



Welcome, Thanks! Agenda

OVERVIEW of DVRPC

- ☞ *Philadelphia's Metropolitan Planning Organization (MPO), created in 1965*
- ☞ *Interstate, intercounty, and intercity agency*
- ☞ *Prioritize transportation funding*
- ☞ *2 States, 9 Counties, 353 Municipalities*
- ☞ *Responsible for the region's **Long Range Plan** and Air Quality*
- ☞ *Strong "Home-Rule" control of land use*





There may be a lot of new stakeholders in the room. We will quickly go over who DVRPC is...

We are Philadelphia's MPO. We're a federally-designated organization... which means we most of our budget from the US Department of Transportation, Pennsylvania DOT and New Jersey DOT... and our work is guided by the federal Transportation Act.

One thing that is interesting to note about New Jersey and Pennsylvania, as well as much of the Northeast... we are "Home Rule" states. Municipal governments have control over land use and zoning. 353 municipalities decide how the region will grow. Where housing will go... where shopping malls will go... where industrial parks will go. And it is up to the State DOTs and DVRPC to serve that growth with mobility options.

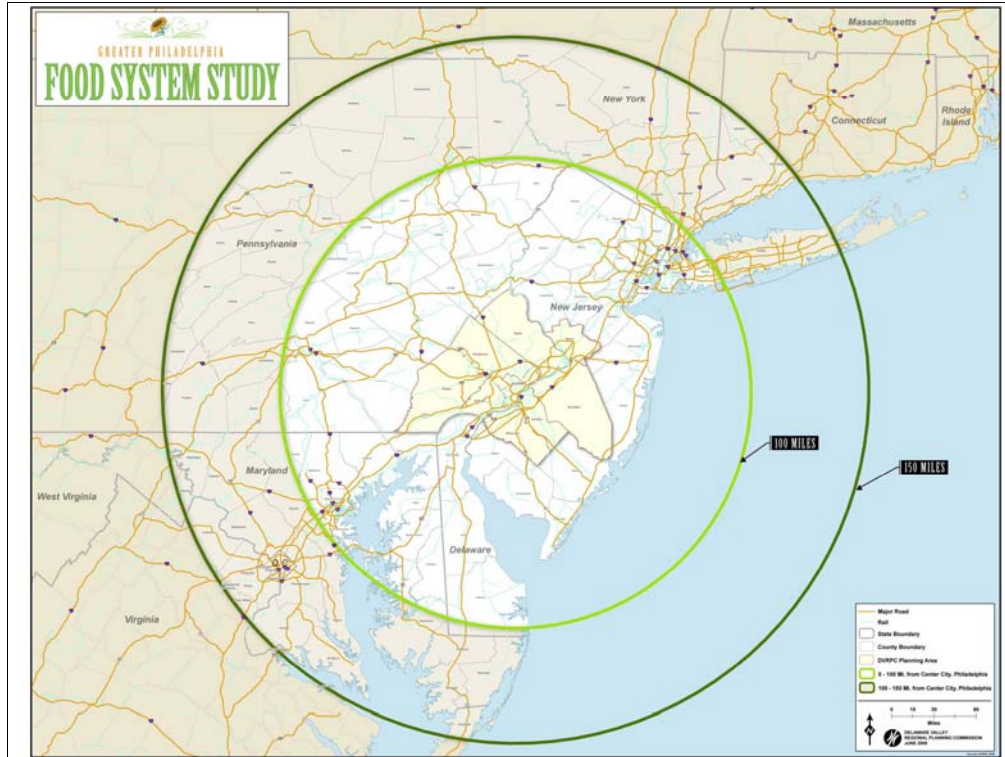
FY09 SCOPE OF WORK



GOAL:

- ☞ *To evaluate the region's food needs,*
- ☞ *Assess the expanded foodshed's agricultural resources,*
- ☞ *Estimate the efficiency of transporting food from farm to plate, and*
- ☞ *Determine if increased food production is possible given rising fuel and food costs, and competing global markets.*

We developed the following goals that stress that this first year's work will be a big learning experience.



Here is the study area.

The yellow/beige area in the middle comprises the DVRPC region. This is the study's population base. We have about 5.5 million people over 3800 square miles... in 2005 about 21% of that was dedicated to agricultural uses.

The first inner ring is the 100-mile radius around Philadelphia. There are 70 counties, comprising about 30,000 square miles of land area. And over 30 million stakeholders.

FY09 SCOPE OF WORK



- ❧ *Part 1: Food Policy Network Analysis*
- ❧ *Part 2: Food Distribution*
- ❧ *Part 3: Resource Assessment*
- ❧ *Part 4: The Food Economy*

We are dividing this first year project into 4 major parts.

Part 1 we discussed in our September meeting

Part 2 we will discuss today.

And Parts 3 and 4 we will discuss at our March SAC meeting.



Amanda Wagner led this surveying effort and presented the findings at the last Study Advisory Committee meeting.

This proved to be an effective way for DVRPC to learn about the Food System and meet so many of these new stakeholders.

I will review some of the highlights.



We reached out to literally hundreds of individuals and organizations.

We talked to: Support businesses

Non-profits, like advocacy groups or academic institutions.

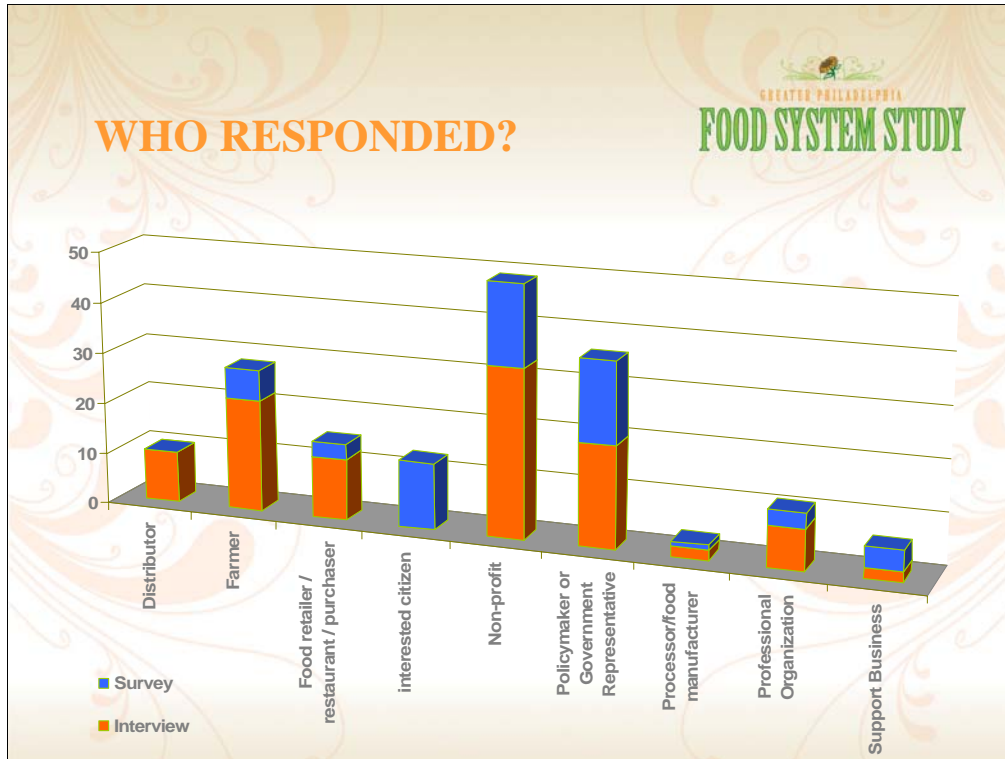
For-Profits like restaurants and stores

Distributors – about 10% of all survey participants were distributors.

Farmers – and about 20% were farmers.

Government

And Professional Organizations, defined as those organizations that are membership-based.

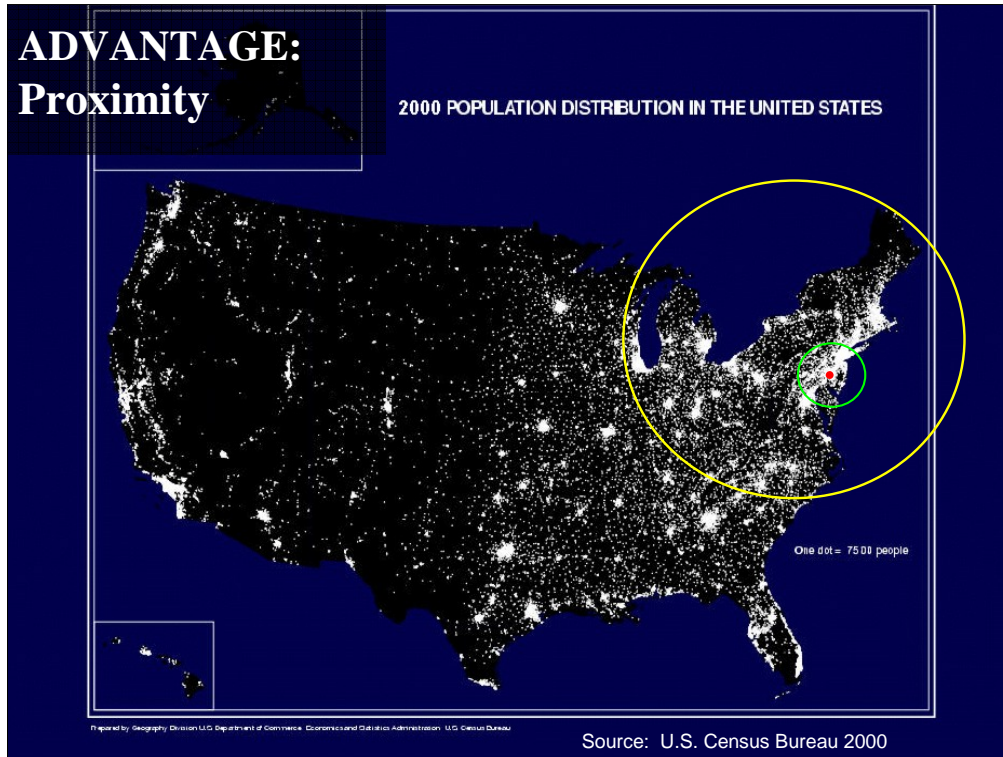


171 People contributed to the survey in a two month period.

About 2/3 of all survey respondents were interviewed, on the phone, in-person, during field trips, or in roundtable formats. Again, Amanda did a tremendous job identifying and reaching out to stakeholders.

