Strategic Partnership Program
Agroterrorism (SPPA) Initiative:
Execution & Outcomes

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United States Department of Agriculture
Food Safety and Inspection Service
Outline

- Overview of SPPA Initiative
- Program Objectives
- Implementation
- Deliverables
- Status
- Results/Outcomes
- Next Steps
- Conclusion
SPPA Overview

• Began Fall 2005

• SPPA is joint initiative to protect the nation’s food supply from terrorist threats

• SPPA is public-private collaboration between:
SPPA Overview - Who

U.S. Government;
  • U.S. Department of Agriculture (USDA)
  • DHHS Food and Drug Administration (FDA)
  • Department of Homeland Security (DHS)
  • Federal Bureau of Investigation (FBI)
    – Program lead, manage contract
SPPA Overview - Who

- Private industry;

and

- States
SPPA Overview

Conduct assessments to:

• Validate or identify vulnerabilities in or threats to food supply
• Identify indicators/warnings that could signify planning for an attack
• Identify research gaps and needs
• Develop mitigation strategies to reduce threats/prevent attacks (industry or government)
• Increase awareness and coordination between food & agriculture government and industry stakeholders
Additional objectives for SPPA Initiative include:

- Inform Homeland Security Centers of Excellence of identified research needs
  - National Center for Food Protection and Defense (NCFPD)
  - National Center for Foreign Animal and Zoonotic Disease Defense (FAZD)
- Catalog lessons-learned
- Validate assessments conducted by USG for the food and agriculture sector
- Gather information to enhance existing tools that both USG and industry employ in food defense
SPPA Overview - Why

• Assessments support requirements for a coordinated (Federal, State, Industry) food and agriculture infrastructure protection program as stated in:
  
    • Establishes National policy to defend agriculture & food against terrorist attacks, disasters, emergencies
    • Directs government to work with industry: identify/prioritize critical infrastructure, development awareness, mitigate vulnerabilities, enhance screening of domestic & imported products, enhance response & recovery
  
  – Sector Specific Plans (SSP) in National Infrastructure Protection Plan (NIPP)
SPPA Criteria List

- USDA and FDA proposed lists of key products or commodities within their jurisdiction that could/should be assessed for the SPPA program
  - Criteria List

- Many of criteria list assessments completed; some still outstanding
SPPA Criteria List

- Aquaculture production
- Cattle stockyard/sale barn
- Beef cattle feedlot
- Citrus Production
- Corn farm
- Dairy farm
- Poultry farm
- Rice mill
- Seed production
- Soybean farm
- Swine production
- Veterinary biologics
- Deli meat processing
- Grain elevator/Grain export handling facility
- Ground beef processing
- Hot dog processing
- Import facilities
- Processed poultry
- Liquid eggs processing
- School kitchens
- Retailers – processing meat
- Warehouses/Distribution Center

- Animal foods/feeds
- Baby food
- Deli salads
- Dietary supplements
- Flour
- Frozen entrees
- Fruit juice
- Gum arabic
- High fructose corn syrup
- Honey
- Ice cream
- Infant formula
- Milk
- Peanut butter
- Produce
- Seafood
- Soft drinks
- Spices
- Vitamins
- Bottled water
- Yogurt
- Stadium Food Service
- Breakfast cereals

- Conducted
- Scheduled
- Outstanding
SPPA Implementation

- **Industry**
  - Trade Association (e.g., American Meat Institute) or
  - Company (e.g., Johnsonville Sausage)
- or **State Agency**
  - Kansas Dept. of Agriculture, Ohio Dept. of Corrections

... volunteers to participate in assessment of vulnerabilities in food or agricultural industry/system
  - Complete 1 page Response Form (online at [www.usda.gov](http://www.usda.gov))

- **Responsibility of volunteer:**
  - Participate in organizing the assessment
  - Arrange for a site visit to a facility engaged in the particular activity
  - Provide expert participation for assessment
- **Ideally, food or system is on Criteria List**
Implementation

- Volunteer is partnered with appropriate government Sector-Specific Agency (SSA) who has responsibility for sector

- Either:
  - FDA
  - or
  - a USDA Agency

- Over 20 USDA Agencies and Offices
  - 6 USDA agencies involved in SPPAs
The Food Safety and Inspection Service (FSIS) is the public health agency in the U.S. Department of Agriculture responsible for ensuring that the nation's commercial supply of meat, poultry, and egg products is safe, wholesome, and correctly labeled and packaged.

