of this first meeting was to introduce the charge, encourage the workgroup members to get to know one another, and decide upon several key elements of how the group would work together: norms, core values, and a decision-making model.

Outcomes

- Director Jamie Clover Adams, State Senator Joe Hune, and State Veterinarian James Averill provided an overview of the charge.
- Workgroup members agreed on a set of Norms, Core Values, and Voting Method to guide work in future meetings. Exception was agreed upon that Legislators would not vote.
- Workgroup established if you were going to miss a meeting you could not send a substitute in your stead. Exception being Legislators could have a staff member attend on their behalf.
- The workgroup established a decision-making model. The group agreed to give top priority to consensus. In instances where consensus does not occur, they agreed to ask the dissenting individuals to share their concerns. Where feasible the workgroup agreed to make changes to accommodate these concerns. If consensus was not attained, they agreed to call the question for a vote. A final decision requires at least a super-majority of 75% of the workgroup members in attendance in order to make a decision. The workgroup members also agreed to the presentation of both the majority and minority positions in the final report, where necessary. Legislators and legislative proxies agreed not to vote.
- The workgroup began discussing and establishing working definitions for key terms in the charge. They established definitions for “stimulate”, “support”, and “effort”.
- The workgroup agreed that at the end of each meeting they would discuss and identify what members could share with other organizations and individuals between meetings.

Meeting #2 – December 5, 2014

Focus

The focus of the second meeting was largely on approving definitions for the remaining keywords in the charge.

Outcomes

- The workgroup continued to develop working relationships among members. Members and shared varying perspectives on the charge.
- Additional definitions of keywords in the charge were approved, including “local” and “address”. Approval was tabled for “urban area” and “suburban area” until next meeting.
- The workgroup received an overview of the strategy and proceedings of the Technical Group and developed clarity on how the Technical Group’s work complements this workgroup.

Meeting #3 – January 12, 2015

Focus

The focus of the third meeting was to begin to establish a draft set of considerations in response to the charge.

Outcomes

- An update was given on the progress of the Technical Group’s progress, including clarity on how the ULW will interact with the technical document (review but not approve).
- Key definitions from the charge were approved, including definitions for “urban area” and “suburban area”.
- An exercise was completed to identify the top considerations to be addressed in the recommendations.
- The workgroup identified and developed pros and cons for the various considerations outlined by each sub-group. The group landed on four major areas of organizing themes for consideration: education, regulations, guidelines, and health.
- Established the major elements of the Recommendation Report.

Meeting #4 – January 25, 2015

Focus

The focus of this meeting was to build on the considerations developed at the previous meeting and establish a set of draft recommendations. The group also began working on the draft report.

Outcomes

- Working in three self-selected groups, each group identified a set of recommendations to include in the final report. Each group independently, yet simultaneously, produced a recommendation for some type of Urban Farming (Agriculture) Act that would broadly govern agriculture in urban and suburban areas. Each group identified specific considerations for the livestock component of such an Act.

Meeting #5 – February 23, 2015

Focus

The focus of this fifth and final workgroup meeting was to review the draft recommendations and considerations and come to a final decision on the workgroup's recommendations.

Outcomes

- A draft report of the Technical Group's report was distributed and members were asked to comment by March 6, 2015.
- The workgroup settled on five recommendations for raising livestock in urban and suburban areas. Some of the recommendations encompass a majority and minority positions.
- The workgroup developed a timeline for finalizing the report for submittal by March 15, 2015.

APPENDIX A
Urban Livestock Technical Group Report

**URBAN LIVESTOCK
TECHNICAL WORKGROUP
GUIDELINES**

March 13, 2015

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Questions may be directed to
MDA-Info@michigan.gov

INTRODUCTION

There is a growing desire by people in more urban and suburban environments to move towards being self-sufficient when it comes to feeding their families. There are also those who are interested in some financial gain in producing their own food. The result of all this is a changing landscape and a greater need for careful consideration for both community planners and people thinking about growing food. A lot of research and practical work has been done to produce food in rural settings; however, this is not the case for urban and suburban settings. While much of the management will be the same, there are special considerations that must be made to be productive in a more densely populated area. While this document does cover a number of production issues, it does not cover all of them. There is a much greater emphasis on livestock related issues since these operations are where most of the conflict between neighbors occurs in rural areas. It is important to remember that in more densely populated areas, it is not acceptable to infringe on your neighbors' right to enjoy their property. This should be an overriding goal as communities move forward. While this document provides many practices to assist with this goal, there is a great deal that is not known or tested in an urban setting to clearly outline practices that assures this goal. There is little doubt that a better understanding will occur over the years ahead.

There are many issues that must be considered when thinking about growing food in an urban environment. Some of these include changes to the land associated with human activity; some include health for both humans and livestock, while others involve cultural practices associated with growing food; the who, what, when, where, and how of agricultural production is important.

This document provides ideas to consider and sources for greater detail for both policy makers and urban producers. It is arranged in major sections including Understanding Your Soils, Livestock Health, Livestock Housing, Waste and Manure Management, Livestock Slaughter and Euthanasia, and Pest Control. Each chapter will introduce the broad issue to be considered and, when available, web links to sites to provide greater section detail and guidance. For purposes of this document, livestock includes all food producing animals.

I. UNDERSTANDING YOUR SOILS

There are many constituents in the soils of Michigan: minerals, organic material, nutrients and in some cases contaminants that can be harmful to plants and animals, including humans. Soil contamination is caused by harmful amounts of contaminants present in the soil. Contaminants can be natural components of soil, like metals, or manmade substances, like

flame retardants. Contaminants can be present in soil in harmful amounts due to natural background, such as arsenic in some areas of Michigan, or human activity, such as cadmium from machine shops and metal works. Because some contaminants can be taken up by plants, it is possible to produce contaminated fruits and vegetables. Livestock eat dirt as they graze and poultry can peck at the ground, which can create dust that when inhaled can contaminate meat or other animal products, like eggs and milk. Understanding the potential constituents of your soil is an important part of determining if the site being considered for growing food or raising certain livestock is appropriate.

An urban environment is expected to have more soil contamination than a rural one, in part because of more industrial activities, a greater density of pre-1978 structures, and more vehicular traffic. For example, past management practices for industrial waste included on-site burial for solid waste and on-site lagoons for liquid waste, both of which had the potential of contaminating soil, groundwater, and surface water.

Old commercial and residential structures can also contribute lead to soil and dust from peeling paint since paint made before 1978 commonly contained lead. Additionally, the past use of leaded gasoline has also increased lead concentrations in urban soil. Lead in soil is a particular concern because it is recognized as an important source and predictor of child blood lead levels.

<http://www.sciencedirect.com/science/article/pii/S0160412013001475>

No safe blood lead level in children has been identified. Even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement. The effects of lead exposure cannot be corrected.

http://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm

Site Evaluation

An evaluation of a potential site for urban livestock must include the history of the site and its surrounding area to help ensure all potential soil contaminants are identified. Past and current activities together with their typical corresponding contaminants are shown in Appendix A, Sources of Contaminants in Soil.

This may also include a review of what others in the area have seen in their soil sample analysis. Soil analysis for all potential contaminants can be expensive, so doing your homework to narrow down the possibilities can save you money. Site evaluation is important because it will provide a sense of security that you are not going to produce a potentially contaminated crop or animal food product.

Soil Sampling

Soil samples need to be representative of the site's soil and prepared in such a way that the laboratory analysis is accurate.

Representative Sampling

The sampling method may be different depending on the total area to be sampled. For example, if an area the size of a typical urban residential back yard is sampled, the instructions given in the *Urban Agriculture in Michigan: Things to consider about soil and water* document may be sufficient.

[http://www.michigan.gov/documents/mdard/Urban_Agriculture_in_Michigan - Things to consider about soil and water 452158 7.pdf?20150114151547](http://www.michigan.gov/documents/mdard/Urban_Agriculture_in_Michigan_-_Things_to_consider_about_soil_and_water_452158_7.pdf?20150114151547).

For a larger area, a method using incremental sampling may need to be considered.

<http://www.itrcweb.org/ism-1/>. Please note that the incremental sampling method may need to be conducted by an environmental professional.

