

## Delmarva Freight Plan Implementation Commodity Flow Studies

*“Agriculture Supply Chain”*

Summer, 2015

December 15, 2015



Delaware Department  
of Transportation



Maryland Department  
of Transportation



VANTAGE POINT  
DEVELOPMENT ADVISORS, LLC



WHITMAN, REQUARDT & ASSOCIATES, LLP  
ENGINEERS · ARCHITECTS · PLANNERS  
WRALLP.COM

# What is the Delmarva Freight Plan ?

State Effort to Meet FHWA Objectives  
& MAP -21 Freight Planning Goals.

**Approach Goals:**  
*Intermodal*  
*Continuing*  
*Economic Basis for Projects*

**Modes**

- Roadway (Trucks)
- Water (Barge & Ship)
- Rail (Trains)
- Air (Cargo Planes)

**Commodities**

- Weight (Tons)
- Value (\$)

**Routes**

- Frequency
- Connections
- Transfers



## Key Economic Factors:

Commodity	Millions of Tons*	Cumulative %
50 Secondary Traffic	12.8	20%
32 Clay, Concrete, Glass, Stone	12.6	40%
20 Food and Kindred Products	6.6	51%
29 Petroleum and Allied Products	6.6	61%
28 Chemical or Allied Products	7.4	73%
33 Primary Metal Products	2.9	78%
24 Lumber or Wood Products	2.3	81%
37 Transportation Equipment	1.5	84%
26 Pulp, Paper and Allied Productst	1.1	86%
34 Fabricated Metal Products	0.7	87%
Else	8.4	100%
TOTAL	62.9	
* Includes inbound, outbound, and local truck tons		

**Delmarva Freight Traffic is Highly Concentrated.**

**5 Commodities = 73% of Trucks.**



## Scenario Planning:

### "WHAT IF" Examples:

... NEC corridor  
restrictions continue?

... coal demand  
ceased?

... barge travel  
was restricted?

... truck volumes  
and maintenance  
needs increased?

### "WHAT IF" Examples:

... the Chesapeake  
Connector was completed?

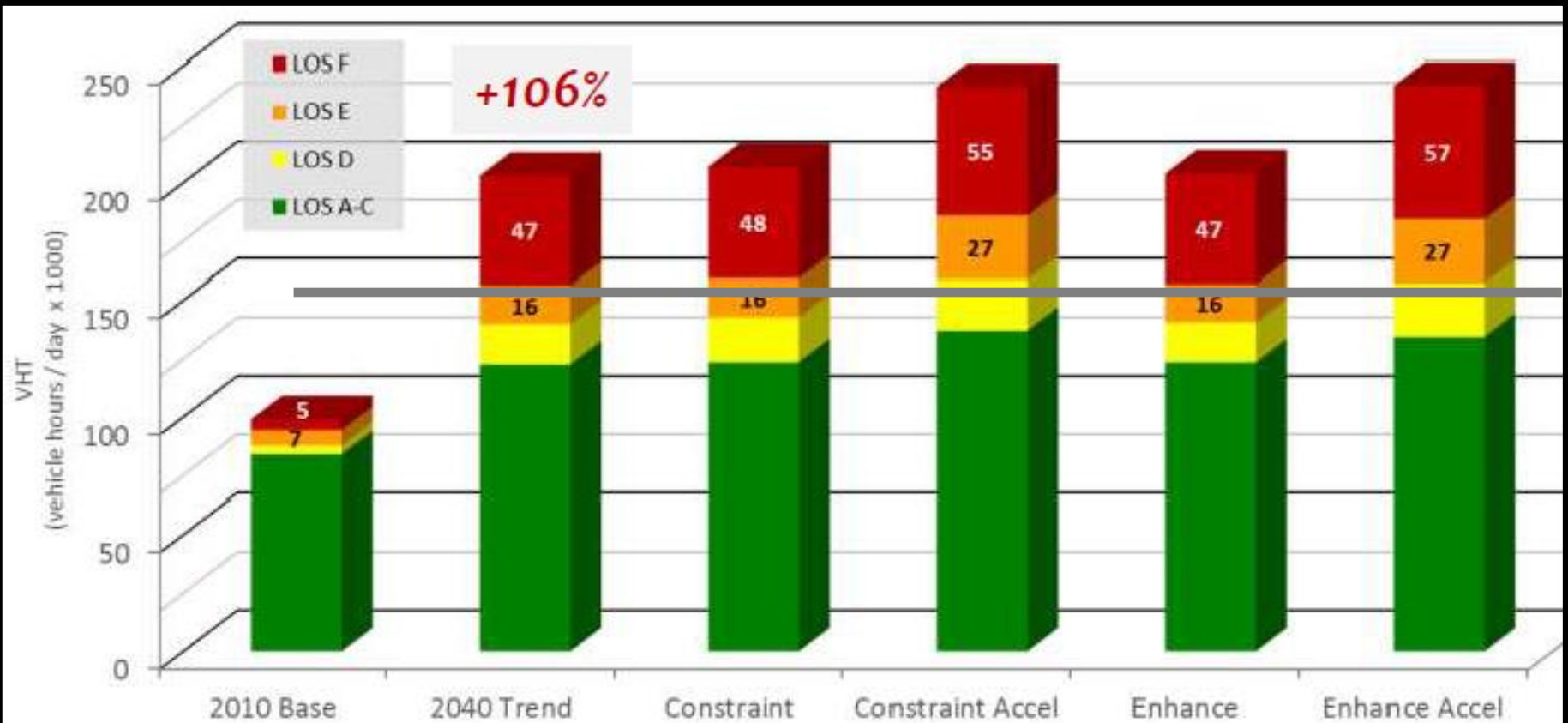
... a new  
intermodal facility  
was constructed?

... Post-Panamax  
trends directly impact  
the peninsula?

