



United States Department of Agriculture

Veterinary Services



Carcass Management and HPAI 2015

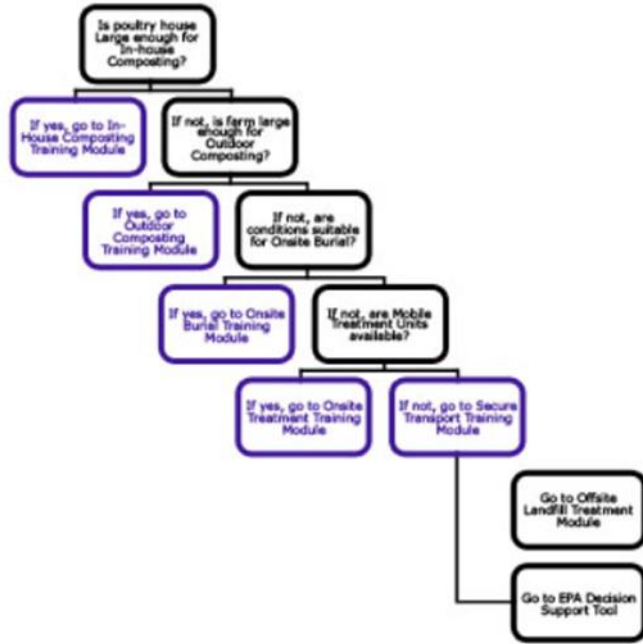
Lori P. Miller, PE
Sr. Staff Officer/Environmental Engineer
U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Veterinary Services
October 24, 2015



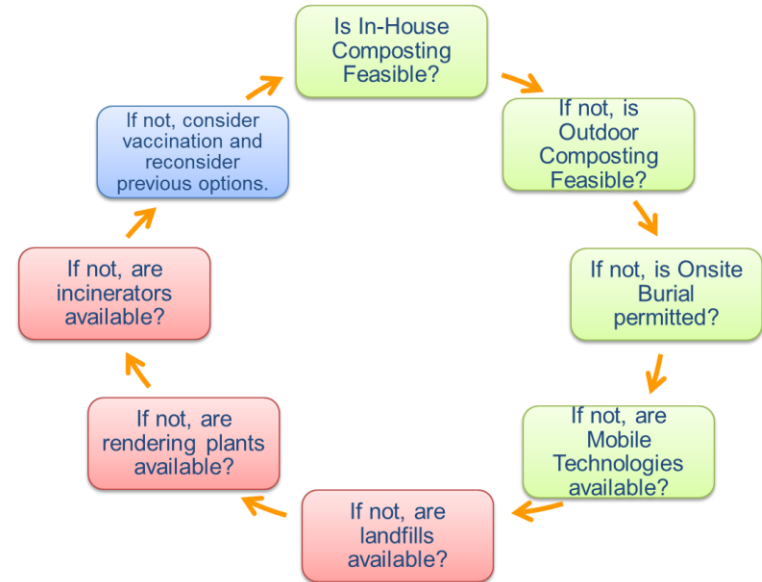


APHIS Carcass Management Tools

INTERACTIVE ONLINE TOOL



MANUAL TOOL



https://www.aphis.usda.gov/wps/portal/aphis/ourfocus/animalhealth/sa_emergency_management/ct_fadprep_outbreak_response_tools!/ut/p/a1/IZHLcolwFlafpQuXTI4RCCzFG6hUW7UKm0wM4TKFhIHYGfv0RdtNF1p7dv-Z_9y-g2J0QLFkH0XGdKEkKy86tul85eO-BziYbdwJBM9v09BZksHKNztD1BIGs6FvkiUAmA6GYOz5Y-KGAIH9WD3ciCH8Vb9HMYq51LXOUcTqvGgpV1lLqWIZHBvWnHvQMqpODU0VP7VXxWRRsZLmmpU6v2ZEJZpMSH6mFZMs66TUPeCapiypG1F3DfSxEeydNqKtIWwF1UqV7WV6zYsERURgThw3MdwBEYbJLWEwx0oNDn3iYHuQWgl8b_vroNnE6w6aLtdkMcewsH4M94BeDXeIRR1ScpOZa6LNP7eeP_BE3ISjMOvaMp0bhUwVOtzAig4PYN2PUNyDrfLwC6qr3a5yBvar_7INq_06GD49fQEvMKEU/?1dmy&uril=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_emergency_response%2Fsa_esf11%2Fsa_tools_and_training%2Fct_aphis_role_emergency_tools

Emergency Management Tools

- **How to use the tools**
- Countermeasures
- Modeling
- Depopulation
- Disposal
- Decontamination
- National Veterinary Stockpile
- Health, Safety
- Resource Links
- Research
- Emergency Situation Pages



Introduction

When responding to an animal disease outbreak emergency, it's important to have tools to assist you in taking appropriate action to control the outbreak while protecting human health and the environment. This course will familiarize you with the following:

- USDA Animal and Plant Health Inspection Service (APHIS) Emergency Management Animal Disease Tools
- EPA Disaster Debris Management and Disposal (DDMD) Decision Support Tools
- USDA [Natural Resources Conservation Service \(NRCS\) Web Soil Survey \(WSS\)](#)

When used as outlined in this course, the APHIS Emergency Management tools can help responders choose the appropriate depopulation, disposal, and decontamination options to safely control an animal disease outbreak.



Interactive tutorial explains how to use the online tools to select one or more carcass management options.





USDA APHIS Emergency Management Animal Disease Tools

The purpose of the [APHIS Emergency Management Animal Disease Tools website](#) is to provide environmentally-sound tools to support the response to the event of an animal disease outbreak.

- [Counter Measures](#)
- [Modeling](#)
- [Depopulation](#)
- [Disposal](#)
- [Decontamination](#)
- [Health, Safety](#)

Especially note disposal section.

Each major topic is a link to more information on that topic. In general, the major topics are divided into subtopics which include main components of the major topics, as well as Training, Research, and Resource Links. For example, the image to the right shows the Counter Measures major topic, which is divided into Surveillance, Vaccination, Movement Control, Training, Research, and Resource Links.

Select here to see the complete [site index](#).

Emergency Management Tools

- [Surveillance](#)
- [Vaccination](#)
- [Movement Control](#)
- [Training](#)
- [Research](#)
- [Resource Links](#)

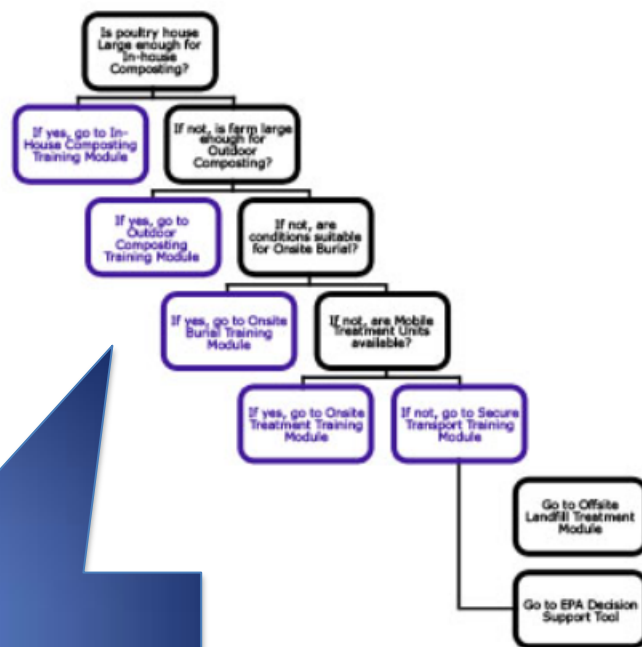
HPAI Disposal Tools

The [Disposal Options Decision Tree](#) page consists of a series of training modules to assist with the carcass disposal decision-making process. Users can access training for the following subjects:

- In-House Composting
- Outdoor Composting
- Onsite Burial/Treatment
- Secure Transport
- Offsite Landfill/Treatment
- Cleaning and Disinfection

Each box links to a list of decision criteria, a training module on the selected action, or a link to additional information/resources.

