Food and Agriculture Sector Criticality Assessment

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National Infrastructure Protection Plan (NIPP) Operational Framework

As the operational framework for Infrastructure Protection (IP) activities, the NIPP will:

- Detail the national architecture we will use to protect our CIKR sectors (governance, information sharing, risk analysis, protective measures, and performance measurement)

- Provide a clear division of labor between IP and our Federal State, local, tribal, and private sector partners

- Form the basis for a risk-based CIKR protection requirements determination and prioritization process

- Inform the annual Federal budget process in the IP mission area
Critical Infrastructure and Key Resources (CIKR) Data Collection -101

The risk management framework is structured to promote continuous improvement to enhance Critical Infrastructure and Key Resources (CIKR) protection.
DHS Organizational Structure for CIKR Data Collection

Department of Homeland Security (DHS)

- National Protection and Programs Directorate (NPPD)

- Office of Infrastructure Protection Divisions (OIP)
Office of Infrastructure Protection Divisions

Partnership and Outreach Division - POD
develops and sustains strategic relationships and information sharing with owners and operators of the nation’s CIKR. POD recently added an outreach and training branch to assist state, tribal, and local homeland security partners.

Infrastructure Analysis and Strategy Division - IASD
leads the nation's premiere analytical teams in CIKR-related modeling, simulation, and analysis, in close collaboration with the Department's public and private partners. IASD maintains the Homeland Security Infrastructure Threat and Risk Analysis Center (HITRAC), an internal Department coordination center, and the the National Infrastructure Simulation and Analysis Center (NISAC).
Infrastructure Information Collection Division - IICD leads the Department's program to acquire infrastructure data and provide it in standardized formats to public and private sector homeland security partners to enhance planning and emergency response. IICD provides enterprise solutions for the **collection**, **protection** and **visualization** of infrastructure information.

**LENS** is the Primary Repository of this data
The Linking Encrypted Network System (LENS)

LENS is a data warehouse and suite of data collection applications supporting DHS activities, primarily Infrastructure review and assessment.

LENS information is used to support Homeland Security Presidential Directive (HSPD)-7, Critical Infrastructure Protection.

LENS provides IP detailed authoritative vulnerability information for physical security, security force, security management, interdependency, protective measures, and mitigation.
LENS Integration - Regional US View showing locations of completed Buffer Zone Protection Plans, Comprehensive Reviews, Site Assistance Visits and Other DHS - Products.
Hurricane support - Hurricane data obtained from NOAA resulting in a forecast cone for Alberto, 2006
NOC COP integration - iCAV integrated as the Geospatial platform for the DHS National Operating Center COP
Two Primary CIKR data Capture tools feed information to LENS for all 18 sectors

ACAMS
PCII protected documentation

LENS
CIKR Data Repository

IDCA
Primary input tool for Data Call submissions
Automated Critical Asset Management System (ACAMS)

ACAMS - Provides a mechanism to deliver tailored infrastructure information to State and local users for prevention, protection, response and recovery.

ACAMS - is PCII protected documentation and provides for GIS of National CIKR assets

PCII - The Protected Critical Infrastructure Information Program is an information-protection program that enhances information sharing between the private sector and the government.

Homeland Security
Automated Critical Asset Management System (ACAMS)

The Protected Critical Infrastructure Information (PCII) Program protects shared data from:

- The Freedom of Information Act (FOIA)
- State and local disclosure laws
- Use in civil litigation.
- PCII cannot be used for regulatory purposes and can only be accessed in accordance with strict safeguarding and handling requirements.
Data Collection Application (IDCA)

Supports data collection for IP mission partners, State, and Sector Specific Agency (SSA) submission and nominations to the NCIPP Annual Data Call

- Provides data for supporting nominations and justifications of Level 1-4 Critical Infrastructure
**Infrastructure Data Collection Application**

Please provide the information below for the CIKR you would like to add to your CIKR list. When completed, select the “Create” button. This will add the CIKR to your CIKR list and then take you to the “CIKR Information” tab.

### Enter CIKR Information

<table>
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<th>Value</th>
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<td>Name</td>
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</tr>
<tr>
<td>Address</td>
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</tr>
<tr>
<td>City, State, ZIP</td>
<td></td>
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<tr>
<td>Type</td>
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<tr>
<td>Latitude</td>
<td></td>
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<td>Longitude</td>
<td></td>
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<tr>
<td>Additional Description</td>
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</table>

*Denotes required field

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This interface is part of the [Homeland Security](https://www.dhs.gov) portal.
How do we input Systems based Food & Agriculture CIKR???

What is Critical???