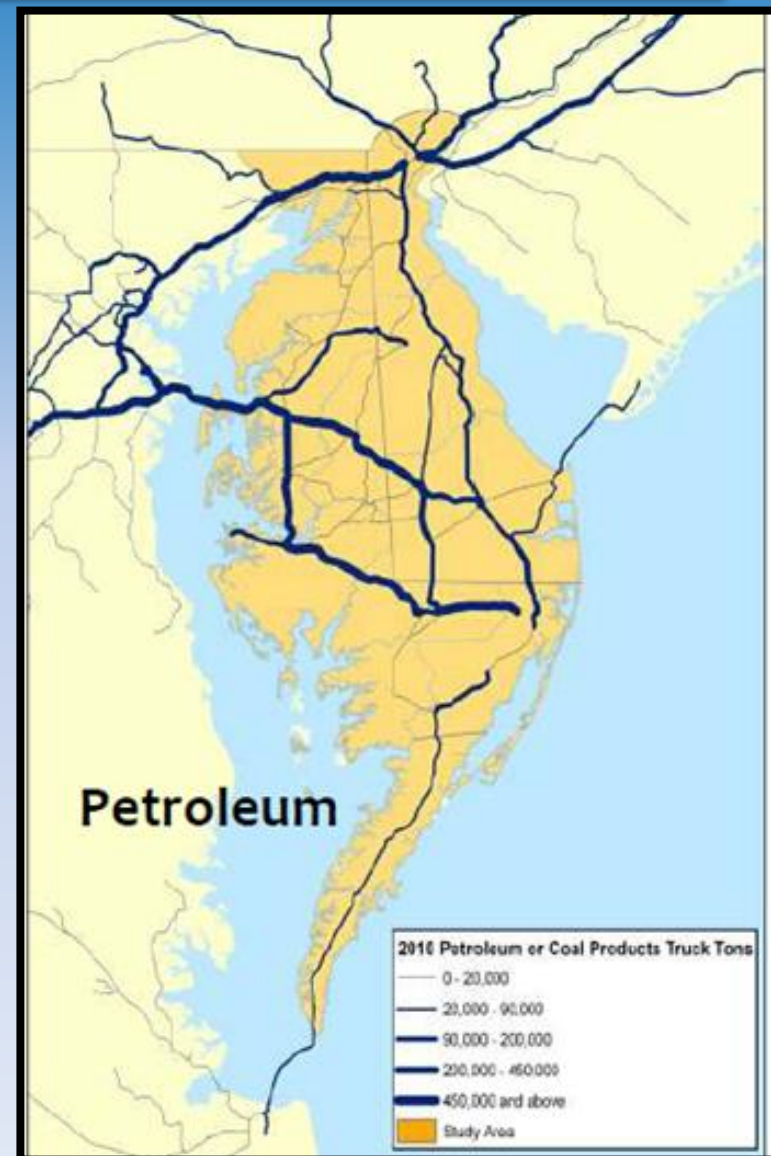
... higher freight  
volumes conflicted  
with other users?

## Across All Scenarios:

Most of the Growth in Truck Travel will Occur at LOS D/E/F (Congested Conditions).