Sample Preparation

Soil sample preparation will be different for different types of analytes (potential contaminants). It is important to obtain specific instructions from the laboratory that will be conducting the soil analysis. For example, an analysis for some types of analytes will need the addition of a preservative such as an acid or base to the soil sample.

Interpretation of Laboratory Results

Activities associated with raising livestock in urban areas need to be safe for the livestock, the people working with the livestock, the people consuming the livestock and livestock products, and the environment. Unfortunately, there is no set of soil contaminant concentrations that assures protection of all these exposure pathways. The Michigan Departments of Agriculture and Rural Development (MDARD), Community Health (MDCH), and Environmental Quality (MDEQ) have developed several guidance documents for urban gardening that include lists of soil and water contaminant concentrations protective for gardeners and people consuming the crops. [http://www.michigan.gov/documents/mdard/Urban_Agriculture_in_Michigan - Things to consider about soil and water 452158 7.pdf?20150114151547](http://www.michigan.gov/documents/mdard/Urban_Agriculture_in_Michigan_-_Things_to_consider_about_soil_and_water_452158_7.pdf?20150114151547) and [http://www.michigan.gov/documents/mdard/Working With Soil in Urban Areas 452152 7.pdf?20150114151547](http://www.michigan.gov/documents/mdard/Working_With_Soil_in_Urban_Areas_452152_7.pdf?20150114151547) However, these concentrations may not be protective for livestock and people consuming the livestock and livestock products. For example, there is some evidence that the lead concentrations may be too high for consumption of chicken eggs from chickens raised on soils with these contaminant levels.

http://cwmi.css.cornell.edu/lead_nyc_garden_eggs.pdf

Information regarding safe concentrations of soil contaminants for protection of people consuming the livestock and livestock products are shown in Appendix B, Soil Contaminants and Livestock.

Reduction of Exposure Risk

If a site is known or suspected to have contaminated soil, there are measures that can be implemented to help reduce the exposure risk. These actions include the following:

- Remove contaminated soil and replace with clean soil. This may be the most expensive option; however, it is a more permanent solution than the others.
- Place a barrier between contaminated soil and livestock. Examples include covering the contaminated soil with a sufficient layer(s) of clean soil, concrete, geotextile fabric, and/or rock. The initial cost may be less expensive than soil replacement; however, ongoing monitoring and maintenance will incur future costs.
- Keep livestock above contaminated soil. This action may not be feasible for large livestock; however, it may be workable for chickens, rabbits, and other small animals.
- In the case of growing crops, consider the use of raised beds.

II. LIVESTOCK HEALTH

An increasing number of people wish to raise livestock species in urban areas. The introduction of livestock species to urban environments does concern some people who are nervous about the potential for introducing diseases that are harmful to humans. It will be the responsibility of the urban livestock owner to develop and follow animal management plans for their animals to minimize the risk of disease.

Management practices are the key to animal health whether there are 100 animals or 2. It is widely agreed that disease prevention is ultimately more cost effective than trying to treat a disease after it develops, therefore, animal health plans should include all aspects of animal care, including but not limited to; housing, nutrition, sanitation, and preventive medicine. The primary focus of this section will involve preventive medicine issues; however, proper housing, nutrition, and sanitation are equally important and can greatly reduce the need for medical treatment.

Preventive Veterinary Medicine

The goal of preventive veterinary medicine is to prevent animal disease, promote animal health and wellbeing, protect human health by reducing the risk of zoonotic diseases (those that can be passed from livestock to humans), and prevent contamination of food products meant for human consumption. Preventive veterinary medicine may include the use of veterinary drugs

such as vaccinations, de-wormers, treatments for internal and external parasites, and medicated feeds. Owners should discuss the use of veterinary drugs with their animals' veterinarian, and the veterinarian's recommendations should be an integral part of the animals' health management plan. Even the best animal health plan can fail, and owners may find themselves having to treat animals for illnesses.

It is important for a person choosing to raise livestock animals to know what the normal, healthy appearance is for the animal. Knowing what the healthy animal looks like helps owners recognize when there is something wrong. Appendix C, Appearance Chart, lists some of the common indicators of health and illness in chickens, goats, pigs, and rabbits. When signs of illness are seen, owners should seek veterinary help.

State law only requires dogs to be vaccinated for rabies; however, all mammals can be infected by the rabies virus, including humans. In an urban setting, livestock have an increased risk of contact with the public and are in close proximity to the owner's house, as well as neighboring houses. The livestock may interact with other wildlife, which can pass a virus onto the livestock. Interactions between the livestock and people, as well as consumption of some foods produced by an infected animal, can lead to the livestock passing rabies onto humans. (Compendium of Animal Rabies Control, 2008, National Association of State Public Health Veterinarians).

All drug use, whether part of a preventive medicine plan or used to treat illness should be discussed with the veterinarian before use. The veterinarian will know the disease risks in the area when developing a preventive animal health plan. There are also regulatory reasons why owners should have a working relationship with their veterinarian.

Extra Label Drug Use

The Food and Drug Administration (FDA), is the federal agency responsible for approving drugs for use in animal agriculture. The FDA requires all animal drugs to have the following information on the label or a package insert: list of species for which the drug is approved, the approved dose and route of administration for each approved species, a list of prohibited uses by species, if any, and withdrawal times for milk, meat, and eggs for consumption, if applicable. The term 'extra label' means the drug is being used in a manner different from what is printed on the label or package insert without the consent and advise of a veterinarian. For example, Pen G (penicillin) is an injectable antibiotic approved for use in horses, cattle, sheep, and swine, but not approved for goats, therefore, when Pen G is used to treat a goat the use is "extra label". The only time a product may be used in a manner different from what is listed on the label is if the extra label use is prescribed by, or under the direct supervision of a veterinarian

with whom the user has a valid veterinarian-client-patient relationship (VCPR). (CFR - Code of Federal Regulations Title 21) <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=530>). This relationship is required by federal law when using any drug on an animal contrary to label instructions.

Extra label drug use is a concern in both rural and urban agriculture; however, it may occur more often in urban settings because urban farmers may have difficulty forming the required VCPR with a veterinarian. The majority of veterinarians in urban settings work with companion animal species (cats and dogs) or exotic animal species (pocket pets, ferrets, pet birds, and reptiles), so it may be more difficult for urban farmers to find veterinarians willing and able to work with livestock. Increased extra label drug use may lead to increased drug residues in tissue (meat), milk, and eggs.

Drug Residues in Meat, Milk, and Eggs

When veterinary drugs are given to animals raised for food, it may be found in the milk, muscles, organs, and eggs for a measurable period of time after administration. This is why the FDA has established withdrawal times for all drugs approved for use in food producing animals. The withdrawal time is the time elapsed between administration of the last dose to the animal, and when the animal will be safe to slaughter (or milk/eggs will be safe for human consumption). All federally approved drugs include the required withdrawal times for that drug on the product label or package insert. If a veterinarian prescribes extra label use of a drug, they are required to put a label on the drug, which includes what they determine the withdrawal time(s) is for meat, milk, or eggs. Below is an example of a residue warning taken from the package insert for Pen G penicillin.

Pen G Penicillin Residue Warnings:

Exceeding the daily dosage of 3,000 units per pound of body weight, administering for more than four consecutive days, or exceeding the maximum injection site volume per injection site may result in antibiotic residues beyond the withdrawal time. Milk taken from treated dairy animals within 48 hours after the last treatment must not be used for food. Discontinue use of this drug for the following time period before treated animals are slaughtered for food:

Cattle - 14 days, Sheep - 9 days, Swine - 7 days.

A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

All federally inspected slaughter facilities have inspectors testing meat and organs for drug residues. Carcasses with residues are condemned so they never enter human food channels. Urban farmers are more likely to use custom slaughter facilities (*See Section V. Livestock*

Slaughter and Euthanasia) or process animals themselves which means tissue samples are less likely to be tested for drug residues.