ACAMS
PCII protected documentation

LENS
CIKR Data Repository

IDCA
Primary input tool for Data Call submissions
What is critical within the food and agriculture sector?
Flow Diagram of Beef Production:

1. **Cattle on Farm** (feeders, yearlings, replacements, and cow herd)
   - Direct to **Sale Barns** (Commingling)
   - Direct to **Slaughter Facilities**

2. **Sale Barns** (Commingling)
   - Direct to **Slaughter Facilities**

3. **Slaughter Facilities**
   - Boxed Beef
   - By Products: Glands, Organs, Blood, Bone

4. **Further Processing/Storage**
   - Boxed Beef
   - Retail Cuts, Ground Beef, etc.

5. **Wholesale/Distribution Storage**
   - Processed Products

6. **Retail Grocery**
Food and Agriculture Criticality Assessment

Tool Needed To:

- **Improve the overall process** for food and agriculture critical system, sub-system and component identification and prioritization

- **Provide greater equity** in cross sector critical system identification for DHS

- **Enable the states to identify and document** critical food and agriculture system components

- **Provide a common methodology and language** to the process

- **Improve critical asset reporting** to DHS
FASCAT
Created
Uses Systems based approach to document and prioritize CIKR
Standardizes CIKR vocabulary/ taxonomy
Documents commodity supply chain
Enables economic & employment modeling
Provides networking of CIKR Critical POC’s & SME’s

ACAMS
PCII protected documentation

IDCA
Primary input tool for Data Call submissions

LENS
CIKR Data Repository
After 2 years of piloting with states and industry, the National Center for Food Protection and Defense (NCFPD) releases spreadsheet version FASCAT 1.1 for use in datacall between February and April of 2009.
2008 Data Call

14 States submitted critical infrastructure data without FAS-CAT
23 states and Puerto Rico used FAS-CAT Tool to submit critical infrastructure, other states also utilized the tool.

37 states in all submitted data in some form.
In accordance with the 9/11 Commission Act, the Department of Homeland Security maintains the lists of the Nation’s most critical infrastructure.

The lists are developed through an annual data call using criteria developed by HITRAC’s National Critical Infrastructure Prioritization Program (NCIPP).

The Program identifies both domestic and foreign “too critical to fail” infrastructure, which are then used to inform homeland security grant programs, and other critical infrastructure protection activities.
List of Lists Approach

- **Level 1 and Level 2 Lists**: In accordance with the 9/11 Commission Act, infrastructure capable of “national or regional catastrophic effects”.
  - Identified through a national data call involving sector and State infrastructure protection community partners.

- **Sector Lists**: Sector-specific lists of infrastructure including the Level 1 and Level 2 infrastructure, as well as infrastructure critical to the sector.
  - Populated by the Sector Specific Agencies.

- **State Lists**: State-specific lists of critical infrastructure including the Level 1, Level 2, and Sector List infrastructure, as well as infrastructure critical to the State.
  - Populated by the State Homeland Security Advisors.

- **Foreign Lists**: Foreign infrastructure critical to the Nation’s public health, economic, and/or national security.
  - Identified through a national data call involving the Intelligence Community, Sector, and State partners.
After evaluations for all 18 sector nominations, DHS – HITRAC determined that no Food and Agriculture nominations met criteria for Level 1 or Level 2.

States Approach FDA, USDA and DHS to resolve issue that repeated responses to data calls reaped no results for Food and Agriculture that could be used in formula of DHS grant funding to states for Protecting Critical Infrastructure.
Methodology Modifications

- **Criteria:** Moved from attribute-based criteria (e.g., number of megawatts produced) to consequence-based criteria (e.g., lives lost, economic disruption) for Level 2:

  - **Level 1 Criteria:** Those infrastructure that, if disrupted, could result in at least two of the following consequences:
    - Greater than 5,000 prompt fatalities;
    - Greater than $75 billion in first-year economic consequences;
    - Mass evacuations with a prolonged absence of greater than 3 months;
    - Severe degradation of the country’s national security capabilities to include intelligence and defense functions, but excluding military facilities.

  - **Level 2 Criteria:** Those infrastructure that, if disrupted, could result in at least two of the following consequences:
    - Greater than 2,500 prompt fatalities;
    - Greater than $25 billion in first-year economic consequences;
    - Mass evacuations with a prolonged absence of greater than 1 month;
    - Severe degradation of the country’s national security capabilities to include intelligence and defense functions, but excluding military facilities.

- **Automatic Inclusion:** Credible threats; national security implications

- **Critical Clusters:** Allowed the inclusion of sector-specific and cross-sector clusters.

