



INFORMATION MANUAL FOR ENHANCED BIOSECURITY FOR PORK PRODUCTION: ANIMALS RAISED INDOORS

December 2017

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Additional Resources

The Secure Pork Supply website has additional resources available at: www.securepork.org

Comments

Please send comments or suggested edits for improvement to: spsinfo@iastate.edu

Information Manual for Enhanced Biosecurity for Pork Production: Animals Raised Indoors

December 2017



Target Audience

This Information Manual for Enhanced Biosecurity and corresponding Self-Assessment Checklist for Enhanced Pork Production Biosecurity for Animals Raised Indoors are written for pork premises where the animals are raised in enclosed animal buildings. The biosecurity measures apply to:

- Sites with several buildings or just one as long as all the pigs are raised indoors
 - This includes sites with other susceptible species (e.g. cattle, sheep, and goats) kept on the premises.
- All individuals delivering to, servicing, or working on the site including family members and/or non-family employees responsible for animal care and husbandry.
- Sites that have **never been infected with or vaccinated for** foot and mouth disease (FMD), classical swine fever (CSF), and African swine fever (ASF).

A separate set of documents are being developed for pigs raised with outdoor access.

Introduction

In the event of a foreign animal disease (FAD) outbreak in the United States (U.S.), maintaining business continuity for the pork industry is critical to the agricultural economy, food security, as well as animal health and well-being. The goal of the Secure Pork Supply (SPS) Plan is to provide a workable business continuity plan for pork producers that have pigs with no evidence of the FAD infection and associated industries that is credible to Responsible Regulatory Officials (local, state, tribal, and federal officials, as appropriate). In an actual outbreak, decisions will be made by Responsible Regulatory Officials based on the unique characteristics of each outbreak.

During an FAD outbreak, it is the producer's responsibility to keep their animals from becoming infected, focusing on what they can control on their site. Biosecurity approaches are both structural and operational. Structural biosecurity is built into the physical construction and maintenance of a facility. Operational biosecurity involves management practices designed to prevent the introduction and spread of disease agents onto or off of the production site. An FAD will test the effectiveness of operational biosecurity practices because successful implementation of these practices depends on the awareness and behavior of individuals on the site.

The three foreign animal diseases of concern for the SPS Plan are 1) foot and mouth disease (FMD), 2) African swine fever (ASF), and 3) classical swine fever (CSF), also known as hog cholera. All three diseases are highly contagious and have a high impact on animal health and international trade; however, **none of these diseases pose a food safety or public health concern.**

Existing biosecurity plans for pork production sites may offer protection against endemic diseases but heightened precautions are needed for FADs. The enhanced biosecurity recommendations outlined in this document are based on the known exposure routes for the three FADs of concern. This document

emphasizes four concepts that all pork production sites must implement to help protect their animals from endemic diseases and to be prepared in the event of an FAD outbreak in the U.S.:

1. A Biosecurity Manager,
2. A written, site-specific, enhanced biosecurity plan,
3. A defined Perimeter Buffer Area, and
4. A defined Line of Separation.

This Manual is organized around the sections in the Self-Assessment Checklist for Enhanced Pork Production Biosecurity: Animals Raised Indoors (statements in the boxes). This Manual along with the SPS Biosecurity Templates should be used to help develop a site-specific written, enhanced biosecurity plan.

All pork production sites must designate a Biosecurity Manager; this is item number 1 in the checklist. The Biosecurity Manager develops the enhanced biosecurity plan PRIOR TO an outbreak; the plan addresses items 2-10 on this checklist. The biosecurity plan describes the scope of the operation, contains forms for documentation of training and signatures, explanations of procedures and signage used on the premises, and protocols written and communicated effectively in languages that are fully understood by the individuals responsible for implementation.

A majority of the biosecurity measures in the biosecurity checklist should be implemented even in the absence of an FAD outbreak to prevent entry and spread of domestic diseases. If producers have not implemented all of the items in the biosecurity checklist (such as a Cleaning & Disinfection Station at the entrance to the Perimeter Buffer Area) prior to the outbreak, they should implement them immediately when an FAD is detected in the U.S., Mexico, or Canada. If their production site is located in an FAD Control Area, Responsible Regulatory Officials will likely require that all of the items on the checklist, and possibly others, be implemented before animal movement is allowed.

Scope of Biosecurity Plan

Each premises must have its own biosecurity plan. Begin by defining your premises, clearly describing the animals (all species) and animal housing associated with the premises. Animals connected to the operation but reared at another site and accessed via a public road may be considered a separate premises, have a separate Premises Identification Number (PIN), and therefore, a separate biosecurity plan. When a premises becomes infected, all premises with the same PIN number will be considered to be infected. Generally, it is best to have separate PIN numbers for premises more than ¼ mile apart. Work with your State Animal Health Official to determine when separate PINs are needed. Locations, PINs, and addresses or GPS coordinates for these secondary premises should be included in the plan. Biosecurity plans for premises owned/managed similarly may have significant overlap. A PIN will be required to request movement permits during an outbreak. A PIN includes a valid 911 address and a set of matching coordinates (latitude and longitude) reflecting the actual location of the animals on the premises. Request a PIN from the office of your State Animal Health Official.

Other businesses, animal or non-animal related, operated from the same premises should also be accounted for in the biosecurity plan. Some animal or animal product related examples could include sale or distribution of compost, feed, or a petting zoo. Non-animal examples could include seed sales or a repair shop. Keep this in mind when completing the checklist and writing the biosecurity plan.

State Animal Health Officials or the manager of the destination site may want to review this biosecurity plan to determine if acceptable biosecurity measures have been implemented.

1. Biosecurity Manager and Written Plan

A Biosecurity Manager is identified for the site. This individual is responsible for developing the biosecurity plan with the assistance of the herd veterinarian (if the Biosecurity Manager is not a veterinarian) and ensuring biosecurity training of, or communicating biosecurity measures with, all individuals who enter the site. The Biosecurity Manager has the written authority to ensure compliance with biosecurity protocols and take corrective action as needed.

The designated Biosecurity Manager for the production site must be able to develop and implement biosecurity procedures effective in protecting the animals from an FAD virus infection. This individual should be familiar with the current structural and operational biosecurity of the production site and health status of the animals. The Biosecurity Manager can be an owner, manager, veterinarian, or employee on-site. If the Biosecurity Manager is not a veterinarian, the individual should consult with an experienced veterinarian who is familiar with the site layout, daily procedures, and health status of the animals when developing the biosecurity plan. Other consultants may provide input to the biosecurity plan if they too are familiar with the site layout and animals on it.

If a system has one Biosecurity Manager for multiple sites within the system, each site should designate an on-site manager who is responsible for ensuring that the biosecurity protocols for that site are followed on a daily basis. It is important that the Biosecurity Manager, and their on-site designees, have the authority to take corrective action if protocols are violated or need to be revised. The Biosecurity Manager should identify an alternate contact person for the premises in the event that the primary Biosecurity Manager is gone or unavailable. The Biosecurity Manager and their designee should have their contact information posted in an area where it can easily be found.

The roles of the Biosecurity Manager include:

- Developing and implementing an effective, site-specific, enhanced biosecurity plan;
- Communicating applicable biosecurity measures with all individuals entering the site;
- Overseeing and documenting that all essential personnel have been trained in biosecurity protocols;
- Ensuring that all individuals entering the site frequently (weekly or more often) have access to a copy of the biosecurity plan;
- Implementing the written plan if FMD, CSF, or ASF is diagnosed in the U.S.; and
- Taking corrective action, as needed, when biosecurity protocols are not followed.

A site-specific, written, enhanced biosecurity plan has been developed and implemented by the Biosecurity Manager. It is reviewed at least annually and whenever the site goes through a change that affects biosecurity (expands, adds a new aspect of the business, etc.). The biosecurity plan clearly defines the scope of the operation and includes biosecurity for other susceptible species kept on the premises. The biosecurity plan includes a premises map labeled with the site entry, Perimeter Buffer Area (PBA), Line of Separation (LOS), access point(s), cleaning and disinfection (C&D) station(s), designated parking, and carcass disposal/pickup location. The map indicates vehicle movements (animal transport vehicles, deliveries, etc.) and carcass removal pathways. The Biosecurity Manager ensures that all individuals entering the site frequently (weekly or more often) have access to a copy of the biosecurity plan.

The biosecurity plan must address how the site will implement the biosecurity measures described in this document which are also listed in the Self-Assessment Biosecurity Checklist. If other susceptible species (cattle, sheep, and goats) are present on the same site, then the biosecurity protocols implemented must

include these species as well. For biosecurity guidance for beef and dairy cattle, see www.securemilksupply.org and www.securebeef.org.

The biosecurity plan must include a premises map (satellite images are preferable) labeled with the following:

- Location of site entry,
- Perimeter Buffer Area (PBA) and PBA Access Point(s),
- Line of Separation (LOS) and LOS Access Point(s),
- Cleaning and disinfection (C&D) station(s),
- Designated parking area outside the PBA,
- Carcass disposal/pickup location and carcass removal pathways, and
- Vehicle movement pathways (animal transport vehicles, deliveries, etc.).

Additionally, the premises map indicates the designated area for delivery of items if the location is on the site. If these deliveries can be made to an off-site location (e.g., post office, residence), clearly identify the location in the biosecurity plan and post signs at the site entrance.

Instructions for creating a premises map for a biosecurity plan using Google Maps can be found in [Appendix A](#). Other programs may be used, Google Maps was utilized just as one example.

The Biosecurity Manager must document that he/she reviews the biosecurity plan at least annually, whenever the site goes through a change (expands, adds a new aspect of the business, etc.), or whenever the “Self-Assessment Checklist for Enhanced Biosecurity: Animals Raised Indoors” is updated/changed (visit www.securepork.org/pork-producers/biosecurity/). The Biosecurity Manager should continuously adapt the plan to address changing risks or recommendations. Due to the inherent variation between sites and structures housing pigs, biosecurity plans must be created specifically for every site.

The biosecurity plan is located where it can be accessed by individuals frequently entering the site, Responsible Regulatory Officials, or the attending veterinarian upon request. Biosecurity Managers need to be able to communicate with individuals and be open to answering their questions or addressing their concerns.

2. Training

The Biosecurity Manager(s) and essential personnel are trained at least annually about the biosecurity measures to keep an FAD out of the herd; training is documented. The Biosecurity Manager(s) informs individuals entering the site of the biosecurity measures they are to follow in a language they understand. Individuals are aware of the biosecurity concepts and procedures that apply to their specific areas of responsibility. The biosecurity plan describes the training required before entering this site.

Encouraging Compliance through Training

Achieving good compliance with biosecurity practices by farm personnel and visitors is an ongoing challenge for animal production sites. The biosecurity plan can only be effective if EVERYONE on the site follows it, all of the time. Ideally, compliance with the biosecurity practices should become part of the culture of the facility. Poor compliance is usually due to lack of knowledge or understanding of either the biosecurity practices or the consequences if they do not comply.

The Biosecurity Manager(s), owners, and essential personnel should be trained at least annually to ensure their awareness of the biosecurity measures necessary to keep an FAD out of the herd. There are many

resources available on the Secure Pork Supply website (www.securepork.org/training-materials/biosecurity/). The Biosecurity Manager(s) needs to inform individuals entering the site of the biosecurity measures they are to follow in a language they understand. Individuals must be made aware of the biosecurity concepts and procedures that apply to their specific areas of responsibility.