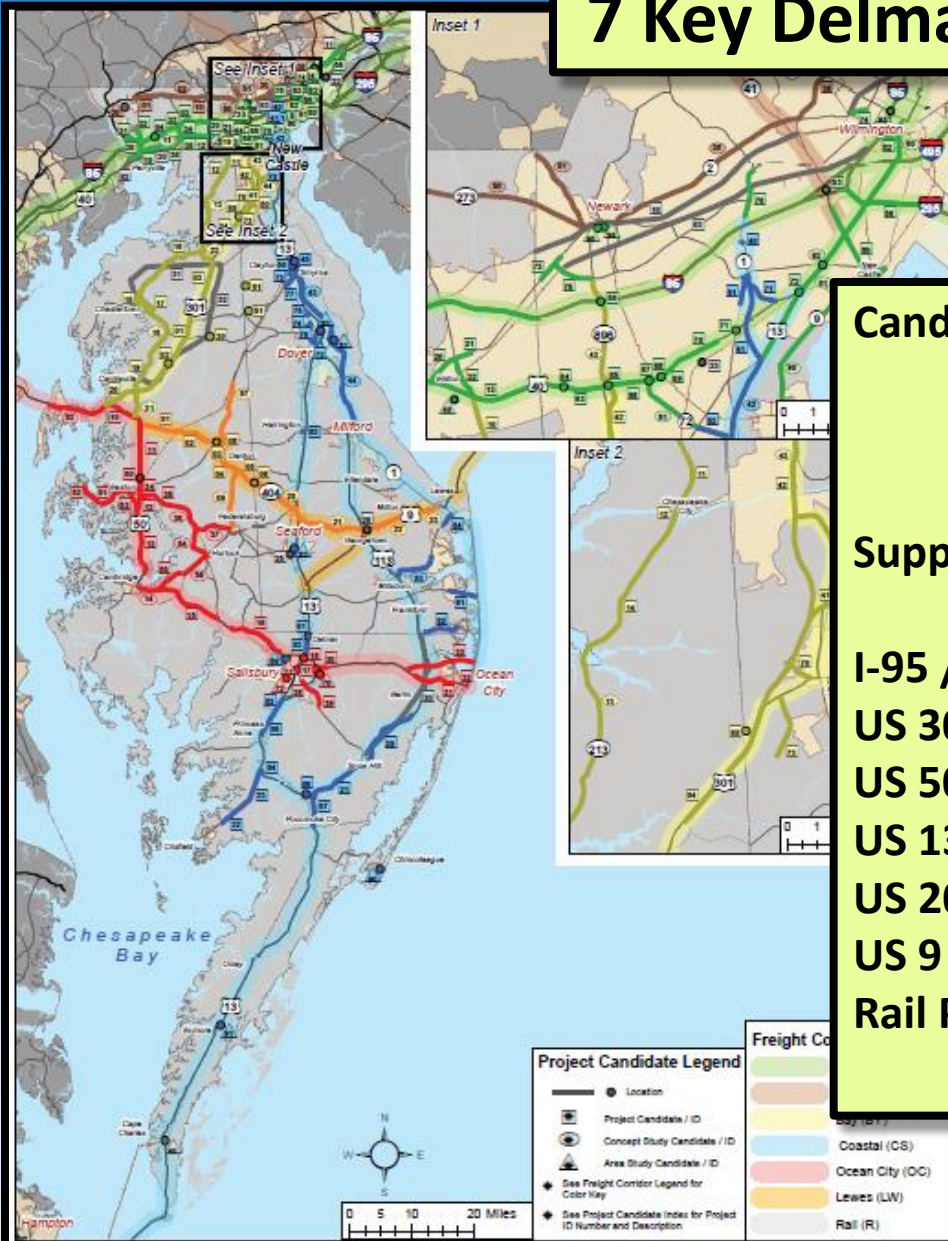


## Industries Have Very Different Travel Patterns:





## 7 Key Delmarva Freight Corridors



**Candidate Freight-Related Projects drawn from:**

- State Freight Plans (DE, MD, VA)
- Technical Analysis (DE)

**Supported by Project Screening & Prioritization**

**I-95 / I-495 / US 40 "Metro Corridor"**

**US 301 "Bay Freight Corridor"**

**US 50 "Ocean City Freight Corridor"**

**US 13 / US 113 / SR 1 "Coastal Freight Corridor"**

**US 202 / SR 41 "Piedmont"**

**US 9 "Lewes Freight Corridor"**

**Rail Project Candidates**

## Corridor Screening:

### Potential Freight Influence:



Nominal



Low



Moderate



High

<15

15-30

30-50

50-100

Scoring / Ranking Scale

Candidate Project Details							
Index #	Route / Area	Limits	Description	State	County	Commit Tier	Network Tier
CS 80	Area Study	Dover	Freight Management Study	DE	KTD	4	4