- **Infrastructure of Concern (IOC) Lists:** Development of analytically defensible IOC lists during incidents instead of providing the static Tier 1 and Tier 2 Lists.
HITRAC Hosts meeting with states

- On January 20 – 22, 2010 HITRAC held a meeting in Chicago at the Argonne National Laboratory to identify criteria or other strategies for prioritizing Food & Agriculture sector infrastructure

- Over 100 people in attendance; represented 30 states and territories, academia, the private sector, and multiple federal agencies

- Resulted in path forward for including Food & Agriculture systems based criteria in Level 1 and 2 CIKR nominations
HITRAC Hosts meeting with states

- Resulted in the inclusion of intentional contamination as justification for Level 1 and 2 CIKR nomination

- Re-defined Level 2 NCIPP Data Call Criteria for Food & Agriculture Sector to meet two of three criteria – multi-state or international footprint, mass casualties greater than 10,000 within a year and return to normalcy is greater than one year or never
FASCAT Results for 2010

- Web version 2.0 released in March 2010 on FoodSHIELD for the data call
- More than 30 Web training
- 13 On-site training and workshops
- 499 total number of sub-systems captured online
Georgia created 23 page Guidance for FASCAT conversion to the IDCA system

ENTERING A FOOD OR AGRICULTURE CIKR INTO THE IDCA (a.k.a) LENS SYSTEM

- Dr. James Daniels – Univ. of Georgia
- Dr. Bill Thomas – Univ. of Georgia
- Dr. Paul Williams – G.E.M.A
Standardized FASCAT Preamble to Narrative Justifications

- It is suggested that all narrative justifications contain the following introduction;

The subsystem identified within the FAS-CAT as:

- **Sub-Sector or Organization Component**: XXXXXXXXX
- **Commodity / Product Chain**: XXXXXXXXX
- **Sub-System / Component at Risk**: XXXXXXXXXXX

And has a DHS Taxonomy reference of:

This subsystem has been identified through use of the FAS-CAT tool as critical to the state of **XXXXXX** with a national significance to our Homeland Security that warrants nomination as a Level 2 asset based on criteria established for the Food and Agriculture Sector.

Support for this determination is derived from this sub system achieving a high FASCAT score of **XXX** out of a total number of **XXX** assessments performed on the **XXX** Commodity Chain. These assessments ranged in score from **XXX** to **XXX**. Additionally, if the disruptive scenario identified in this submission were to occur, it would lead to the following impacts;

**Note… only list below the ones from the 3 criteria established that apply.**

(international communities impacted)
FASCAT Results for 2010

- 2008-2010 FASCAT assessments from 31 states and Puerto Rico have now been entered into version 2.0 of FASCAT
- 26 states have performed 148 new sub-systems assessments during 2010
- 28 states completed the full IDCA submission for Level 2 consideration in the NCIPP
- 96 Sub-systems and components from 27 states gained tentative approval for being on the Level 2 list
FoodSHIELD
United in Protecting & Defending the Food Supply

FASCAT
FOOD AG SECTOR CRITICALITY ASSESSMENT TOOL

DEMO (A Workspace FASCAT Team)

Workzone
- Home
- News & Notes
- Workspace Docs
- FASCAT Docs
- Wiki
- Videos

State FASCAT Tools
- Start Assessment
- Modify Data
- Review/Search Data

FASCAT Collaboration
- Video Training
- Send Email
- FASCAT Docs
- Add Commodity team
- Add Members
- More Admin Tools

Admin Tools

Communicate
- Meetings
- Members
- Commodity Chains
- Group Admins

Security
Your Reports:

- View Complete Reports
- View Incomplete Reports

Back
Incomplete Reports

03-25-2009 Transportation Dairy Fluid milk plant
03-25-2009 Processing Dairy Fluid milk plant
03-25-2009 Processing Dairy Dairy Products Processing
03-26-2009 Processing Poultry Processing 6
03-27-2009 Processing Retail Opns Processing
02/02/2010 Plant/Produce Fruit Farm Opns
03-25-2009 Processing Swine Slaughter
### Consequences

<table>
<thead>
<tr>
<th>Threats</th>
<th>2nd &amp; 3rd Order Consequences</th>
<th>Impact of Attack or Disaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAD</td>
<td>✅ Chemical/Toxin</td>
<td>✅ Intentional Adulteration</td>
</tr>
<tr>
<td>Destruction</td>
<td>✅ Loss of Operation Rights</td>
<td>✅ Theft</td>
</tr>
<tr>
<td>Lost Access</td>
<td>✅ Pathogen Contamination</td>
<td>✅ Production/Processing Disruption</td>
</tr>
<tr>
<td>Drought</td>
<td>✅ Plant Disease</td>
<td>✅ Plant Pests</td>
</tr>
<tr>
<td>Food Pathogens Veg.</td>
<td>✅ Radiological Contamination</td>
<td>✅ Exotic Plant Pest/Disease</td>
</tr>
<tr>
<td>Misinformation/Public Messaging</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This report is not complete.