The Biosecurity Manager works with individuals entering the site to ensure they understand how to:

- Contact the Biosecurity Manager(s)
- Respect the Perimeter Buffer Area (PBA)
- Cross the Line of Separation (LOS), if required, following arrival and biosecurity entry requirements
- Perform biosecurity measures for their specific job duties

In addition, employees must:

- Understand the importance of biosecurity;
- Review the entire biosecurity plan;
- Review the labeled premises map;
- Know who to report to if they see someone not complying or something preventing compliance; and
- Recognize the consequence for not complying with biosecurity protocols.

The Biosecurity Manager communicates with drivers, delivery and service personnel, veterinarians, livestock transporters, and visitors to promote awareness of biosecurity expectations and site-specific biosecurity protocols prior to arrival at the site. It may be useful to include a premises map specific to each delivery (feed, propane, etc.) highlighting the areas on the map where the driver is to go. This may include calling, emailing, texting, or faxing information to individuals prior to arrival or communicating with these individuals upon arrival, prior to entry. One example might include a copy of a memo sent to the feed company with a map of the site showing where the feed trucks are to drive and stating that feed truck drivers are to wear disposable footwear and disposable gloves or apply hand sanitizer when they cross into the PBA to open the grain bins.

Effective training can be done through one-on-one or group sessions, depending on the responsibilities of the individuals and their learning style. Document training sessions for employees and all communication with visitors and service personnel (see Appendix B for an example [Training Documentation Forms](#)). Examples of possible documentation include:

- During a training session, have all attendees sign and date a document, include a copy of the training agenda/content reviewed.
- Keep a copy of the document sent to off-site individuals describing where to enter the site and how to follow biosecurity measures when performing their tasks (remain in cab, exit wearing disposable boots/gloves, etc.). Have contractors sign a document which states that their employees will follow these biosecurity measures on the site.

All training documents and signage should be in languages individuals will understand. Many training tools and resources can be found online at www.securepork.org/training-materials/.

The Biosecurity Manager should continually emphasize the importance of the biosecurity protocols for disease prevention. Communication of biosecurity is vital to any operation to protect animal health.

3. Protecting the Pig Herd

Site Entry

Entry to the pork production site is restricted by a limited number of entry points. Each entry point is protected with a gate or suitable barrier (e.g. cable) which is locked when the facility is not attended. If a locked barrier is not possible at the site entrance (such as when a house uses the same driveway), a barrier must be present restricting access of unauthorized vehicles to the pork production facilities within the site. Signage at the site entry conveys the access is restricted.

Restricting access to the site through a limited number of entry points is beneficial for multiple reasons. Unauthorized access can result in theft, destruction of property, and introduction of disease agents onto the premises. Entrance routes onto the site that enable unauthorized individuals to gain access must also be secured. All driveways leading to the production site that are not used for site entry need to be protected with a suitable barrier (locked gate, hay bales, semi-trucks, heavy equipment etc.) to prevent unauthorized vehicles and people from entering. All entrances need to have a barrier with a locking mechanism. A gate with a chain and padlock or a cable with a lock are suitable options. The entrances must be locked when no one is present on-site. Signage be placed at the site entry and building entry stating that access is restricted.

While not a requirement, a perimeter fence would provide another layer of security to make sure that individuals do not walk or drive around the gates or cables at the site entry. In addition a perimeter fence would help reduce the chances of wildlife accessing the site.

In the event that a locked barrier is not possible at the entrance to the site, such as when a home is located on the premises and shares the same driveway, a barrier should be placed past the residence before the pig facilities to restrict the entrance of unauthorized vehicles to the pig facilities. Options for this may include a gate or cable. Examples are included in Figures 1-3 in [Appendix C](#).

Designated Parking Area

There is a clearly marked, designated parking area outside of the PBA, away from animal areas, for vehicles that will not enter the PBA and have not been cleaned and disinfected.

Designated parking areas outside of the PBA for employee and visitor vehicles minimize the need to clean and disinfect them upon arrival and reduces the chance of viruses on vehicles entering the PBA. Locate the parking area where individuals can conveniently walk to the nearest employee entry to better ensure compliance.

Signs should be posted designating the parking area to ensure vehicles are parked away from the PBA. If a home is present on the production site, communicate with residents to ensure that no personal vehicles enter the PBA and remain parked away from the pig buildings. The designated parking area needs to be labeled on the site map. For examples of a possible location of the designated parking area, see Figures 1-3 in [Appendix C](#).

Perimeter Buffer Area (PBA)

The site has a PBA(s), which is established to serve as an outer control boundary around the buildings to limit movement of virus near animal housing. The PBA is established so that individuals can perform duties within the PBA during the course of their daily tasks and so that routine deliveries occur outside of the PBA as much as possible. The PBA is clearly defined in the biosecurity plan and is clearly marked around animal buildings on the premises.

The PBA is the first line of defense to protect the pigs housed within its perimeter. The PBA acts as an outer control boundary, set up around the buildings to minimize potential contamination near animal housing.

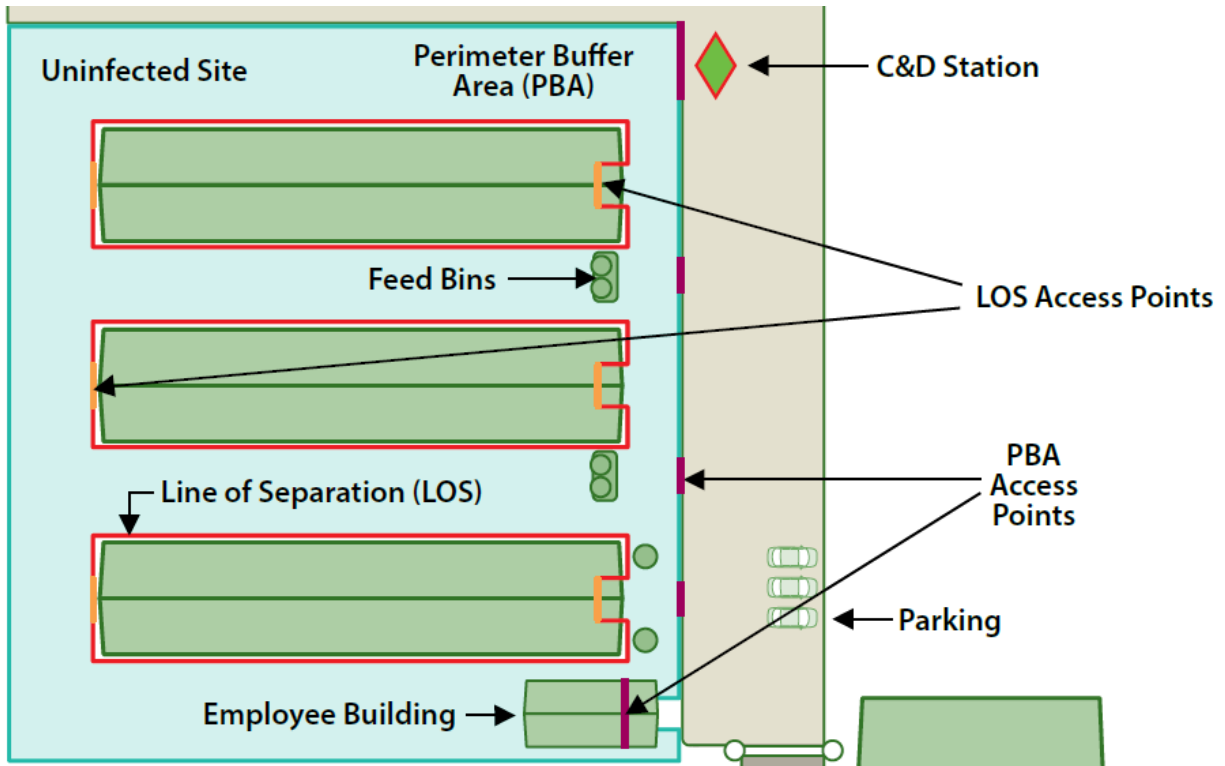
Production sites vary greatly in their structural layouts; therefore, the location of the PBA may vary at each site. The Biosecurity Manager and/or veterinarian will work with the owner or management of the site to determine the location of the PBA. During an FAD outbreak, vehicles and equipment entering the PBA must be cleaned and disinfected prior to entering the PBA. The PBA and site perimeter do not need to be the same. In many cases, the PBA is established closer to the buildings and doesn't include the entire perimeter of the site. See Figures 1—3 in [Appendix C](#) for examples of how the PBA might be laid out on a site.

The PBA should be set up so that vehicles do not enter the PBA when possible and therefore, do not need to be cleaned and disinfected each time they arrive at the site. One example might be a feed truck. In many situations, the truck could drive onsite and deliver feed without cleaning and disinfecting as long as it stayed outside of the PBA. Furthermore, the PBA should be established so that individuals, once within the PBA, do not need to leave the PBA during the course of their daily tasks, unless the task specifically requires them to leave the PBA (such as when delivering deadstock to a common pickup location). By remaining within the PBA, personnel will avoid areas where contaminated off-site vehicles may have driven. Establish an area outside of the PBA for routine deliveries, so that delivery personnel do not need to enter the PBA.

When determining the best location for the PBA, the following should be considered:

- Traffic on roadways. Vehicles could be carrying virus in organic matter (mud, manure, run-off). The PBA needs to be established so that common drives within the site are located outside the PBA so off-farm organic matter does not cross the PBA.
- Effect of weather conditions (rain, snow, mud) on drive paths near the PBA. The distance from the PBA to animal housing will depend on the drive paths for deliveries, weather extremes (PBA might be affected by snow removal), and what is known about the viruses and their infectivity. There is not a specified distance as it varies with the above conditions. This includes natural snow accumulation as well as plow routes and storage of snow.
- Daily routines on the site. Minimize the need for individuals working on the site to move into and out of the PBA when performing daily activities.
- Location of living quarters on the premises. Consider all the movements that need to occur for the household to operate (school bus, postal deliveries, non-farm employee vehicles, etc.). For ease of access, locate households outside of the PBA.
- Select the fewest number of PBA Access Point(s).

Here is one example of how the PBA and the PBA Access Points may be drawn on a site. Additional examples are included in [Appendix C](#).



The PBA should be clearly defined through a variety of methods including but not limited to: a road, fence, flags, signage, stakes, or ropes and clearly visible to employees, visitors, and delivery personnel so that no one enters the PBA without permission and following the proper biosecurity measures.

PBA Access Point(s)

Entry to the PBA is restricted to a limited number of controlled PBA Access Points. Each PBA Access Point is clearly marked with a sign and protected with a suitable barrier (e.g. cable, gate, rope). Vehicles moving through the PBA Access Points should be cleaned to remove visible contamination and then disinfected. All individuals and equipment moving through PBA Access Points are required to follow specific biosecurity measures.

In order to minimize contamination of the area immediately surrounding the animal housing, entry into the PBA for vehicles, equipment, and people must occur through predetermined PBA Access Points. Limiting the number of PBA Access Points helps to better ensure biosecurity measures are being followed when vehicles, individuals, and equipment enter the PBA. Each PBA Access Point should be clearly marked with a sign in a language understood by those entering and protected with a suitable barrier to ensure that individuals do not cross inadvertently into the PBA.