You can also access [Management and Disposal](#) other useful documents.



Online tool features interactive decision tree

Click the image above to see a full-size version.



USDA **APHIS** **Animal Disease Outbreak Emergency Management Tools** [print] [refresh]

Emergency Management Tools [back] 4 of 9 [forward]

EPA's Suite of DDMD Decision Support Tools

This [website](#) organizes large amounts of information related to disposal of debris resulting from incidents of national significance (e.g., contaminated buildings and water treatment systems). The tools can be used by emergency responders and other individuals responsible for making disposal decisions to access technical information, regulations, and guidance to work through important disposal issues to assure safe and efficient removal, transport, and disposal of waste materials. Available tools include:

- Disposal Facility Information
- Building Residue Characteristics and Quantity Estimates
- Water Systems Material Characteristics and Equipment
- Agricultural Biomass Disposal Guidance
- Natural Disaster Debris Characteristics and Guidance
- Radiological Dispersal Devis Information and Guidance
- Contaminant and Decontaminant Characteristics
- Transportation, Packaging, and Storage Information
- Worker Protection Information
- Library of Useful Resources



Online tool links to EPA database of landfills, rendering plants, incinerators and other disposal facilities across the US, includes contact info

Of particular note is the Agricultural Biomass tool, which allows the user access detailed information about availability of disposal sites near an incident.

Demonstration - Web Soil Survey

United States Department of Agriculture
Natural Resources Conservation Service

Contact Us | Download Soils Data | Archived

Area of Interest (AOI) | Soil Map

Quick Navigation

Navigate By...

Address

State and County

View

State: New York

County (optional)

Soil Survey Area

Latitude and Longitude

PLSS (Section, Township, Range)

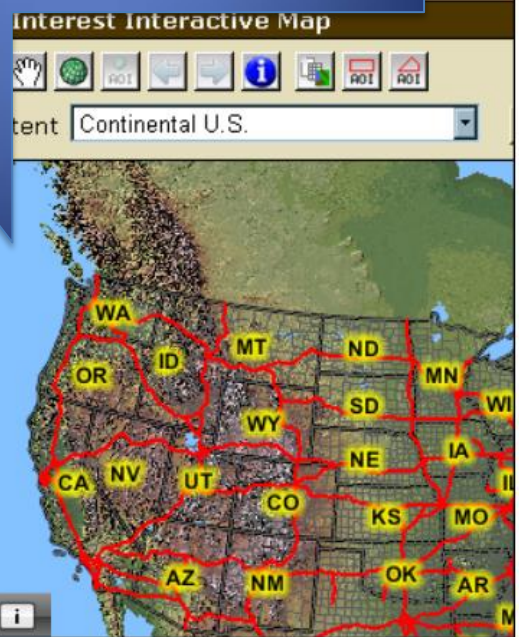
Bureau of Land Management

Department of Defense

Forest Service

Tool also links to NRSC Web Soil Survey with instructions on how to determine if a specific location has soils suitable for burial

Select the **County** dropdown box, if desired.



close



APHIS Manual Carcass Management Decision Tool

Matrix, Loop, and Checklist
(MLCh)

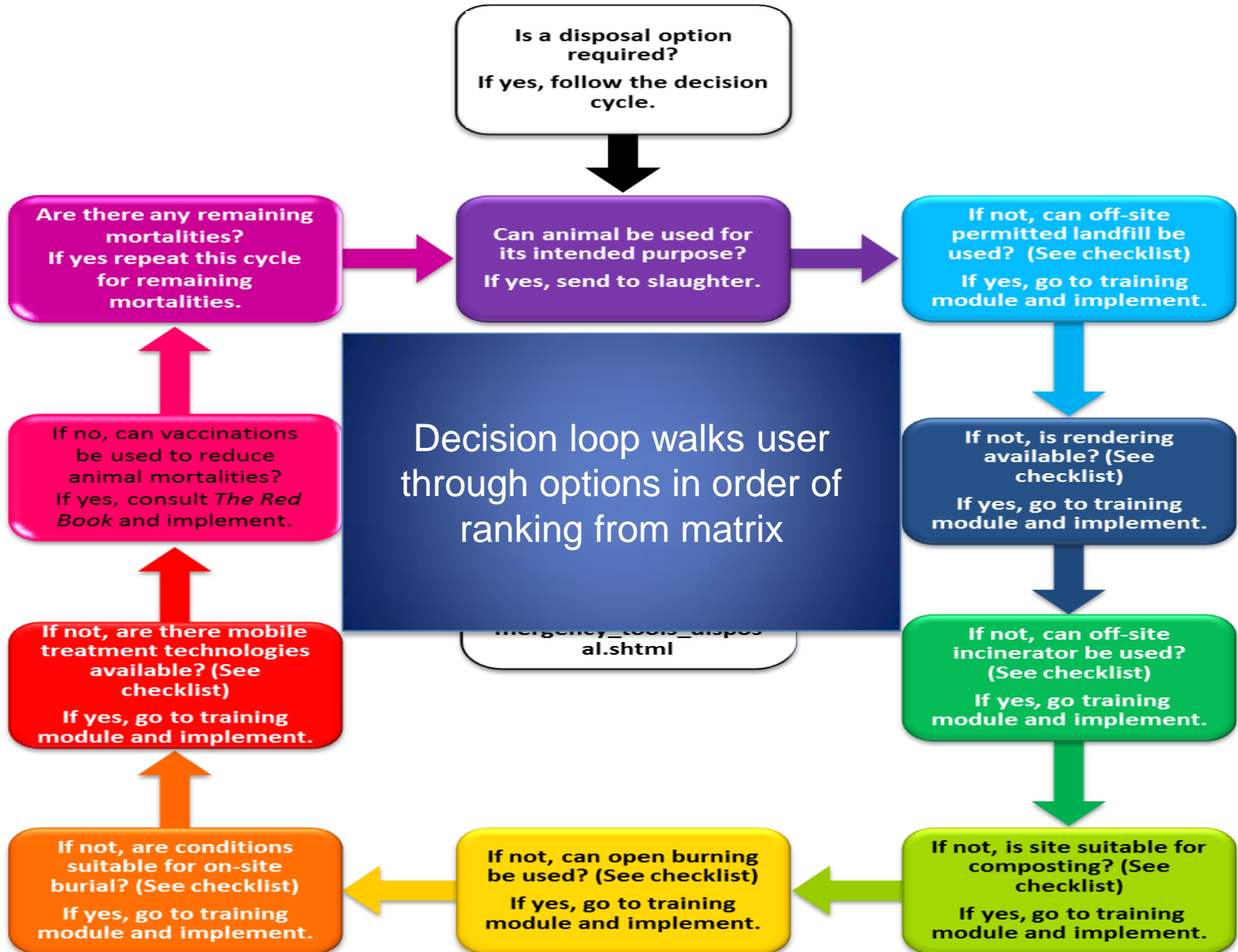


Weighting	Criteria	Off-Site Landfill	Rendering	Off-Site Incineration	Composting	Open Air Burning	On-Site Burial
Most Important (x3)	Public Health Risk (1)	9	9	9	9	6	3
	Biosecurity (2)	6	6	6	3	3	3
	Pathogen Inactivation (3)	3	6	9	6	9	3
	Environmentally Sustainable (4)	9	9	9	9	3	3
Important (x2)	Need to Transport Carcasses Offsite (5)	2	2	2			
	Volume Reduction (6)	4	6	6			
	Availability(7)	6	4	2			
	Throughput (8)	6	6	2			
	Speed to Implement (9)	6	4	4			
	Public Acceptance (10)	6	4	6			
Less Important (x1)	Cost Effectiveness (11)	3	2	1	1	1	3
	Efficiency (12)	3	3	3	2	1	2
	Operability (13)	3	3	3	2	1	3
	Regulatory limitations (14)	2	3	2	2	1	1
	Denial of use (15)	3	2	2	2	2	1
	Total Points	71	69	66	62	53	48
	Average Score	4.7	4.6	4.4	4.1	3.5	3.2