CS 81	Area Study	Dover	Expansion of Air Cargo Ramp at Dover AFB and adjacent development potential (e.g., Kent County AeroPark)	DE	KTD	3	4
CS 82	Area Study	Harrington	Truck Route Updgrade (DE 14 to US 13)	DE	KTD	1	4
CS 83	Area Study	Seaford	Freight Management Study	DE	SSX	4	4
CS 84	Area Study	Southern Delmarva	Intermodal Center Feasibility Study	MD	WIC	4	4
VIRGINIA							
Tier 1S Routes (State Primary)							
CS 90	Area Study	Chincoteague-Wallops Island	Freight Access Study	VA	ACC	4	3
CS 91	US 13	Accomack-Northampton Co.	Truck Parking Study	VA	ACC NOR	4	1S

Focus Area Influence						
Overall	Economic Vitality	Connectivity Mobility	Safety security	Management O&M	Sustainability Env	Steward



**Statewide Freight  
Working Group**



**Delmarva  
Freight  
Plan**

**MPO/DeIDOT  
Prioritization**

**Commodity Flow Study  
#1 Chemicals  
2014**

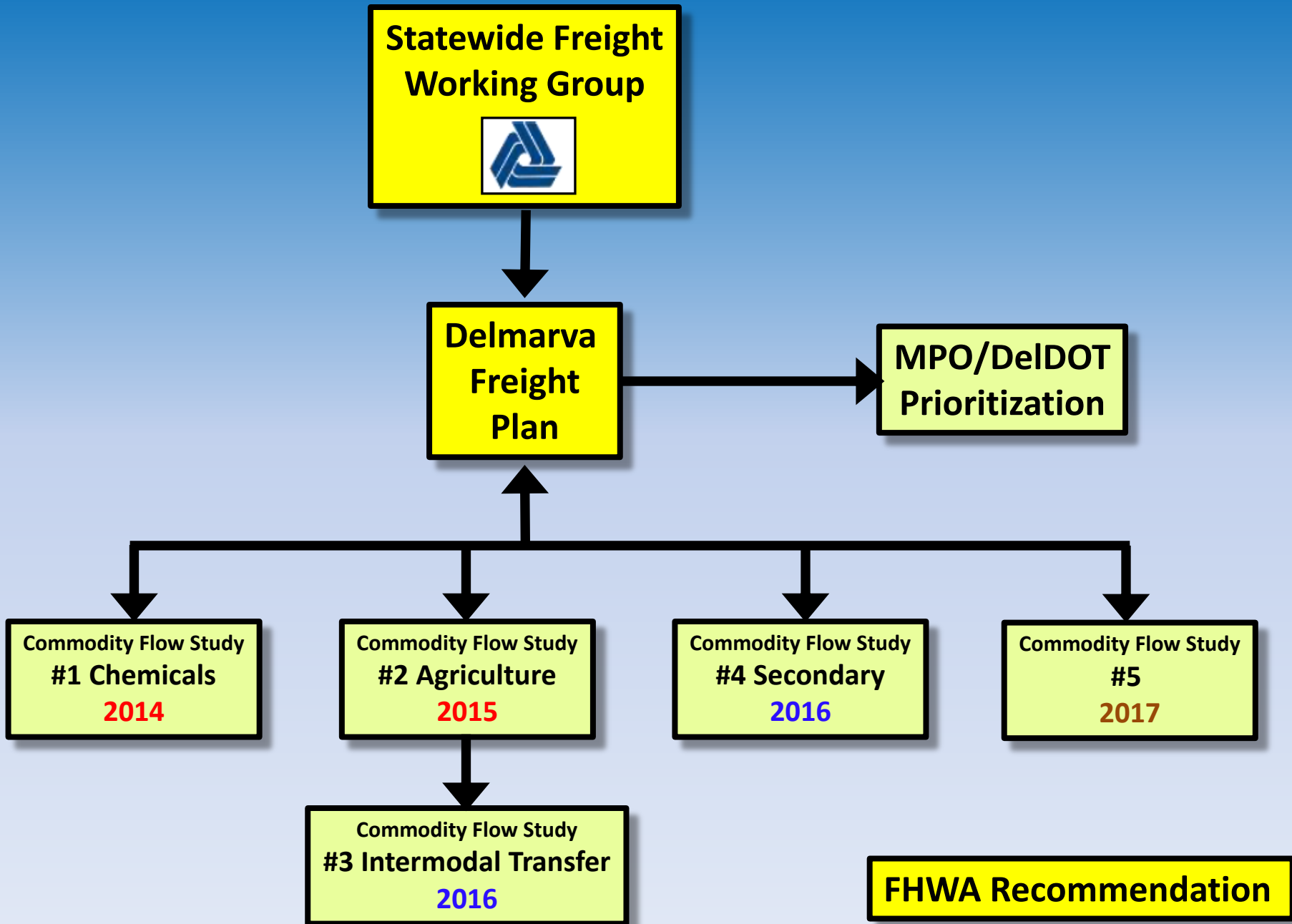
**Commodity Flow Study  
#2 Agriculture  
2015**