Reportable Diseases

Reportable animal diseases are diseases that must be reported to the State Veterinarian when suspected or confirmed to be present in one or more animals. Diseases can be reportable for different reasons; 1. The disease is known to exist in Michigan and is reported for the purpose of surveillance; 2. The disease does not exist in Michigan and would have a significant impact on animal health and/or Michigan's animal industry if it was found here; or 3. The disease is zoonotic and would be a threat to human health. Michigan maintains a list of reportable diseases which is updated annually. [2015 Michigan Reportable Animal Diseases List](#)

If the State Veterinarian is notified of a suspected or confirmed reportable disease, a state field staff veterinarian will likely visit the premise where the animal resides to confirm the disease is present and to determine what steps need to be taken to control the spread of the disease. These steps may include: 1. Issuance of a quarantine confining the animal(s) to the premise until they are shown to be free of the disease, either through medical treatment or confirmatory laboratory testing; 2. Some diseases may involve a lifelong quarantine so the animal(s) are confined until they die or are slaughtered; or 3. Depending on the disease, the animal(s) may be ordered by the State Veterinarian to be euthanized in order to protect human and animal health, and the animal industry. In many cases, the premise must be cleaned and disinfected after the infected animal is no longer at the premise.

Animal Identification

In Michigan, cattle, sheep, goats, and swine under specific circumstances, are required to have official identification before leaving the premise where they have been living. In order for an owner to obtain official identification for their animals, they must have a premise identification number. Owners can visit [MDARD - Animal ID - State of Michigan \(http://www.michigan.gov/mdard/0,4610,7-125-48096_48149---,00.html\)](http://www.michigan.gov/mdard/0,4610,7-125-48096_48149---,00.html) to register their premise and obtain approved eartags for their cattle, sheep, and goats. Swine are required to have official identification for the sale of breeding sows and for taking the animal to exhibition. [Official Swine ID Options](#) . For further information, owners can call the Michigan Department of Agriculture, Animal Industry Division at 1-800-292-3939.

III. LIVESTOCK HOUSING

The keeping of small livestock and poultry in urban areas presents opportunities to acquaint neighborhoods and household members with the production of food. Although there are social

and physical challenges, owners' attention and care to good husbandry of animals, hygiene, upkeep of animal housing, fencing, and outdoor areas can help to diminish neighbor concerns.

General Shelter Characteristics

The provision of a comfortable shelter for animals should be a high priority for the urban agriculturalist. Since Michigan lies in a temperate zone and is capable of producing severe weather extremes, animals must be provided with a partial (three-sided) or fully enclosed solid roofed shelter, depending on the species. In addition to providing comfort, shelters also serve to contain animals from sunset to sunrise, which minimizes potential for disturbance to neighbors, encourages animals to feel secure, and prevents predation. Larger livestock such as goats, pigs, and sheep may be housed in three-sided or fully enclosed roofed sheds. The indoor surface floor can be compact earth or concrete layered with bedding or litter but should be designed to prevent excess wetness resulting in odor, and problems with foot health. Partial and full enclosures should be oriented based on local geography and weather patterns such that they protect from extreme heat or cold and prevailing winds and rain. Animal housing must be sited according to local or city ordinances and typically away from neighbors' property to avoid creating noise, smell, and other potential nuisance.

Smaller livestock, like rabbits and poultry, may be kept loose in a coop/room or in specially designed hutches or enclosures that are solid roofed. Each coop or hutch must contain a nesting box, food and water containers, and in the case of chickens, areas for perching. Flooring within the coop or hutch should allow for easy daily cleaning and prevention of manure build-up. The provisioning of food in bowls or feeding devices, and water in bowls, bottles, or water devices should be appropriately designed for the species. Since small livestock and poultry are prone to predation, coops, hutches, and other shelter types should be designed to prohibit intrusion by foxes, predatory birds, raccoons, dogs, cats, and small predators such as rats.

All shelters should provide a source of ventilation such as wire screened windows or vents that may be opened or closed to maintain desired thermal comfort and to allow fresh air flow to prevent accumulation of indoor gas or humidity. Shelters must be maintained in good physical condition, and kept clean and attractive. More specific recommendations for type and design of animal shelters can be found in numerous places online.

Animals per Unit Area

The number of animals allowed per unit area is dependent on the configuration of the "useable space" of the outdoor area, area inside the animal shelter, breed type, physical status, and behavioral needs of the animals. While this document includes recommendations for minimum

space per animal based on the physical and behavioral needs of adult animals or animals of a certain weight class, these are only recommendations and care must be taken to evaluate each outdoor area and shelter for its unique attributes and ability to house and maintain animals safely and comfortably. Where standards have been set for livestock density based on science and/or legal requirements, numbers will be provided. Where there is not specific consensus or consensus on space allowance, no numerical reference is provided.

The intended purpose of keeping farm animals also guides the number to be kept. If animals are kept primarily for the provision of household food, then no more animals should be kept than what the household requires (nor should it exceed the animal unit capacity of the lot and shelter). The optimal number of animals required to meet household needs can be calculated. For example, all breeds of egg-laying hens have been evaluated for their egg production. These statistics can easily be found on-line. The number of eggs required to provide for the household can be estimated by using the average weekly number of eggs laid by that breed of hen and the average weekly household egg consumption (meals and baking). Keeping records of individual hen daily egg production can provide a more accurate representation of the home flock capability. The same approach may be used to calculate animal numbers required for provisioning meat and milk for the household. If household consumption and the provision of food to persons living outside the household is a goal, the same estimates can be applied except calculated for more people. In either case, the animal units on the lot will have an upper limit set either by the estimated need for the household (plus others) or the limitations of the lot space and shelter space to accommodate the animals.

Animal Space Recommendations for Indoor Areas

The indoor space within the animal shelter is a source of useable space. Most indoor areas provide animals' access to floor space where animals may rest, move about, and fulfill behavioral or dietary needs. Deductions should be made for space that is inaccessible to animals. Only useable space should be counted to determine the number of animals that can be housed within the sheltered area. The recommendations below were derived through review of empirical work and evidence produced through scientific inquiry and practical experience. Based upon size, breed/strain, and physical and behavioral needs, these minimum recommended allowances must be carefully considered as type of indoor housing varies. Since animal size will vary, space allowances (ft² per animal) should be adjusted upward if the minimum recommendations do not allow animals to comfortably lie down together, stand-up, turn around, stretch their limbs, gain access to food and water, or permit normal postural adjustments for maintenance behaviors such as grooming or preening while kept indoors. This should be an overall goal when examining space for livestock.

Table 1**¹Recommended Minimum Indoor Useable Floor Space Allowance per Adult Animal or Final Market Weight****Poultry**

Egg laying hen	1.0 ft ² (smaller breeds/strains); 1.5 ft ² (larger breeds/strains)
Meat chicken	1.0 ft ² per 7 lbs. body weight

Turkey

Light weight	4.2 ft ²
Heavy weight	5.0 ft ²

Rabbit

² Enclosed hutch	1.5 ft ² (small breeds); 5.0 ft ² (larger breeds)
³ Loose floor pen	6.1 ft ²

***Sheep**

Market lamb	7.5 ft ² (45 – 65 lbs.); 9.0 ft ² (65 -90 lbs.); 11 ft ² (91 - 110 lbs.) market weight
Ewe	14 ft ² – 20 ft ² (non-pregnant – with lambs)
Ram	20 ft ² – 32 ft ² (135 - 300 lbs. adult weight)

Goat

Doe and kid	18.0 ft ²
Buck	40.0 ft ²

Pig

Market pig	9.1 ft ² (market weight ~264 lbs.)
Sow	35 ft ² (sow with litter); 16.0 ft ² (5 – 20 sows per pen)

¹ Derived from recognized and scientifically developed guideline resources including: Humane Farm Animal Care Certified Humane, American Humane Heartland Certified, and Federation of Animal Science Societies unless otherwise specified.

²American Rabbit Breeders Association based on U.S. Department of Agriculture regulations for housing rabbits.

³ European Union recommendations for floor space.

*Space allowance should be increased for fully fleeced and horned sheep.

Animal Space Recommendations for Outdoor Areas

Outdoor useable space can be measured by calculating the total area of the lot where the animals will be kept, minus the area occupied by animal shelter(s) and other buildings inside the lot (or space restrictions such as patio areas), and deducting any other restrictions required by city or local ordinances, such as property line setbacks. The outdoor useable space is generally the area that will be available for open unobstructed use by the animals.