**Notes**

Describe the assumptions or specific scenarios used in completing this evaluation.
### 2nd & 3rd Order Consequences

<table>
<thead>
<tr>
<th>Threats</th>
<th>Consequences</th>
<th>Impact of Attack or Disaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Term System Shut Down</td>
<td>Long Term System Shut Down</td>
<td>Loss of Key Input</td>
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<tr>
<td>Loss of Key Output</td>
<td>Mass Casualty</td>
<td>Loss of Contam. of Breed/Plant Stock</td>
</tr>
<tr>
<td>Loss/Contamination of Herd/Flock</td>
<td>Reduced Output</td>
<td>Loss of Capital</td>
</tr>
<tr>
<td>Product Shortage</td>
<td>Loss of Seed Source</td>
<td>Loss of Capital</td>
</tr>
<tr>
<td>Loss of Tourism</td>
<td></td>
<td>Credit Access</td>
</tr>
<tr>
<td>Cost of Response</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

Describe the assumptions or specific scenarios used in completing this evaluation.
This report is not complete.
Critical Sub-System Points of Contact

- Agriculture, Public Health, Emergency Services,
- Industry, Law Enforcement, Federal, State, Local
NAICS Select Options

These select options make use of the taxonomy tree.

Choose Sub-sector » Choose Segment » Choose Sub-Segment »

Your DHS Selection: Supply » Animal Production » Cattle Ranches and Farms » Beef Cattle Ranches »

FAS-CAT Query Path

These select options are specific to current FAS-CAT data.

Food animals » Beef » Cow Calf Opns

Your FASCAT Selection: Food animals » Beef » Cow Calf Opns

Basic Search Parameters

Weighted Score: - Select -

Cumulative Score: - Select -
Your FASCAT Selection: Food animals » Beef » Cow Calf Opns

<table>
<thead>
<tr>
<th>Basic Search Parameters</th>
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</thead>
<tbody>
<tr>
<td>States/Regions</td>
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<tr>
<td>Potential Threats</td>
</tr>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>□ Small</td>
</tr>
<tr>
<td>□ Mid-Size</td>
</tr>
<tr>
<td>□ Large</td>
</tr>
<tr>
<td>□ Very Large</td>
</tr>
<tr>
<td>□ Multi-State &gt; 5</td>
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<tr>
<td>□ Multi-State &lt; 5</td>
</tr>
<tr>
<td>□ National</td>
</tr>
<tr>
<td>□ International</td>
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</tbody>
</table>

Potential Direct Consequences

Impacts of Attack

2nd - 3rd Order Consequences

Ease of Attack

Probability

Critical

Recovery

Category

Concentration

Area

Participants

Affiliations

Search
<table>
<thead>
<tr>
<th>Cumulative Score</th>
<th>Weighted Score</th>
<th>Subsector</th>
<th>Commodity</th>
<th>Subsystem</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>101</td>
<td>Plant/Produce</td>
<td>Vegetable</td>
<td>Farm Opns</td>
</tr>
<tr>
<td>85</td>
<td>102</td>
<td>Warehouse</td>
<td>Retail Opns</td>
<td>Warehouse</td>
</tr>
<tr>
<td>85</td>
<td>102</td>
<td>Transportation</td>
<td>Dairy</td>
<td>Sale Barns</td>
</tr>
<tr>
<td>85</td>
<td>102</td>
<td>Transportation</td>
<td>Beef</td>
<td>Sale Barns</td>
</tr>
<tr>
<td>89</td>
<td>107</td>
<td>Food animals</td>
<td>Poultry</td>
<td>Layer Operations</td>
</tr>
<tr>
<td>93</td>
<td>112</td>
<td>Food animals</td>
<td>Dairy</td>
<td>Milking Parlor</td>
</tr>
<tr>
<td>89</td>
<td>134</td>
<td>Processing</td>
<td>Vegetable</td>
<td>Processing</td>
</tr>
</tbody>
</table>
Workspace

6 Members :: Closed Group

Listed below are contacts who are members of the workgroup. You can get contact information for any person or organization by clicking on its link.