Vehicles, equipment, and supplies entering the PBA must pass through a PBA Access Point after being inspected for any visible contamination. These vehicles need to either arrive on the site cleaned and effectively disinfected, without visiting other sites that could potentially contaminate the vehicle, or be cleaned and effectively disinfected at the on-site C&D station. More information on C&D stations can be found in [Section 3 \(Cleaning and Disinfection \(C&D\) Stations\)](#). All records of vehicle and equipment movements by date and time onto the site should be maintained and made available to Responsible Regulatory Officials in the event it is needed for a trace-back or trace-forward investigation. See Appendix D for an example [Vehicle and Equipment Entry Log](#). The site-specific biosecurity plan should

identify individuals who will determine if the vehicles, equipment, and supplies are adequately cleaned, disinfected, and dried.

Deliveries should be made to a designated area outside of the PBA when possible. This information should be communicated to the drivers when possible or signage posted where to leave deliveries.

Movement of people (e.g. animal caretakers, maintenance workers, feed truck drivers, and propane delivery personnel) into the PBA to perform their duties must include putting on cleaned and disinfected footwear or new, disposable footwear and disposable gloves or apply hand sanitizer as they cross into the PBA or as they leave their vehicle if parked within the PBA. The site-specific protocols must be communicated to all personnel prior to arriving onsite and the Biosecurity Manager is responsible for ensuring they are followed.

The PBA Access Point(s) need to be included on the site map. See Figures 1—3 in [Appendix C](#) for examples of the PBA Access Points.

Cleaning and Disinfection (C&D) Station

There is an operational, clearly marked, and equipped C&D station with the means to remove visible contamination and then disinfect vehicles, equipment, and items needing to enter the PBA at a PBA Access Point. The C&D station is operated by individuals who have received documented training in proper selection and use of personal protective equipment and the principles of C&D. Runoff from the C&D station is managed following state and local regulations, ensuring it does not enter waterways, animal housing, or on-farm traffic areas. The biosecurity plan contains contingency plans for vehicle and equipment C&D in inclement weather.

All vehicles, equipment, and items entering the PBA must be free of visible contamination and disinfected prior to entry which is best accomplished at a Cleaning and Disinfection (C&D) Station on-site. At least one stationary or mobile C&D Station must be located near a PBA Access Point to clean and disinfect vehicles, equipment, and items prior to entering the PBA. The C&D Stations are equipped with good lighting, adequate water, soap, and a disinfectant labeled for the virus at the proper dilution. Basic steps, supplies needed, and an example Standard Operating Procedure (SOP) for the C&D process can be found in [Appendix E](#) and at www.securepork.org/pork-producers/forms-sops/.

To kill the FMD, CSF, or ASF virus using disinfectants, it is important to use an effective disinfectant appropriate to the surface and to allow for proper wet contact times and adequate drying. Baking equipment can also be effective in destroying the viruses when properly conducted (time and temperature dependent). Designated individuals operating the C&D Station should be trained in proper selection and use of personal protective equipment (PPE), how to effectively clean and disinfect items so they do not introduce virus into the PBA, and how to safely use approved disinfectants. The PPE necessary is dependent on the disinfectant used; consult the label for more information.

When determining the location of the C&D Station, consider the following:

- The wash pad at the C&D Station should be free of dirt/mud (ideally on a hard/solid/paved or well-drained gravel surface).
- The wash pad and surrounding area should be sloped AWAY from animal housing, waterways, and on-farm traffic areas.
- All applicable state or local regulations regarding the management (capture/diversion) of the runoff must be followed. This may require building drainage ditches, berms, or other physical barriers to ensure susceptible animals are not exposed.

Effective C&D can be very difficult in the winter in northern climates or during severe weather events unless conducted inside a building. Create a contingency plan for inclement weather and include it in the biosecurity plan. Contingency plans may include:

- Creating a sheltered C&D Station,
- Using another structure on the premises (but outside of the PBA) as a temporary C&D Station during inclement weather, or
 - Designating an off-site location, such as a nearby truck wash, for washing all vehicles and equipment arriving on site during inclement weather (freezing temperatures, thunderstorms, high winds). Vehicles or equipment washed and disinfected off-site must arrive free of visible contamination upon arrival, and must not have been on any other premises with FAD-susceptible species after cleaning and disinfecting or have driven on contaminated roadways.
- Determining alternate delivery options or on-site drive paths.
 - Livestock loading: transfer animals at the PBA to a trailer located inside the PBA.

The C&D station(s) needs to be labeled on the site map. Examples of the location of the C & D Station can be found in [Appendix C](#).

Line of Separation (LOS)

The site has one or more LOS, which is established as a control boundary to prevent movement of virus into areas where susceptible animals can be exposed. In many situations, the walls of the building housing the animals form the LOS. The LOS is clearly defined in the biosecurity plan and is clearly marked on the premises. Animals, people, or items only cross the LOS through clearly marked and controlled LOS Access Point(s), following appropriate biosecurity measures. Areas contaminated after loading/unloading animals are cleaned and disinfected according to the biosecurity plan.

The Line of Separation (LOS) is established as “last line of defense” to isolate pigs from potential sources of disease. For indoor-raised animals, the LOS is the building walls separating the pigs from the outside. Curtain sided buildings are included as the animals are raised totally indoors. A site may have as many Lines of Separation as there are buildings; or a group of buildings connected by enclosed walkways, such as a sow unit, may all be within the same LOS. Crossing the LOS should only occur through LOS Access Points. See Figures 1-3 in [Appendix C](#) for examples of how the LOS might be established. The LOS needs to be included on the site map.

LOS Access Point(s)

Crossing the LOS is restricted to a limited number of controlled LOS Access Points. Each LOS Access Point is clearly marked with a sign in a language understood by all entering. Equipment, people, and items crossing through the LOS Access Points follow specific biosecurity measures. While the load-out area is a LOS Access Point, it should not serve as an entry point for personnel when possible. All movements (animals, equipment, people) across the LOS are recorded and available for review upon request.

Designated areas for crossing the LOS are called the LOS Access Points. Limiting the number of LOS Access Points helps to better ensure biosecurity measures are being followed when pigs, people, and equipment cross the LOS. Each barn or group of connected barns should establish a single, clearly marked LOS Access Point for people crossing to the pig side of the LOS. A clearly marked LOS Access Point should also be established for pig movement across the LOS. In some finishing barns, the people

LOS Access Point and the pig LOS Access Point have to be one and the same. For many barns, especially shower-in-shower-out situations, the LOS Access Point will clearly be separate.

In situations where there is a separate people LOS Access Point and pig LOS Access Point, the load-out area must not act as an entry point. If individuals cross the LOS in the load-out area from the pig side to the outside, the person must re-enter by crossing at the people LOS Access Point and follow biosecure entry protocols. One exception would be if the entire building was being emptied then cleaned, disinfected, and dried the same day.

A Bench Entry is recommended for sites that do not have showering facilities.

The LOS Access Point(s) must be included in the site map. Examples of the LOS Access Point locations are included in Figures 1-3 in [Appendix C](#).

Each LOS Access Point should be clearly marked with signs posted in a language understood by all entering. Signs should include instructions for biosecurity measures regarding animal, people, equipment, and items crossing the LOS, or should direct individuals where they can access these protocols. Methods to mark the LOS Access Point may include (but are not limited to): gates, benches, wooden barriers/boards, spray paint, duct tape, etc. These protocols should be communicated with personnel, visitors, etc. prior to their arrival. All movements (animals, equipment, supplies, people) which cross the LOS are recorded and these documents are available for review upon request.

Movement of pigs onto the site may require a movement permit if the origin or destination is located within a Control Area. Biosecurity measures for animals crossing the LOS are found in [Section 6: Animal and Semen Movement](#). Communicate load-out instructions, specifically emphasizing the LOS Access Point and site-specific procedures associated with the LOS Access Point, with all individuals working on-site, and in writing to the truck drivers and/or trucking company when applicable.

Movement of people through the LOS Access Point(s) requires following biosecurity measures as outlined in [Section 5: Personnel](#). Clearly mark the LOS Access Point(s) for people (e.g. bench, duct tape, shower, etc.). At a minimum, provide site-specific clothing or coveralls and footwear and ensure individuals have a place to change and wash hands.

Movement of food, personal items, equipment, and supplies across the LOS should be limited to what is necessary and items must be cleaned and disinfected, or be from a known clean source. Examples include:

- Food crossing the LOS is carried in containers that can be cleaned and disinfected, consumed in designated break rooms, and is never brought into the pig areas.
- Personal items (cell phones and other electronics, jewelry, eye glasses, etc.) are limited to those necessary to perform job duties and need to be cleaned and disinfected when crossing the LOS. Cell phones can be enclosed in a waterproof case (or plastic bag) and either submerged in a disinfectant solution or wiped with a commercial disinfectant wipe prior to crossing the LOS.
- For items from a known clean source, they should be double packaged so the inside packaging can be emptied onto a clean surface or into someone's hands on the pig side of the LOS so as to not contaminate the inside packaging.
- Equipment used on production sites can serve as a means for disease spread. This includes any number of items used for the handling, care, treatment, or euthanasia of pigs, or any other items that may have had contact with infected pigs or entered pig barns. All equipment should be disinfected with either a) heat; b) chemical disinfectant; c) fumigation; d) ultraviolet light as it crosses the LOS. Another option is to have the items come from known clean sources and be packaged so it can be handled in a biosecure manner as it crosses the LOS.

Securing the Buildings

Buildings are locked when no one is present.

Designate a person or persons who are responsible for ensuring that buildings are locked when no one is present onsite. All buildings must have locks in proper working order.

4. Vehicles and Equipment

All records of vehicle and equipment movements by date and time onto the site should be maintained and made available to Responsible Regulatory Officials in the event it is needed for a trace-back or trace-forward investigation. See Appendix D for an example of a [Vehicle and Equipment Entry Log](#).

Vehicles and Equipment (non-animal transport)

All vehicles and equipment (not containing live animals) are cleaned and effectively disinfected prior to entering the PBA. Sharing of equipment with other sites is minimized.

Public roadways in the regulatory Control Area may be contaminated with FAD virus. Therefore, allowing only vehicles and equipment into the PBA that are free of visible contamination and effectively disinfected at the site's C&D Station (Section 3: Protecting the Pig Herd, C&D Station) to reduce the chance of introducing virus. Basic steps, supplies needed, and an example Standard Operating Procedure (SOP) for the C&D process can be found in [Appendix E](#). Site-specific equipment should be used and not shared unless absolutely necessary.

However, entry of equipment (e.g. skid loaders), feed trucks, livestock trailers (see additional information below), service personnel vehicles, and any other off-site vehicles or equipment needs to occur in a biosecure manner. Vehicles and equipment remaining inside the PBA do not need to go through C&D procedures unless it exits the PBA and needs to return. Vehicles and equipment that remain outside of the PBA do not need to be cleaned and disinfected.

Effective disinfection of vehicles and equipment requires thorough cleaning to remove visible contamination, application of a disinfectant labeled for the FAD virus, then allowing time at an appropriate temperature for the disinfectant to kill the virus. Alternatively, heat may be used to kill viruses after a scrape out if it is effective in destroying the virus.

Site-specific dedicated equipment should be used and equipment should not be shared unless absolutely necessary. If sharing of equipment is necessary, the Biosecurity Manager should ensure that the shared equipment is cleaned thoroughly and disinfected prior to entering the PBA; cleaning and disinfecting prior to arrival at the site as well as cleaning and disinfection at the site would reduce risk of disease spread.

See [Appendix E](#) for additional information on setting up and operating a C & D Station.