The outdoor areas used by animals should be properly fenced to contain animals and prevent intrusion by outside predators or burrowing under the fence, provide shaded area, and be

maintained such that dust, mud, water, and manure do not accumulate. Maintaining ground surface vegetation is important to mitigating dust, facilitates the use and spread of animal manure, and prevents surface run-off. Maintaining vegetation by resting, reseeding, and rotation of the outdoor areas are important. Sheep and goats graze vegetation and poultry scratch/peck the ground for seeds, worms, and insects, and dust bathe that can create patches or complete loss of vegetation. Rabbits burrow and graze; and pigs create wallows for dissipating body heat and forage by rooting the ground. Through the use of temporary interior fencing, outdoor areas may be divided and used in a rotation. This allows one area to rest and the restoration of ground surface vegetation while the other area is in use. It is highly advisable to maintain vegetative cover because it helps to avoid odor and health concerns.

Recommendations for space allowance per animal will vary depending on the purpose of the outdoor space. If animals are expected to obtain part or all of their daily dietary needs, then the type, quantity, and quality of available vegetation will determine the number of animals able to be supported. For the purpose of this document, and under most conditions of urban agriculture, open useable space is primarily meant to meet the behavioral rather than dietary needs of the animal. Below is the minimum recommended space per animal for the provision of access to daylight, performance of important behaviors, and exercise.

Table 2
¹**Recommended Minimum Outdoor Useable Space Allowance per Adult Animal**

Poultry	
Egg-laying hen	43.6 ft ²
Meat chicken	10.8 ft ² (fast growing strains); 21.6 ft ² (slow growing strains)
Turkey	65 ft ²
Rabbit	No specific allowances set
Sheep	25 – 40 ft ²
Goat	No specific allowances set
Pig	No specific allowances set

¹ Space allowances are derived from Humane Farm Animal Care standards unless otherwise specified. These standards were developed by a scientific committee and member farmers.

Nutrition and Feeding

An important aspect of maintaining the health and welfare of urban livestock and poultry is the provision of a nutritionally robust diet and access to fresh potable water. The daily diet should be formulated in the right amount and ratio specifically for the species and the animal's stage of life and production. Free access to water is important. Water should be provided in containers that are easily accessed, cleaned to prevent build-up of sediment and algal growth, and regularly checked, especially during hot weather or freezing cold. Buckets or other water containers should be placed to avoid injuring the animal, drowning, or contamination by feces. Buckets, troughs, or bunks used to feed animals should be kept clean. Leftover feed should be cleaned out and properly disposed of in a secured container to prevent rodent, bird, or other wildlife attraction.

Michigan State University (MSU) Extension (<http://msue.anr.msu.edu/topic/info/agriculture>) can provide guidance on the nutritional and water requirements for each species and other information resources on animal care. Pre-formulated feed can be purchased at local feed and livestock stores and sometimes hardware stores. Commercially available feed rations are available for organic standard food production. Commercial pre-formulated feed rations typically contain a mix of grains. Ruminant (multi-chambered digestive tract) species such as sheep, goats, and rabbits also have a requirement for preserved or dried stemmed and leafed forages such as hay and legumes such as alfalfa. Hay can be bought as bales from local farmers or feed stores, or in some cases the requirement met through a complete ration such as alfalfa cubes or pellets. Hay should be soft, dry, light green, and easily pulled apart in flakes. Hay should not be dusty or moldy.

When using automated feeding or watering devices, it is imperative such devices are checked daily to detect blockage, breaks, or power outages to ensure proper feed and water delivery. Regular maintenance to assure smooth operation is important. As these automated devices typically rely on electrical power, in the event of a power outage, emergency back-up power or alternative strategies for delivering feed and water to livestock and poultry should be in place.

Maintaining Feed and Forage Quality

The tag on each bag of a commercial grain-based feed ration will provide information on the nutritional composition of the feed and its ingredients. Forages, such as grasses and legumes, also constitute an important part of some farm animal diets. To maintain feed ration quality, the proper storage of animal feed and forage is important to preventing spoiled or contaminated feed and moldy or poor quality hay. Freshness and storage of feed is as important to maintaining animal health as it is to properly storing food for the human diet. The feed tag provided on each bag of commercial feed has an expiration date. The expiration date

is based on optimal storage conditions. Feed products will degrade more quickly and feed spoilage increases under inadequate storage conditions.

Storage of feed includes safeguarding from the attraction of wild birds, deer, rodents, and insects that can contaminate feed products with feces and saliva or introduce microbial growth and spoilage. It may also present potential nuisance for neighbors. Grain based rations or complete feeds, such as forage cubes, must be stored in pest resistant sealable metal containers or bins. Avoiding direct ground contact by placing the container and any unopened stored bags of feed on wooden pallets or raised platforms away from walls discourages access by pests. Containers should also be stored within a room or area that provides shelter, prevents intrusion by pests, and is not subject to moisture or flooding. Hay bales or loose forages should be stored under a roofed or covered area as moisture will cause mold and spoilage. Bales should be elevated off the ground on wooden pallets or a platform and securely stacked on edge (strings or wire on sides not on top and bottom) to allow airflow and prevent spoilage. Left over spoiled or spilled feed should be cleaned up and properly disposed. (*See Feed Storage.*)

IV. WASTE AND MANURE MANAGEMENT

No two farming operations in Michigan are the same due to a large number of site variables. As a result, waste and manure management practices will vary from farm to farm. While the source of manure is obvious, there are other waste streams on a farm. Items such as weeds that have been pulled and piled, discarded materials from crops such as carrot tops, potato skins, cracked eggs, spoiled food, and other organic parts from the growing and harvesting of food can also be sources of your waste stream. The key to not impacting your neighbors is to keep from having organic materials around your facility begin to rot. These management practices will prevent negative impacts on neighbors, the environment, and your livestock.

Periodically scrape the manure or collect organic materials from outside areas

Every day or every few days as needed, all manure and other organic accumulations should be scraped and removed from outside areas. Keeping this area clean and dry will prevent odors, as well as aid in keeping livestock healthy. When dealing with manure, practices such as adding lime or wood shavings can help to further minimize odors with the goal of eliminating odor impacts on neighbors.

Periodically clean all livestock shelters

Every day or every few days as needed, indoor areas should be cleaned and all manure and soiled bedding should be removed. Additives such as lime wood shavings may be used to help reduce odors.

Remove manure from the property

If manure has to be temporarily stacked on the premises prior to being removed, it should be placed in a covered bin or on a concrete pad and covered. Keep the area covered at all times to eliminate odor impacts on neighbors and reduce the chance for attracting pests. Like pet manure, small amounts of manure can be disposed of in regular garbage removal. For larger amounts, there may be a need to move waste to someone who is handling these materials in other ways (e.g. county or farm composting facility or a farmer who is willing to take the material for their use).

Composting

If you plan to compost the manure and other organic waste streams generated on-site, a compost bin should be used. A fully enclosed design keeps pests out, minimizes odor, and will allow you to control moisture and aeration. By continuously turning the material, you will allow oxygen into the system and prevent odors from negatively impacting neighboring properties.

Effective composting will involve several factors:

- Materials high in carbon; typically leaves, straw, and woody materials.
- Materials high in nitrogen; typically grass and manure.
- Good composting processes will need air, water, and to maintain temperatures as recommended in the resources below.

There are many sites that provide valuable information about composting.

https://extension.unh.edu/resources/files/Resource000471_Rep493.pdf

<http://umaine.edu/publications/1021e/>

<http://urbanext.illinois.edu/compost/process.cfm>

Runoff

Make sure that no runoff leaves the manure, waste, or compost pad. Pooling of runoff from these sites onto bare ground can cause negative environmental impacts, as well as create odors. All manure containment areas should be kept dry to eliminate potential odors.

In addition, no manure or wash water runoff should be allowed to flow onto neighboring properties, into the storm water system, a road ditch, stream, creek, or other waterway. A direct discharge into a waterway is illegal and you may incur penalties.