Matrix developed by panel of experts who ranked six major disposal options against 15 different criteria

High Capacity Options Matrix

Decision Loop



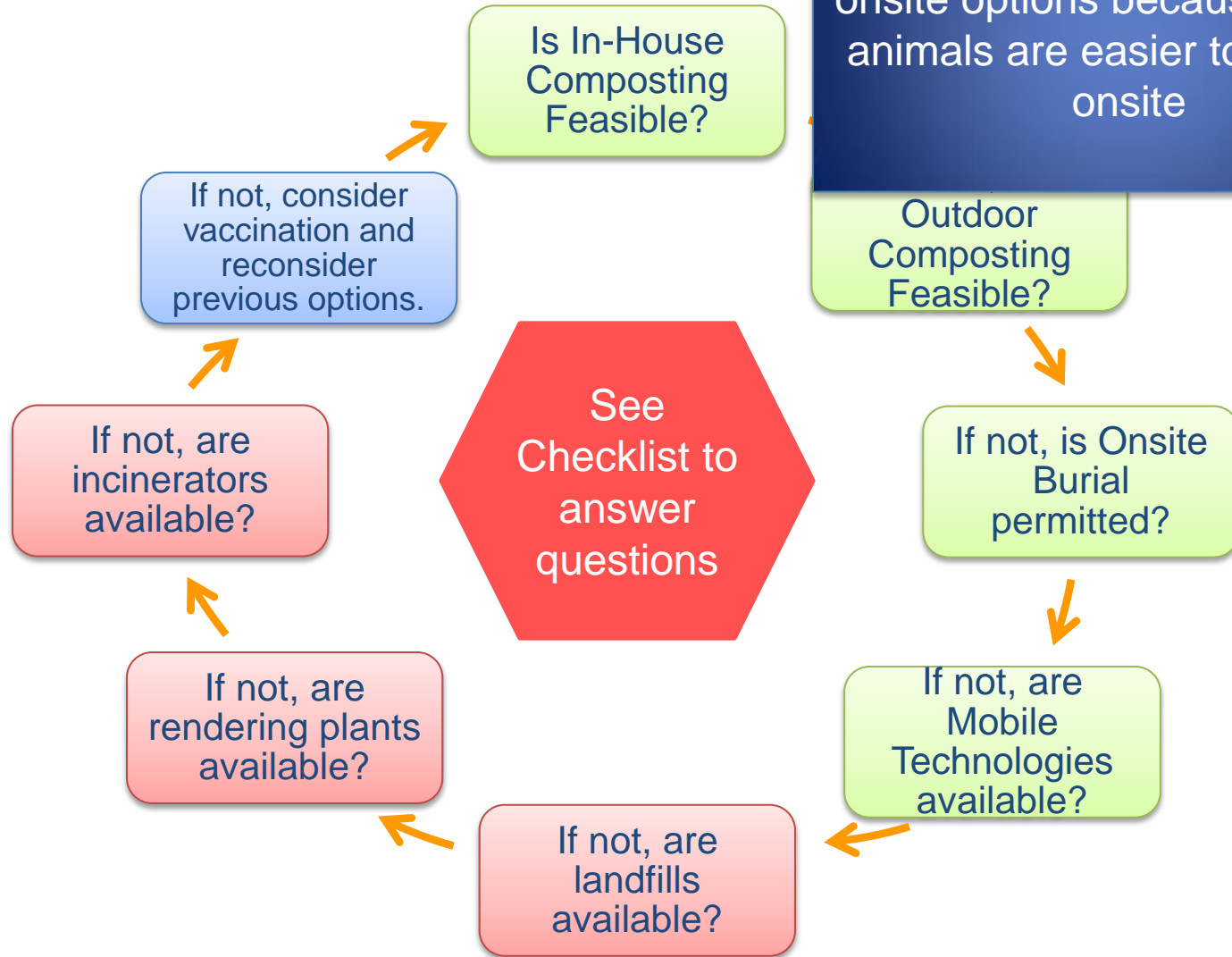
Checklist

Can off-site permitted landfill be used?

- See a comprehensive list of landfills at <http://www2.ergweb.com/bdrtool/login.asp>.
- Contact facilities and determine if they will accept some or all of your capacity needs.
 - If there is insufficient capacity, contact the state for permitting of new landfill for this purpose.
 - Consider potential environmental impacts.
- If the landfill will accept the material, arrange for a waste management professional to:
 - Determine if any permits are required for transport of infected carcasses.
 - Determine type of transport vehicles required. If the waste must travel on public roads, it should be transported in closed, leak-proof trucks or dumpsters. Secondary containment may be needed, depending on the type of waste being transported.
 - Work with disposal group within the Incident Command System to determine how many animals can be depopulated per day and how many trucks will be needed for transport per day, ensuring the rates are about the same.
 - Pre-identify transport routes to minimize exposure to susceptible premises.

Checklist helps user answer questions to determine if option can be used at a specific premises

If permitted landfilling is an option, see the **Secure Transport** and **Off-Site Treatment/Burial** training modules at www.aphis.usda.gov/emergency_response/tools/aphis_role_emergency_tools.shtml and implement off-site permitted landfilling.