- Provide Inspection Services Nationwide
- Worked with FDA to develop process/procedures for assessing vulnerabilities in food and food systems
- Conduct internal vulnerabilities assessments
- Develop security/food defense guidance
- FSIS has conducted majority of USDA-led SPPAs:
  - frozen pizza, liquid eggs, hot dogs, ground beef, RTE chicken, correctional facilities, central kitchens for NSLP, sausages
• Animal and Plant Health Inspection Service (APHIS)
• Grain Inspection, Packers and Stockyards Administration (GIPSA)
• Food and Nutrition Services (FNS)
  – Administers National School Lunch Program (NSLP)
• Agricultural Marketing Service (AMS)
  – Responsible for procurement of both FDA and FSIS regulated foods for the NSLP
• Farm Service Agency (FSA)
  – Regulates commercial agricultural warehouses (e.g. grain elevators)
The USG Sector Specific Agency (SSA) leads assessment:

• SSA agency forms assessment team of knowledgeable personnel. Team includes:
  – USG representatives (USDA, FDA, DHS, FBI)
  – State and local reps (State Dept. of Health, State Dept. of Ag, FDA, USDA, law enforcement, Homeland Security offices, vets, etc)
  – Industry representatives
    • Work closely with commodity group trade associations (or professional societies) to increase the number of companies and other participants in the assessment, prepare background materials

• Assessment team about 20-30 people in size
Implementation

- Industry participants develop background material and flow diagram of product/system to be assessed:
  - Generic
  - Based on more than one company
- Pre-assessment conference call
  - Goals, training on methodology
- Site visit (tour) conducted at a location (e.g., processing plant) representative of the industry/commodity group
  - SPPA does not assess specific vulnerabilities of individual company or facility
Implementation

• After site visit, team conducts assessment
• Actual assessment takes place in a conference room
• Assessment takes 2 – 4 days depending on complexity
• Contractor support provided
Assessment Methodology

- CARVER + Shock methodology used in SPPA assessments
- Modified by FSIS and FDA to allow assessment of vulnerabilities of food supply
- Breaks a food system down into small pieces (nodes)
- Simplifies and standardizes process
- Analysis of each node allows for determining which are “critical”, i.e., most likely targets for attack
Assessment Methodology

Cont.

• Mitigation steps, best practices proposed and discussed
• Research gaps and needs identified
Deliverables – Working Papers

- Working Papers Reports are developed by contractor and approved by industry participants.
- Distributed to all attendees; marked as “Sensitive” (non-classified).
  - For SPPA, Sensitive information is defined as “information whose unauthorized disclosure could compromise the safety of or consumer confidence in the industry” (FBI 6/5/07).
- SPPA participants agreed to restrict distribution of Working Papers to those in their organizations with a “need to know”.
- However, encouraged to share knowledge gained to “harden targets”.
  - Company-specific basis.
  - Industry or system-wide basis.
Deliverables – Assessment Report

• For each assessment, a final Assessment Report is produced
• Assessment Report is classified in accordance with USG guidelines
  – CARVER + Shock scores for nodes & threat agents deemed “Secret”
• Classified report from each site visit details critical nodes, threat agents, vulnerabilities, possible mitigation strategies, and potential warnings and indicators
  – Access restricted to those with a national security clearance and need to know
Deliverables

- **Strategic Partnership Program Agroterrorism (SPPA) Initiative – First Year Status Report**
  - Copies in back of room

- **SPPA FY07 Status Report**
  - October 2006 – September 2007
  - In preparation
  - Expected to be available Nov./Dec. 2007
Deliverables

• **Final SPPA Summary Report**
  - Prepared at completion of program
  - Will have appendix addressing use of CARVER + Shock tool
    • How well did it work?
    • Any changes recommended for future use?