Utilization

Manure or compost can be utilized on site in areas such as gardens. However, because manure contains pathogens, the grower should be sure that manure does not come into contact with crops that will be directly consumed. Understanding the nutrient values in manure or compost is important. Your manure or compost should be analyzed for these nutrients. This, in addition to the soil analysis, will assure you are utilizing the proper amount of manure or compost needed for the plants being grown. Also, anytime manure is utilized in a garden or around the property, it should be disked, or turned into the soil, immediately to eliminate any potential for odors. Assistance with soil testing can be found at <http://www.spnl.msu.edu/>. Assistance with manure analysis can be found at <http://uwlab.soils.wisc.edu/manure/>.

Fencing and Trees

The use of fencing and/or trees can help to dissipate odors moving towards neighboring properties. Perennial flowers, shrubs, or grasses will also help to control odors, as well as provide a pleasing aesthetic for the neighboring properties. Additional technical assistance and information can be found at <https://store.extension.iastate.edu/Product/Animal-Housing-Landscaping-Overview>.

Feed Storage

All feed should be stored in metal containers with secured lids to prevent pest infestation. Any spilled feed should be cleaned up immediately and all spoiled feed should be put in the trash or composted.

V. LIVESTOCK SLAUGHTER AND EUTHANASIA

In some cases, urban agriculture may involve slaughtering of livestock for food purposes. All slaughtering activities should be handled in an enclosed area. All wash water and slaughter by-products should be captured. This material should not be allowed to flow to a storm water drain or any other body of water. Cleanup should occur as soon as processing is completed. By-products should be securely bagged and tied prior to placing it in the garbage.

Processing By-Products

All processing by-products such as wash water, stems, cull products (not acceptable for consumption or further processing), and fruit and vegetable materials should be captured. This material should not be allowed to flow to a storm water drain or any other body of water. The cull products and fruit and vegetable materials can be composted or put in the garbage. Cleanup should occur as soon as processing is completed.

Regulatory Agencies

Depending on the size and type of operation, there are two different regulatory agencies that may be involved in slaughtering livestock for consumption. The United States Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS) regulates the slaughter and processing of meat and poultry. Operations either require carcass-by-carcass inspections by the USDA, or fall under an exemption. Operations that fall under an exemption can be subject to periodic sanitation inspections by the USDA. MDARD regulates food in commerce in the state of Michigan. Operations that provide food, but are exempt from USDA FSIS inspections, require a license from MDARD. Periodic sanitation inspections are part of the MDARD requirements. Operations that solely produce food inspected under USDA FSIS do not require a MDARD license. Operations that have multiple products or conduct multiple services may be regulated under both agencies.

There is a big difference between a carcass-by-carcass inspection program, conducted by USDA FSIS, and periodic sanitation inspections, conducted by MDARD. The carcass-by-carcass inspection program focuses on the health and condition of each individual animal and requires a USDA FSIS inspector to be onsite during all times of production. The periodic sanitation inspection conducted by MDARD occurs on a routine basis and focuses on the sanitary conditions of the facility/equipment and hygienic practices of personnel. An inspector does not need to be present during all times of production under this program.

Animal Species

The type of animal being slaughtered will impact what regulations apply to the operation. In order to address the different risks associated with different species, the USDA has two separate sets of rules addressing slaughter and processing of animals. One set of rules addresses “meat” and the other addresses “poultry”. The term “amenable species” is used to describe the species of animals covered by the USDA regulations. Amenable species in the Poultry Products Inspection Act include turkeys, chickens, ducks, geese, squab, guinea fowl, and ratites (ostrich, emu and rhea). Amenable species in the Federal Meat Inspection Act include cattle, swine, sheep, goat, and equine.

Non-amenable species are not covered by the USDA rules, but do fall under MDARD licensing and inspection requirements. Examples of non-amenable meat species include mammals such as reindeer, elk, deer, antelope, water buffalo, bison, squirrel, opossum, raccoon, rabbits, nutria or muskrat, and non-aquatic reptiles such as land snakes. Non-amenable poultry includes game birds such as pheasant and quail. The food risks associated with these species are not fully known or controlled under the specific USDA inspection requirements. Therefore, MDARD's general food safety regulations apply.

[Federal Meat Inspection Act](#)

[Poultry Products Inspection Act](#)

[The Michigan Food Law P.A. 92 of 2000 as amended](#)

Information for obtaining an MDARD license can be found at http://www.michigan.gov/mdard/0,4610,7-125-1569_16958_16974-53792--,00.html.

Information for obtaining a USDA FSIS license can be found at <http://www.fsis.usda.gov/wps/portal/fsis/home>

Exemptions

There are some exemptions to the USDA regulations. Both the meat and poultry acts contain "Personal" and "Custom" slaughter exemptions for personal or household use. These two exemptions also apply to MDARD licensing. For your own personal food safety, exempt operations are still expected to have good sanitary standards and provide products that are sound, clean, and fit for human food. However, the carcass-by-carcass inspection requirement does not apply. Food products resulting from these exempt services cannot be sold and must be marked "Not for Sale". The personal slaughter exemption pertains to situations where the owner of the animal slaughters and processes their own animal for personal use. The custom slaughter exemption pertains to situations where someone other than the owner slaughters and processes the animal. The meat is then provided back to the owner for personal use and cannot be sold or used to make food that will be sold. The custom exemption also applies to animals taken by lawful hunting or trapping.

Meat

For amenable species, there are no other exemptions for slaughter under the Federal Meat Inspection Act. All slaughter of cattle, swine, sheep, goat, and equine for meat or meat products requires a USDA carcass-by-carcass inspection. For non-amenable species (reindeer, elk, deer, antelope, water buffalo, bison, squirrel, opossum, raccoon, rabbits, nutria or

muskrat), all slaughter and processing activities for meat or meat products require MDARD inspection and licensure.

There are several additional USDA exemptions for poultry.

1. 1,000 or fewer birds processed annually: A person may raise, slaughter, cut up, and sell at retail up to 1,000 poultry and is exempt from all USDA inspections. **MDARD inspection and licensure apply.** USDA may conduct random or complaint initiated investigations.
2. 1,001 to 20,000 birds processed annually: A person may raise, slaughter, cut up, and sell at retail or wholesale from 1,001 to 20,000 chickens or turkeys if the products are labeled “Exempted under Public Law 90 – 492”. This type of establishment is exempt from Ante mortem and Post mortem USDA inspection, but is subject to USDA sanitation inspections on a periodic basis. **MDARD inspection and licensure may apply** (depending on the scope and complexity of the operation).
3. 20,001 or more birds processed annually: Full USDA FSIS inspections required. No exemption.
4. Markets that sell live poultry at retail and slaughter at the request of the retail customer are exempt from all USDA inspections. **MDARD inspection and licensure apply.**

To qualify for any one of the poultry exemptions, the conditions or standards below must be met:

- The poultry is healthy when slaughtered.
- The slaughter and processing are conducted under sanitary standards, practices, and procedures that produce poultry products that are sound, clean, and fit for human food (not adulterated).
- The poultry is not misbranded, identified as exempt product and labeled.
- The business operates under only one exemption during calendar year.
- Product cannot bear the official USDA mark of inspection.
- Poultry products do not move in inter-state commerce.
- Labelling requirements are met.

More information related to on-farm processing of pastured poultry can be found at [Guidance for Determining Whether a Poultry Slaughter or Processing Operations is Exempt from Inspection Requirements of the Poultry Products Inspection Act](#):

Waste

All wash water and slaughter by-products should be captured. This material should not be allowed to flow to a storm drain or any body of water. Wash water can go down a household drain to a treatment plant. Clean up should occur as soon as processing is completed.

Humane Slaughter

All slaughter activities must meet the requirements of the Humane Slaughter of Livestock Act 163 of 1962. The act requires that a humane method of slaughter is used, which is defined as: (1) A method whereby the animal is rendered insensible to pain by mechanical, electrical, chemical, or other means that is rapid and effective, before being shackled, hoisted, thrown, cast or cut; or (2) A method in accordance with ritual requirements of any religious faith whereby the animal suffers loss of consciousness by anemia of the brain caused by the simultaneous and instantaneous severance of the carotid arteries with a sharp instrument.