And as most people can guess, we could have kept on going.

What did we learn?



First, about 30% of all respondents said that Greater Philadelphia's proximity to markets was the top competitive advantage for doing business in the 100-mile foodshed.

First circle – Philadelphia

Second circle – 100-miles from Philadelphia (study area)

Third circle – a 12-hour drive, give or take.

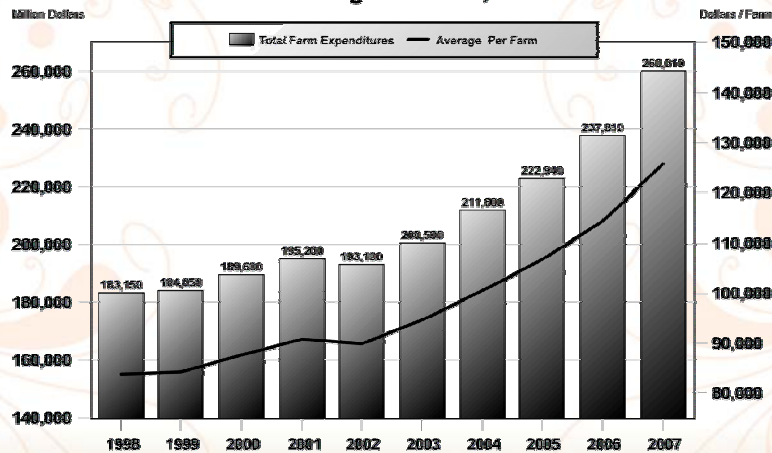
Within a 12-hour you can reach New York and Boston in the north, Chicago to the west, Baltimore, DC, and North Carolina and South Carolina to the south. There is easy access to the Canadian markets of Toronto and Montreal.

According to Select Greater Philadelphia, more than 100 million US residents are within 12-hour drive.

CHALLENGE: Rising Costs



U.S. Farm Production Expenditures Total and Average Per Farm, 1998 - 2007



Source: USDA/ERS Agricultural Income Report, 2007

Next, Over half of all respondents cited rising costs to both consumers and producers as the biggest challenge facing the food system.

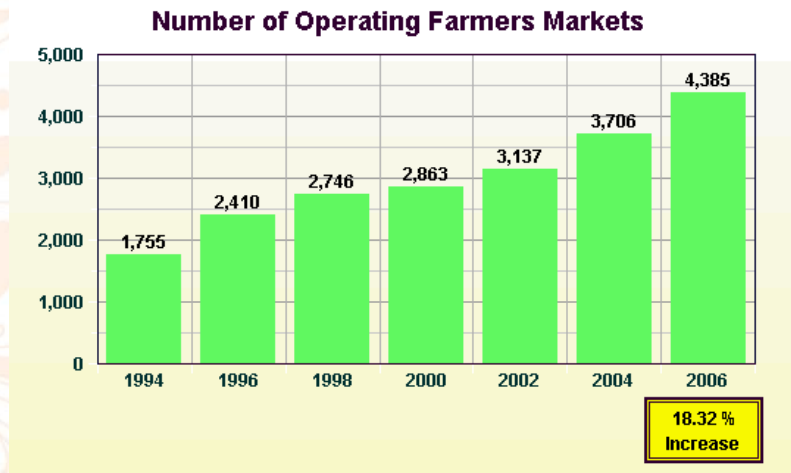
Rising food prices are complicated because they are bad for the consumer but can be good for the farmer. If prices rise and expenses stay the same, the farmer is becoming more profitable and viable. However, if expenses are rising at an uneven pace with prices, than it makes it impossible to do business.

Most importantly, the issue of costs underscores the underlying issue that farming has to operate as a business and be profitable. If its not profitable its not going to be a for-profit business in the long run.

For distributors, obviously transportation costs are huge and the ones we spoke with are reacting by rethinking how to where they distribute. They are looking at ways to do backhauls and cross-docking and using newer technologies to look at which customers to keep or drop.

However, the price of gas fluctuates extremely. In July 2008, the nation's average price of diesel gas peaked at \$4.81. And is down to \$2.61 as of December 1st.

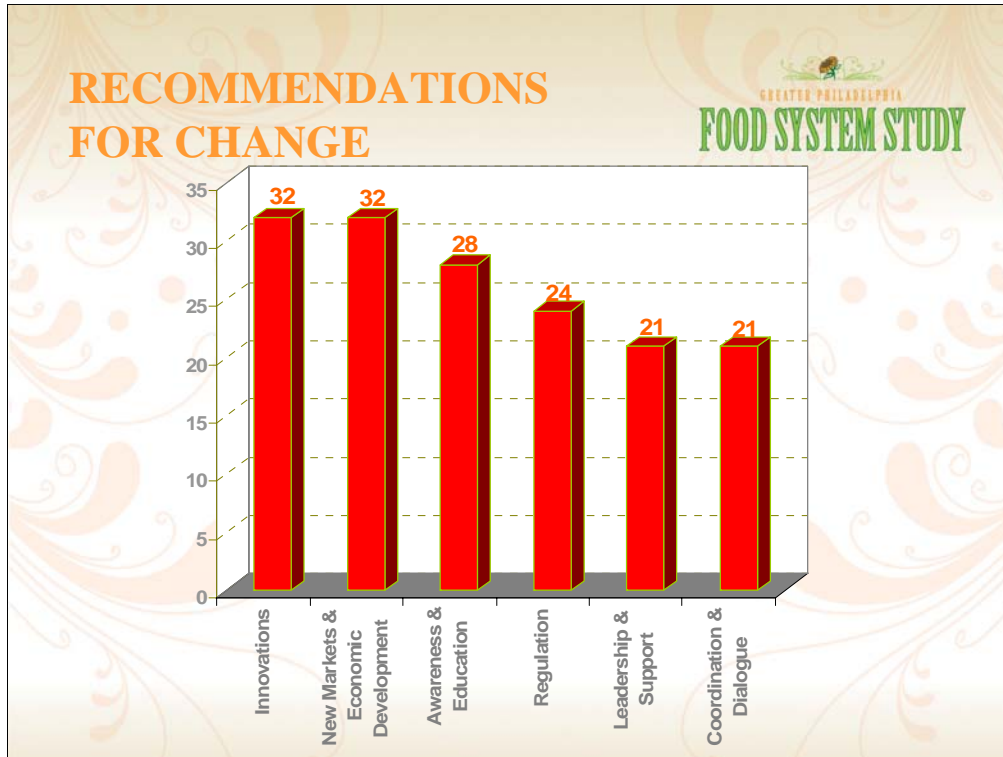
**CHANGE:
Local, Sustainable, Direct, and
Niche Markets**



Source: USDA Agricultural Marketing Service

39 survey participants identified the biggest change they have noticed in the food system as the interest in local food, sustainable growing practices, direct marketing, and niche market products.

This chart shows the dramatic increase in farmers markets between 1994 and 2006.



One of our final questions, asked participants to identify ways to improve Greater Philadelphia’s food system.

Tied for first are the categories:

“Innovation” and “New Markets.”

Innovation means a number of things to our survey participants. Some participants want access to new technology, like auto-steer tractors. Other participants saw innovation to mean improved or new distribution networks like the Common Market, or improved transportation infrastructure, like rural routes and bridges.

Just as many participants recommended that more “New Markets” be developed. Survey participants from all different professions are looking for ways to capitalize on the combination of rich agricultural resources and the close metropolitan markets to create new food industries and products.

PART 1: CONCLUSIONS



- ❧ *Interconnected food system*
- ❧ *Not all farming (or farmers) are the same*
- ❧ *The food system is global because of technological efficiencies and international labor specialization*
- ❧ *Advantages can also be challenges*
- ❧ *Everyone (every individual, organization, industry, business) has different perspectives and needs*

We have developed some preliminary conclusions from this first part, that will be tested and revised through Parts 2, 3 and 4.

1st, the food system is very complicated and interconnected. Philadelphia's food system includes both local producers and global trading partners, because one's diet includes both fresh produce and processed and refined foods, like bread and cereal. But not all of those food items are grown within the food shed.

2nd, growers in the 100-mile foodshed grow a great diversity of crops, which one can poetically draw comparisons to the region's ethnic diversity. All different types of farmers operate in the 100-mile foodshed, just like all different kinds of people live within Greater Philadelphia. .

3rd, Because the local food system and the global food system are very interconnected to meet consumer demand and dietary needs, the world has experienced drastic international labor specialization. Using the United States as an extreme example, in 1910, 32% of the working population was considered a "farmer" or "farm laborer." In 2000, less than 1% of the population worked on a farm.

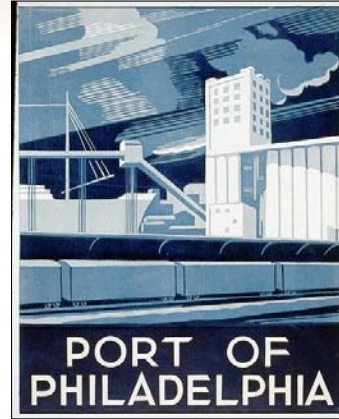
4th, We learned that many of the region's strengths also create the region's biggest challenge. Nearly every producer and distributor listed proximity to large markets like New York and Washington DC as a competitive advantage. However, that advantage also puts land at a premium and makes the cost of doing business much higher for all businesses and especially farmers, who are land dependent and grow low-value products.

And lastly, during the survey process, we had the opportunity to meet many different people in many different professions. And not a surprise, they have very differing needs and perspectives. For example, an organization concerned with food access and security may not be as concerned with the cachet associated with local food.

PART 2: FOOD DISTRIBUTION

- ❧ *Food is a “high turnover” commodity*
- ❧ *How do goods move through the region?*
- ❧ *Freight Analysis Framework*
 - ❧ *Origins and Destinations of food*
- ❧ *Supply chain case studies*

GREATER PHILADELPHIA
FOOD SYSTEM STUDY



The 2nd part, which we will discuss in depth today, looks more closely at food distribution and tries to get at the important questions:

How much food that is produced within the 100-mile foodshed is consumed within the Philadelphia Metropolitan area.