Livestock Trucks/Trailers (Animal Transport Vehicles)

All empty animal transport vehicles that enter the PBA are effectively cleaned and disinfected prior to arrival at the site (outgoing loads) or before animals are loaded for delivery to the site (incoming loads).

Livestock trucks/trailers may introduce an FAD virus unless proper biosecurity protocols are followed. Specific livestock transport driver details are provided in [Section 5: Personnel under Biosecure Entry/Exit Procedure](#).

Communicate with the source of incoming animals or with the animal transporter/ transport companies to ensure that all animal transport vehicles are cleaned and effectively disinfected prior to the loading of animals for delivery to this site. Document all communication and contact information.

Empty livestock trucks/trailers must be free of all visible contamination (inside and out) followed by disinfection before crossing the PBA at a PBA Access Point. A designated individual onsite should inspect the vehicles to ensure they are clean. If not, cleaning and disinfection is performed at the C & D Station.

Livestock trucks/trailers cannot be effectively C&D with animals on board. Options for bringing animals onto the site include:

- Locate the end of the PBA at the end of the chute away from the building. The chute can be C & D before placed in the PBA. The truck backs up to the chute so the truck remains outside of the PBA and the chute can be cleaned and disinfected when finished.
- Relocating the PBA near the animal load-out area while animals are unloaded. After the truck leaves the area, the PBA should be re-established by cleaning and disinfecting the area accessed (if the surface allows) and any equipment used during the unloading procedure. If the surface cannot be cleaned and disinfected, applying an adequate amount of Ag lime to cover the area may be an option.
- The livestock truck/trailers transporting animals to the site parks outside the PBA at the staging area. Internal transport shuttles park on the inside edge of the PBA. Animals are transported across the staging area into the internal transport shuttle located inside of the PBA.

If these are not possible, before crossing the PBA the vehicle's tires, wheel wells, undercarriage, and mud flaps should be cleaned as described in [Appendix E](#) to remove visible contamination, followed by disinfection for the recommended wet contact time. The vehicle should take only the shortest, most direct drive path to the loading/unloading area. The area inside the PBA where the off-site vehicle drove and parked should be considered contaminated and a possible source of virus introduction. In this situation, the drive path and load out should be cleaned and disinfected or apply an adequate amount of Ag lime to the surface to inactivate the virus. The Biosecurity Manager should ensure that individuals are trained in proper use of personal protective equipment (PPE), how to effectively C&D so virus is not introduced to the swine operation, and how to safely use and properly dilute approved disinfectants.

5. Personnel

Prior to Arriving at the Site

Access is limited to individuals who are essential to the operation of the production site. Everyone crossing the LOS arrives at the site having showered and wearing clean clothing and footwear since last contacting susceptible animals. All individuals crossing the LOS have a signed agreement on file agreeing to follow these instructions.

Individuals and their clothing/footwear may become contaminated with FMD, ASF, or CSF virus through a variety of activities and contacts when they are off-site such as:

- Living with people who work at other livestock production sites;
- Working at or visiting other livestock production sites (e.g. pig, cattle, sheep or goat);

- Working at or visiting exhibitions, swap meets, auction markets, buying stations, slaughter plants, or rendering facilities;
- Hunting or contact with feral swine, deer, etc.; and
- Stopping at a gas station or other location previously visited by rendering truck drivers or livestock haulers.

It is possible to reduce the potential for people to introduce a virus by taking certain precautions prior to arrival at the site. All individuals crossing the LOS should:

- Ensure that the inside of their vehicle is clean (free of all animal manure/excrement) prior to arrival and has not become contaminated by soiled clothes, footwear, or other items.
- Shower and change into clean clothes and footwear prior to arrival on the site.
 - For individuals that work in the pig barns and live on-site, showering and changing into clean clothing /footwear before leaving the house is required.
 - For individuals living off-site, after showering and changing into clean clothes and footwear, they must NOT contact animals, live or dead, facilities where they are held, or attend other activities listed previously prior to arrival at the site.
- Understand and be able to follow all procedures for crossing the LOS before arrival.
- Sign an agreement verifying they have been informed of the biosecurity protocols and they will abide by them. (example agreement included in [Appendix F.](#))

Entry Logbook

Everyone crossing the LOS Access Point(s) completes the entry logbook, unless they are a scheduled worker. The entry logbook is monitored by an individual working on the site to ensure accurate completion. The contact information and work schedule records for workers are maintained.

Prior to crossing the LOS, all individuals (other than scheduled workers) granted entrance must sign the Entry Logbook maintained on-site. Information recorded must include (at minimum): name, phone number, reason for entry, and if they had livestock (cattle, pigs, sheep, goats) contact in the last forty eight hours, and describe where (auction, packing plant, exhibition, home, etc. and City/State).

The Biosecurity Manager will ensure the entry logbook is maintained. Sites can utilize existing logbooks if they contain the information described above or the SPS People Entry Log form (see [Appendix G](#)). The Entry Logbook should be available for review and be kept up-to-date.

Employee and family member contact information and work schedule records must be maintained and be accurate.

Biosecure Entry/Exit Procedures

All individuals entering the PBA or crossing the LOS at a controlled Access Point follow a biosecurity entry and exit procedure as specified in the biosecurity plan.

Entering the PBA

Individuals must use a Biosecure Entry Procedure to enter the PBA. The minimum essential components for a Biosecure Entry Procedure are:

- Disposable or disinfectable footwear must be worn when entering the PBA.
- Gloves must be worn or hand sanitizer applied.

- Vehicles and equipment entering the PBA need to be cleaned and disinfected (Vehicles are addressed in [Section 4: Vehicles and Equipment](#)).
- All deliveries and items entering the PBA should be recorded in the log.

This applies to all delivery and service personnel as well as feed truck drivers. If they need to enter the buildings to perform their duties, they follow biosecure entry procedures when crossing the LOS (see below). Site management or the Biosecurity Manager is responsible for communicating this protocol and ensuring that it is followed.

Delivery drivers for items such as parcels must be directed to make their deliveries to a location outside the PBA when possible. This information should be communicated to the drivers or clear signage posted at the site entry about where to leave parcel deliveries.

Livestock transporters are NOT to cross the LOS to the pig side without following proper biosecurity protocols entering at an LOS Access Point. If they need to exit the cab and enter the PBA, they should wear disinfectable or disposable footwear, coveralls, and gloves or use hand sanitizer. The goal is to not transfer manure/excretions from inside the cab on footwear to inside the PBA. Upon removal, disinfectable or disposable footwear and coveralls should be enclosed in a garbage bag/tote and stored until they can be laundered or disposed of. Communicate animal handling and biosecurity protocols in writing with the trucking company so it can be shared with the truck drivers.

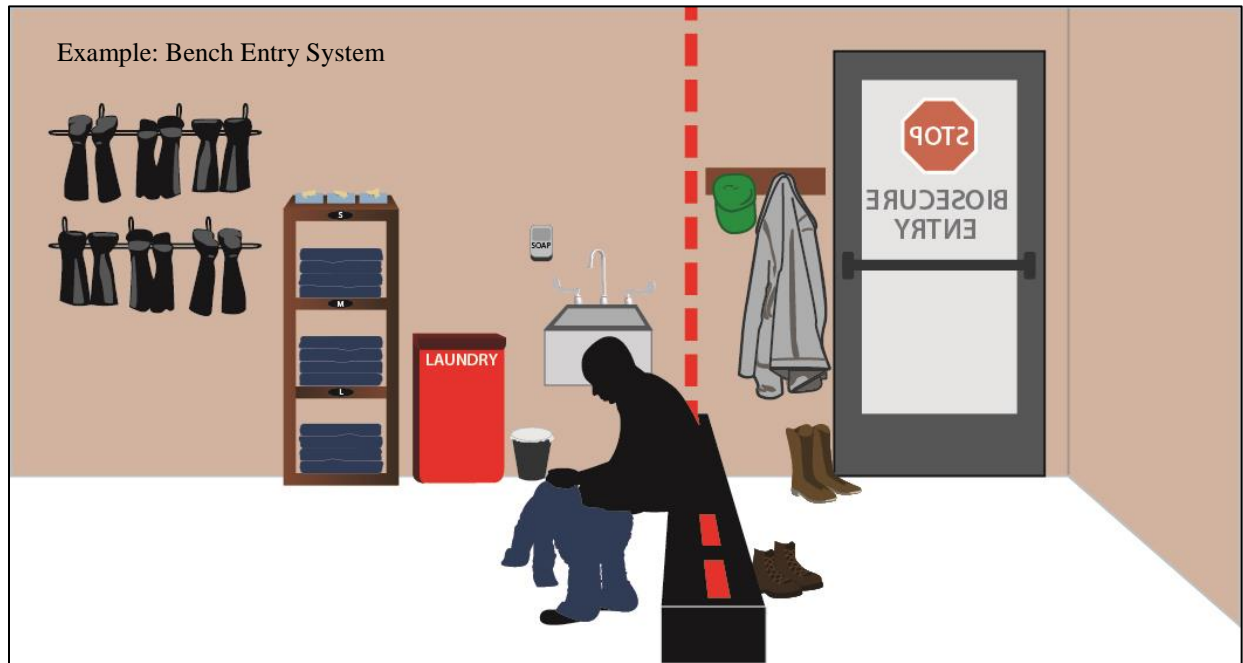
Keep on record all communications (written, oral, etc.) that occurred between the Biosecurity Manager and livestock transporters, delivery, or service personnel, including dates and times of said communication. For example, keep a copy of the information sent to the feed company with a premises map showing where the feed trucks are to drive and what the drivers are supposed to wear (disposable footwear, disposable gloves, no hats, etc.).

Crossing the LOS

All individuals crossing the LOS should, at a minimum:

- Shower in and shower out when facilities are available.
- Wear site-specific coveralls or clothing and footwear that is provided. Management may determine what type of clothing or coveralls and footwear work best on their site.
 - Footwear change is mandatory when crossing the LOS.
 - Absolutely no street clothes not completely covered by site-specific coveralls/hats/accessories are allowed inside the LOS.
- Wash hands, apply hand sanitizer, or put on disposable or disinfectable gloves as they cross the LOS.
- When a site includes multiple pig buildings that do not have an area for employees to change into site-specific clothing, change into site-specific clothing or coveralls and footwear within the PBA (such as for sites with a separate employee building); change footwear and wash hands at each barn when crossing the LOS.
- If the LOS is just inside the door of a finisher building, there may not be room for a bench or room to store coveralls. Respect a visible LOS on the floor as change into footwear before crossing the LOS. A small sink may be available, draining into the pit. Hands can be washed before applying building-specific footwear. Extra footwear needs to be present in these buildings when this approach is utilized.
- The same procedure will be followed in reverse when crossing back across the LOS to the outside of the building.
- Clean and disinfect items crossing the LOS (Information available in the LOS Access Point section of [Section 3: Protecting the Pig Herd](#)).

The Bench Entry System is an example of a Biosecure Entry Procedure for people to cross at an LOS Access Point. This system includes a dedicated entrance area. The LOS Access Point is identified with a disinfectable solid barrier (sealed plywood, plastic bench) that clearly demarcates the separation between the entry and animal areas. On the pig side of the line, site-specific coveralls or clothing and footwear are available as well as handwashing facilities. An example of a Bench Entry System that could be implemented is shown in the figure below.