[Humane Slaughter of Livestock act 163 of 1962](#)

The American Veterinary Medical Association (AVMA) Guidelines for the Euthanasia of Animals: 2013 Edition (<https://www.avma.org/kb/policies/documents/euthanasia.pdf>) explains in detail the acceptable methods for euthanasia as well as the proper way to perform each method for each species. The document also provides details regarding when a method might not be appropriate for the age or size of an animal. In order for any of the methods to be considered humane, the person dispatching the animal must be adequately trained in the method being used. If a person dispatching the animal does not have adequate training, even an approved method can become accidental torture of the animal.

On rural farms, the most common method of euthanasia for cattle, swine, sheep, and goats is gunshot, and for chickens, the most common method is cervical dislocation. Gunshot is not likely to be an allowed method inside city limits in most jurisdictions, so people wishing to slaughter their own livestock will need to find someone who is trained or willing to train them in one of the other methods. For farm animals, killing for slaughter or for welfare reasons is often done the same way. Local authorities should be consulted regarding restrictions on dispatching livestock for slaughter or welfare reasons. Acceptable methods for both include:

Poultry – gunshot, manually applied blunt force trauma, cervical dislocation, decapitation, electrocution, and captive bolt.

Sheep/goats – gunshot, captive bolt followed by an adjunctive method such as exsanguination (bled out).

Swine – gunshot, non-penetrating and penetrating captive bolts, electrocution, and blunt force trauma (in suckling piglets only).

Euthanasia for welfare reasons can be done by a veterinarian using injectable euthanasia agents or gas overdose, but the carcass would then need to be disposed of in a manner consistent with the Bodies of Dead Animals Act rather than being used for food. [Bodies of Dead Animals: Public Act 239 of 1982, Regulations for Public Act 239 of 1982](#)

VI. PEST CONTROL

Pesticide Use According to Label

Any person who uses a pesticide must follow all label use directions. Every label contains pesticide use restrictions, directions for use, and in the case of agricultural pesticides, worker protection standards.

Pesticides are classified as general use or restricted use. In agricultural production settings, general use pesticides may be applied by an uncertified applicator but the uncertified applicator must have received handler training in accordance with the federal worker protection standards. Applicators that use or supervise the use of restricted use pesticides must become a private certified applicator. (*See Applicator Certification.*) This certification meets the requirements of the federal worker protection standards.

Pesticides may only be applied to crop sites that are listed on the pesticide's label. The label will also have other use directions such as proper mixing and loading instructions, limitations on the rate of application, the number of applications or the frequency of the application, requirements for personal protective equipment, and storage and disposal directions. Many agricultural pesticides include a preharvest interval. The preharvest interval is the number of days after a pesticide application that a producer must wait before harvesting the crop. More information about pesticide labels can be found at <http://www.epa.gov/pesticides/regulating/labels/product-labels.htm>.

Agricultural pesticides contain very specific federal worker protection standards to protect the pesticide applicator, called a handler, and workers who may enter treated areas, called workers. These standards require pesticide safety training, restrictions on reentry intervals during which time workers and handlers may not reenter the treated area, decontamination materials, posting, and recordkeeping requirements. More information on the federal worker protection standards can be found at <http://www.epa.gov/pesticides/health/worker.htm>.

Pesticide Selection

When selecting a pesticide for use on a crop, the producer should consider toxicity as one way to reduce pesticide risk. Pesticide labels contain signal words that are based on the toxicity of the pesticide. The three signal words are caution (lower risk), warning (greater risk) and danger/poison (highest risk). The level of risk is determined when the U.S. Environmental Protection Agency (EPA) initially registers the pesticide based on the registrant's research data. More information on signal words can be found at <http://npic.orst.edu/factsheets/signalwords.html>.

Another consideration when choosing a pesticide is its toxicity to pollinators. Pollinators include honeybees, bumblebees, and other bee species that forage for nectar and pollen. Pesticides that are in any way toxic to honeybees will include label use directions that restrict use when bees are foraging in the treatment area. These restrictions are often found under the Environmental Hazards label statements. EPA is currently modifying pesticide labeling to add additional use restrictions to protect pollinators that will be found in other sections of the pesticide label, so reading and following all label use directions is very important. More information on EPA's efforts to protect pollinators through label use directions can be found at <http://www2.epa.gov/pollinator-protection>.

Producers can also implement a variety of stewardship practices to protect pollinators. Information on stewardship and best practices to protect pollinators can be found at <http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Business Licensing

In the event an urban agricultural producer wishes to hire a pesticide applicator to perform applications to their crops, the producer should check to make sure the business is properly licensed with MDARD. Licensed businesses use certified applicators and have a minimum of two seasons of application experience. They must also carry general liability insurance. A list of licensed businesses in Michigan can be found on the MDARD's web site at http://michigan.gov/mdard/0,4610,7-125-1569_16988_35288-11993--,00.html.

Applicator Certification

Any agricultural producer who wants to purchase and use a restricted use pesticide must first become a private certified applicator. Information on how to become a certified applicator can be found on MDARD's web site at http://michigan.gov/mdard/0,4610,7-125-1569_16988_35289---,00.html.

The certification process includes obtaining the private core training manual from MSU, studying the manual, and passing the private core exam. Bring a completed application and the

fee with you to your exam session. To schedule an exam, visit the online pesticide exam schedule at <https://secure1.state.mi.us/OPES/Login.aspx>.

Drift

Pesticide drift from the treatment site is a violation of State law. Drift may be the result of windy conditions, small droplet size, high spray pressure, or low volume applications. Written drift management plans can be a useful tool in preventing drift. Regulatory information related to drift management plans can be found in Regulation 637, Rule 10, which can be found at http://www7.dleg.state.mi.us/weborrgsa/102_10_AdminCode.pdf.

APPENDIX A

SOURCES OF CONTAMINANTS IN SOIL

Contaminants	Sites and Sources										
	Agriculture, green space	Car wash, parking lots, road and maintenance depot, vehicle services	Dry cleaning	Existing commercial or industrial building structures	Junkyards	Machine shops and metal works	Residential areas; buildings with lead-based paint; where coal, oil, gas or garbage was burned	Stormwater drains and retention basins	Underground and aboveground storage tanks	Wood preserving	Chemical manufacture, clandestine dumping, hazardous material storage and transfer, industrial lagoons and pits, railroad tracks and yards, research labs
Arsenic				X							
Asbestos											
Barium		X			X	X	X	X		X	X
Cadmium		X			X	X	X	X		X	X
Chromium		X			X	X	X	X		X	X
Copper											
Fluoride											X
Mercury											
Lead				X			X				
Molybdenum											
Selenium											
Sodium		X						X			X
Sulfur											
Zinc		X			X	X	X	X		X	X
Dioxin ⁸											
PCBs ⁷				X							
PAHs ¹		X					X				
Petroleum Products ²		X		X	X	X	X	X	X	X	X
Pest/Herb ³	X							X	X		
Solvents ⁴		X	X	X	X	X		X	X	X	X
Surfactants ⁵		X				X					
Phenols ⁶										X	X
Nitrate	X										X
Sulfate					X					X	X
Radioactivity											X
Other											
References	A	A	A	A	A	A	A	A	A	A	A

SOURCES OF CONTAMINANTS IN SOIL (continued)

Contaminants	Waste Incineration: municipal waste combustion, hazardous waste incineration, medical waste incineration, crematoria, sewage sludge incineration, tire combustion, combustion of wastewater sludge at bleached chemical pulp mills, biogas combustion	Power/Energy Generation: motor vehicle fuel combustion, wood combustion, oil combustion, coal combustion	Other High-Temperature Sources: cement kilns, lightweight aggregate kilns, asphalt mixing plants, petroleum refining catalyst regeneration, cigarette smoking, pyrolysis of brominated flame retardants, carbon reactivation furnaces, kraft black liquor recovery boilers, and others	Minimally Controlled and Uncontrolled Combustion Sources: combustion of landfill gas, accidental fires, landfill fires, forest and brush fires, backyard barrel burning, residential yard waste burning, land-clearing debris burning, uncontrolled combustion of polychlorinated biphenyls, volcanoes, fireworks, open burning and open detonation of energetic materials
Arsenic Asbestos Barium				
Cadmium Chromium Copper				
Fluoride Mercury Lead				
Molybdenum Selenium Sodium				
Sulfur Zinc Dioxin ⁸	X	X	X	X
PCBs ⁷ PAHs ¹ Petroleum Products ²				
Pest/Herb ³ Solvents ⁴ Surfactants ⁵				
Phenols ⁶ Nitrate Sulfate				
Radioactivity Other				
References	B	B	B	B