Are we a region that relies on food imports?

Or are we a food exporter?

PART 3: RESOURCE ASSESSMENT



- ☞ *Maps, maps, charts, and more maps*
- ☞ *Agricultural Census Data*
- ☞ *Inventories*
- ☞ *Possible Impact of Climate Change*

The third part will focus on evaluating the agricultural resources in the 70 county area. What was grown here... what grows here now... and what may be able to grow here in the future.

PART 3: RESOURCE ASSESSMENT



Agricultural Land in DVRPC Region



Source: DVRPC Land Use File, 1990, 1995, 2000, & 2005

This chart illustrates one of the types of data DVRPC creates and collects – land use.

1990 – 26% of land area dedicated to agriculture

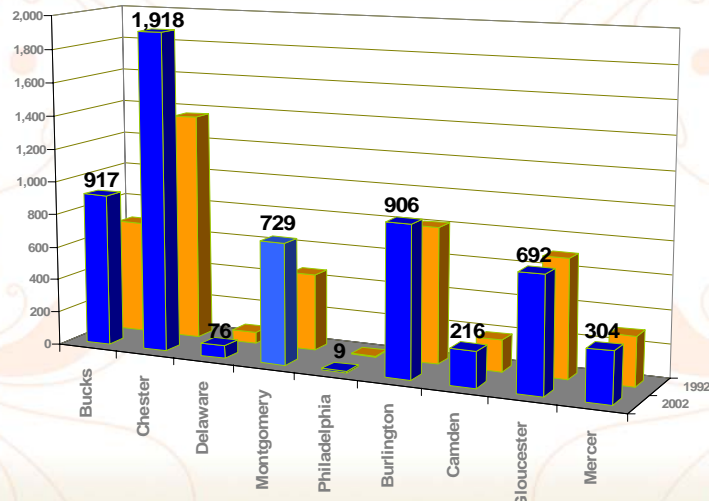
2005 – 21% of land area dedicated to agriculture

Between 1990 and 2005, the 9-county area lost 124,704 acres of agricultural land. Which is a land size larger than Delaware County.

PART 3: RESOURCE ASSESSMENT



Number of Farms in DVRPC Region



Source: USDA Census of Agriculture, 2002

And this chart illustrates an interesting conundrum. While agricultural land was diminishing between 1990 and 2005, the number of farm operators actually increased between a similar time period 1992 and 2002.

In 7 counties, the number of farm operators increased.

This may be evidence that we are experiencing a rise in hobby farms, or gentlemen farmers, or farmettes in some of our more rural counties, like Chester, and our suburbanizing counties, like Montgomery County. Or farmland is getting more fragmented as land is divided between heirs.

PART 4: THE FOOD ECONOMY



- ❧ *Information gathered from Parts 1, 2, & 3*
- ❧ *How important is agriculture and food industries to the regional economy?*
 - ❧ *Economic Analysis – micro and macro scale*
 - ❧ *Capturing revenue in the region*
 - ❧ *Emergence of “Green Collar” jobs*
- ❧ *Preparing for Climate Change*
- ❧ *BMP Case studies*

Part 4 is our last section of work.

We will look at the recommendations and best management practices identified through Part 1: the Food Policy Network Analysis. We'll have some data to understand how much food is being produced, where it is produced, and where it is consumed. We'll estimate how large the “food economy” is within the larger regional economy. And how much personal income is spent on food.

PART 2: Food Freight Analysis

- **Other Food Transportation Studies within the Region**
- **Greater Philadelphia's Food Freight Analysis Framework**
- **Supply Chain Case Studies**
- **Conclusions**



New Jersey Agricultural Transportation Study (1976)

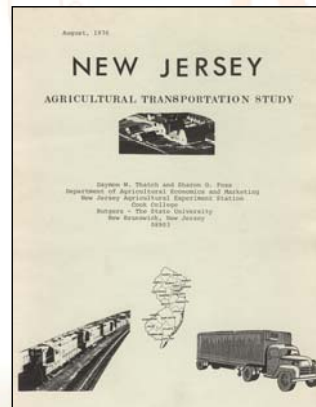
🌀 *New Jersey Department of Agriculture & Rutgers University NJAES*

🌀 *Provides a history of the relationship between agriculture and transportation in the state, starting in 1609.*

🌀 *Competition from western states, connected by rails forced NJ farmers to shift farming livestock to fruits, vegetables, dairy and poultry.*

🌀 *Used an interview methodology to assess how and where NJ agricultural products are going.*

GREATER PHILADELPHIA
FOOD SYSTEM STUDY

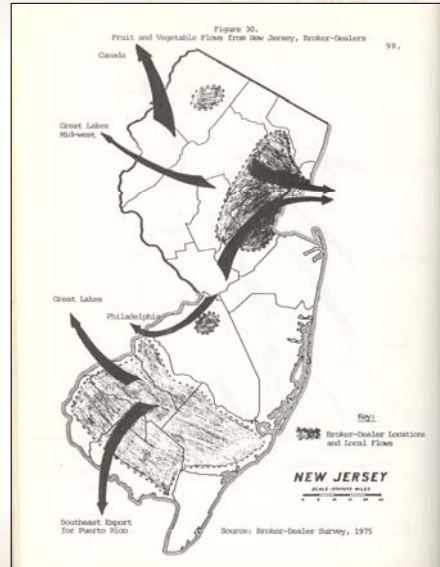


New Jersey Agricultural Transportation Study (1976)

Major Findings:

- Most unprocessed agricultural products consumed within State, Philadelphia and New York metro areas.
- Flow of products in Northeast direction: from Philadelphia through New England to Eastern Canada

GREATER PHILADELPHIA FOOD SYSTEM STUDY



Pennsylvania Shipping Point Market Feasibility Study (2007)



- ❧ *The Food Trust & Pennsylvania Department of Agriculture*
- ❧ *Surveyed producers throughout the state to evaluate need and desire for consolidation point*
- ❧ *Key finding:*
 - ❧ *Pennsylvania's auction system serves as a shipping point market system*
 - ❧ *Farmers are interested in expanding retail markets.*

Pennsylvania Shipping Point Market Feasibility Study (2007)



☞ *Key recommendation: Headhouse Farmers' Market*

☞ *Included market business plan*

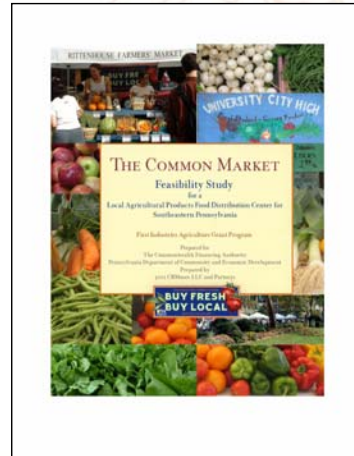
☞ *A permanent urban-oriented farmers' market with a diversity of products.*



The Common Market Feasibility Study (2007)

- ☞ *Funded by the First Industries Grant Program*
- ☞ *Tested the idea of opening a values-driven wholesale local food distributor in Philadelphia*
- ☞ *Supply & demand analysis conducted through focus groups of wholesale buyers and producers*

GREATER PHILADELPHIA
FOOD SYSTEM STUDY



The Common Market Feasibility Study (2007)



- ☞ *Key recommendation: The Common Market*
- ☞ *Included business plan*
- ☞ *Start as a non-profit to gain access to start-up capital, build reputation.*



PART 2: Food Freight Analysis

- **Other Food Transportation Studies within the Region**
- **Greater Philadelphia's Food Freight Analysis Framework**
- **Supply Chain Case Studies**
- **Conclusions**



Moving into the next part of the Food Freight Analysis, we'll look at a large data source, which will hopefully provide some quantitative data that supports the preceding studies we just discussed. And with that, I'll turn it over to Walker Allen.



Good Morning, My name is Walker Allen, and I am a planner in the Freight Division here are DVRPC. Before we get into the data analysis undertaken for the food plan I'd like to give you a brief overview of our office and the freight facilities the DVRPC region hosts.

The 1991 transportation bill ISTEA directed MPO's to begin to look at freight as a planning area. Shortly thereafter DVRPC opened a freight planning department and in 1992 held the first meeting of the Delaware Valley Goods Movement Task Force. The task force continues to meet quarterly and directs the work of the freight planning department.

Organizational involvement includes a freight module in the long range plan, and projects identified in the TIP as important to freight transportation.

Recent work has been center around the concept of freight corridors. We have identified 2 corridor (north-south corridor and east-west corridor) and our work is dedicated around finding and funding improvements to make the corridors as desirable as possible.

Recent completed studies include NHS Connectors and Grade Crossing Management Database and we are currently working on a regional truck parking study.

