

# Industry Application of Modeling Catastrophic Disease Effects in Confined Livestock Operations

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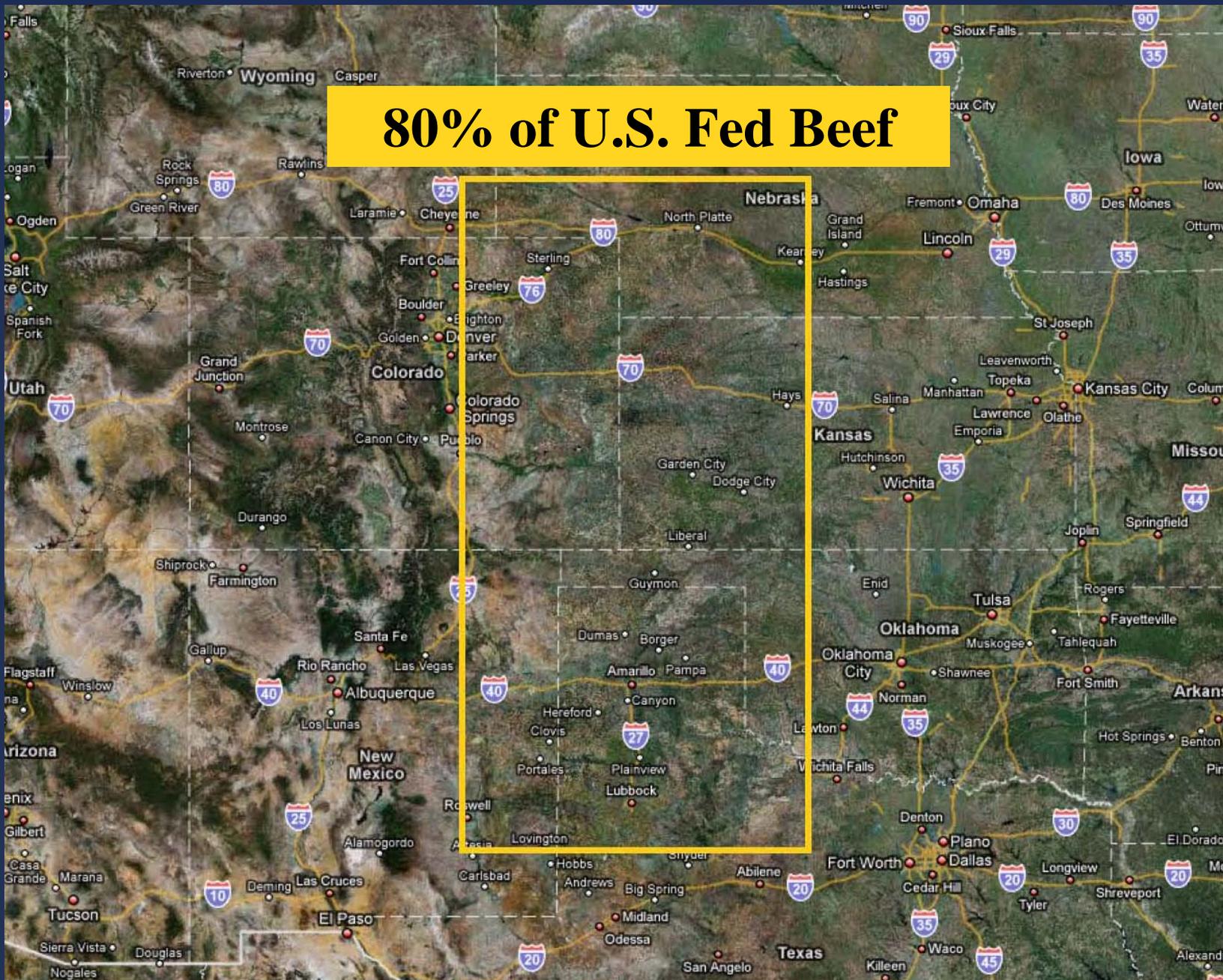
2009 DHS University Summit

Washington, D.C.