SOURCES OF CONTAMINANTS IN SOIL (continued)

Contaminants	Metal Smelting and Refining: ferrous and nonferrous metal smelting/refining, ferrous foundries, scrap electric wire recovery, drum and barrel reclamation furnaces, solid waste from primary/secondary iron/steel mills/foundries	Chemical Manufacturing and Processing Sources: bleached chemical wood pulp and paper mills; manufacture of chlorine, chlorine derivatives, and metal chlorides; manufacture of halogenated organic chemicals; other chemical manufacturing and processing sources	Ball clay	High Traffic Areas	Treated Lumber	Manure	Existing or former smelters, fossil fuel-fired electrical power plants, or cement manufacturing facilities	Structures once painted with lead-based paint
Arsenic Asbestos Barium					X		X	
Cadmium Chromium Copper					X X	X		
Fluoride Mercury Lead				X			X	X
Molybdenum Selenium Sodium								
Sulfur Zinc Dioxin ⁸	X	X	X	X		X		
PCBs ⁷ PAHs ¹ Petroleum Products ²				X				
Pest/Herb ³ Solvents ⁴ Surfactants ⁵								
Phenols ⁶ Nitrate Sulfate								
Radioactivity Other								
References	B	B	B	C, D	C	C	D	D

SOURCES OF CONTAMINANTS IN SOIL (continued)

Contaminants	Tailings from current or former metal ore mines	Paint (before 1978): Old residential buildings; mining; leather tanning; landfill operations; aircraft component manufacturing	High traffic areas: Next to heavily trafficked roadways or highways; near roadways built before leaded fuel was phased out	Treated lumber: Lumber treatment facilities	Burning wastes: Landfill operations	Contaminated manure: Copper and zinc salts added to animal feed	Coal ash: Coal-fired power plants; landfills	Sewage sludge: Sewage treatment plants; agriculture	Petroleum spills: Gas stations; residential/commercial/industrial uses (anywhere an aboveground or underground storage tank is or has been located)	Pesticides: Widespread pesticide use, such as in orchards (especially pre-1947); pesticide formulation, packaging and shipping
Arsenic	X			X						X
Asbestos										
Barium										
Cadmium								X		
Chromium				X						
Copper				X		X		X		
Fluoride										
Mercury										X
Lead	X	X	X					X		X
Molybdenum							X			
Selenium										
Sodium										
Sulfur							X			
Zinc			X			X		X		
Dioxin ⁸					X					
PCBs ⁷									X	
PAHs ¹			X		X				X	
Petroleum Products ²									X	
Pest/Herb ³										X
Solvents ⁴										
Surfactants ⁵										
Phenols ⁶										
Nitrate										
Sulfate										
Radioactivity										
Other										
References	D	E	E	E	E	E	E	E	E	D, E

SOURCES OF CONTAMINANTS IN SOIL (continued)

			Burning coal, lead-acid batteries, leaded gasoline, lead-based paints, solder	Burning coal, rechargeable batteries, TVs, steel, phosphate fertilizer, galvanized water pipes	Certain pesticides, iron and steel production, treated lumber, burning coal		Attic and wall insulation, insulated water pipes, roofing shingles, ceiling and floor tiles, cement, automobile parts	Parking lots and carwashes	Demolished commercial or industrial buildings	High-traffic roadways (vehicle exhaust)	Former parks and lands adjacent to railroad rights-of-way
Contaminants	Commercial/industrial site use	Dry cleaners				Metal plating, treated lumber					
Arsenic	X				X		X		X		
Asbestos											
Barium											
Cadmium	X			X							
Chromium	X					X					
Copper											
Fluoride											
Mercury	X										
Lead	X		X					X		X	
Molybdenum											
Selenium											
Sodium											
Sulfur											
Zinc	X										
Dioxin ⁸											
PCBs ⁷								X	X		
PAHs ¹	X									X	
Petroleum Products ²	X							X			
Pest/Herb ³											X
Solvents ⁴	X	X						X			
Surfactants ⁵								X			
Phenols ⁶											
Nitrate											
Sulfate											
Radioactivity											
Other											
References	E	E	F	F	F	F	F	G	G	G	G

SOURCES OF CONTAMINANTS IN SOIL (continued)

Contaminants	Federal-Mogul nearby properties, Detroit, Michigan	Tittabawassee River Floodplain, Michigan	St. Louis, Michigan
Arsenic Asbestos Barium			
Cadmium Chromium Copper			
Fluoride Mercury Lead	X		
Molybdenum Selenium Sodium			
Sulfur Zinc Dioxin ⁸		X	
PCBs ⁷ PAHs ¹ Petroleum Products ²			
Pest/Herb ³ Solvents ⁴ Surfactants ⁵			
Phenols ⁶ Nitrate Sulfate			
Radioactivity Other			PBBs, DDT
References	H	I	J

SOURCES OF CONTAMINANTS IN SOIL (continued)

¹PAHs = Polycyclic Aromatic Hydrocarbons (benzo[a]pyrene, benzo[b]fluoranthene, etc.)

²Petroleum Products = gasoline, kerosene, fuel oil.

³Pest/Herb = Pesticides and/or Herbicides

⁴Solvents = tetrachloroethene, trichloroethene, trichloroethanes, dichloroethenes, dichloroethanes, etc.

⁵Surfactants = various products such as Triton, Dowfax, and others.

⁶Phenols = phenol, chlorophenols, methylphenols, nitrophenols.

⁷PCBs = Polychlorinated Biphenyls

⁸Dioxins can persist in the environment for decades (half-life about 50 - 100 years), so dioxins from sources that were active in the 1800's and 1900's may still be present today.

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F. The Johns Hopkins Center for a Livable Future. (2014) Soil Safety Resource Guide for Urban Food Growers. http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/projects/urban-soil-safety/CLF%20Soil%20Safety%20Guide.pdf.

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J. U.S. EPA (Environmental Protection Agency). Region 5 Cleanup Sites: Velsicol Corp. (Michigan) Superfund Site. <http://www.epa.gov/region5/cleanup/velsicolmichigan/>

APPENDIX B

SOIL CONTAMINANTS AND LIVESTOCK

Line	State	Jurisdiction	Regulatory/Guidance	Application	Contaminants Specified	References	Details
1	New York	Statewide	Regulatory	Brownfield and Superfund Remedial Soil Cleanup. Unrestricted use soil cleanup objectives protect for child and adult consumption of vegetables from a home garden and home produced animal products such as meat, eggs and milk.	Metals and other inorganics, PCB's, pesticides, semivolatile organic compounds, and volatile organic compounds.	(a), (b)	Maximum soil concentrations for unrestricted land use are listed for 85 contaminants.
2	New York	Statewide	Guidance	Protection of human, plant, and animal health for all land uses.	Arsenic, Cadmium, Hexavalent Chromium, Trivalent Chromium, Copper, Lead, Nickel, and Zinc.	(c)	New York's unrestricted use soil cleanup objectives (maximum soil concentrations) (Line 1) are listed for these 8 contaminants.
3	New York	Statewide	Guidance	Urban gardening that includes raising chickens for eggs.	Lead: Two Guidance Values. Guidance Value I is 200 ppm, Guidance Value II is 400 ppm.	(d)	No practices recommended for <200 ppm lead in soil, some for 200 to 400 ppm, and additional ones for >400 ppm.
4	California	Statewide	Guidance	Eggs from backyard chickens that forage on the ground.	Dioxin: Consumption Advisory.	(e)	"Do Not Eat" advisory for eggs from chickens that have contact with the ground located near industries releasing dioxins into the environment.

(a) New York State Department of Environmental Conservation. Subpart 375-6: *Remedial Program Soil Cleanup Objectives*. Effective December 14, 2006.