DELAWARE VALLEY FREIGHT OVERVIEW

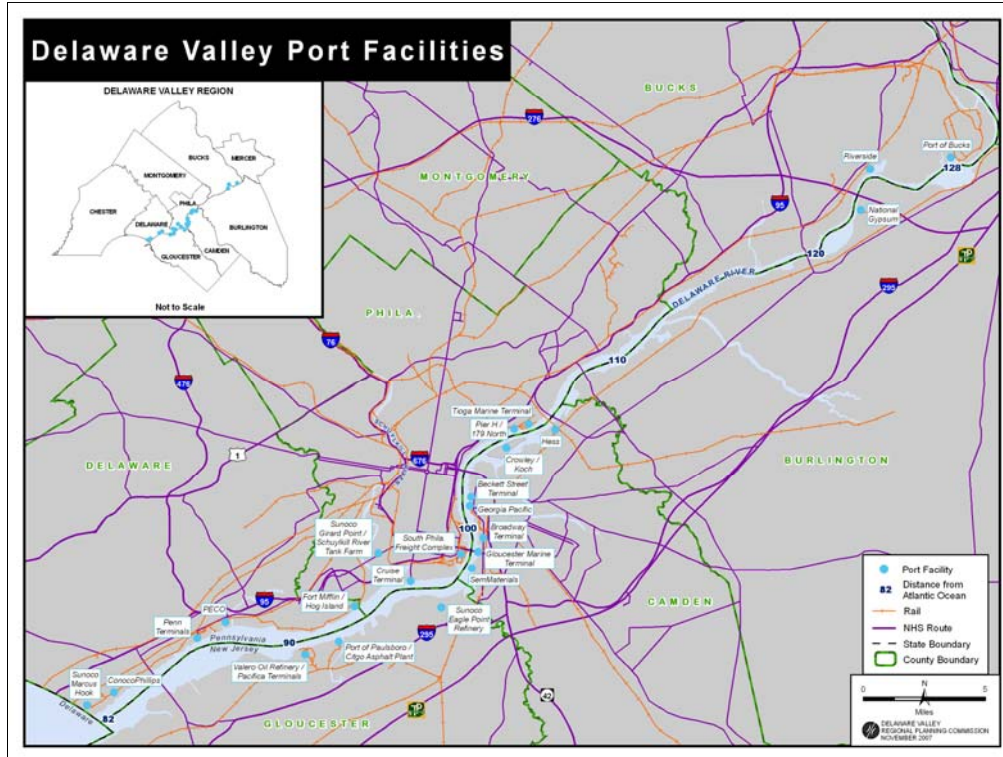


- ❧ *3 Class One Rail Carriers*
- ❧ *Vast Network of Highways – 11 Intermodal Freight Connectors*
- ❧ *33 Active Ports in 6 Counties*
- ❧ *Ports are a large importer of Crude Petroleum – Area is strong in energy related commodities*
- ❧ *Regional Ports also specialize in niche cargos such as:*
 - ❧ *Steel*
 - ❧ *Paper*
 - ❧ *Fresh Produce*

The DVRPC region hosts a large array of freight facilities that are affected by the projects listed in this document. There are 7 Interstate Highways: I-76, I-276, I-476, I-95, I-195, I-295 and the New Jersey Turnpike. These Interstates are supported by a vast network of arterial highways. Also there are 11 NHS connector roadways which are made up of the roads that carry trucks from these highways to major intermodal facilities. These connector roadways must carry 100 trucks per day in each direction to be classified as NHS connectors and to be eligible for NHS funding.

The region is serviced by three Class I rail carriers: CSX, Norfolk Southern, and Canadian Pacific. During the deregulation of the rail industry there were areas of the region where Norfolk Southern and CSX could not decide how to split the lines; because of this Conrail remains an entity in the region, both in South Philadelphia and New Jersey. The region also hosts a wide array of short lines which connect businesses that wish to ship by rail to the different Class I lines.

The DVRPC region's port activity is centered along the Delaware River and hosts 33 active port facilities in 6 counties. The majority of the tonnage moving along the Delaware River is crude petroleum that is destined for one of the major refineries in the region. The regional ports tend to specialize in niche cargo such as steel, paper, and fresh produce.



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8 Hours from sea

Packer Ave and South Philly Complex

Strong Landside infrastructure esp. for niche products like refrigerated warehouse space for food

FREIGHT ANALYSIS FRAMEWORK: What is it?



☞ *FAF:*

- ☞ *Produced by the Federal Highway Administration (FHWA)*
- ☞ *An estimate of commodity flows and related freight transportation activity among states, metropolitan areas, and international gateways.*
- ☞ *Originally produced in 1997, update released in 2002, and will be updated every five years.*

The Freight Analysis Framework, herein referred to as FAF, is a massive data integration process undertaken by the Federal Highway Administration (FHWA) to create nationwide freight data. The original FAF 1, released in 2000, used a base year of 1997, in accordance with the 1997 Commodity Flow Survey (CFS).

The 2002 **Commodity Flow Survey (CFS)** is the foundation upon which the FAF is built. The CFS is simply a survey of manufacturing, mining, wholesale, and select retail establishments (namely, electronic shopping) on the movement of their goods within the United States. It is undertaken in partnership by the U.S. Census Bureau, the U.S. Department of Commerce, and the Bureau of Transportation Statistics (BTS). The 2002 CFS covers businesses with paid employees that are located in the United States, as well as auxiliary establishments (for example, warehouses) of multi-establishment companies. The survey is sent to 50,000 business chosen based on geographic location and industry. The selected establishment is asked to provide a report on a sample of individual shipments for a one week period in each calendar quarter.

Other data sources are included to better the data in the CFS. These data sources include: **Carload Waybill Sample, Domestic Waterborne Commerce of the United States, International Waterborne Commerce of the United States, Transborder Surface Freight, and US Air Freight Movements.**

FREIGHT ANALYSIS FRAMEWORK: Purpose



- ❧ *Tracks the FLOW of commodities between origin and destination*
- ❧ *Summed in annual total value and weight*
- ❧ *Planning Tool:*
 - ❧ *Allows regions' freight data to be aggregated at a regional, state, or national level*
 - ❧ *Forecasts future flows of commodities for transportation and economic planners*

FAF 1 was developed because of the increased pressure freight was and still is putting on the nation's infrastructure. It was realized that understanding future freight activity was essential for making decisions on additional investment and operational strategies to transportation infrastructure. The mission of USDOT in creating FAF 1 was to have "a comprehensive database and policy analysis tool, to examine geographic relationships between freight movement and infrastructure capacity." In FAF 2, USDOT radically changed the methodology used for collecting data and the new methodology provides more reliable information on freight movements. Increasing the amounts of modes calculated to include Intermodal and Pipeline Shipments, as well as forecasting further into the future are only two of the more noticeable differences between FAF 2 and FAF 1. It is important to note that because of the differences between FAF 2 and FAF 1 should not be compared.

FREIGHT ANALYSIS FRAMEWORK: Forecasts



- ❧ *Based on Global Insight's Business Demographics Model*
- ❧ *5 step approach*
 - ❧ *National forecasts by commodity*
 - ❧ *Shipment growth by market and commodity*
 - ❧ *Purchasing and consumption growth by market and commodity*
 - ❧ *Check against nation control totals*
 - ❧ *Adjust*
- ❧ *Forecasts do not take into account any drastic changes such as spikes in cost of oil or the current economic recession*

5 Step approach:

Establish national control totals by commodity;

Apply specific shipment growth by market and commodity;

Apply specific purchasing and consumption growth by market and commodity;

Summarize & compare the results from steps 2 and 3 with the national controls;

Adjust the resulting freight flows so the volumes correspond with the nation control levels as follows:

For each market and commodity, adjust so shipments match purchases.

For each commodity, adjust so that national control totals are satisfied.



DEFINITIONS:
Origins and Destinations

- ☞ *114 geographical regions within the United States*
- ☞ *7 international geographical regions:*
 - *Americas (Latin and South America)*
 - *Canada*
 - *Mexico*
 - *East Asia and South Asia*
 - *Europe*
 - *Southwest Asia (Middle East)*
 - *Rest of World (Africa and Oceania)*

The FAF 2.2 is broken up into 114 geographical regions within the United States. The regions are based on Metropolitan Statistical Areas, Consolidated Statistical Areas, and states or balances of states. As well, there are 7 international geographical regions: Canada, Mexico, Latin and South America, Asia, Europe, Rest of World, and South West Asia.

For the purposes of this study DVRPC decided to aggregate data at the state level unless the geographical region intersected the 100 planning area.

DEFINITIONS: Philadelphia CSA



- ☞ *DVRPC aggregates data for the Philadelphia Primary Metropolitan Statistical Area (PMSA)*
- ☞ *Slightly Different from DVRPC Region*
- ☞ *Food FAF evaluated origins and destinations within the following geography:*
 - *Philadelphia CSA*
 - *100-Mile Foodshed*
 - *Regions/States within the United States*
 - *International*

The New Jersey side of the Philadelphia Combined Statistical Area (CSA) varies slightly from the New Jersey side of the DVRPC region. The Philadelphia CSA includes Salem and Cumberland counties, which are not part of the DVRPC region, and does not include Mercer County which is part of the DVRPC region. A CSA represents multiple metropolitan or micropolitan areas that have a moderate degree of employment interchange. In 2005, the Census Bureau added Berks County to the Philadelphia CSA, however, since this data is based on 2002 data Berks County is not included for the purposes of this study. This geographical difference should not hinder DVRPC and its partners from using the information to determine which sectors of industry and transportation will see growth, extreme growth, little growth, or a decline.

You will hear me talk about 4 major regions in this presentation:

Philadelphia CSA just discussed

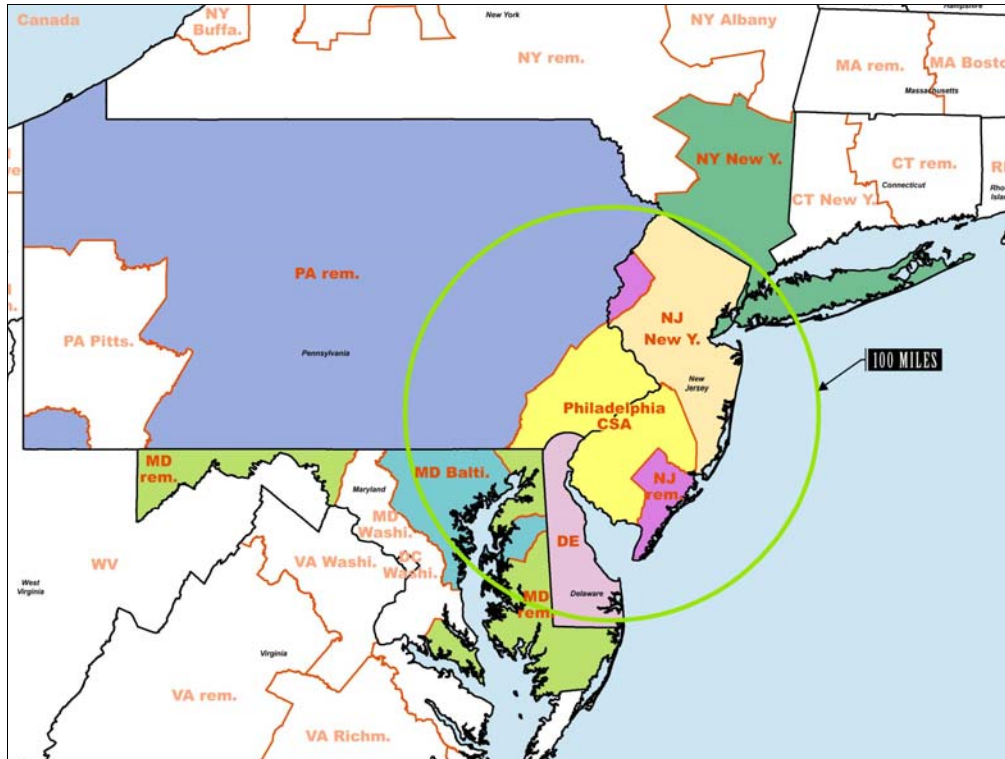
100 mile food shed- All FAF regions that intersect the 100 mile