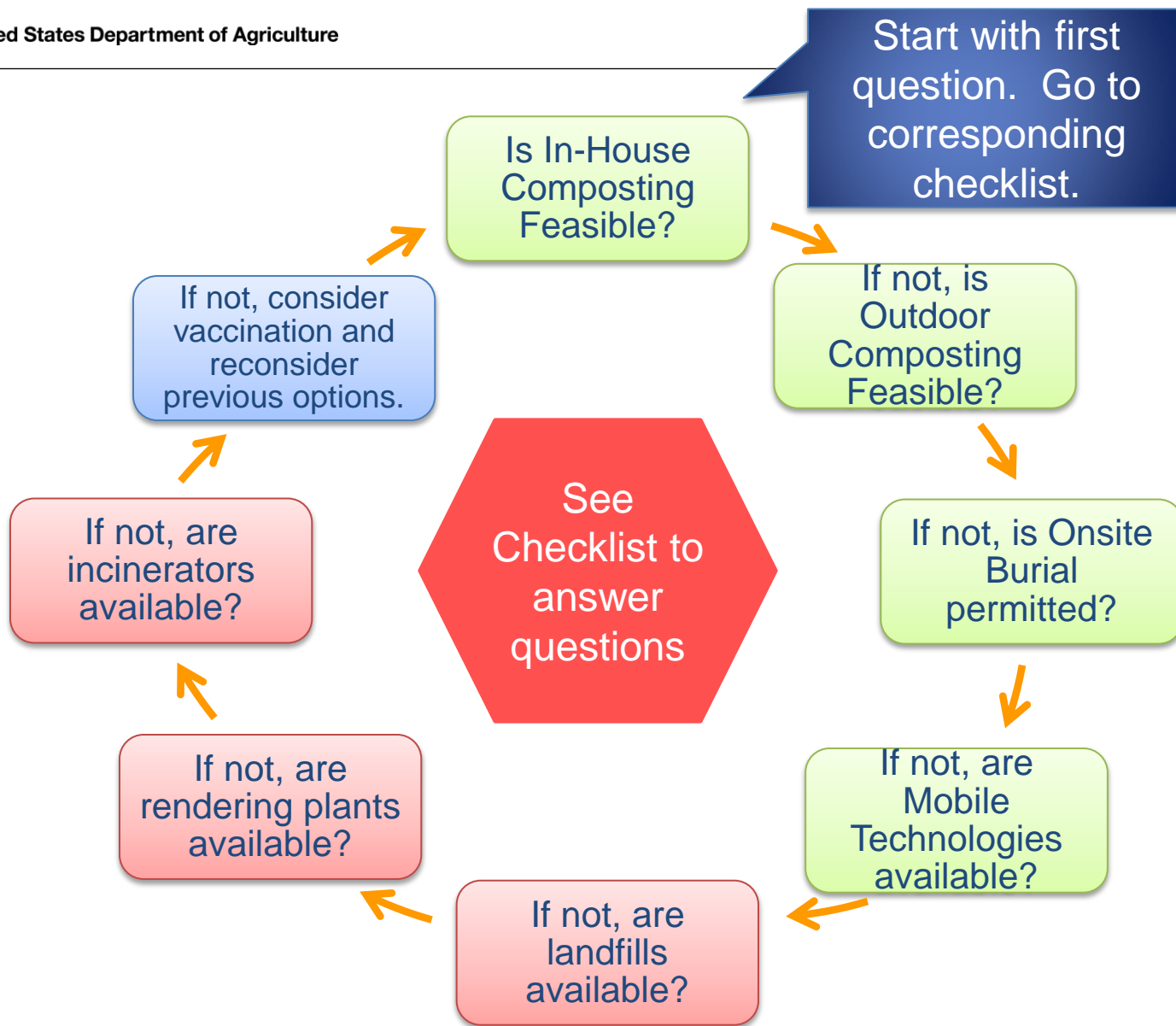
Loop modified for HPAI to favor onsite options because smaller animals are easier to manage onsite

HPAI Carcass Management Decision Tree



- Caged layer hen facility
- 4 barns with 1M birds in each barn; total of 4M infected birds requiring disposal.
- The cage rows are 5 cages high with 24 inches between rows.

Example Decision Process



HPAI Carcass Management Decision Tree

Suitability for In-House Composting

- In order to be suitable for in-house composting, the facility should have the following characteristics:
 - ✘ Have sufficient space to maneuver composting equipment and construct windrows. The facility should contain enough open space and ceiling must be high enough to allow the loader to construct windrows 6 feet high and 12 feet wide. Facilities with columns, such as double-deck houses, restrict such formations.
 - Be located in an area that is suitable for the delivery of carbon source and removal.
 - Have access doors that can be closed to prevent vandals, scavengers or dirt.

Because the layer houses have cages spaced 24 inches apart, the houses are not suited for in-house composting.

Corresponding
online training
module

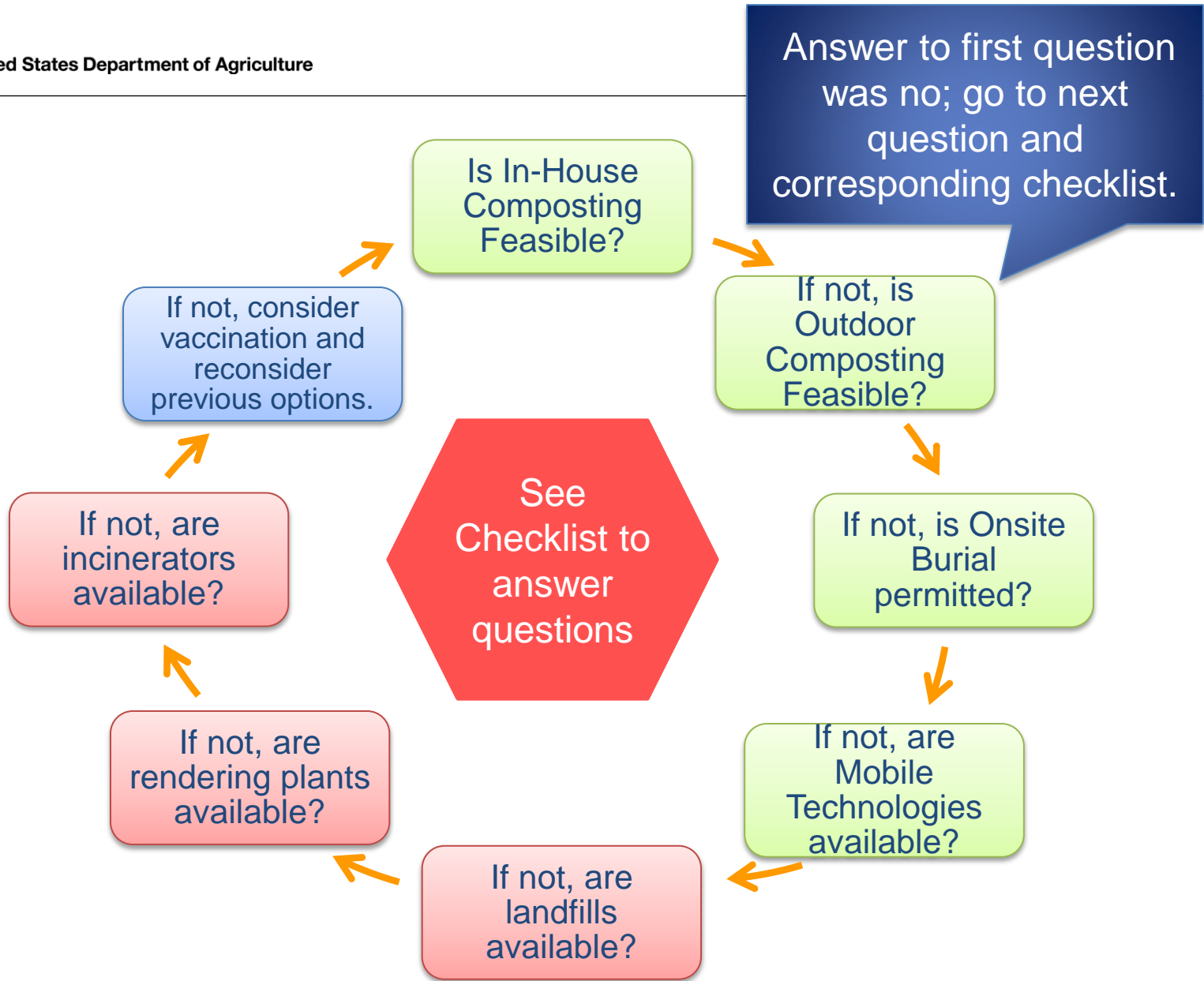


In-House Composting

Select one of the following items:

- Introduction
- PPE for Avian Influenza
- ICS Disposal Unit
- Preparation for Composting
- Materials & Calculations
- Assembling a Windrow
- Monitoring, Turning and Disposal of Compost
- References
- Summary