**Commodity Flow Study  
#4 Secondary  
2016**

**Commodity Flow Study  
#5  
2017**

**Commodity Flow Study  
#3 Intermodal Transfer  
2016**

**FHWA Recommendation**

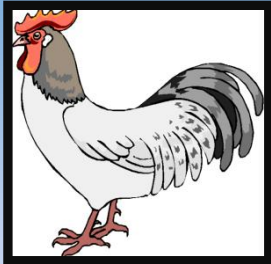


Agriculture Supply Chain Study

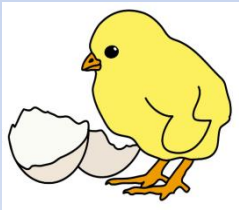
Process



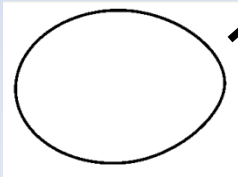
Broilers



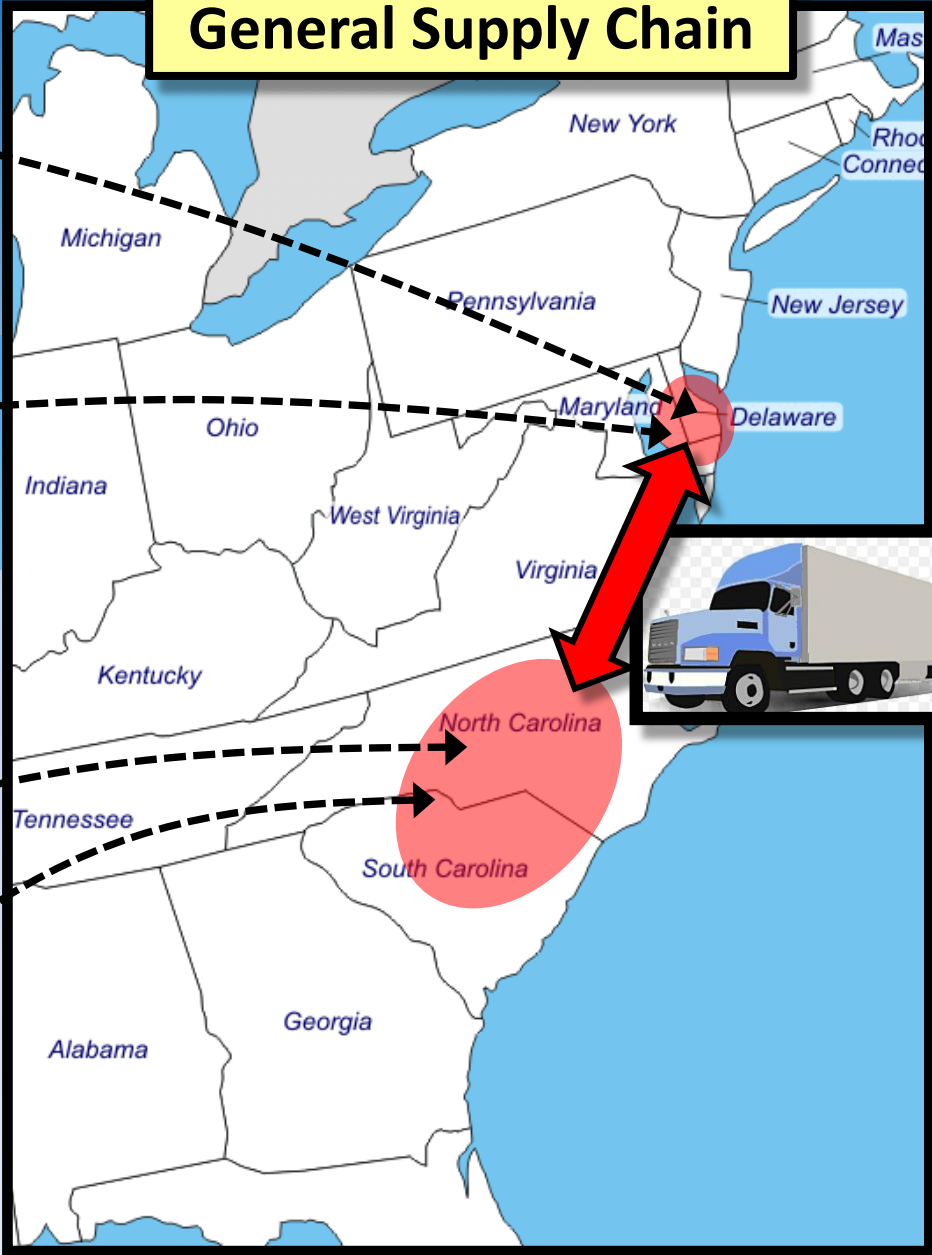
Hatchlings



Layers



General Supply Chain

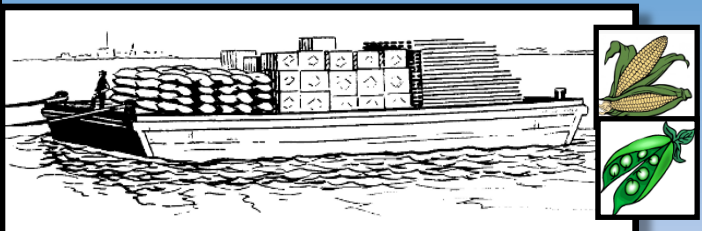