All other States / States

7 International Regions



PHILADELPHIA CSA



7 Regions intersected the 100 Mile Planning Area.

- 1) Pennsylvania Remainder (PA rem) which constitutes the state of Pennsylvania minus the Philadelphia and Pittsburgh Metro Areas.
- 2) Maryland Remainder (MD rem) which constitutes the state of Maryland minus the Baltimore and Washington DC Metro Areas
- 3) Maryland Baltimore (MD Balt) which is made up of the Baltimore – Towson MSA
- 4) Delaware (DE) which consists of the entire state of Delaware
- 5) NJ Remainder (NJ rem) which is the state of New Jersey minus the Philadelphia and New York CSA's.
- 6) New Jersey section of the New York-Newark-Bridgeport CSA (NJ New Y).
- 7) New York section of the New York-Newark- Bridgeport CSA (NY New Y)

DEFINITIONS: Commodities



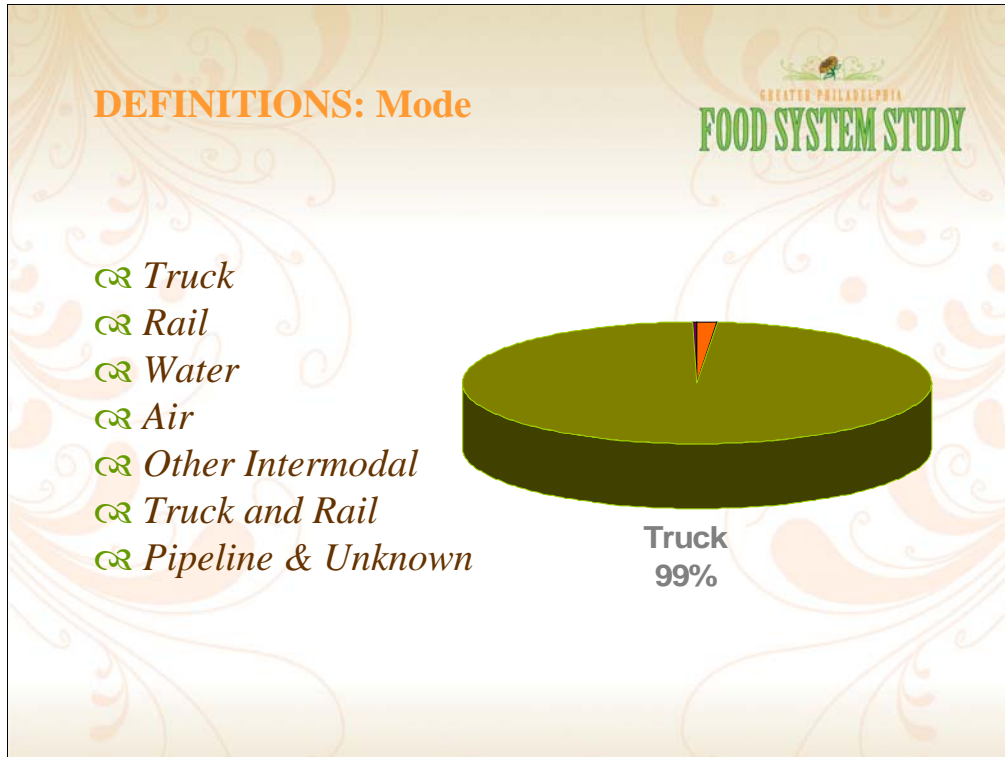
- ❧ *Uses the Standard Classification of Transported Goods (SCTG)*
- ❧ *43 total commodity types*
 - ❧ *8 food related commodities*

DEFINITIONS: Commodities

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- (1) *Live Animals/Fish*
- (2) *Cereal Grains*
- (3) *Other Ag Products*
- (4) *Animal Feed*
- (5) *Meat/Seafood*
- (6) *Milled Grain Products*
- (7) *Other Foodstuffs*
- (8) *Alcoholic Beverages*





Truck. Includes private and for-hire trucks.

Rail. Any common carrier or private railroad.

Water. Includes shallow draft and deep draft.

Air (includes truck-air). Commercial or private aircraft, and all air service for shipments that typically weight over 100 pounds.

Truck and rail. Includes shipments by a combination of truck and rail.

Pipeline and Unknown. Includes pipeline shipments because region-to-region flows by pipeline are subject to large uncertainty.

*the graph shows that, for food, the most prevalent mode (by far) is truck.

DEFINITIONS: Weight and Value



- ☞ *Value – Net Selling Value, excluding shipping charges and taxes*
- ☞ *Weight – Thousands of short tons (2,000 pounds)*
- ☞ *Same item/commodity can be counted multiple times because FAF counts movements*

All FAF data is described in terms of either weight or value. The total weight of shipments is measured using thousands of short tons (2,000 pounds). For freight shipped to distribution centers for reshipment the weight is counted two times, both going in and going out of the distribution center. The value of commodities transported is described as the net selling value exclusive of freight charges and taxes. Thus, the value of the material has been counted multiple times in FAF 2.2, but only once in GDP.

Double counting example: widget comes into region (inbound shipment) is repackaged (stops chain) delivered to source of sale (within regional movement). Database is focused on infrastructure not total of what is being shipped.

Here more examples as we get further into analysis

DEFINITIONS: Types of Movements



- ☞ **Within** – originating within the Philadelphia CSA and destined for the Philadelphia CSA
- ☞ **Inbound** – originating in another region within the United States and destined for the Philadelphia CSA
- ☞ **Outbound** – originating within the Philadelphia CAS and destined for outside the CSA
- ☞ **Import** – originating outside the United States and destined for the Philadelphia CSA
- ☞ **Export** – originating within the Philadelphia CSA and destined for outside the United States

This study will discuss 5 different types of movements that goods make in regards to the Philadelphia PMSA. Also did this for the 100-mile food shed.

- 1) Within Region, or intra-regional, moves are moves that both originate and are destined for one of the two areas (PA side and NJ side) of the Philadelphia CSA.
- 2) Inbound Movements represent domestic movements that originate outside the Philadelphia CSA and are destined for the Philadelphia CSA.
- 3) Outbound Movements are domestic movements from the Philadelphia CSA that are destined for outside the Philadelphia CSA.
- 4) Imports are movements of International origin that are destined for the Philadelphia CSA
- 5) Exports are movements from the Philadelphia CSA to an International destination.

FREIGHT ANALYSIS FRAMEWORK: Shortcomings



- ❧ *No county level data*
- ❧ *Items can be double counted*
- ❧ *No through movements accounted for (from Maine to Florida)*
- ❧ *Controls are national, so regions are manipulated to match national totals*
- ❧ *Uses 2000/2002 data sources; forecasts do not account for extreme rises in food/fuel prices and popularity of bio-fuels*
- ❧ *Food categories do not appear rational*

Food categories like Live Animals don't seem necessary, and other ag prods and other foodstuffs don't make logical sense as names.



On to the analysis:

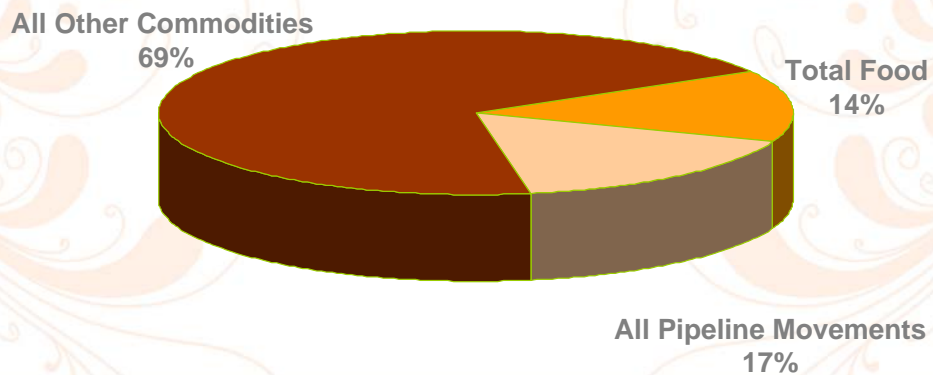
The first thing to discuss is how food fits into the total freight picture. In 2002 food made up 13% of the total movements associated with the Philadelphia CSA. Pipeline movements made 16%, but since food is only sharing modal space with commodities which don't travel by pipeline I wanted to separate those energy related movements out of the total. So if you totally ignore pipeline food makes up 15% of the weight of all movements.

Food is roughly 40 million tons out of 320 total.