March 19, 2009



**80% of U.S. Fed Beef**





Hereford, TX

1058

60

1057

Cr-1



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Pointer 34°46'26.41" N 102°29'57.11" W elev 3871 ft

Streaming ||||| 100%

Eye alt 28272 ft





Pointer 34°49'27.77" N 102°21'32.88" W elev 3781 ft

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Streaming ||||| 100%

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Eye alt 9071 ft





60

2943

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La Villa Dr



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Pointer 34°49'27.77" N 102°21'32.88" W elev 3781 ft

Streaming ||||| 100%

Eye alt 6433 ft





36°06'49.17" N 102°40'58.23" W

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elev 1251 m

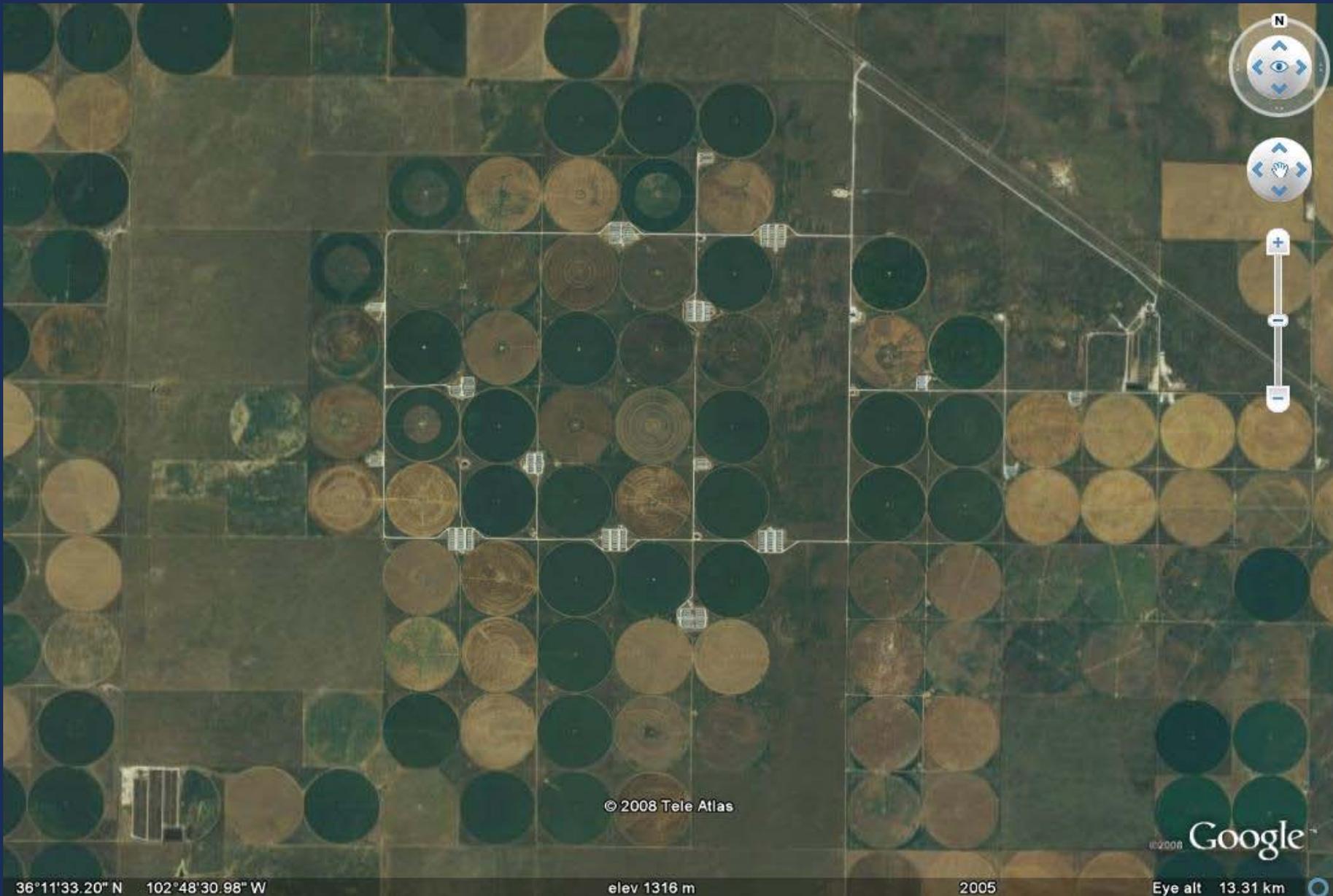
2005

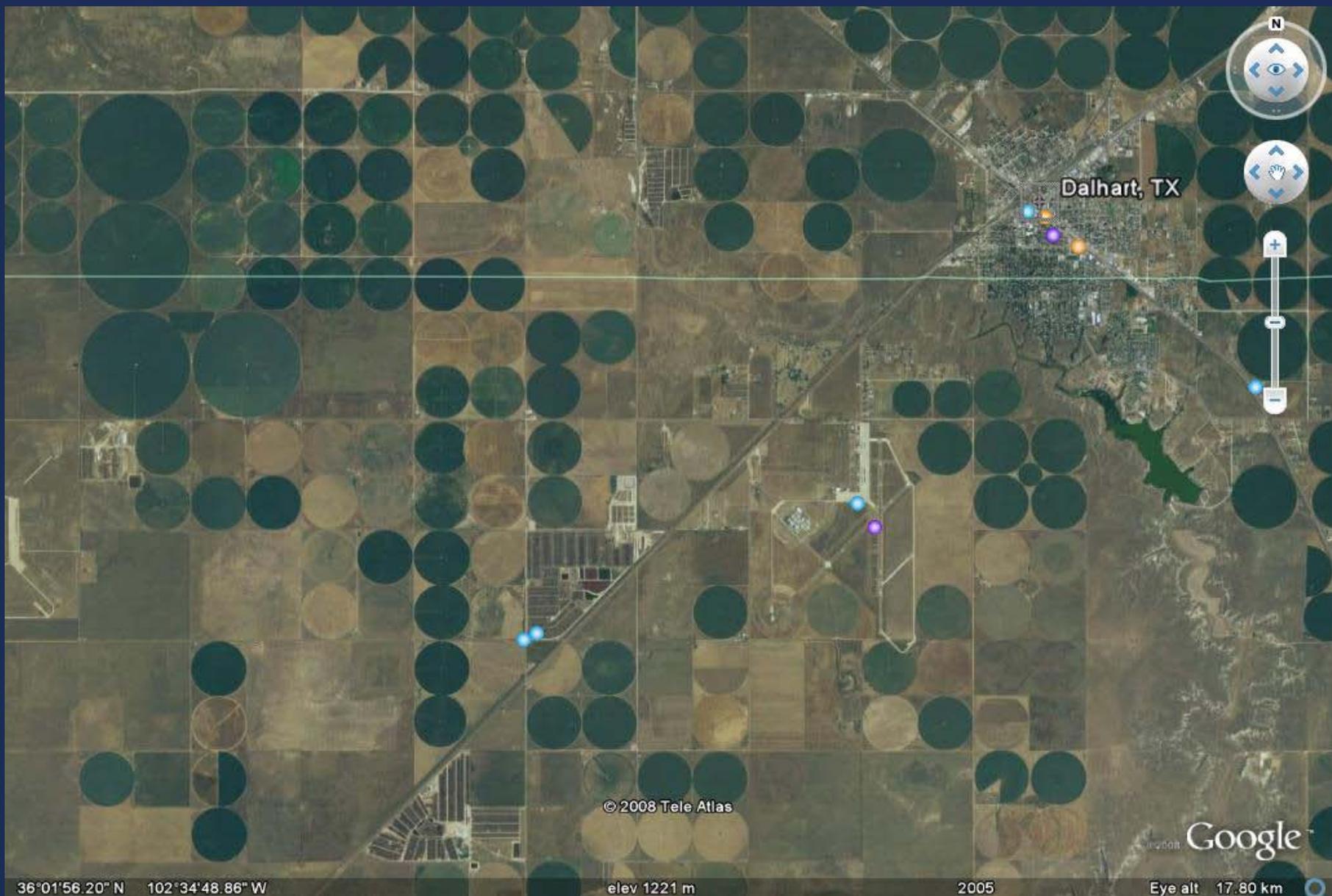
Eye alt 33.79 km

Google

Dalhart, TX







Dalhart, TX

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36°01'56.20" N 102°34'48.86" W

elev 1221 m

2005

Eye alt 17.80 km

















# Industry Statistics

- ❑ Cattle industry largest U.S. agricultural sector
- ❑ \$30 B fed cattle sales / \$75 B retail beef sales