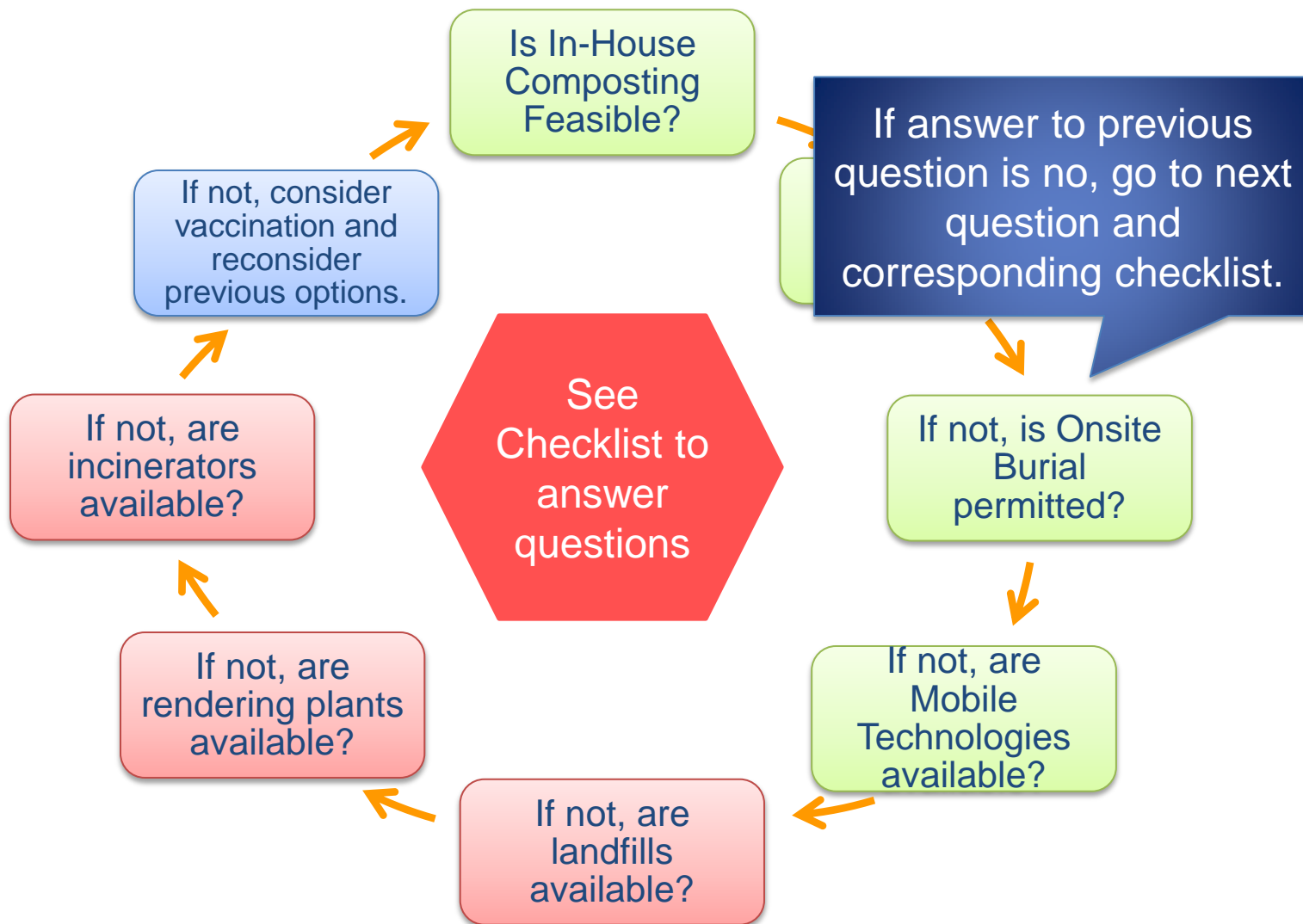


HPAI Carcass Management Decision Tree

Is site suitable for composting?

- Adequate land area to build compost piles
 - At least 200 feet from water wells, surface water bodies (lakes, streams, rivers, etc.), sinkholes, seasonal seeps or other landscape features that indicate the area is hydrologically sensitive.
 - Consider all groundwater pathways including the presence of drain tiles, soil characteristics, depth to groundwater, use of groundwater etc.
- Located away from neighbors and/or out of sight.
 - Located downwind from neighbors and/or houses.
 - Located away from environmentally-sensitive areas.
 - Located close to the livestock or poultry facility or have clear access to the facility.
 - Clear of overhead utility lines.
 - Void of excess water.

From aerial photograph, the site appears too restricted to meet outdoor windrow siting criteria



HPAI Carcass Management Decision Tree

Is site suitable for on-site burial?

- Are soils suitable (see USDA NRCS online Web Soil Survey)?
 - If so, based on the expert written opinion of an experienced groundwater hydrologist, will leachate contaminate groundwater in excess of public health standards?
 - Consider all groundwater pathways including soil characteristics, depth to groundwater, use of groundwater, and other factors.
 - If not, based on the expert written opinion of an experienced groundwater hydrologist, will the burial site create a stability or explosion hazard from the burial process?
- If not, is adequate land available for on-site burial?
 - If so, is burial permitted by applicable regulatory authorities? Can permit requirements be met?
 - If so, will land owner accept on-site burial, associated environmental liabilities, and potential loss of property value or use?

Soils only marginally suitable based on Web Soil Survey, and inadequate acreage to bury.