• **Sub-Sector Reports**
  - Prepared at completion of program
  - Categorize assessments by food or agriculture sub-sectors
  - Sub-sector is division within the food and agriculture sector
  - 7 sub-sectors:
    • Producers/plant; producers/animal; retail;
      processors/manufacturers; restaurant/food service;
      warehousing and logistics; agriculture inputs & services
Current Status: SPPA Assessments

- 31 vulnerability assessments completed in 2 years
    - 3 remain to be completed this fiscal year

- 14 assessments tentatively planned for FY08 (October 2007 – September 2008)
# SPPA Assessments Conducted


<table>
<thead>
<tr>
<th>Sector Specific Agency</th>
<th>Industry</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDA</td>
<td>Yogurt</td>
<td>TN, MN</td>
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<tr>
<td>FDA/ USDA FSA</td>
<td>Grain – export elevators</td>
<td>LA</td>
</tr>
<tr>
<td>FDA</td>
<td>Bottled Water</td>
<td>NJ</td>
</tr>
<tr>
<td>FDA</td>
<td>Baby Food – jarred applesauce</td>
<td>MI</td>
</tr>
<tr>
<td>USDA FSIS, FNS, AMS</td>
<td>School Central Kitchens</td>
<td>NC</td>
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<tr>
<td>USDA APHIS</td>
<td>Swine Production</td>
<td>IA</td>
</tr>
<tr>
<td>FDA/ USDA FSIS</td>
<td>Frozen Food – pizza</td>
<td>WI, FL</td>
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<tr>
<td>FDA</td>
<td>Juice Industry – apple juice</td>
<td>NH</td>
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<tr>
<td>USDA FSIS</td>
<td>Egg Products – liquid</td>
<td>PA</td>
</tr>
<tr>
<td>FDA</td>
<td>Fresh-Cut Produce – bagged salads</td>
<td>CA</td>
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<tr>
<td>FDA</td>
<td>Infant Formula</td>
<td>AZ</td>
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<td>USDA FSIS</td>
<td>Poultry Processing</td>
<td>AR</td>
</tr>
<tr>
<td>FDA</td>
<td>Fluid Dairy – processing</td>
<td>NY</td>
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<td>USDA APHIS</td>
<td>Beef Cattle Feedlot</td>
<td>NE</td>
</tr>
<tr>
<td>USDA FSIS</td>
<td>Ground Beef Processing</td>
<td>KS</td>
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<td>USDA APHIS</td>
<td>Live Auction Markets</td>
<td>MO</td>
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<tr>
<td>USDA APHIS</td>
<td>Dairy Cattle Farm</td>
<td>ID</td>
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</table>
## SPPA Assessments Conducted


<table>
<thead>
<tr>
<th>Date</th>
<th>Sector Specific Agency</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 06</td>
<td>USDA APHIS</td>
<td>Soybean Growers</td>
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<tr>
<td>Nov 06</td>
<td>USDA APHIS</td>
<td>Corn Growers</td>
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<tr>
<td>Jan 07</td>
<td>FDA</td>
<td>Retail Fluid Dairy Milk</td>
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<tr>
<td>Feb 07</td>
<td>USDA FSA</td>
<td>Flour</td>
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<tr>
<td>Mar 07</td>
<td>FDA</td>
<td>Stadium Retail Food Service</td>
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<td>Mar 07</td>
<td>USDA FSIS</td>
<td>Sausage Processing</td>
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<td>Apr 07</td>
<td>USDA FSIS</td>
<td>Correctional Institution</td>
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<td></td>
<td></td>
<td>Food Processing/Ground Beef</td>
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<td>Jun 07</td>
<td>FDA</td>
<td>Commercial Feed Mill</td>
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<td>Jun 07</td>
<td>USDA FSIS</td>
<td>Hot Dogs Processing</td>
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<td>July 07</td>
<td>USDA FSA</td>
<td>Domestic Grain Cooperative</td>
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<td>July 07</td>
<td>FDA</td>
<td>Breakfast Cereal Manufacturer</td>
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<tr>
<td>Aug 07</td>
<td>FDA</td>
<td>Grocery Store</td>
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<tr>
<td>Sep 07</td>
<td>USDA FSA &amp; AMS</td>
<td>USDA Commodity Warehouse</td>
</tr>
<tr>
<td>Sep 07</td>
<td>FDA</td>
<td>High Fructose Corn Syrup</td>
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</table>
Overarching Observations (thus far...)