- ❑ \$3 B export beef sales
- ❑ 85,000 feedyards below 1K head / 4.3 m head
- ❑ 2,160 feedyards over 1K hd / 22.5 m head
- ❑ Texas largest cattle feeding state / 6 m head



# Key Policy Considerations

- ❑ **Early Detection & Surveillance**
- ❑ **Stop Movement Management & Restart or Permitting Movement**
- ❑ **Depopulation & Disposal**
- ❑ **Vaccines**
- ❑ **Communication and Coordination**
- ❑ **Capacity – Lab capacity/capability, personnel/manpower, depop methods, disposal methods, vaccines, biosecurity supplies**
- ❑ **Consumer confidence / Trading Partner Confidence**
- ❑ **Indemnity Procedures**
- ❑ **Business Continuity**



# Current FMD Response Plan

- ❑ Greater flexibility based on event conditions
- ❑ Mass depop and disposal impossible in high concentration areas
- ❑ Environmental conditions may prohibit disposal
- ❑ No vaccinate to live / salvage
- ❑ Trade restrictions accepted
- ❑ Lacking technology/approval for pen-side testing



# FAZD High Plains Study

- ❑ Nine-county area of Texas High Plains
- ❑ Assumed one accidental introduction of FMD
- ❑ Industry stakeholder survey
- ❑ Sixty-four scenarios
- ❑ Large & small confined facilities, different ownership