6. Animal and Semen (if Applicable) Movement

All animal movement into, out of, or through a regulatory Control Area requires a movement permit issued by Responsible Regulatory Officials. Permit movement criteria must be met before animal movement may occur in an effort to prevent spread of an FAD virus between premises.

All records of animal movements by date and time should be maintained and made available to Responsible Regulatory Officials in the event it is needed for a trace-back or trace-forward investigation. See Appendix H for an example of an [Animal Movement Log](#). An animal movement log is only necessary when computer records showing animal movements are not utilized.

The Biosecurity Manager communicates all biosecurity protocols pertaining to animal movement with the source or destination of animals and/or with the transport companies. This communication is documented.

Incoming Animals and Semen

Pigs and semen (if applicable) come from sources with documented, enhanced biosecurity practices and no current or recent evidence of an FAD infection. Semen is transported in containers whose exteriors can be cleaned and disinfected effectively to minimize the risk of virus transmission.

It is not possible to prove that pigs are free of FMD, ASF, or CSF virus; it is only possible to demonstrate lack of evidence of infection. All incoming animals and semen must come directly from a premises with

no evidence of infection with FMD, ASF, and/or CSF. Once infection occurs, spread within the herd is rapid (days). Prior to animal or semen movement from a premises within a Control Area, daily observation of all susceptible animals on the premises for at least 7 days is necessary to determine if there is evidence of infection with the FAD. This process is called Active Observational Surveillance and is explained in the Secure Pork Supply Plan (www.securepork.org/regulatory-officials/surveillance/).

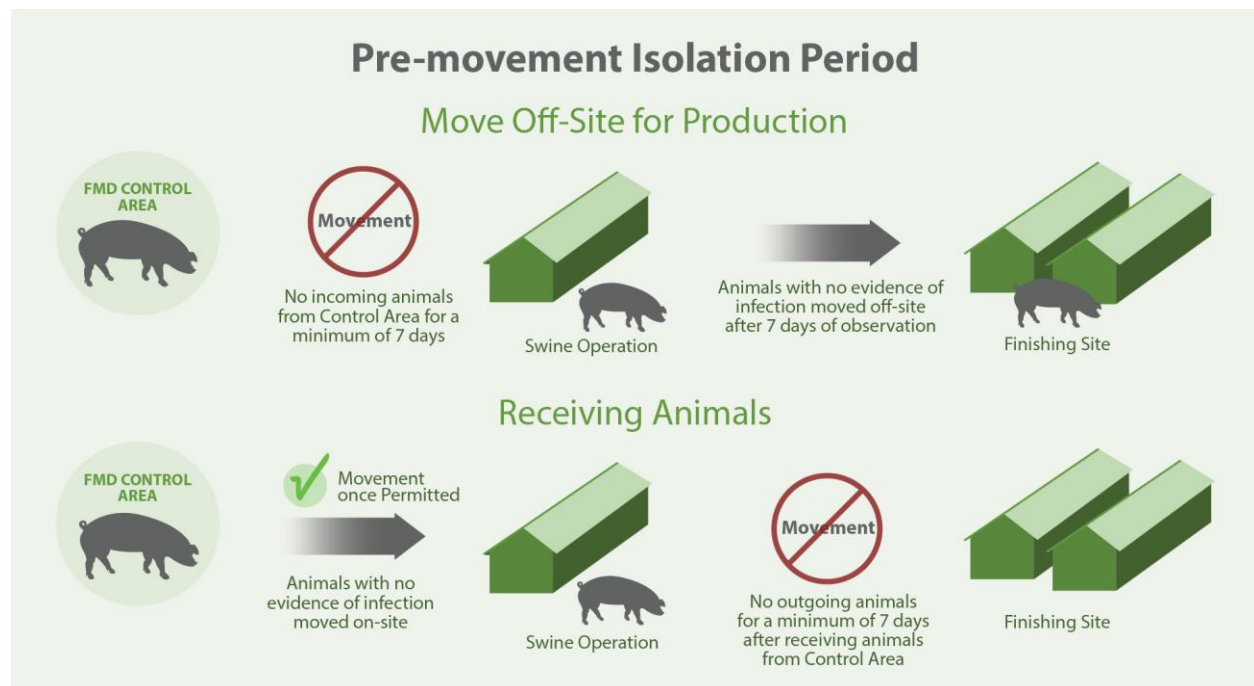
In addition, frozen or chilled semen should be held on the site until the semen tests negative for the virus by PCR. If the animals are healthy and the semen tests negative for the virus, the semen may be shipped. Semen should be transported in disposable containers or those that can be cleaned and disinfected appropriately to minimize the risk of disease transmission.

Pre-movement Isolation Period

No animals from a regulatory Control Area are introduced onto the site for at least 7 days prior to moving animals to another pork production site with susceptible animals.

Animals from a Control Area are at higher risk of being infected with the virus, but may be undetected clinically if in the early stages of infection. Restricting animal introduction to the site for a minimum of 7 days before animals are moved to another production site will increase confidence that the FAD virus was not introduced through animal movements. Animals moving off the site directly to slaughter may do so at any point in time once movement requirements have been met and a permit issued.

For example, if a sow farm needs to move weaned pigs to a finisher, then no incoming replacement gilts are allowed to come on the sow site from the regulatory Control Area for 7 days prior to the weaned pig movement. After weaned pigs are moved off site to the finisher, replacement gilts can be brought in from a premises located within a Control Area. This minimum of a one-week restricted entry provides added assurance to those receiving the weaned pigs that no clinical signs were found on the premises of origin. See figure below.



Contingency Plan for Interrupted Animal Movement

A plan exists to manage pigs in a biosecure manner on-site in the event animal movement is stopped for several weeks.

Animal movement to the next stage of production is very important in pig production including weaned pigs to a nursery or finisher, growers to a finisher, and finished pigs to slaughter. Producers need to have a plan on how to manage these animals for several weeks in the event animal movement is stopped. Describe the plan to address welfare considerations and a possible increase in humane euthanasia and cull animals.

Loading Animals

Animals leaving a production site only move in one direction across the LOS at an Access Point at any one time. Areas contaminated by individuals or animals after loading/unloading are effectively cleaned and disinfected according to the biosecurity plan.

Animal loading procedures minimize cross-contamination by maintaining directional flow of animals. Animals which have crossed the LOS to the outside are not allowed to cross back to the animal side of the LOS. The LOS Access Point in the loading area must be marked in a way that is always visible to individuals moving animals, even during loadout (when the floor may be covered with manure and debris). Methods to prevent animals from crossing back across the LOS to the animal side during the loading process may include an extra person, gate, or door. Livestock transporters or other individuals assisting with animal handling do not cross the LOS to the pig side without following a biosecure entry procedure at an LOS Access Point.

Any areas and equipment that are contaminated during loading/unloading must be cleaned and disinfected using appropriate disinfectants. Remove all visual contamination, then apply an approved disinfectant for the recommended wet contact time; consult the label and follow the application directions. The Biosecurity Manager should ensure that individuals applying the disinfectant are wearing appropriate PPE.

For more information on managing the livestock trailer, see [Section 4: Vehicles and Equipment](#).

7. Carcass Disposal

Dead pigs are disposed of in a manner that prevents the attraction of wildlife, rodents, and other scavengers. Rendering trucks and other vehicles hauling dead pigs to a common disposal site do not enter the PBA.

Develop a plan for carcass disposal of all deceased animals using normal mortality numbers and a contingency plan for a large number of mortalities unrelated to FAD infection (toxicity, etc.). The plan should include the process for removing dead pigs from buildings as well as storage and disposal of carcasses using methods compliant with state and federal laws. These regulations may change during an FAD outbreak. Options for disposal may include burial, incineration, composting or rendering—check with local authorities for the state and federal laws pertaining to animal disposal. Guidance may also be provided by the regulatory officials managing the outbreak response. Landfills may not be a reliable option for disposal of carcasses in an FAD outbreak.

- Incineration or composting of carcasses from premises with no evidence of infection may be performed either on-site or off-site, inside the PBA or outside of the PBA, as long as it is accomplished in a biosecure manner.
- Burial and composting must be accomplished in a way that prevents wildlife, pets, and rodents from accessing the carcasses.
- Temporary cold storage may also be a short term option onsite.
- Rendering trucks must not cross into the PBA. The ideal location for a storage bin for rendering pickup is at the edge of the PBA, so that equipment used to move carcasses within the PBA does not need to exit the PBA and rendering trucks have access to the bin without truck or personnel entering the PBA. Any on-site equipment exiting the PBA must go through C&D at a PBA Access Point before re-entering the PBA.

Carcass disposal options should be described in the biosecurity plan, including on-site and off-site possibilities, and carcass movement drawn on the premises map. For example, if rendering is used, the plan should describe how the animals are moved to the pickup location and demonstrate that the rendering truck never crosses over into the PBA. If carcasses are disposed on-site, then the burial or compost location should be labeled on the premises map. The site’s animal disposal plan needs to be reviewed and updated at least once a year. See Figures 1-3 in [Appendix C](#) for some examples of deadstock removal.

8. Manure Management

Manure is stored and removed in a manner that prevents exposure of susceptible animals (either on or off the premises of origin) to disease agents and meets state, local, and Responsible Regulatory Officials’ requirements.

Techniques for manure management vary with the type of production system, physical characteristics of the operation, and weather. Infected animals shed viruses in their manure. The risk of an FAD introduction increases when manure handling equipment is shared between sites and personnel do not follow effective biosecurity protocols, cleaning and disinfection. For these reasons, it is very important the Biosecurity Manager develop site-specific standard operating procedures (SOPs) for manure management for the site. One option for producers is to purchase their own site-specific hose and backflow valve for liquid manure handling to avoid the possibility of contaminated hoses transferring disease to the site.

A plan exists for storing manure on-site in the event it cannot be permitted to move off-site during an outbreak.

Contingency planning for long-term manure storage may be necessary for prolonged outbreaks. Spreading or storing manure off-site may not be a permitted movement depending on the risk of the FAD spreading; all local, state, and Responsible Regulatory Official regulations will need to be met.

All manure hauling personnel must have showered and changed into clean clothes and footwear prior to arriving at the production site.

Contaminated vehicles and equipment that come in contact with hog or cattle manure from other sites are a potential source of infection. Therefore, require all manure hauling vehicles and equipment from other sites be cleaned and disinfected with either heat or a chemical disinfectant followed by drying. These protocols should be shared in writing with any contract companies, signed and dated when an agreement has been reached. Whenever possible, site-specific dedicated equipment should be used (for example, site-specific pumps) and equipment should not be shared unless absolutely necessary.

If the equipment cannot be effectively C&D, the PBA near the manure storage areas could be temporarily modified during manure removal. After manure removal is completed, the PBA should be re-established by cleaning and disinfecting the area accessed during manure removal.

See [Appendix E](#) for additional information on setting up and operating a C&D Station.

9. Rodent, Fly, Wildlife, and Other Animal Control

Rodent and Fly Control

Written rodent and fly control programs are in place and implementation is documented.

Properly controlling the rodent and fly populations on a production site are very important. Rodents and flies can transmit disease agents into pig herds. General farm maintenance, weed/grass control around buildings, sanitation, and drainage are important because it reduces attraction of wildlife and rodents. Trash should be regularly removed and feed spills cleaned up and disposed of immediately. Dead pigs should be disposed of/removed promptly.

The Biosecurity Manager needs to ensure the site develops and implements a rodent and fly control plan. Keep records current and ensure that they contain, at minimum, monthly entries. An example to document rodent control is included in [Appendix I](#).