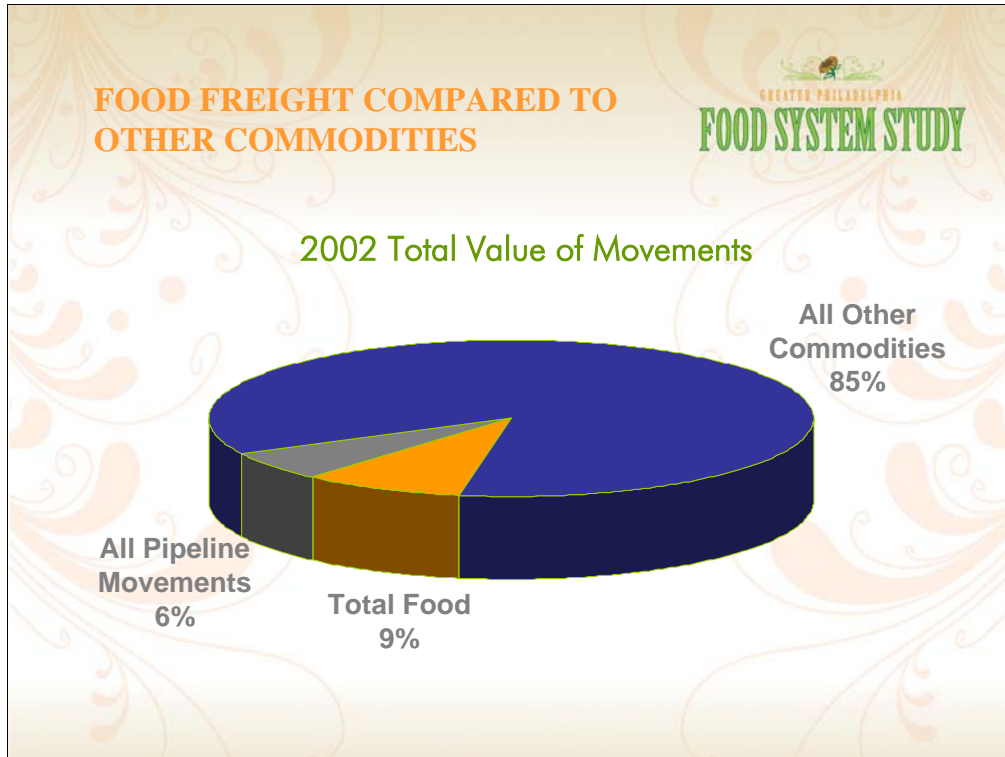
FOOD FREIGHT COMPARED TO OTHER COMMODITIES



2035 Forecasted Total Weight of Movements



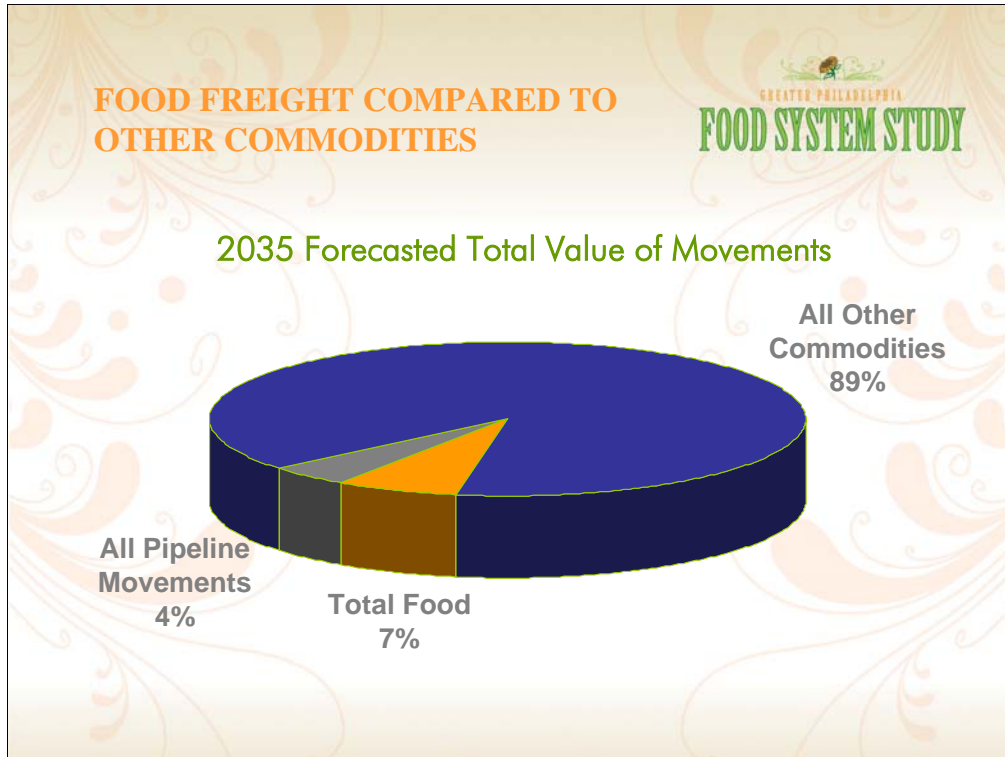
When we jump ahead to 2035 data it can be seen that food related commodities are projected to grow at a faster rate than all other commodities. Food related commodities are projected to grow 46% in terms of weight through the year 2035, while all other commodities not including energy related ones are projected to grow 25% over the same time period.



In terms of value food is a smaller piece of the overall pie than in terms of weight. This is largely because there are more high value / low weight commodities (such as pharmaceuticals, medical equipment, and electronics) moving in our region than high weight / low value commodities (such as coal and gravel).

As a dense urban area we are largely a consumer market, meaning there is a higher demand for high value / low weight commodities, and less production of high weight / low value commodities.

As we will see later some aspects of food fall into each of these categories, but food in general tends not to be classified as a good example of either.



The value of food movements is projected to grow almost as much as the weight, 40%, however unlike with weight that is significantly behind the growth in value of all other commodities, 93%.

One of the major findings of the FAF analysis was that value of movements was projected to grow significantly faster than weight, however this finding does not hold true for food related products.

Looking forward, that could cause additional stress on the food industry as the freight market moves to handle increased demands for high value / low weight movements.



When it comes to the 8 different food commodities two very logically stand out as predominant: Other ag prods (mainly fresh veggies and fruit) and other foodstuffs (all processed food and drinks).

Other foodstuffs made up just over a third of all food movements in terms of weight in 2002 and agricultural products made up roughly a quarter.

Cereal grain can be categorized as a high weight / low value commodities, because it comes in relatively high on the weight scale, roughly 20% of 2002 weight, and is merely a blip when you look at the 8 commodities in terms of value.



In terms of value other foodstuffs make up 41% of all 2002 movements. While Ag Products make up 15%.

The two major changes from the weight graph is the huge drop in share from cereal grains, and a jump in share by Meat / Seafood. In terms of value Meat / Seafood is the 2nd most predominant commodity in 2002. (should not come as too big a surprise, the vegetarian option is usually the cheapest.



The number #1 finding and something you will see depicted again and again in this presentation is that the growth of Inbound is outpacing the growth of intra-regional movements and outbound movements. Meaning as a region we are becoming increasingly dependent on food from outside the region.

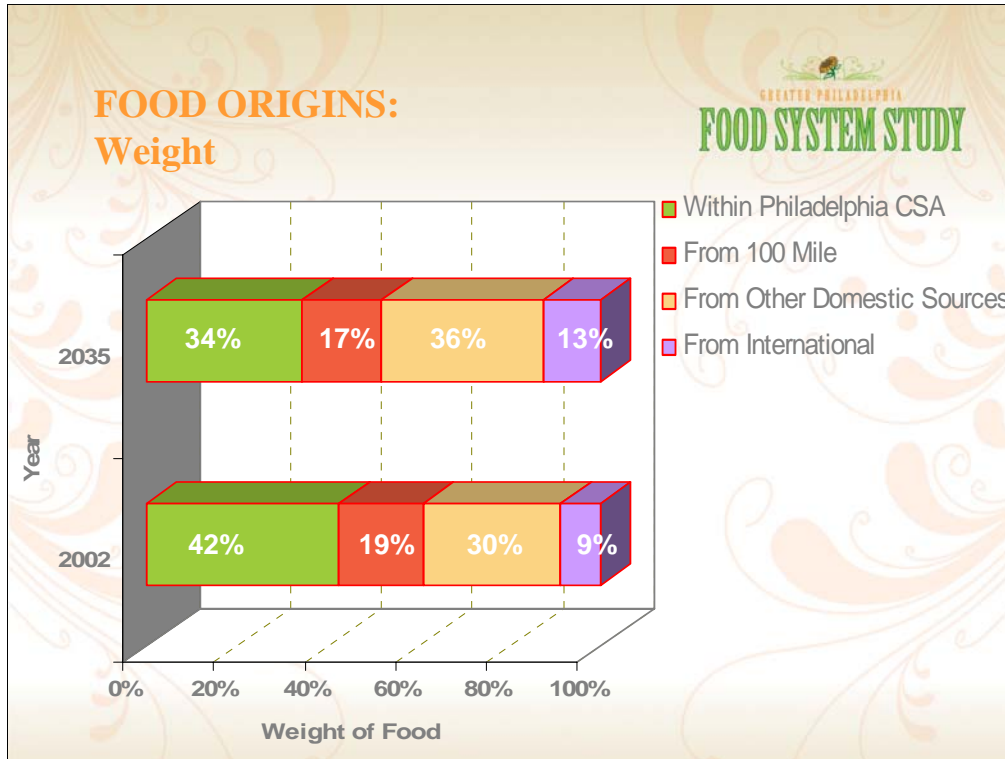


Chart represents foods origins. i.e. of the food destined for the Philadelphia CSA where is it coming from?

First point everything goes up!

But not at the same rate:

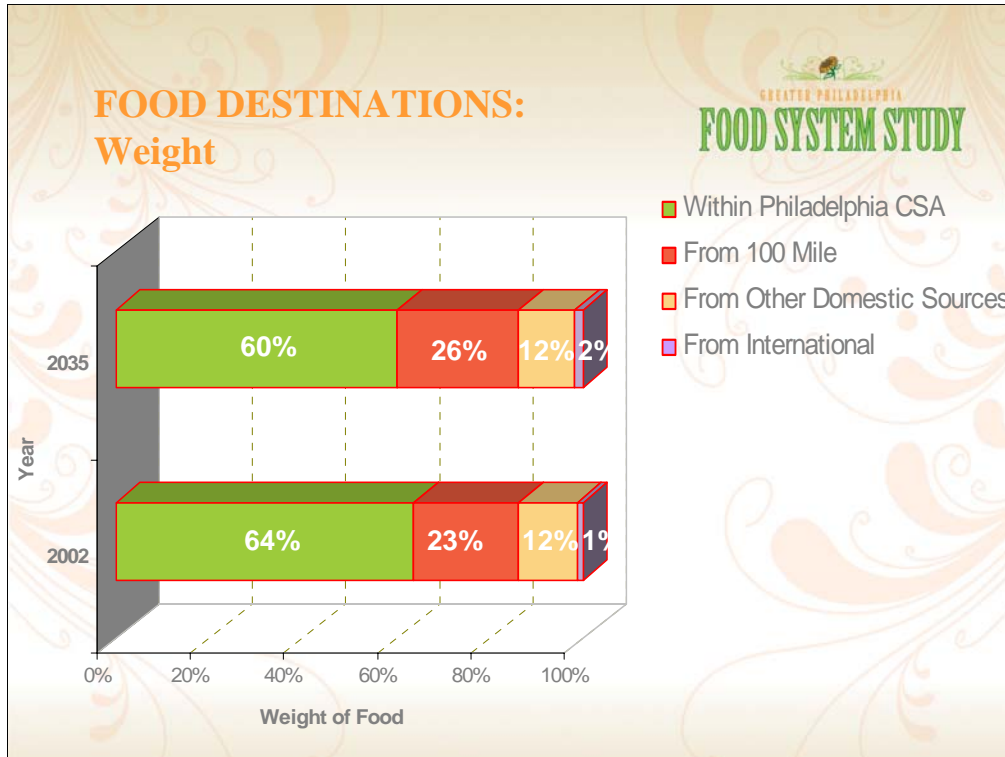
Within: 20%

From 100 mile: 40%

From other: 75%

From International: 110%

Conclusion: Larger share of food coming from other domestic and international. (40% in 2002, 50% in 2035)



In terms of food from the Philadelphia CSA looking at its destinations you see a different story.