# Vulnerabilities

- ❑ Open lot facilities / Difficult to isolate
- ❑ Production risks / Demand risks
- ❑ Livestock arrived from 29 states, Mexico & Canada
- ❑ Livestock shipped from study area to 14 states
- ❑ Livestock traveled 10 to over 1,000 miles
- ❑ Thousands of truckloads of cattle and feed per year
  - 50 K head / 1.4 M lbs. of feed per day
- ❑ One week feed supply on hand



# Overall Results

- ❑ 20K to 50K head feedyard
- ❑ Avg. epidemic length 28 to 52 days
- ❑ Early detection = 21 days avg. length
- ❑ Early detection = fewer herds slaughtered
- ❑ Outcomes varied based on size / type operation



# Future Scenarios

- Early detection / diagnostics / pen side, etc.
- Vaccination availability and efficacy
- Efficient use of labor for various tasks
- Size / location impact on mitigation strategy
- Vaccinate to live vs. vaccinate to die
- Trade implications for VTL animals



# Future Scenarios cont'd

- ❑ Stop movement / permit “home”, slaughter, etc.
- ❑ Size of quarantine and other zones
- ❑ Confinement and feed needs in route
- ❑ Feedyard prevention and response SOPs
- ❑ Interstate transportation and marketing



THANK YOU