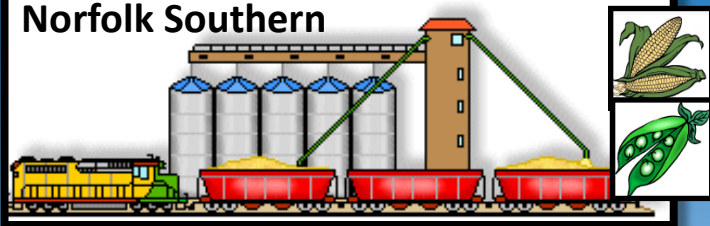


# Agriculture Supply Chain Study

## Delmarva Supply Chain

Philadelphia  
New York  
Boston  
Baltimore  
Washington, D.C.

### Norfolk Southern

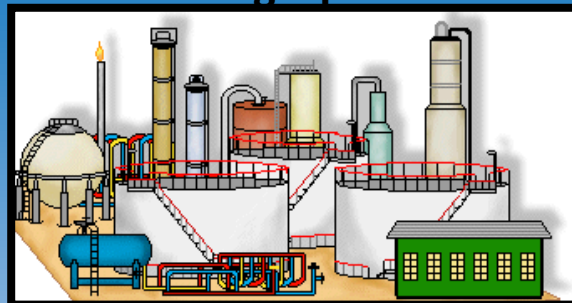


### Kent/Sussex Farms

Seed  
Fertilizer  
Fuel  
Operations  
Maintenance

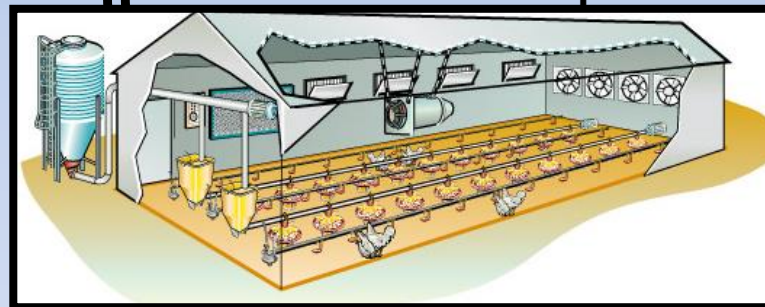


### Processing Operations

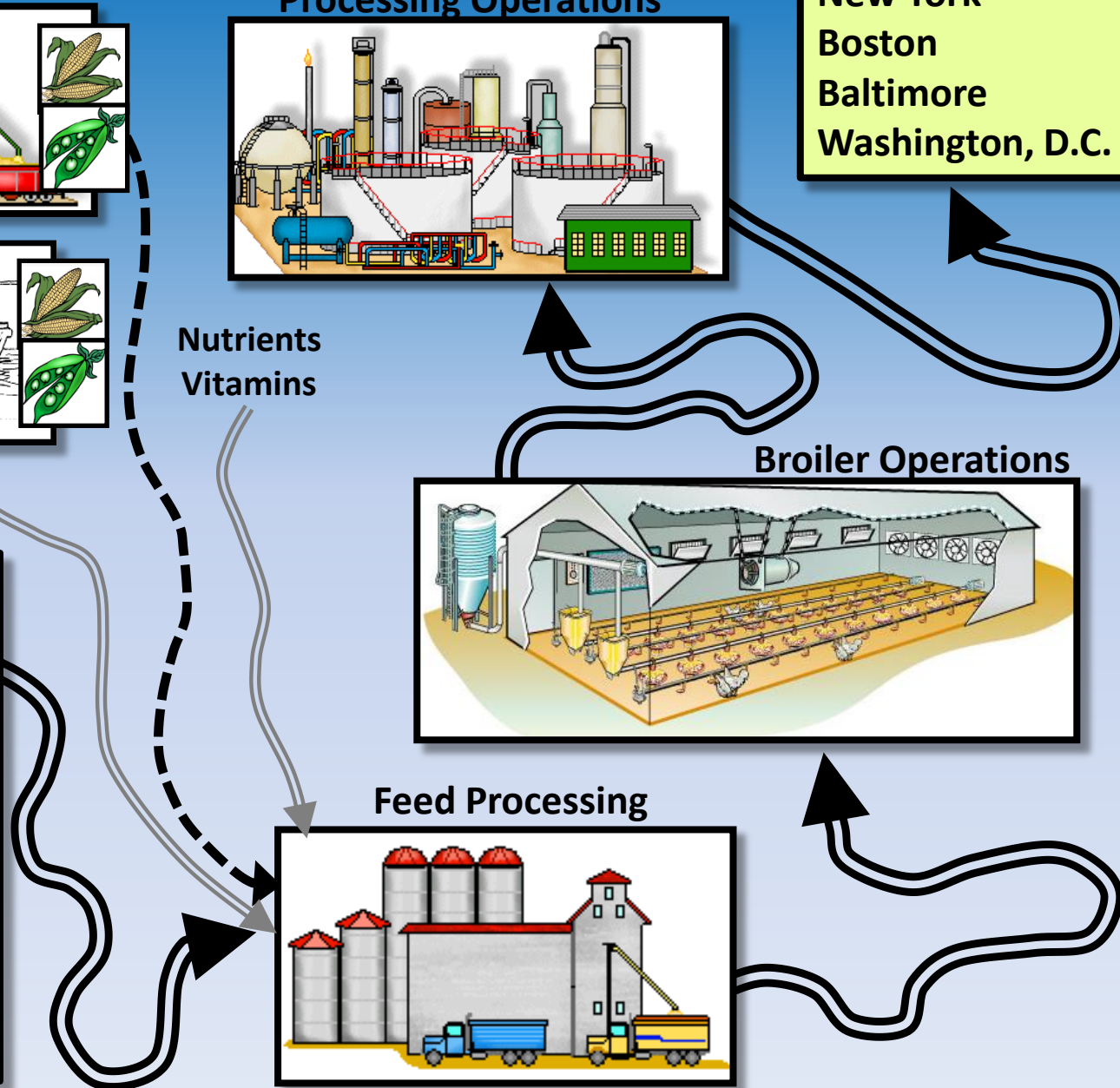
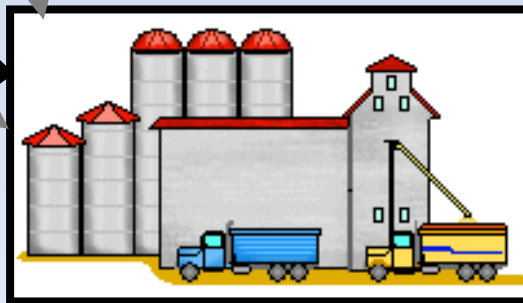