Inbound roughly twice as much as outbound.

Within: 20%

To 100 Mile: 45%

To Other domestic: -25%

To international – 70%

Share remains relatively even. But to 100 mile grows much faster than to other domestic destinations.

Conclusion: more food produced and processed in Philly CSA being consumed in 100 mile food shed.



I talked earlier about how our ports are strong in niche products like fresh produce and here we can see that all that produce and food related commodities that move through the port are staying within the region.

Now because of the way the database is set up to record movements this means a couple things. As I mentioned early repackaging or any value added activity stops the trip as far as FAF is concerned. So it is not necessarily true that 68% of food that comes through the Philadelphia ports is consumed here. However, that 68% of food is either consumed here or has a value added activity that goes on the region.

From a freight and economic development point of view this is a wonderful thing. It means that even if the food is not being consumed in the 100-mile food shed, chances are the region is getting economic benefit from it.

In fact it is possible that some of the domestic outbound trips from the Philadelphia CSA are really other legs of the food represented in the chart above. Because the database is in yearly averages there is not way to track exact shipments and portray this in any quantitative way, however in a little bit you'll here about some case studies undertaken that help portray this activity.



Now that we've gone through some of the total trends, we will take a look at the top four food related commodities in a little more detail.

TOP COMMODITIES: Other Foodstuffs

GREATER PHILADELPHIA
FOOD SYSTEM STUDY

☞ *Examples*

- ☞ *Dairy products*
- ☞ *Processed/canned fruits & vegetables*
- ☞ *Processed coffee, tea, and spices*
- ☞ *Non-alcoholic beverages.*



☞ *Most predominant food commodity by both
WEIGHT and VALUE*

Other foodstuffs represent processed foods such as dairy products, canned fruits and vegetables, processed coffee, tea, and spices, and non-alcoholic beverages such as juices and sodas.

As one would assume going into a process like this, other foodstuffs is the number 1 moving food item in terms of both weight and value.



Within region movements of other foodstuffs one of the most common movements understood and seen by everyday people Local deliveries of soda and chips etc to stores throughout the city. Good example of a commodity that probably has a high flow of double counting the same product. (grains get double counted but in different forms) Foodstuffs get double counted because they are distributed from distribution centers. Meaning an inbound trip to the DC and a within region trip to place of purchase.

Probably responsible for higher percentage of truck related to food that data here would indicate.

Of those Inbound movements in 2002 40% are from the 100 mile food shed and 60% are from outside of that. The inbound movements from outside the 100 mile area are projected to grow faster, so in 2035 the projection shows only 1/3 of the inbound movements to be from the 100 mile food shed.

TOP COMMODITIES: Other Agricultural Products

GREATER PHILADELPHIA
FOOD SYSTEM STUDY

Examples

- Vegetables fresh and dried
- Fruits, fresh and dried
- Fresh cut flowers

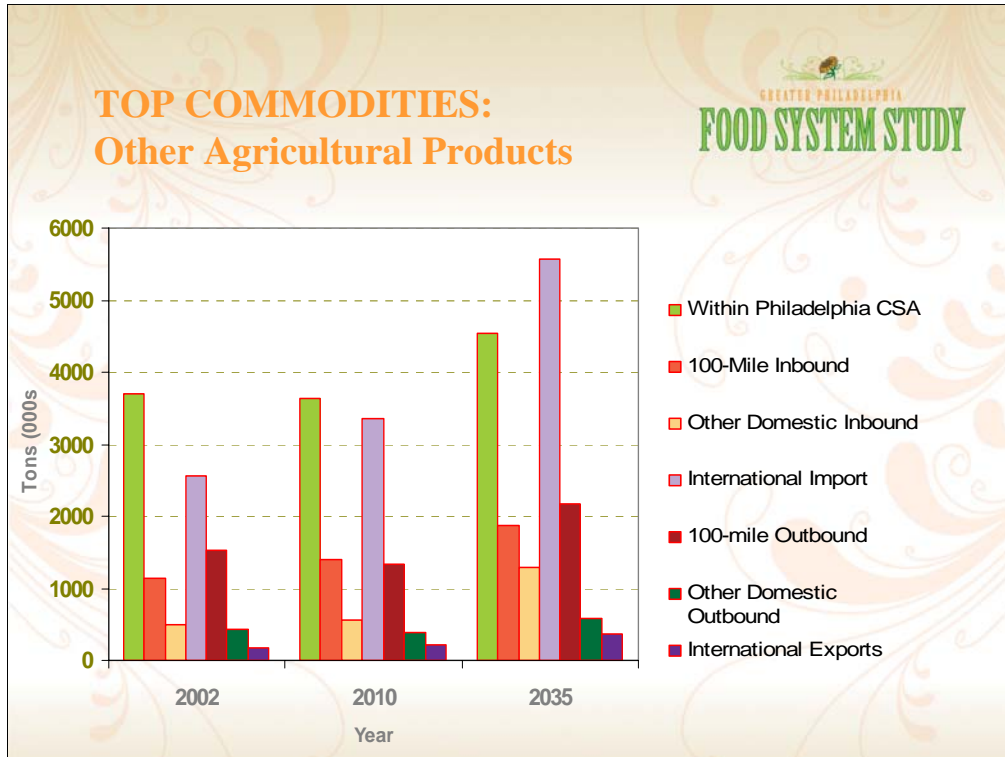
Most common International Import



Other Agricultural products mostly represents fresh produce. It is the only food related product that has a significant % of its movement involved with international trade.

Again it is important to keep in mind how the database is formatted. It shows average YEARLY movement, and with fresh produce this is not the ideal way to look at data.

Fresh produce tends to be highly seasonal. For example the Tioga Marine Complex in the port Richmond section of Philadelphia. Handles mostly fresh produce and is to very busy for most of the year, but from about December through march is a buzz with activity. Again you will hear about some case studies later that we hope fills some of the aspects of the movement of food that this data simply cannot explain.



Other ag prods is interesting because of it has by far the largest net from which inbound movements come from.

There is growth in all of the movement types depicted in this chart, but what sticks out is most projected growth by far is International Imports. Which is projected to grow 118% through 2035. Our regions top trading partner in terms is Latin and South American which make up more than half of the imported cargo. However, growing at an even faster rate is the inbound cargo from outside our 100-mile food shed (projected growth rate 160%). With the top trading partner being California from which inbound movements are projected to grow 160%.

CONCLUSION: More from further away.

TOP COMMODITIES: Cereal Grain

GREATER PHILADELPHIA
FOOD SYSTEM STUDY

☞ *Examples:*

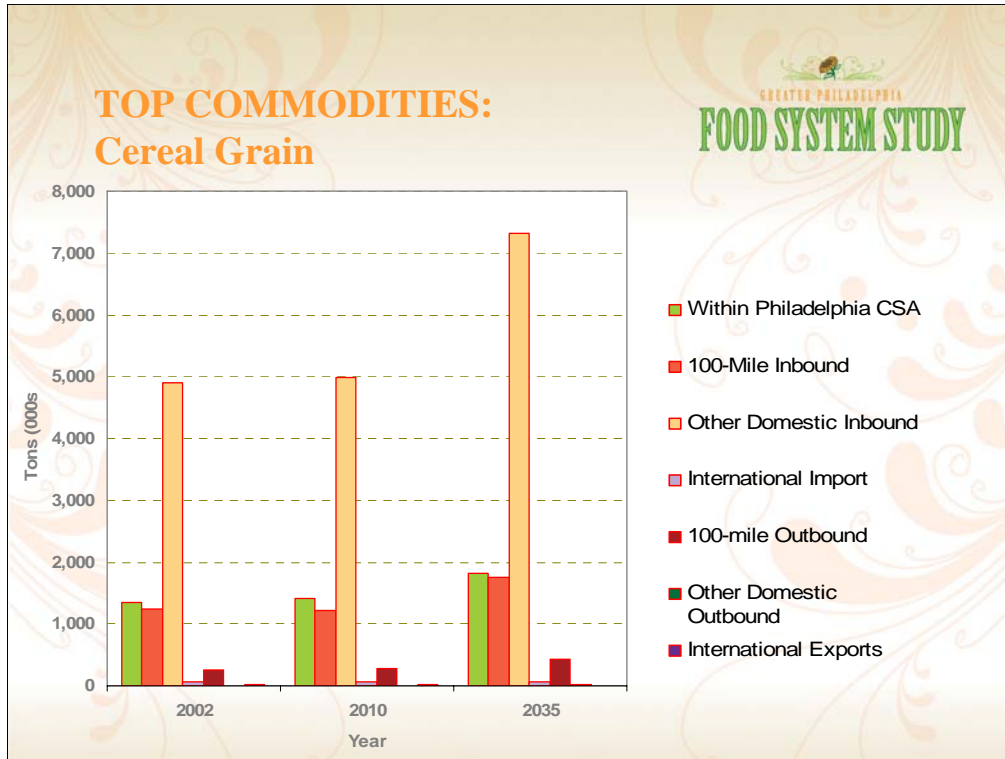
- ☞ *Wheat*
- ☞ *Corn (except sweet corn)*
- ☞ *Rye*
- ☞ *Barley*
- ☞ *Oats*



☞ *Domestic Import*

☞ *Suggests Philadelphia area is food processing center; area for value-added activities*

Cereal grains are likely to be double counted by in a very different way from the one we just discussed in terms of foodstuffs. Few of these grains are sold in bulk form, however they are purchased by processors who are importing the grains and making them into a marketable food commodity.