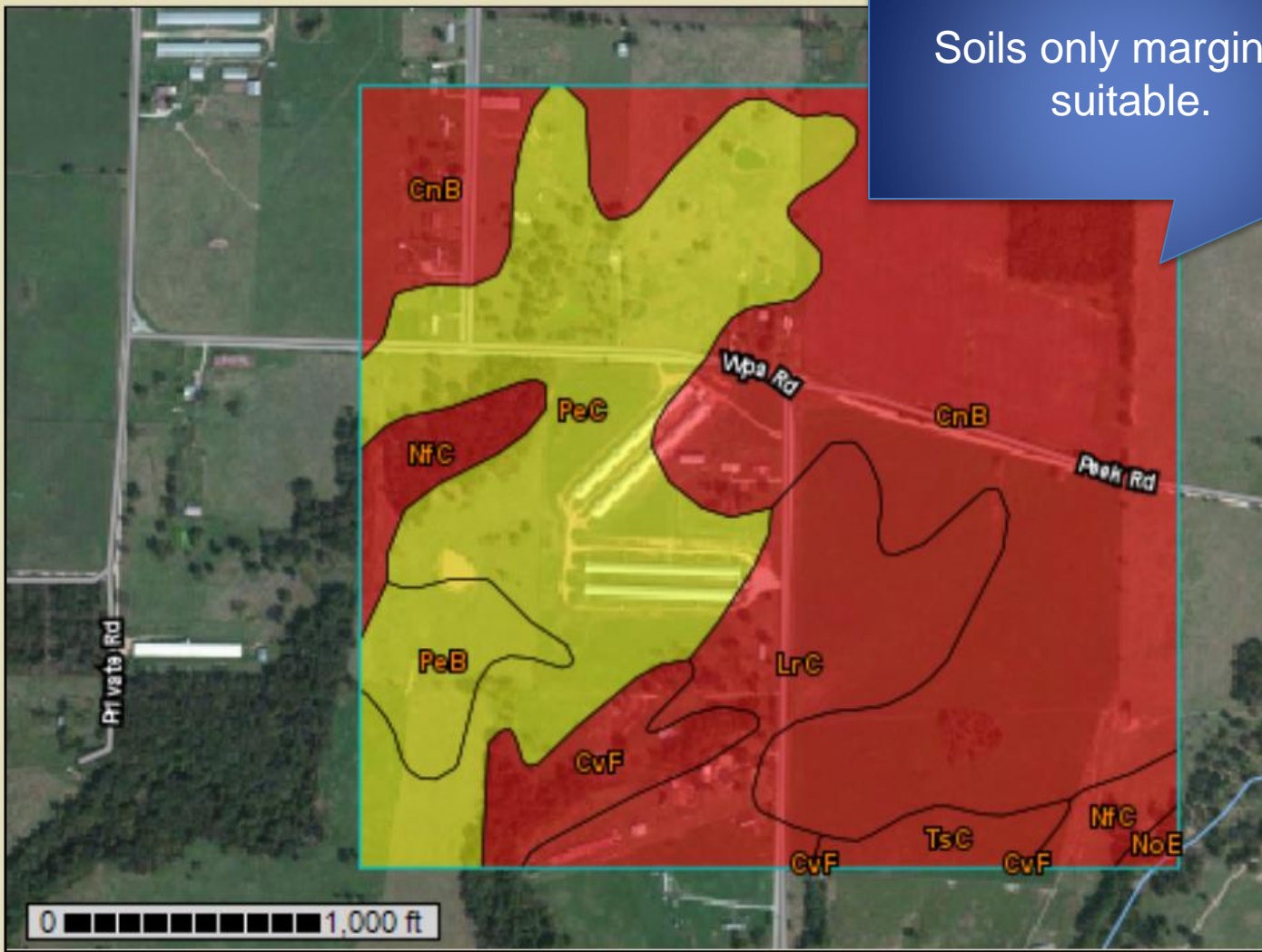
If on-site burial is an option, see the **On-Site Treatment/Burial** training module at www.aphis.usda.gov/emergency_response/tools/aphis_role_emergency_tools.shtml and implement on-site burial.

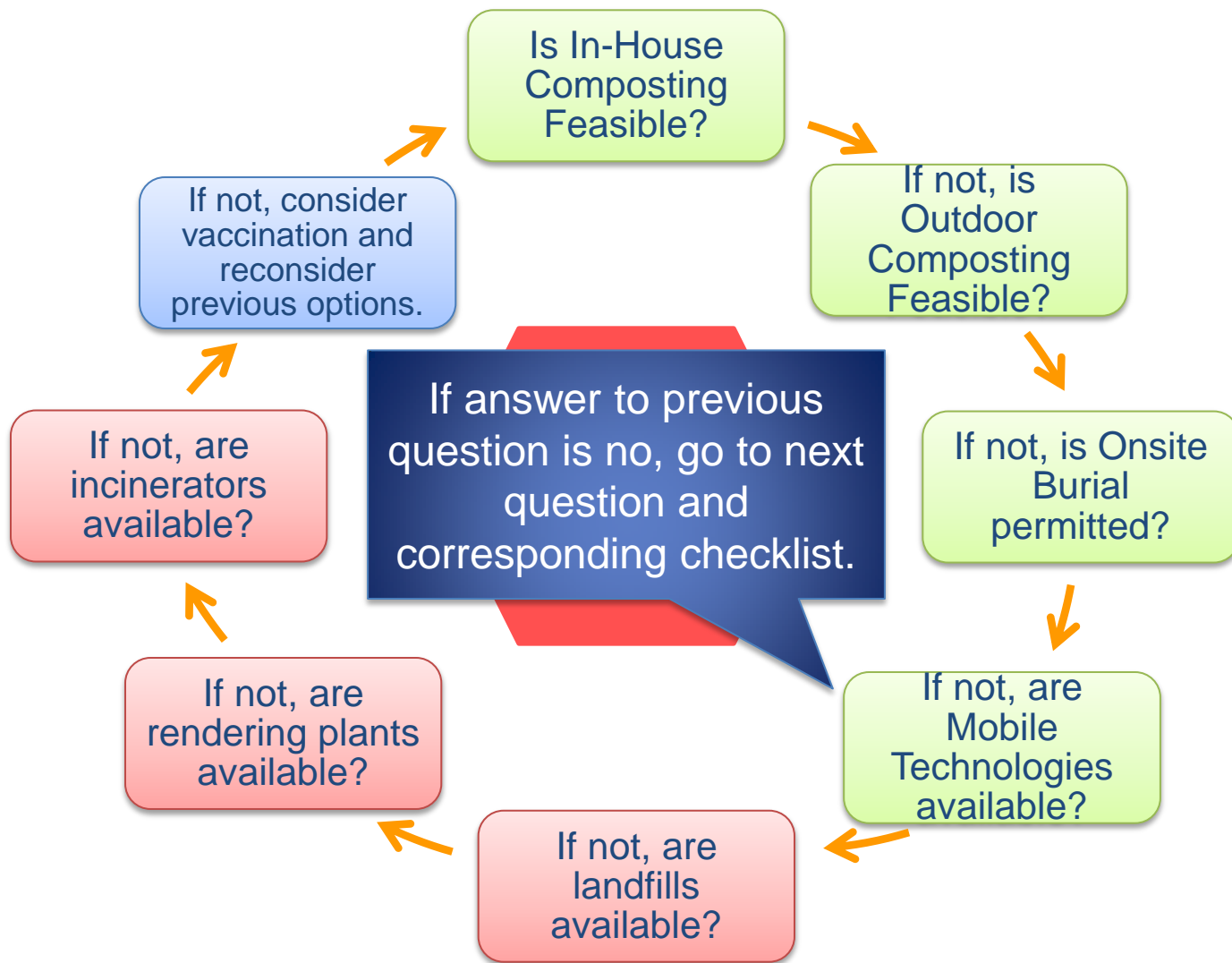
Map – Catastrophic Mortality, Large Animal Disposal, Trench



Scale

Soils only marginally suitable.