- Out of CARVER categories, industry can influence/affect “Vulnerability” and “Accessibility” the most
- Mitigation strategies are sensitive part of the discussions, though vital.
  - Many “best practices” and flow of ideas help foster discussion
- Participation of trade associations are key to a successful assessment
  - Provide general ranges and serve as broker during discussions involving proprietary information
Overarching Observations
(thus far...)

• Many research gaps regarding properties and characteristics of threat agents in specific commodities
• Research will be key to mitigating food defense threats and issues
• Need to identify and validate R&D initiatives related to the food and agriculture sector
Vulnerabilities
Vulnerabilities identified from SPPA assessments highly dependent on whether a food or agricultural product/commodity.

- **Food Processing**
  - Nodes of highest concern are those in which direct human contact both possible and likely with the largest amount of product (large batch sizes)
    - Containers of bulk raw ingredients, or large amounts of mixed ingredients
    - Especially the case if human access is a normal operation step (e.g. manual addition of ingredients)
  - Secondary ingredients are a high concern because they are usually dispersed and mixed into large amounts of product during further processing
General Industry-Wide Vulnerabilities

**Agricultural Production**

- Live animals and plants have different vulnerabilities
- Readily available; highly transmissible; or contagious plant and animal diseases pose greatest threat from an economic perspective
  - Infection of single plant or animal may close borders, impact national economy
- A zoonotic disease (transmissible between animals and humans) as a threat-agent raises the possibility for a dual impact to public health and the economy
Specific FSIS Example

- **Prison System Food Processing SPPA**
  - Partners: FSIS, Ohio Department of Corrections, Ohio Department of Agriculture; National Association of Institutional Agribusiness
  - Prisons provide a competitive food supply source
    - Ohio produces 1.9 million lbs of beef and 1.8 million lbs of pork products per year

- **Unique: existing security infrastructures (e.g., restricted access areas, equipment inventory, identification)**
  - Might think accessibility and vulnerability issues minimal

- **However, vulnerabilities similar to private sector**
  - Accessibility to dry ingredient storage/batch preparation areas and bulk prep areas such as open grinders and hoppers
Threat Indicators
Commonalities of Identified Threat Indicators

- Employees, visitors, vendors, and contractors, observed in areas where they have no legitimate reason to be
- Someone expressing an unusual interest in the production process
- Employee health patterns such as unusual absence or attendance patterns and illnesses related to particular job functions or work areas
- Delays in deliveries, deviations from delivery schedules or evidence of product tampering
Mitigation Strategies
Commonalities of Identified Mitigation Strategies

- Physical security measures based on site-specific vulnerability assessments (i.e., vary by site)
  - e.g., cameras, supervision, locks, seals, restricted access, color-coded uniforms or caps, limiting personal items

- Penetration audits – attempt to access facility or location

- Conduct site-specific vulnerability assessments
  - Builds on SPPA
  - Periodically revisit
Commonalities of Identified Mitigation Strategies

- **Employee peer monitoring programs**
  - Badge challenges, location challenges, buddy system
- **Raw materials inspection**
  - Detection of tampering or adulteration
    - SOPs for rejecting, quarantine, and investigating goods
- **Food process design changes may eliminate threat**
  - Alter time/temp of processing step; physical layout; design equipment for improved security (not open)
- **Incorporate food and agriculture defense into procurement process**
  - Trickle-down effect to suppliers
  - USDA AMS uses SPPA results in contracting for NSLP
Commonalities of Identified Mitigation Strategies

Awareness:

• **Employee Training**
  – Free web course

• **Trade Industry Group Best Practices**

• **Biosecurity Best Practices for livestock & plants**
  – Isolate & protect (screening visitors & water/feed suppliers, decontaminating materials)
  – Mitigate economic fallout

• **Other USG Guidance**
Mitigation Strategies - Food Defense Guidance

- Government Guidance - FSIS has provided food defense guidance to food processors, importers, transporters, and distributors (5 languages)
Research Needs
Commonalities of Identified Research Gaps and Needs

- Threat agent and agent/matrix research
  - Which agents applicable?
  - Agent stability, persistence, toxic dose, feasibility of production/acquisition

- Incident detection and response
  - Are (rapid) methods available?