(b) New York State Department of Environmental Conservation and New York State Department of Health. New York State Brownfield Cleanup Program, *Development of Soil Cleanup Objectives*, Technical Support Document. September 2006.

(c) Cornell University, Waste Management Institute, College of Agriculture and Life Sciences, Department of Crop & Soil Sciences. *Guide to Soil Testing and Interpreting Results*. April 2009.

(d) New York State Department of Health; Cornell University, College of Agriculture and Life Sciences, Department of Crop and Soil Sciences; and Cornell University, Cooperative Extension, New York City. *Understanding Your Test Results: Lead in Soil and Chicken Eggs*. October 2012.

(e) California Department of Health Services, Environmental Health Investigations Branch. *Backyard Chicken Eggs in California: Reducing Risks Questions and Answers*. August 2004.

APPENDIX C

APPEARANCE CHART

SPECIES	HEALTHY APPEARANCE	SIGNS OF ILLNESS
Chickens	Dry nostrils Red comb Bright eyes Shiny feathers Good weight and muscle tone Clean vent feathers Smooth legs Straight toes Bright, alert, and responsive	Discharge from eyes and/or nostrils Swelling around the eyes Coughing Excessive soiling of feathers around vent Pale or discolored comb Lameness, swelling of legs/feet Splay leg Droopy/lethargic
Goats	Energetic Curious Feet planted squarely and well balanced when standing Chewing cud when laying down Tail held above or over the back Hair coat rich and shiny Bright, alert, and responsive Nonvocal unless hungry, thirsty, or in rut	Not eating or drinking Diarrhea Painful urination Bloated belly with vocalizations Poor hair coat Pale or discolored gums Drainage from eyes and/or nostrils Limping and/or swelling of foot/leg Lumps under jaw Coughing, sneezing Drooping tail Not chewing cud Pressing head against wall/fence Refusing to get up or difficulty rising Hot udder Grinding teeth Isolation from flock mates Circling, head tilt, stumbling

APPEARANCE CHART (continued)

<p>Pigs</p>	<p>Bright and clean hair coat Free and easy movement Good growth for its age Bright, alert, and responsive</p>	<p>Twisted, swollen, misshapen snout Discharge from eyes or nostrils Sniffing and/or coughing sounds Swelling along the jaw line Dull, sunken eyes Listless or depressed Swelling in foot/leg, lameness Dull hair coat, hair on end Slow to get off their beds Eating less or not at all Diarrhea Vomiting Abortions/stillborns Uncoordinated "Poor doers" when nursing age</p>
<p>Rabbits</p>	<p>Bright, alert, and responsive Fur is clean, shiny, well groomed Normal movement Pelleted fecal material Eating/drinking normally</p>	<p>Grinding teeth Hot or cold ears Discharge from eyes and/or nose Coughing, sneezing Listless, depressed Not eating/drinking Wet chin or drooling Stumbling or limping Diarrhea Open mouth breathing Hunched position Blood in urine Enlarged abdomen Hair loss Head tilt</p>

WORKGROUP CONTRIBUTORS

Jim Johnson, Chair

Director
Environmental Stewardship Division,
Michigan Department of Agriculture and
Rural Development

Kristin Esch

Right to Farm Inspector
Environmental Stewardship Division,
Michigan Department of Agriculture and
Rural Development

Dr. Kay Fritz

Toxicologist
Rapid Response Team,
Michigan Department of Agriculture and
Rural Development

Dr. Jorda Livermore

Veterinarian
Animal Industry Division,
Michigan Department of Agriculture and
Rural Development

Kathryn Lynch Underwood

City Planner
City of Detroit City Planning Commission

Jerry May

Senior Educator
Michigan State University Extension

Dr. Wendy Powers

Professor, Director of Environmental
Stewardship for Animal Agriculture
Livestock Environment Management,
Michigan State University

Brian Rowe

Pesticide Section Manager
Pesticide and Plant Pest
Management,
Michigan Department of Agriculture
and Rural Development

Dr. Dale Rozeboom

Professor, Extension Specialist
Swine Nutrition & Production
Management,
Michigan State University

Tim Slawinski

Emerging Issues Specialist
Food and Dairy Division,
Michigan Department of Agriculture
and Rural Development

Dr. Janice Swanson

Chairperson and Professor
Animal Behavior and Welfare,
Michigan State University

APPENDIX B

Workgroup's Core Values

Core values are the basic elements of how to go about the work. They influence the work process, interactions with each other, and the strategies selected to fulfill the charge.

The Urban Livestock Workgroup identified and agreed to the following core values:

- Be open minded
- Compromise
- Think forward/progressively
- Creative and solution oriented
- Action and implementation

APPENDIX C

Workgroup's Decision Making Model

In group interactions determining the methodology for how decisions will be made prior to actually attempting to make decisions, provides a sense of security in knowing what the next steps will be and it establishes a sense of fairness and trust in the process. The Urban Livestock Work Group identified and utilized the decision making steps outlined below.

1. Consensus – Can you live with it and support it?
2. Discussion and adjustments. Then return to step one. If consensus is not achieved move to step three.
3. Super majority (75%) agreement of workgroup members in attendance. If not attained return to steps two, then three.
4. Minority considerations may be requested and noted in the report.

APPENDIX D

Workgroup's Norms

The group identified and agreed to the terms below as building blocks for how they would interact and work with one another.

1. Electronic devices on "stun" (turned off or silenced).
2. Participate and play.
3. Respect all roles – freedom to be, do not judge, think and then talk
4. Listen – give full attention with posture and eye contact, and avoid checking electronics.
5. Keep it (comments) short and easily understood.
6. Remember – "We all care". Freedom to have opinions and be able to change ideas.
7. Keep it (discussions) confidential. (Unless the group determines it is something to be shared.)
8. Trust the process and the people.

APPENDIX E

Michigan Townships Association Map of Michigan



APPENDIX F

Notes from Workgroup Discussion

The ULW was charged with formulating recommendations related to raising livestock in urban/suburban areas. Therefore the majority of the questions and considerations discussed were related to raising livestock in urban and suburban areas. The information below represents the discussions at various stages in the process.

For the Act

- Preemption or Not?
 - Require (opportunity) but also allow for local decision making
 - Local zoning authority to regulate – without preemption
 - No preemption of Condos and HOA agreements
- Local registration / licensing of livestock being raised in urban and suburban areas
- Include home use and sale
- Amend Planning and Zoning Acts (to align with Urban Farming Act)
- Define non-commercial agriculture to differentiate with RTFA

For the Guidelines / Best Practices

- Development of Model Ordinances
- Establish a dollar threshold or definition for commercial and/or other defining characteristics
- Set a minimum standards for which local governments used for their regulations
- High standards, broadly permissive
- These guidelines would include but are not limited to aspects identified by the Urban Livestock Technical Workgroup: Care of Farm Animals, Soil Toxicity, Waste Management, Pest Control, Public Health, Food Safety, and Slaughter Practices.
 - Type of livestock
 - Minimum number of livestock that must be allowed (e.g. two laying hens)
 - Density of livestock (e.g. minimum square footage per animal)
 - Harvest, Sale, Fencing, Housing, and Set-Back
- Neighbor considerations, nuisance guidelines
- Urban MAEAP

For Education

- Why people want to raise livestock in urban/suburban areas
 - “Choose where your food comes from”
 - For health reasons
- Disseminate information to
 - Policy Makers
 - Local Government
 - Community members
- Explanation of technical information for local units of government
- Means in which information is distributed
- Need to identify sources

Other Considerations (Bike Rack)

Below are other aspects that the ULW identified which should be further discussed or considered in regards to urban and suburban agriculture. These aspects were outside the focus of the workgroup's charge in regards to raising livestock in urban and suburban areas.

Recommendations:

The ULW recommends additional thoughts and opinions be sought as there are many more diverse voices that should be brought into the discussion about how to support agriculture (including raising livestock) in urban and suburban areas.

Considerations:

1. Bees should be included in an Urban Act, as they are not livestock per the Animal Industry Act, 1988 PA 466, MCL 287.701-287.747.
2. Several Michigan universities are directly engaged in working on urban and suburban agricultural practices and food safety. The Act should take into consideration the guidelines and best practices identified through their work too.