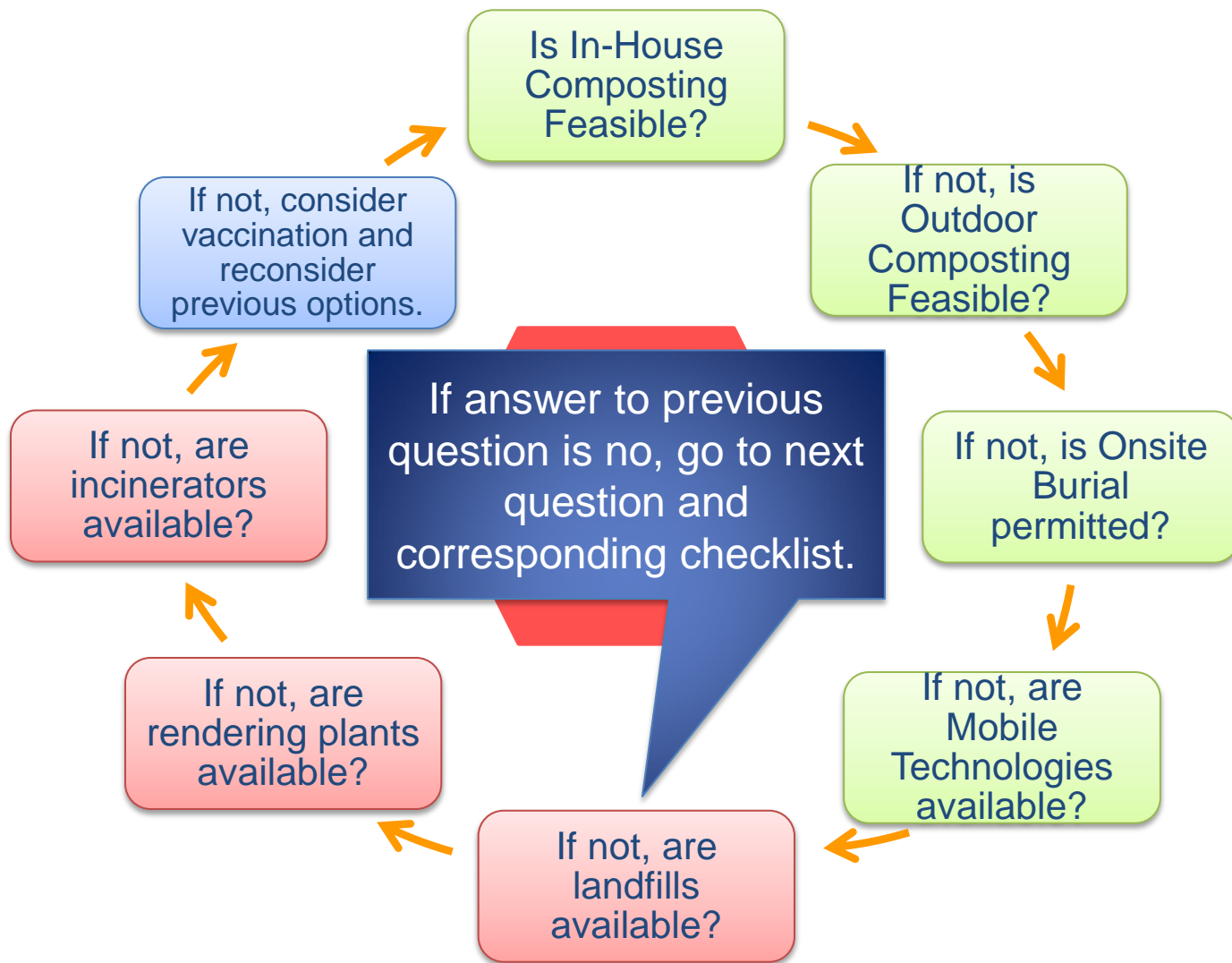


HPAI Carcass Management Decision Tree

Are mobile treatment technologies available for your area?

- Contact all appropriate mobile treatment technologies
 - Verify the units are available for deployment
 - Verify your ability to meet all site/utility requirements
 - Verify units can be fully disinfected after use.
 - Verify the units have adequate capacity to meet your needs.
 - If the capacity is less than needed, can the carcasses be stored/refrigerated while awaiting disposal?
 - Verify the availability of skilled operators and spare parts to keep the units operational.
 - Verify the unit can be set-up on the site (e.g., the site has appropriate grading)

Air curtain fire boxes are available, but they can only process 5 tons per day, and the depop crews are generating 100-200 tons of birds per day



HPAI Carcass Management Decision Tree

Can off-site permitted landfill be used?

- See a comprehensive list of landfills at <http://www2.ergweb.com/bdrtool/login.asp>.
- Contact facilities and determine if they will accept your livestock or poultry and meet some or all of your capacity needs.
 - If there is insufficient capacity, consider fast-tracking expansion of existing landfill or permitting of new landfills for this purpose.
 - Consider potential environmental impacts.
- If the landfill will accept the material, arrange for a waste management professional to:
 - Determine if any permits are required.
 - Determine type of transport vehicle. If transported on public roads, it should be transported in closed, leak-proof trucks or dumpsters. Secondary containment may be needed, depending on the type of waste being transported.
 - Work with disposal group within the Incident Command System to determine how many animals can be depopulated per day and how many trucks will be needed for transport per day, ensuring the rates are about the same.
 - Pre-identify transport routes to minimize exposure to susceptible premises.

It is important to contact local landfills in advance to determine if they can/will accept HPAI waste and under what conditions

If permitted landfilling is an option, see the **Secure Transport** and **Off-Site Treatment/Burial** training modules at www.aphis.usda.gov/emergency_response/tools/aphis_role_emergency_tools.shtml and implement off-site permitted landfilling.





Name	Address	State	EPA Region	Contact Information
CITY OF CONWAY LANDFILL; MRF	4550 64 HWY W, CONWAY	AR	6	David Jaros 501-847-9292
CRAIGHEAD COUNTY SOLID WASTE DISPOSAL	328 COUNTY ROAD 476, JONESBORO	AR	6	Angela Sparks 870-972-6353
CRITTENDEN COUNTY LANDFILL	1299 KUHN ROAD, WEST MEMPHIS	AR	6	Tommy Griffin 870-732-4290
FORT SMITH SANITARY LANDFILL	5900 COMMERCE ROAD, FORT		6	Charles Sanders 479-784-2461
IESI Cherokee Village Landfill			6	Phil Smith 817-632-4000
JEFFERSON COUNTY LANDFILL			6	Charles Gillian 615-517-4997
LITTLE ROCK CITY SW LANDFILL			6	Warren Atkins 501-688-4581
MISSISSIPPI COUNTY LANDFILL	1695 E COUNTY RD. 506, BLYTHEVILLE	AR	6	Randy Carney 870-763-3212