Legend: Contact | Guest | Industry | Member | Staff | Expired | Hidden | Inactive | Add to Book

<table>
<thead>
<tr>
<th>Name</th>
<th>Work Phone</th>
<th>Email</th>
<th>Organization</th>
<th>Role</th>
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<tr>
<td>Burgers, Kate</td>
<td>312-634-6061</td>
<td></td>
<td>James Lee Witt</td>
<td>Member</td>
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<tr>
<td>Hoffman, Eric</td>
<td>651-717-4105</td>
<td></td>
<td>FoodSHIELD Demo Agency</td>
<td>Admin</td>
</tr>
<tr>
<td>Pierquet, Jennifer</td>
<td>612-625-2899</td>
<td></td>
<td>University of Minnesota</td>
<td>Member</td>
</tr>
<tr>
<td>Ricks, Grandville</td>
<td>651-717-4114</td>
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<td>FoodSHIELD Demo Agency</td>
<td>Admin</td>
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</table>
UNITED IN PROTECTING & DEFENDING THE FOOD SUPPLY

FoodSHIELD

FASCAT
FOOD AG SECTOR CRITICALITY ASSESSMENT TOOL

DEMO (A Workspace)

Commodity Chains

- DEMO Beef
- DEMO Dairy
- DEMO vegetables

Add Workspace

FASCAT Collaboration

- Video Training
- Send Email
- FASCAT Docs

Admin Tools

- Add Commodity team
- Add Members
- More Admin Tools

Security
Critical Infrastructure and Key Resources (CIKR)
CORE INFORMATION SHARING
Mission Based Processes

Governance and Membership Foundation:

Nomination, Validation and Vetting (NV&V):
Government Coordinating Council (GCC) and Sector Coordinating Council (SCC) Charters and organizational policies identify the Sector’s membership and operating policies
Core Information Sharing Capabilities:

Alerts, Warnings & Notifications (AWN):
Details how the sector will receive and distribute notices provided by the government and industry to the sector

Suspicious Activity Reporting (SAR):
Details how the sector will receive and distribute reports of suspicious activity affecting critical infrastructure

Data Management (DM):
Details how the sector will develop, post, distribute and maintain documents and other forms of data
Core Information Sharing Capabilities continued:

Incident Collaboration & Communication (IC&C): Details how the sector will communicate during an emergency or incident

Routine Collaboration & Communication (RC&C): Details how the sector will communicate during non-emergency situations
CoreSHIELD

Features
- Workgroups
- Document Management
- Webinar
- Events Calendar
- Announcements
- Recall Alerts

Directories
- CCCET - Compliant
- AgencyDIR
- FoodAgDIR
- LabDIR
- IndustryDIR
- AcademicDIR

Portals
- Food Emergency Response Network (FERN)
- Homeland Security University Programs (HSUP)
- Integrated Consortium of Laboratory Networks (ICLN)
- National Center for Food Protection and Defense (NCFPD)
- Association of Food & Drug Officials (AFDO)
- The International Food Protection Training Institute (IFPTI)

FoodSHIELD

- Food and Ag (Research Database)*
- Over 200 Active Workgroups
- Sector Specific Planning
- Grants Tutorial
- FASCAT Tool
- FARM Tool

HSIN-CS

Features
- Workgroups
- Document Management
- Webinar
- Events Calendar
- Announcements

Directories
- Portal Specific

Portals
- Banking and Finance - Chemical
- Commercial Facilities - Critical Manufacturing
- Dams - Defense Industrial Base
- Emergency Services - Energy
- Electricity
- Energy: Oil and Natural Gas
- Government Facilities
- Healthcare & Public Services - Info Technology
- Nat'l Monuments and Icons
- Nuclear
- Postal & Shipping - Telecommunications
- Transportation

HSIN-FA

- Event FOUO Documents
- Event Coordination Workgroups
- DHS Sector Updates from GCC-SCC
- DHS IT Education, Training and Outreach
- DHS I&A Intelligence Products
- TRIPwire - Expert Threat Analysis and Reports

Communication with DHS Components — FEMA, CBP, S&T, OHA, I&A, IP, and State Fusion Centers

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FoodSHIELD CoreSHIELD

Primary platform used for vetting membership, for routine communications in a steady-state and for extending stakeholder outreach during emergencies.

HSIN-CS HSIN-FA

Used for communications during an incident and for sharing sensitive information. Also used for sharing information with other CKIP sectors during an incident or in a steady-state.

The HSIN-FA portal is under redesign to reflect all changes essential to these integration processes. Your stakeholder participation with the site and feedback will ensure that the added value of these enhancements is fully realized.