If the site utilizes a professional rodent control company, keep records (e.g. invoices or other documentation) provided by a licensed pest control operator describing rodent control measures for the site.

Wildlife and Other Animal Control

Facilities are designed and maintained to inhibit all animals, including birds, from crossing the LOS and contacting pigs.

Free-roaming animals like wildlife, dogs, cats, and birds can potentially spread FAD viruses from infected to susceptible animals via contaminated fur, hooves, foot pads, feet/claws, or feathers. Wildlife like deer, feral pigs, and birds can be prevented from contacting pigs by housing the pigs indoors and maintaining bird barriers in the buildings.

State and local regulations for controlling birds, insects, and rodents must be followed. Use of chemical control methods must follow all label directions and regulations to avoid contamination of pigs.

10. Feed

Grain and feed are delivered, stored, mixed, and fed in a manner that minimizes contamination. Feed spills are cleaned up promptly and disposed of to avoid attracting wildlife.

Grain, feed, and feed ingredients can be contaminated if exposed to wildlife carrying the virus. Feed ingredients are stored in such a way that prevents bird, rodent, and other wildlife access. Bagged feed must be elevated off the floor and proper rodent control procedures must be implemented in feed ingredient storage areas. All feed spills or feed ingredient spills must be cleaned up and disposed of promptly to minimize attraction of birds, rodents and/or wildlife.

- Grain and feed should be stored and handled so that it cannot be contaminated or it should be treated to eliminate contamination.

- Grain and feed delivery trailers should be covered during transport to reduce the risk of contamination.
- Finished feed and feed ingredients should be stored in closed bins or buildings.

It is important to consider the entry and movement of feed delivery vehicles and the feed they carry when determining the best location for the PBA and Access Points.

Appendix A: Creating a Premises Map for a Biosecurity Plan



Animals Raised Indoors

The first step is to get an aerial map of your operation (steps described below). It can then be [labeled by hand](#) or [using a computer](#) (also described below).











Getting an Aerial View from Google Maps*

*Google Maps is one example of aerial images provided free of charge online. There are others such as www.bing.com/maps and <https://zoom.earth>; use what works best for your operation. The steps below pertain to Google Maps.

1. Open an internet browser. Type in the URL: <https://www.google.com/maps>
2. Type in the address of your production site (address where the buildings are located, not home address—if different).
3. Click on the small box in the lower left that says “Satellite”
4. Zoom in so that you can visualize all barns and accessory structures once you see the satellite view. The entire site should still fit within the screen.



5. Find your site location on the map where the animals are located and click. A gray “pushpin” icon will appear. At the bottom of the screen, you will see the GPS coordinates in light gray below the location’s address. Copy this information to include in your premises map.
6. Go to your biosecurity plan in Microsoft Word, but keep the internet browser in Google Maps open behind Word. Click on “**Insert**” in the toolbar; click “**screenshot**,” click “**screen clipping**.” The browser will move to the front and be frosted. You can now use the mouse to select the area you want to copy into the word document.
7. Label the map with the following items and include a legend:

-  Perimeter Buffer Area (PBA)
-  PBA Access Point(s)
-  Line of Separation (LOS)
-  LOS Access Point(s)
-  Cleaning and disinfection (C&D) station(s)
-  Designated parking area (label)
-  Carcass disposal/pickup location (label)
-  Carcass removal pathways
-  Vehicle movements (animal transport vehicles, deliveries, etc.)
-  Site Entry

Labeling Map By Hand

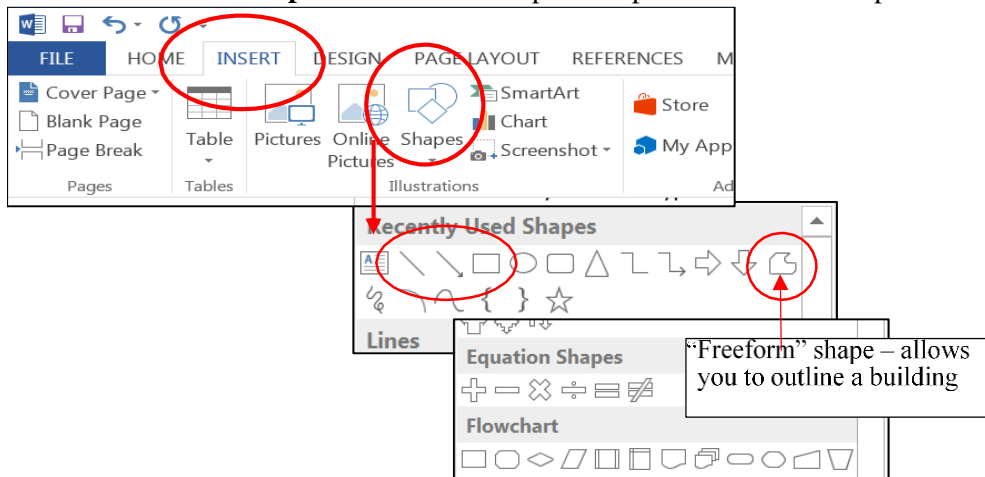
Use color pencils or markers to draw the lines, arrows, and shapes listed below on your map. Here is an example of a completed map with legend:



Labeling Map Using Computer

If using Microsoft Word

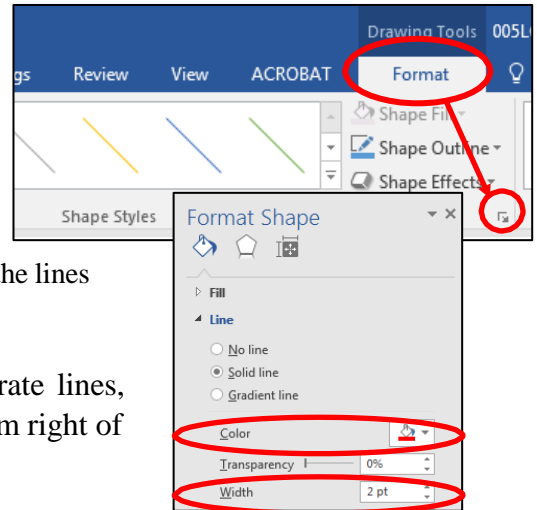
1. Use the **Insert: Shapes** from the control panel to place the various shapes and lines.



2. Use the "Line" tool to make the PBA around the buildings. This allows for editing individual areas if the PBA was to change in the future. The "Freeform" tool is helpful to use in smaller, more complicated areas of the LOS, but will make it difficult to edit later.

3. After you insert your first line, click the “Format” tab at the top of the page. Click the expander button in the “Shape Styles” section to expand your formatting pane to the right side of the page.

- Use the “Format Shape” panel on the right to adjust the color and line width of your lines, arrows, and shapes.

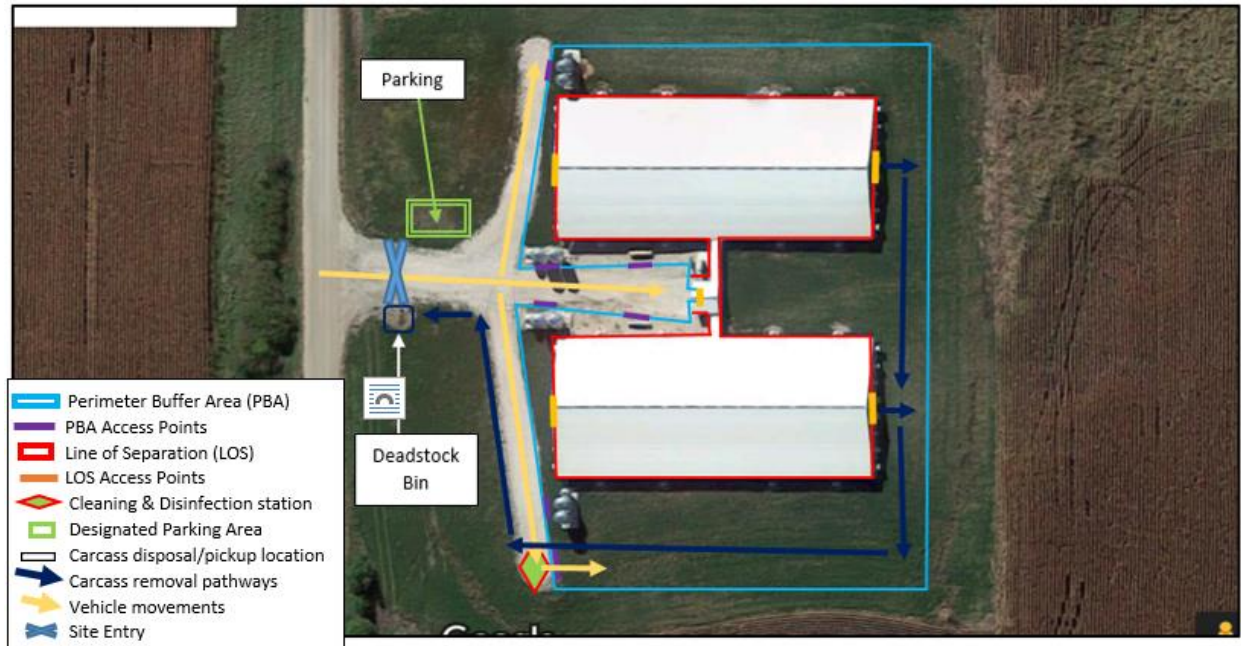


4. Copy the formatted line by selecting it and hitting “Ctrl + C” on your keyboard. Paste a new line (“Ctrl + V”), already formatted, next to the first one you created. Drag the ends of the lines to connect them at the appropriate locations.

5. If you have a hard time seeing where to connect the separate lines, zoom in on your map using the zoom option at the bottom right of the word document.