The EPA database includes contact names and phone numbers



**Arkansas Dept. of Environmental Quality
Solid Waste Management Division
Class 3 Landfill Inspection**

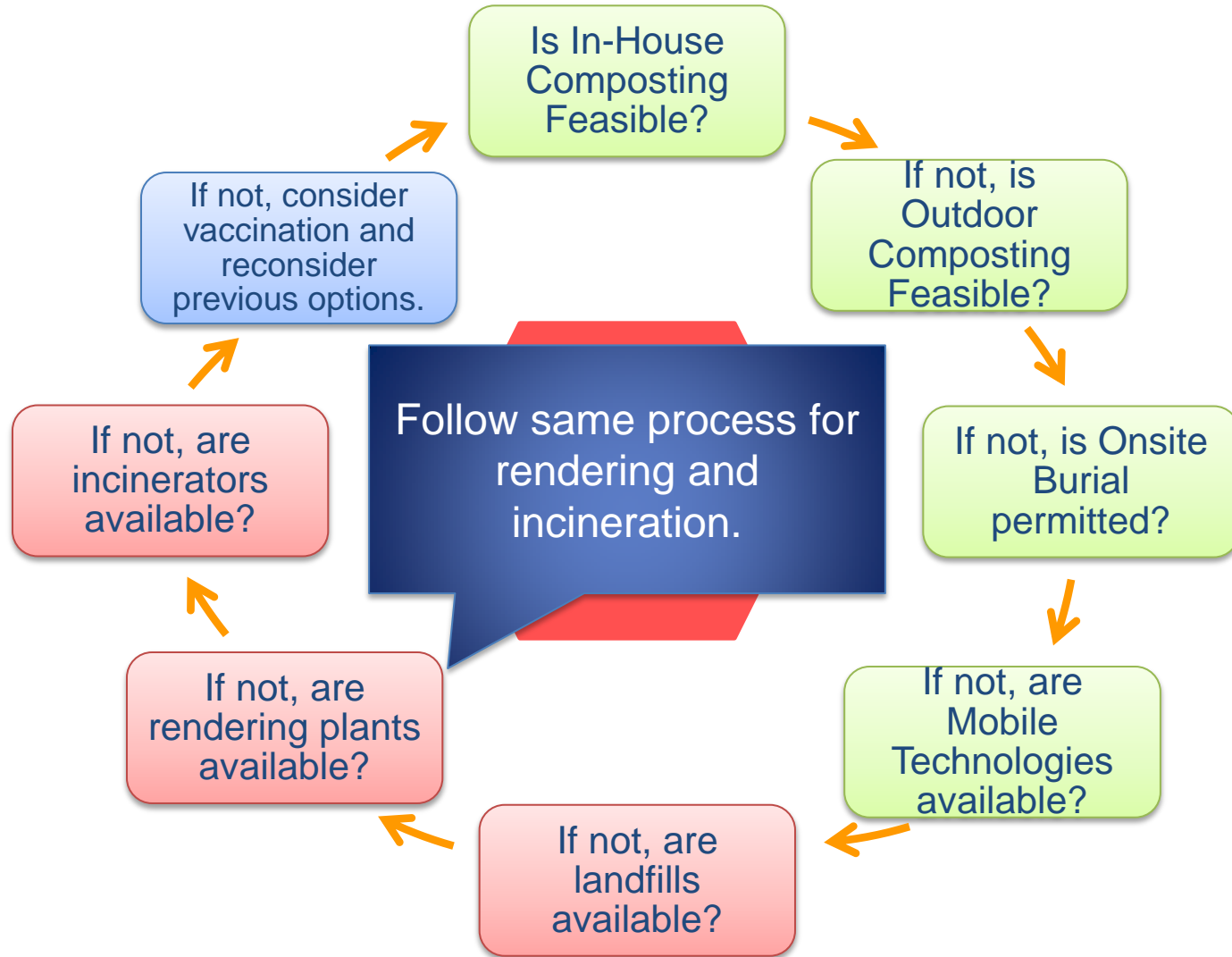



Site Name:	Swepeco- AEP	County:	Benton	AFIN:	04-00107
Location:	Benton CR 489	Telephone Number:	(479) 736-2626	Permit No.:	0273-S3N
Address of Permittee:	Rt 2, Box 835 Gentry, AR 72734	E-Mail Address:		Licensed Operator & No: Scott Carney	

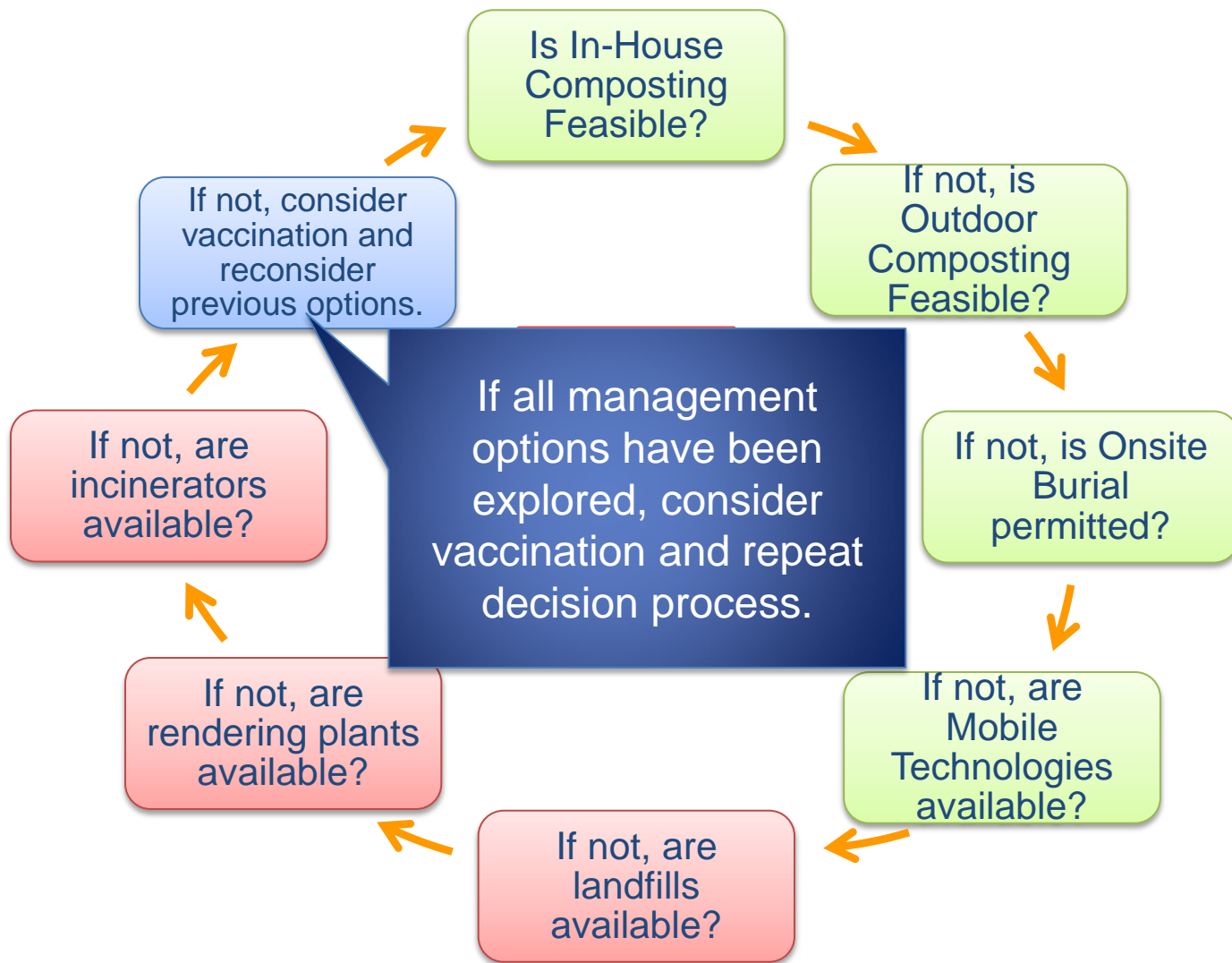
Regulation 22 - Operational Standards

Category 1	Category 3
<p>First Violation: Score of 1 Second Violation: Score of 2 Third Violation: Score of 3</p> <p>Adequate employee facilities 510(l) Record keeping meets requirements specified by regulations 520(a)(b) Feeding of farm or domestic animals prohibited 510(f)(2) Salvage operations meet approved conditions 510(e) Required facilities, fencing and information signs posted 516(b) Access confined to hours of operation 516(d) Scavenging of waste prohibited 510(f)(1) Proper wet weather repairs 510(o) Operations by licensed on-site personnel at all times 510(b) Waste spread and compacted as unloaded 510(d) Adequate all weather operational roads 516(c) Adequate provisions for backup equipment 510(j) Waste receipt records, ticket system maintained 520(c) Telephone system and written emergency response plan on site 510(k)</p>	<p>First Violation: Score of 3 Second Violation: Score of 6 Third Violation: Score of 12</p> <p>Operations in accordance with permit documents 510(a) Gas monitoring program 514</p>
<p>Category 2</p> <p>First Violation: Score of 2 Second Violation: Score of 4 Third Violation: Score of 8</p> <p>Adequate access control 516(a) Smallest practical area, unloading supervised, single working face 510(c)</p>	<p>Leachate discharge leaving landfill 51</p> <p>Comments: No violations noted at time of inspection.</p>

If possible, verify with the county or state that the selected landfill is in compliance with its permit conditions.



HPAI Carcass Management Decision Tree



HPAI Carcass Management Decision Tree



Questions?