- Improved communication channels
  - Consolidation of materials
  - Simple points-of-contact
  - Clear protocols
FSIS-Specific Research Needs & Activities

- Behavior of threat agents in Agency-specific food matrices
- Impact of food processes (e.g., cooking, freezing, acidification) on stability/survivability of agents
- Improved lab detection methods
- Equipment re-design (e.g., development of closed systems)
- Decontamination technologies (e.g., effect of sanitizers)
- Organoleptic changes in foods in response to addition of threat agents
Next Steps

• Continue with remaining planned FY07 assessments
  – August: Grocery Store - FDA
  – September: USDA Commodity Warehouse – FSA & AMS
  – September: High Fructose Corn Syrup - FDA

• Schedule and conduct FY08 assessments
  – 14 assessments tentatively planned for FY08
  – Still seeking partners/volunteers
    • Of 14 tentative assessments, only 4 have identified sponsors
## Future SPPAs: FY08 Assessments

**Tentative**

<table>
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<tr>
<th>Date</th>
<th>SSA</th>
<th>Industry</th>
<th>Location</th>
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<tbody>
<tr>
<td>Oct 07</td>
<td>USDA APHIS</td>
<td>Seed Producers</td>
<td>MI</td>
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<tr>
<td>Oct or Nov 07</td>
<td>FDA or USDA</td>
<td>Transportation</td>
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<tr>
<td>TBD</td>
<td>USDA FSIS &amp; FDA</td>
<td>Distribution Centers / Refrigerated Warehouse</td>
<td>TBD</td>
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<tr>
<td>TBD</td>
<td>FDA</td>
<td>Food Service</td>
<td>NV</td>
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<td>FDA</td>
<td>Full Service Restaurant</td>
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<td>FDA</td>
<td>Ice Cream</td>
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<td>USDA</td>
<td>Rice Industry</td>
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<tr>
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<td>USDA</td>
<td>Citrus Industry</td>
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<td>FDA</td>
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<td>TBD</td>
<td>FDA</td>
<td>Deli-Salads</td>
<td>OR?</td>
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## Remaining Key Criteria List

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<tr>
<th>Sector Specific Agency</th>
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<tr>
<td>FDA</td>
<td>Animal By-Products</td>
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<td>FDA</td>
<td>Breaded Food, Frozen, Raw</td>
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<tr>
<td>FDA</td>
<td>Canned Food, Low Acid</td>
</tr>
<tr>
<td>FDA</td>
<td>Dietary Supplement, Botanical, Tablets</td>
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<tr>
<td>FDA</td>
<td>Entrees, Fully Cooked</td>
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<tr>
<td>FDA</td>
<td>Gum Arabic (Ingredient)</td>
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<tr>
<td>FDA</td>
<td>Honey</td>
</tr>
<tr>
<td>FDA</td>
<td>Peanut Butter</td>
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<tr>
<td>FDA</td>
<td>Soft Drink, Carbonated</td>
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<tr>
<td>FDA</td>
<td>Spices</td>
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<td>FDA</td>
<td>Vitamin/Micro-ingredient Premixes/Flavors</td>
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<tr>
<td>FDA</td>
<td>Vitamins, Capsules</td>
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<tr>
<td>USDA</td>
<td>Aquaculture Production Facility</td>
</tr>
<tr>
<td>USDA FSIS</td>
<td>Retailers (further processing on-site)</td>
</tr>
<tr>
<td>USDA</td>
<td>Veterinary Biologics</td>
</tr>
</tbody>
</table>
Next Steps

- Program scheduled to end September 2008
- Complete Final Summary Report
- Complete 7 Sub-sector Reports
Conclusion

• Impossible to guard against all threats to food and agriculture

• Must anticipate possibility of terrorist attack, evaluate preparedness, & implement mitigation strategies to thwart attacks—or at least mitigate damage and recover

• SPPA Initiative is significant step towards “hardening” food and agriculture industries
  – Provides training and hands-on experience with terrorism-focused assessment tool to industry
  – Provides Federal, State, and local government in-depth look at vulnerabilities associated with these industries
  – Increases communication between industry, government, and law enforcement stakeholders
Questions?