Here is an example of a completed map with legend:



Appendix B: Training Documentation Forms



Group Training Record



Trainer/Advisor: _____ Company: _____

Address: _____ Phone: _____

Email: _____ Class Date: _____ Advisor ID (if available): _____

	First and Last Name	Company/ Department	Work Premises ID	Training Topic
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

**Secure Pork Supply Participation: Must provide the Premises ID of the work/farm location where the individual works.*



Individual Training Record



Name: _____ Email: _____ Mobile Phone: _____

Home Address: _____ City/State/Zip: _____ Home Phone: _____

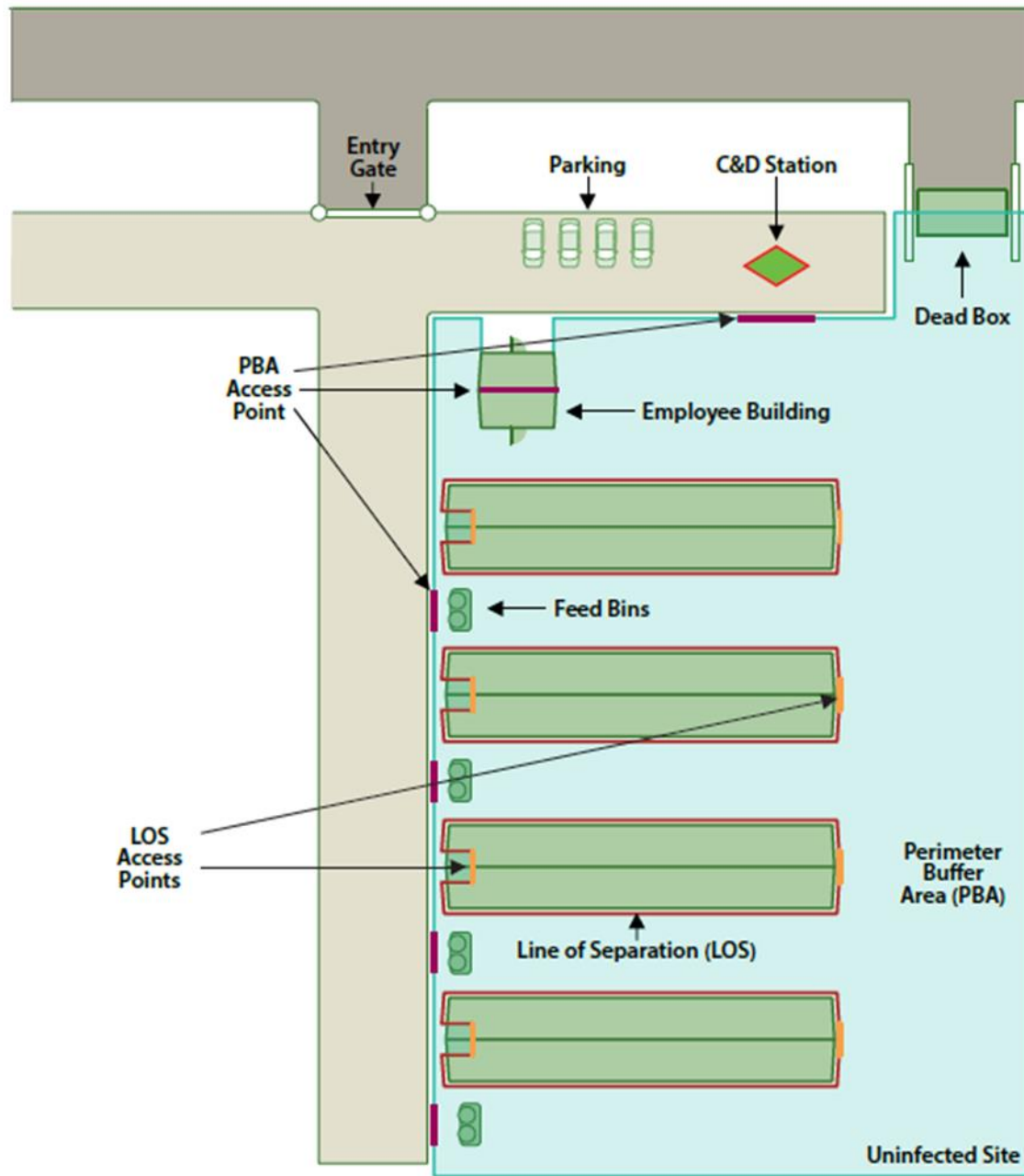
Business Name: _____ Business Address: _____ City/State/Zip: _____

PremID (PIN): _____ Business Phone: _____

Date	Training Completed	Certification # <i>(if available)</i>	Trainer/Advisor Name	Trainer/Advisor Signature	Employee Signature

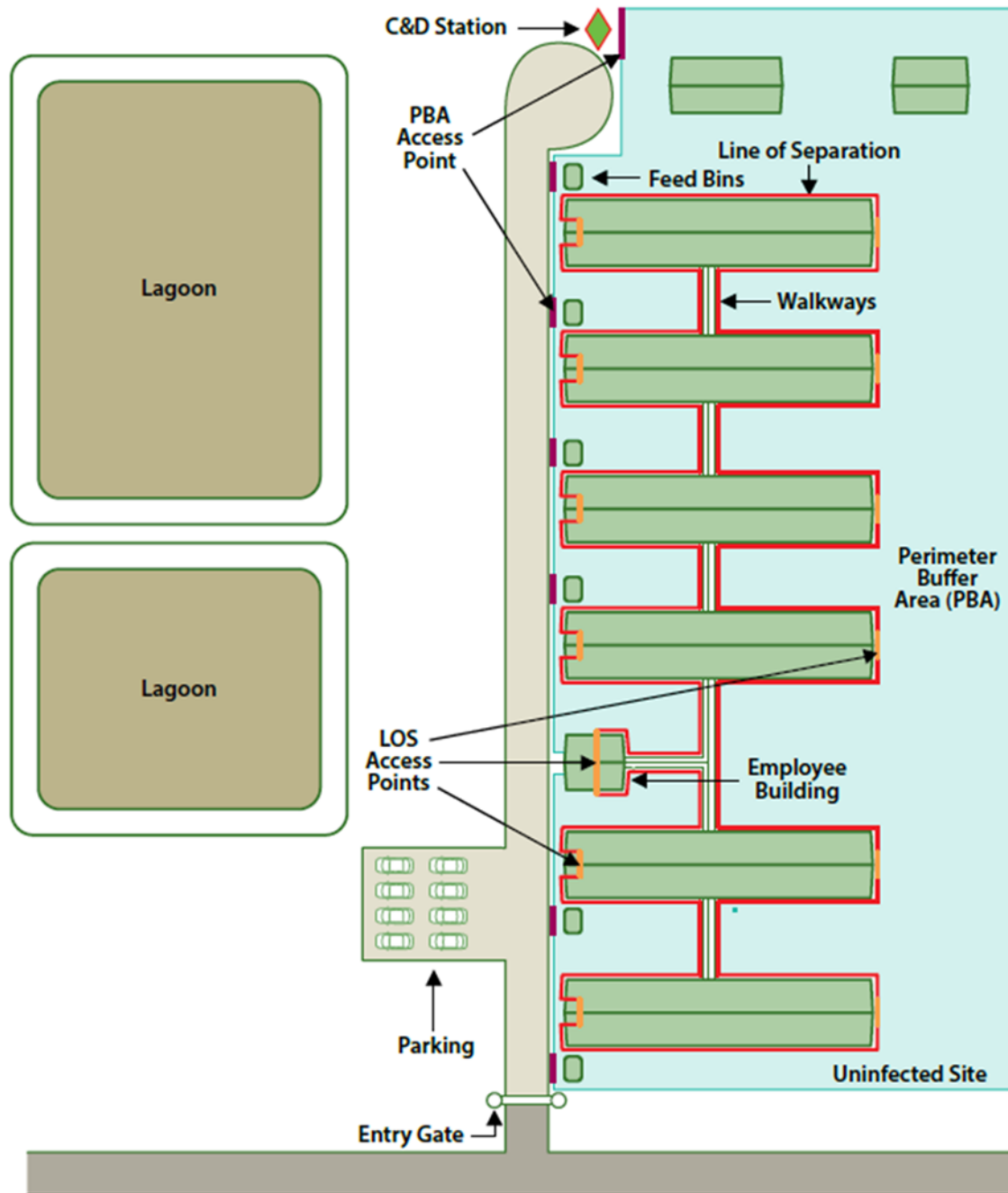
Appendix C: Examples with Different Site Layouts

Figure 1



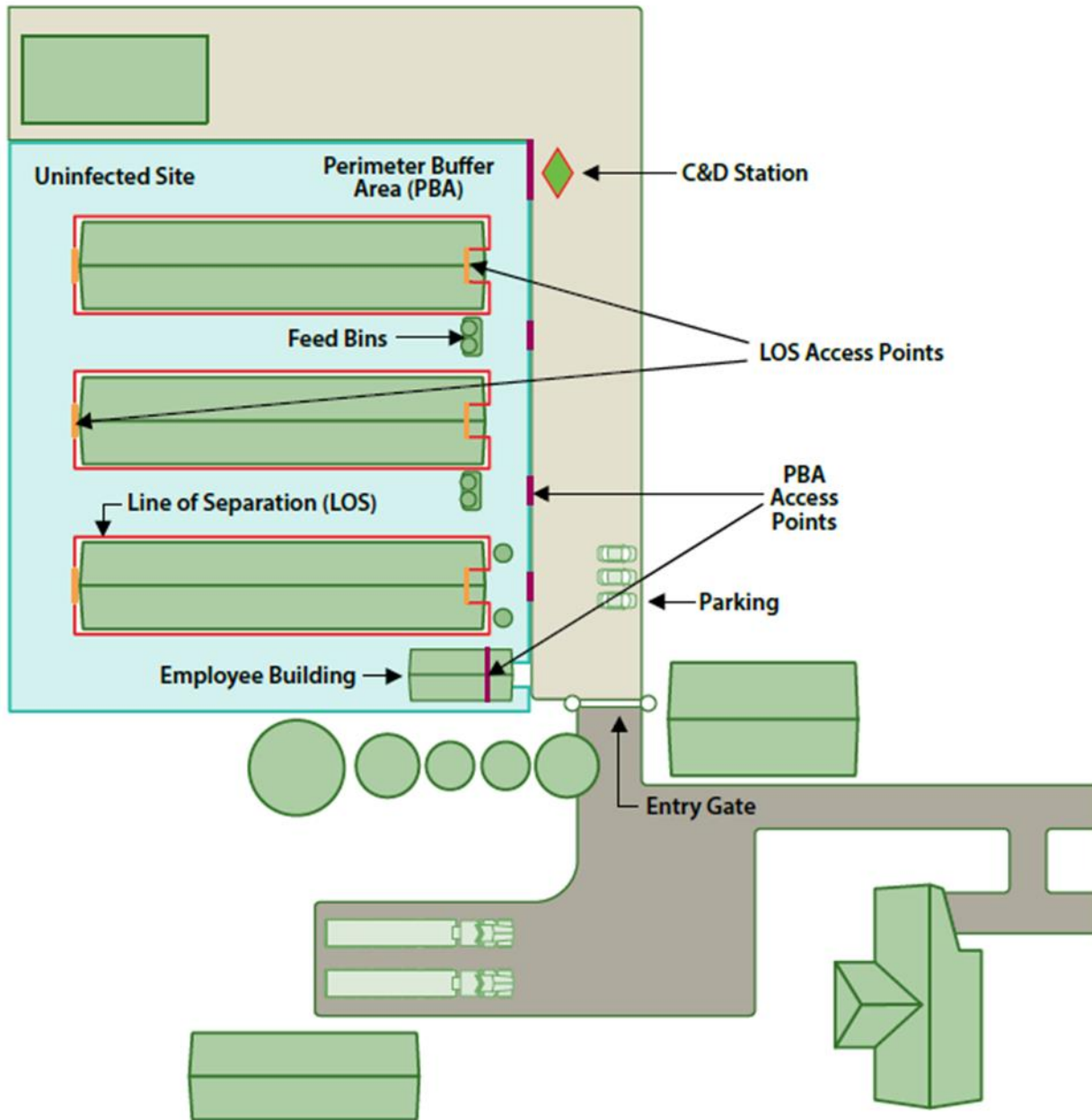
Source: Center for Food Security and Public Health, Iowa State University

Figure 2:



Source: Center for Food Security and Public Health, Iowa State University

Figure 3:



Source: Center for Food Security and Public Health, Iowa State University

Appendix D: Vehicle and Equipment Entry Log



Vehicle and Equipment Entry Log



PremID (PIN): _____ Address: _____ Contact Name: _____ Phone: _____

Date	License Plate/State	Driver Name	Driver Phone	Vehicle Description	Reason for Entry	C&D prior to arrival	Entry Supervisor
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	

This form and information will be important during a disease outbreak.