Nutrients  
Vitamins

### Broiler Operations



### Feed Processing

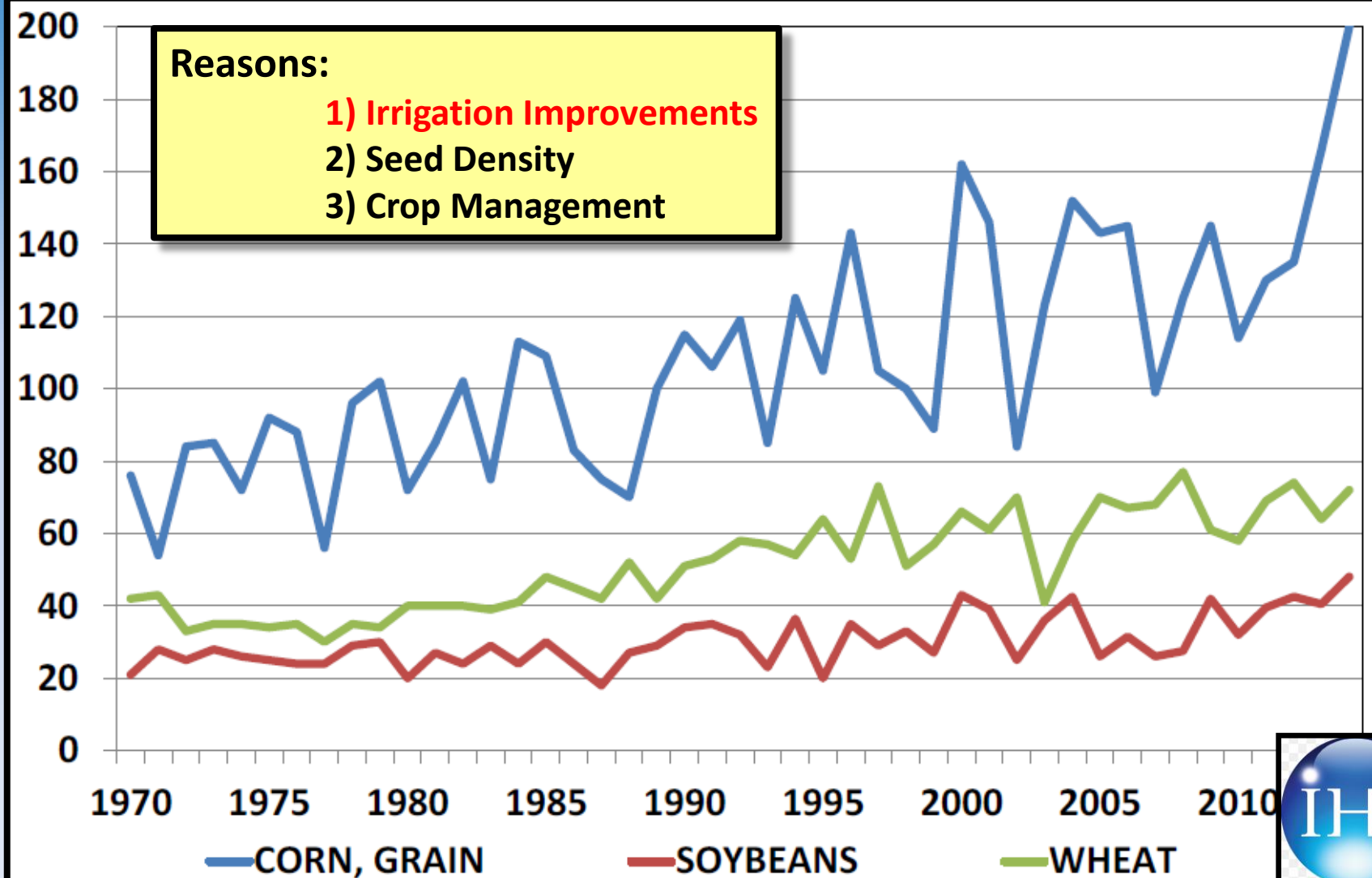




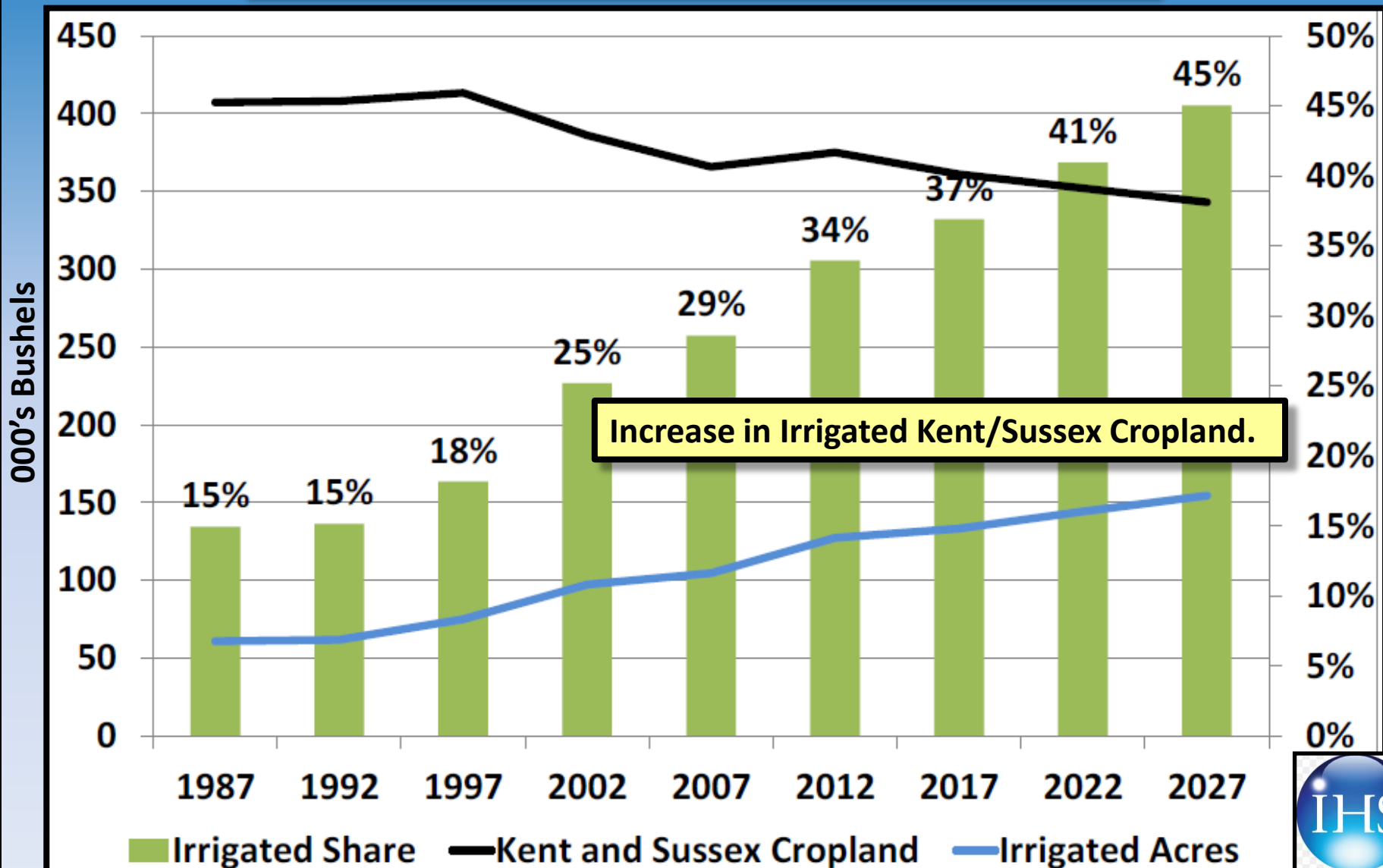
## Corn Yields in Kent/Sussex Increasing:

### Reasons:

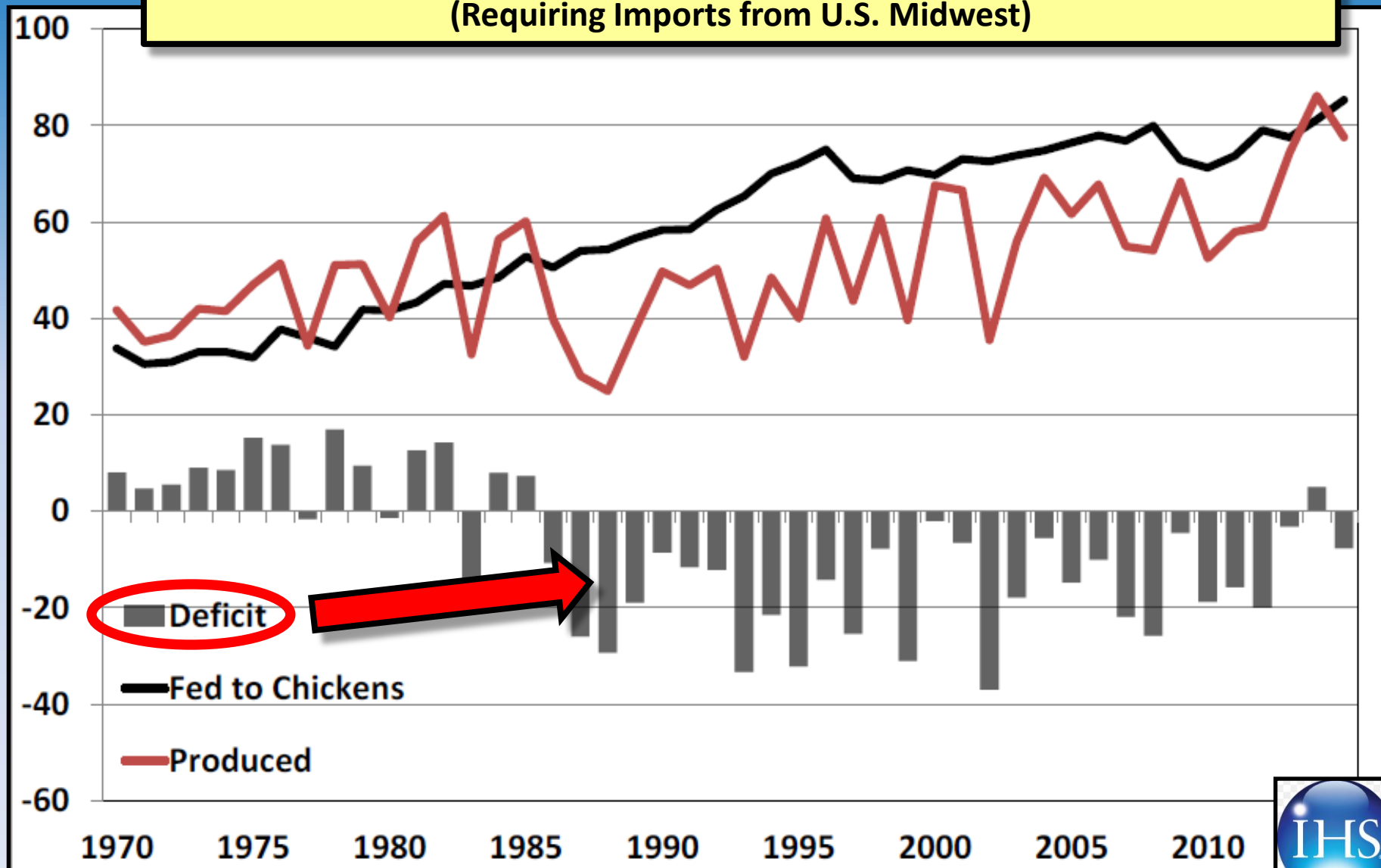
- 1) Irrigation Improvements
- 2) Seed Density
- 3) Crop Management



## Slight Decrease in Kent/Sussex Cropland:



## Delmarva Produces Less Corn than Consumed by Broilers (Requiring Imports from U.S. Midwest)





## **Conclusions:**

- 1) No Major Transportation Constraints Identified;  
Proximity to Metropolitan Centers “Competitive Advantage”.**
- 2) Majority of Kent & Sussex Corn & Soybean Production  
Supports Feed Processing.**
- 3) Over 12 Million Bushels of Corn Imported Annually,  
via Norfolk Southern.**
- 4) Further Studies / Recommendations:  
Intermodal Transfer Study of:  
Grain Storage, Feed Processing & Transport.**

# Delmarva Freight Plan Implementation Commodity Flow Studies

*“Intermodal Transfer Facility Study”*

December 15, 2015



## **Background:**

- 1) **Rail Service is Critical** to Farming, Poultry, and Livestock Industries in Delaware.
- 2) **Only One Facility** (in Salisbury) Capable of Receiving Barge Grain Shipments; Has Minimal Storage (Especially for Soybeans).
- 3) Truck Shares of Grain are **Much Higher than Other Regions**.
- 4) Live and Processed Poultry Typically Moves by Trucks, But, Much of the Inbound Grain & Fertilizer Moves by Rail.
- 5) **Trend:** Inbound Grain “Less Needed” Due to Seasonal Rainfall Variations, “**More Needed**” Due to Increased Poultry Production.

**Outreach Indicated Possible Need & Benefit of a “Transfer Facility”.**



## **Study Goals:**

### **1) Preliminary Planning-Level Assessment of:**

- a) Market Conditions & Trends**
- b) Potential Suitable Locations**
- c) Location Site, Access, and Physical Characteristics**  
(Lot Area, Access Points, Square Footage, etc.)
- d) General Logistics & Intermodal Requirements**
- e) Potential Economic Impacts** (Ranges of Jobs, etc.)
- f) Potential Costs** (Site, Construction, Ongoing, etc.)

### **2) Assess If Additional Intermodal Transfer Capacity Would Enhance:**

- a) Efficiency, Reliability, Resiliency** of Kent/Sussex Freight Infrastructure
- b) Existing Competitive Advantages** of Kent/Sussex Ag & Poultry Industries.

## **Key Elements / Scope of Work:**

- 1) **Project Kickoff Meeting**
- 2) Delaware grains and poultry **production, consumption, and transportation demand**
- 3) Research on Kent/Sussex intermodal transfer facility **need and options**
- 4) **Planning analysis** of Kent/Sussex intermodal transfer facility
- 5) **Economic impact** analysis
- 6) Preparation of **complete deliverables**

## **Economic Impact Analysis:**

- 1) Estimate the **economic impacts** of the rail transportation expansion on the Delaware economy and selected counties
- 2) Manufacturing and service sectors will be impacted by a **change of demand** in the transportation sector
- 3) Repercussions on all other producing industries and final demand, magnifying indirect impact
- 4) Net effects yields two additional economics effects:
  - a) **Indirect impact** (supply chain effect)
  - b) **Expenditure-induced impact** (income effect)



## **Timeline /Schedule:**

- 1) Project Kick-off Meeting – *January 2016***
- 2) Delaware Grains and Poultry Production, Consumption, and Transportation Demand – *February 2016***
- 3) Research on Kent/Sussex Intermodal Transfer Facility Needs and Options – *March 2016***
- 4) Planning Analysis of Kent/Sussex Intermodal Transfer Facility – *March 2016***
- 5) Economic Impact Analysis – *April 2016***
- 6) Preparation of Complete Deliverables – *May 2016***

***Thank You !***