Appendix E: Establishing and Operating a Cleaning and Disinfection (C & D) Station

Effective disinfection of equipment and vehicles requires thorough cleaning with detergent, application of an effective and properly mixed disinfectant, and time for the disinfectant to work at an appropriate temperature (consult disinfectant labels to determine the contact time and temperature necessary for virus elimination/inactivation). Effective cleaning and disinfection can be difficult on complex equipment. Heat may be a more effective method for inactivating the virus on equipment that is difficult to thoroughly clean.

When setting up a C&D station, consider the following:

- The C&D station should be free of dirt/mud. A hard or solid surface is recommended, but a well-drained gravel surface is acceptable. It is important to prepare the wash pad of a C&D station of a material that is easy to clean and does not harbor disease agents.
- Choose the location of the C&D pad carefully. Consider the location of the PBA Access Point(s), the direction of the slope of the lane, the farm topography around potential wash pad sites, and how the land next to the wash pad is used. If the C&D pad is not directly adjacent to the PBA Access Point, locate the C&D wash pad such that cross-traffic between newly disinfected vehicles and dirty vehicles not entering the PBA is prevented.
- It is preferable to choose a location for the C&D pad that drains away from the PBA, high-traffic areas, and animal housing.
 - Remember that wastewater from the C&D station should be managed following state, local, and municipality regulations. Review the appropriate laws for specifics on wastewater/effluent regulations. Many areas have specific rules concerning wastewater runoff, to ensure that it does not enter waterways, streams, or other waters of the state.
 - You may need to build a berm or channels around the C&D pad to ensure wastewater runoff is collected.
- Adequate lighting should be provided to conduct vehicle C&D in non-daylight hours. This may include headlamps or portable lighting.
- Ensure protective gear is available. Personnel need to wear protective gear that protects their street clothes/footwear, eyes, and face from environmental contamination, washing procedures, and disinfectant sprays. All protective gear and equipment should be stored at or near the disinfection station.
- Provide a container to store protective gear until it is disposed of. FMD, ASF, and CSF viruses are not a public health concern, but contaminated clothing and footwear can carry the virus, potentially exposing susceptible animals.

Cleaning and disinfection procedures for vehicles crossing the PBA should be similar to the following:

- **Soak** the most visibly contaminated areas to aid in washing, removing organic material on tires, wheel wells, undercarriage, mud flaps, splash guards, and steps.
- **Wash**, wipe, spray or scrub the areas with excess organic matter starting with the dirtiest and working toward the cleaner areas. Pressure washers can enhance organic matter removal.
- **Rinse** and remove all detergent/soap residues by applying a low pressure water rinse on all surfaces, starting with the top of the equipment and working down.
- **Read** the product label on the disinfectant and handle the solution correctly to ensure safety of the handler and effectiveness of the disinfectant. Personal protective equipment may be needed to mix up solutions.
 - Note the recommended dilutions, water temperature, environmental temperature, and the need for ventilation when using the product.

- **Disinfect** by applying the product to the cleaned areas of the vehicle, starting with the tires to maximize contact time before moving.
 - The vehicle can be slowly rolled forward to allow the disinfectant to contact all parts of the tires.
 - Allow the product adequate wet contact time (per label directions) with all surfaces to inactivate the virus. Solution must remain ‘wet’ to actively work; reapplication may be necessary.

Below is an example SOP for wearing protective gear, inspecting, cleaning and disinfecting vehicles. Modify to meet your specific operation needs.

Establish the C&D Station

Setting up C&D Station

1. Set up C&D station outside but adjacent to the PBA Access Point. Maintain C&D station free of dirt, manure and other contaminants.
2. Provide and properly maintain vegetative filter area around C&D station for wash water runoff. Manage runoff so that it does not enter animal housing, drive paths, flowing streams, ditches or other avenues that leave the site. Follow state or local regulations regarding management of effluent and who to report to in case of runoff.
3. Make sure the following supplies are available and can last four days minimum, stored out of the elements, and refilled when low
 - a. Rubber gloves (2 pair for each person, each washing) or heavier gloves for when cleaning under cold weather conditions
 - b. Waterproof outerwear covering street clothing, skin, head, neck (2 sets in different sizes)
 - c. Cooling vests if working in extreme heat
 - d. Safety glasses or goggles (2 pairs) or face shields
 - e. Protective footwear (in required sizes) that remain at the C&D station
 - f. Plastic garbage bags for disposal of gloves
 - g. Effective Disinfectant and proper dilution guidance
 - h. Water (60 gallons per vehicle)
 - i. Pressure washer
 - j. Fuel or power source for pressure washer
 - k. Long handle brush (2), brush extension
 - l. Timer for disinfectant contact times
 - m. Vehicle log sheet with pens
 - n. Headlamps or portable lighting
4. Maintain a supply inventory log (see below) and written plan for restocking supplies, including names addresses and other contact information for suppliers and the means by which supplies will be delivered to the company or hauler/driver in a timely manner
5. Mix the disinfectant solution fresh daily. Mix thoroughly. When available, test strips which check the viability of the solution may also be utilized to determine if fresh disinfectant solution needs to be prepared.
 - a. Wear protective gear when mixing up solution. Read label
 - b. Do NOT mix or use with bleach or chlorinated products

Putting on (Donning) Protective Gear at C&D Station

1. Inspect all protective gear for damage or contamination; do not use unless intact, clean
2. Put on waterproof outerwear making sure it completely covers all street clothes and exposed skin, including neck and head

3. Put on gloves
 - a. Cover wrist opening with protective outerwear or
 - b. Seal with tape to prevent water, disinfectant running inside
4. Put on protective footwear
 - a. Cover top of footwear with protective outerwear or
 - b. Seal with tape to prevent water, disinfectant running down the pant leg inside the footwear
5. Put on the safety glasses/goggles or face shield over the hooded outerwear

Inspecting and Cleaning Vehicles

1. Wash down the wash pad surface to remove mud/manure before vehicle enters
 - a. Monitor wash runoff to ensure it enter a grassy area or catch basin and does not cross the pavement
 - b. If crosses, build a berm to hold it within the wash area
2. Guide vehicle to wash pad
3. Driver remains in vehicle
4. Record vehicle entry details on log sheet
 - a. Date, license plate/state, driver name, driver phone, vehicle description, reason for entry, if the vehicle was C&D prior to arrival, and entry supervisor
5. Walk around and visually inspect the exterior of vehicle for contamination, focusing on the tires, wheel wells, undercarriage, mud flaps, splash guards and steps
6. If exterior is visibly contaminated, soak the dirty areas with water and soap
 - a. Have driver move vehicle forward slightly to ensure tire contact surface is cleaned
 - b. Scrub heavily soiled areas
7. Pressure wash off the soap and visible contamination
8. Rinse with low pressure water working from the top of the contaminated area down

Disinfecting Vehicles

1. Apply the correct dilution of the disinfectant to the cleaned areas of the vehicle, starting with the tires to maximize contact time before moving
 - Have driver move vehicle forward slightly to ensure disinfectant contact with entire tire surface
2. Allow the disinfectant to contact the surfaces for required time listed on container (start time upon first application) to inactivate the virus
 - Solution must remain 'wet' to actively work; reapplication may be necessary
3. Wash down drive path area where wash water/runoff traveled
4. Apply the disinfectant to drive path where wash water/run off traveled and allow required time of wet contact time
5. Allow vehicle to enter premises

Removing (Doffing) Protective Gear at C&D Station

1. Rinse off protective gear with water from top to bottom to remove any potential contamination from outerwear, gloves, and footwear
2. Remove safety glass/goggles or face shield and store in a protected location
3. Remove gloves
 - a. If reusable, store in a protected location or
 - b. Dispose of in garbage bag
4. Remove protective outerwear, protective footwear
 - a. Store in a protected location near the C&D station to be worn upon next vehicle C&D
5. Put on protective footwear that can be worn around animals before leaving C&D station

6. Remove all disposable PPE and dispose of properly

Vehicles Exiting Site

1. Proceed to exit, wait for farm personnel to open gate, and leave production site
2. If soiled, visible contamination may be removed prior to leaving the site.

C&D Station Supply Inventory Log

Minimum 4 day supply, maintain in good condition, inventory every 6 months

PremID (PIN) : _____ Address: _____ Contact Name: _____ Phone: _____

Supplies	Inventory Date	Current Amount/ Sizes	Supply Order Invoice #	Purchased From	Additional Info (make, model#)	Initials
Rubber Gloves						
Waterproof outerwear						
Cooling vests if needed						
Safety glasses/ goggles/ face shields						
Protective footwear						
Water storage						
Pressure washer & fuel/propane						
Timer						
Waste Receptacle						
Long handle brush						
Disinfectant						
Light source with power cord, headlamps						
Signage						
Barrier Gate(s)						

Appendix F: Employee and Visitor Arrival Agreement

If I cross the Line of Separation, at a minimum I agree to the following biosecurity measures:

- Shower and change into clean clothes and footwear prior to my arrival at the premises
- After showering and changing into clean clothing and footwear offsite, I will not have any contact with animals or facilities where livestock or deadstock are held (e.g., my home, other premises, auction market, buying station, slaughter plant, rendering plant) prior to my arrival onsite.
- I will maintain a clean vehicle interior, free from contamination of soiled clothes, footwear, or other items.

I agree to follow additional biosecurity measures once on the premises based on my job duties that reduce the risk of introducing disease to the animals.

If I observe or perform a breach of biosecurity (accidental or intentional), I will promptly inform the Biosecurity Manager of the date, time, and nature of the incident.

Apéndice F: Acuerdo de entrada de empleados y visitantes

Si cruzo la línea de separación, como mínimo estoy de acuerdo con las siguientes medidas de bioseguridad:

- Ducharme y ponerme ropa y calzado limpio antes de mi llegada a las instalaciones
- Después de ducharme y cambiarme con ropa y calzado limpio fuera del establecimiento, no tendré ningún contacto con animales o instalaciones donde se alojan ganado vivo o muerto (por ejemplo, mi casa, otros establecimientos, mercados de subastas, estación de compra, mataderos, planta de procesamiento) antes de mi llegada al establecimiento.
- Mantendré el interior de mi vehículo limpio, libre de contaminación de ropa, calzado y otros artículos sucios.

Estoy de acuerdo en seguir con medidas de bioseguridad adicionales una vez dentro del establecimiento, basado en mis funciones de trabajo que reducen el riesgo de introducir enfermedades a los animales.

Si observo o realizo una violación de la bioseguridad (accidental o intencional), informaré lo antes posible al Encargado de Bioseguridad sobre la fecha, hora y naturaleza del incidente.

Print Name/ **Imprimir nombre**

Phone/ **teléfono**

Signature/**Firma**

Date/ **fecha**

Appendix G: People Entry Log



Visitor Log



PremID (PIN): _____ Address: _____ Contact Name: _____ Phone: _____

Date (MM/DD/YY)	Visitor Name	Reason for Entry	Time Out (AM/PM)	Visitor Signature	Date of Last Livestock Contact*

**Includes: auction, packing plant, exhibition, hunting, home, etc.*

Appendix H: Animal Movement Log



Animal Movement Log



PremID (PIN): _____ Address: _____ Contact Name: _____ Phone: _____

Date	Animal/ Group ID	# of head in shipment	Origin Address (PIN)	Destination Address (PIN)	Reason for Entry/Exit	Transporter Contact Info (Company, Driver name, Phone, License Plate, State)	Initials of Movement Supervisor

Appendix I: Record of Checking Bait Stations.

Rodent bait stations must be checked weekly and contents replaced when low.			
	Date	Signature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			