Cereal Grain is the one commodity where a that has a significant amount of its movements associated with inbound from outside our 100 mils food shed. This is logical because there is not very much wheat and grains being grown in our area. According to the database, Ohio is by far the top trading partner.

TOP COMMODITIES: Meat/Seafood



Examples

Fresh or frozen meat / seafood (except live animals)

187% growth projected for inbound movements from outside the 100-mile food shed area

Most growth projected to come from Virginia

Within movements forecasted to decrease by almost 50%





As the chart above shows the only type of movement projected for an increase in this category are inbound movements. Of these inbound movements from the 100-mile food shed are only projected to grow 8% while inbound movements from other domestic sources are projected to grow a whopping 187%.

Meanwhile outbound movements to outside the 100 mile food shed are projected to drop 87%.

This leads to the conclusion that more of the locally produced and processed meats and seafood will be consumed within the 100 mile food shed, and the area will need to increasingly rely on a larger and larger area from which to attract meat / seafood.



That ends my part of the presentation. With that I will turn it over to Jessica Brown who will highlight supply chain case studies.

Good morning, As Walker mentioned, we conducted a number of case studies, which were relatively simple investigation of where particular food items may have come from, where they might end up and what stop they may make along the way

SUPPLY CHAIN CASE STUDIES



- ❧ *Why Case Studies?*
 - ❧ *“Food Miles” do not show the whole picture*
 - ❧ *Nearly impossible to track items back to producers because of confidentiality concerns and technology limitations*
 - ❧ *Food FAF double counts food items to show the movements*
 - ❧ *Case studies show the complexities of both the local and global food system*

We conducted these case studies to illustrate some of the complexities that are swept over by other types of studies.

For example, Food Miles studies are a common way to look at food supply chains, but the data is highly generalized and looks only at average overall distances, rather than the complex steps involved in moving food from producer to consumer.

Track backs, which take a real item and specifically track it back from the consumer to the producer, are nearly impossible because individual companies hold this data and are reluctant to share it, due to concerns about confidentiality of client relationships.

The FAF, which Walker just discussed, tells us a lot about individual movements of food items, but does not tell us about production or consumption, and many individual food items are double counted.

The case studies I will present today are intended to illustrate some of the complexities otherwise missed in these studies.

SUPPLY CHAIN CASE STUDIES

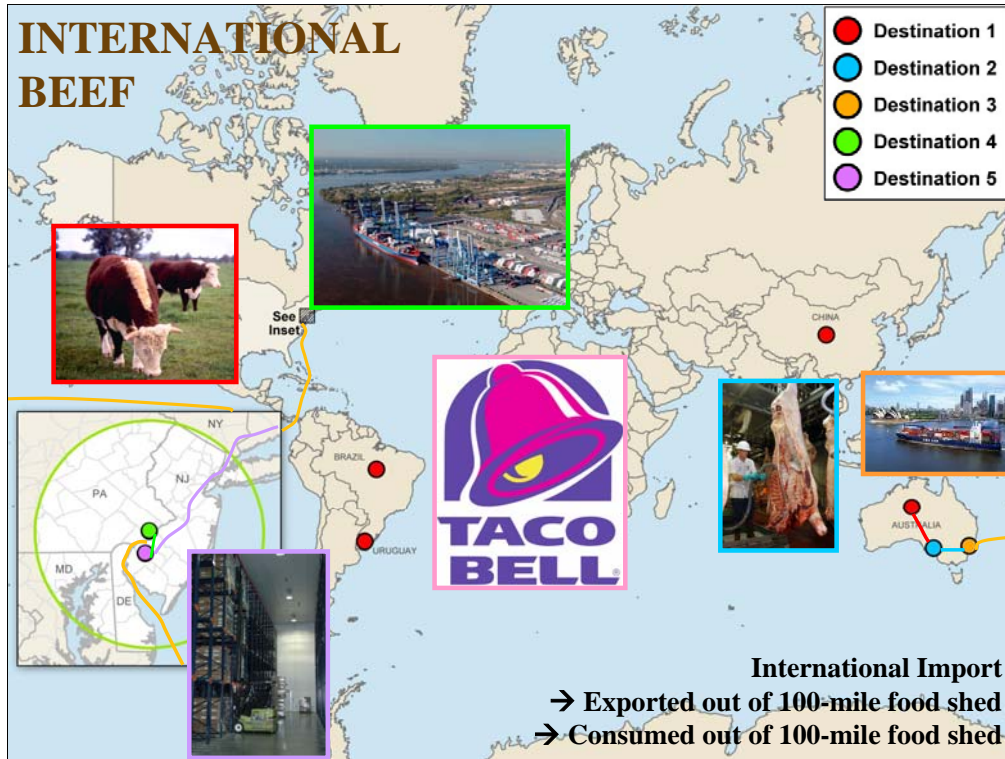


- ❧ *16 food items selected*
 - ❧ *A mix of globally- and locally-produced*
 - ❧ *Match up to the 8 Food FAF categories*
 - ❧ *4 items presented today:*
 - ❧ *Beef*
 - ❧ *Avocado*
 - ❧ *Hot dog*
 - ❧ *Tomato*

For the case studies we looked into 16 food items, with a mix of globally and locally produced products in each of the 8 FAF food commodity categories discussed earlier.

Today I will present four of these items:

- Beef- an example of an international import into the region
- Avocados- an example of a domestic import into the region
- Hotdogs- an example of a local product that may be consumed within the region or outside or exported out of the region
- Tomatoes- an example of a local product that may take many routes to different consumption points within the region



The first product we will look at is beef coming through the port of Philadelphia
 Most of the beef coming through the port comes from Australia, Brazil, Uruguay or Chile

1. Taking the example of Australian beef, we see that the first movement, which is not accounted for in the FAF, is from the farm to the processing plant, where the animals are slaughtered and packed into freezer containers
2. Then they are taken to the next destination the port in Melbourne.
3. There, the containers are loaded onto a ship and sent directly to the Port of Philadelphia. This trip may take 40-60 days, depending on conditions, and no handling of the beef is necessary in this time. This is the first movement of the beef that is tracked by the FAF, and it is an international import of meat from “rest of world” by boat
4. From the port, the containers are taken to freezers in the area, such as Garden State freezers in Mullica Hill. This would be a within movement of meat by truck.

From the freezers, customers, who often have direct relationships with the original farms, pick up their portions of the shipment. Some of the meat will be fillets destined for supermarkets or nice restaurants, while some will be ground beef, more likely to end up at fast food restaurants.

Because the meat is frozen it could be shipped by train, as far as Canada, which would be an outbound movement, or it might be consumed within the region. We have no way of tracking this, and companies are reluctant to share the information.

so, beef is our example of an international import that may be exported and consumed within or beyond the region.



Next, there is the example of avocados

While many of our avocados are imported from abroad, during the January to October growing season a large portion come from southern California.

Today we will look at the example of avocados distributed by mission produce, a large company in southern California.

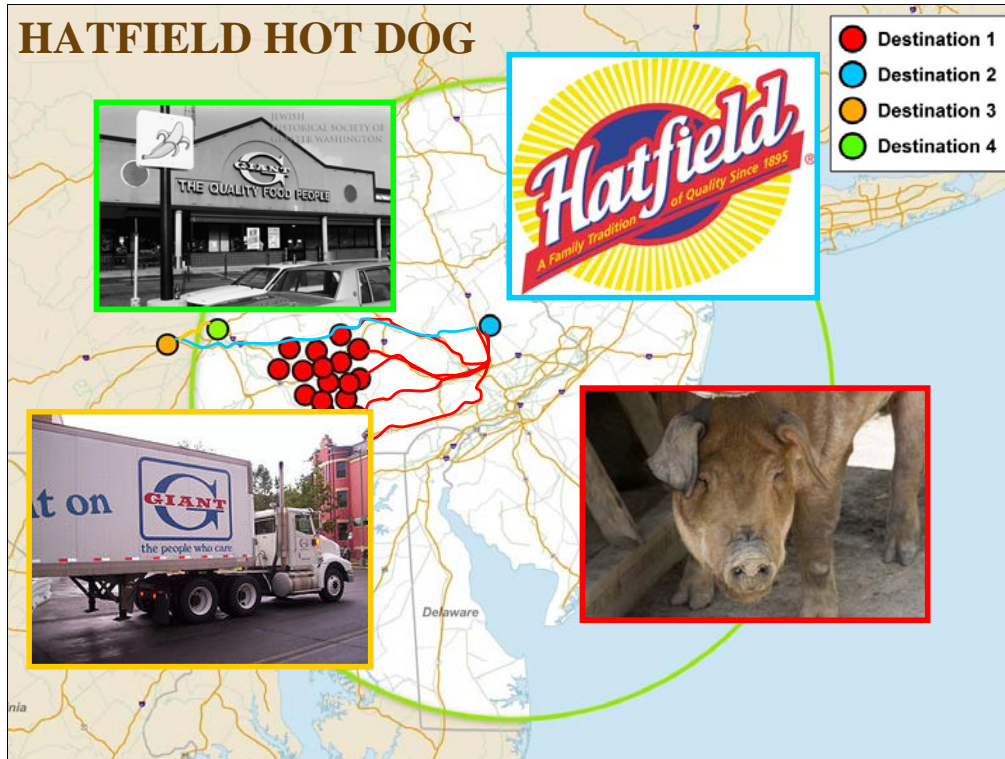
1. Mission produce gathers avocados from 7 counties in southern California at their packing plant in Oxnard California

From there, the avocados are taken by truck to a ripening facility in Vineland New Jersey. This is a domestic inbound truck movement of other ag products.

2. From the ripening facility the avocados may be taken to the Philadelphia produce market, a trip counted as a within movement. These avocados may then be purchased by retailers, such as fruit trucks or grocery stores or

3. Purchased by another distributor, such as Killian's Harvest Green in Yeadon, who then sells to high end restaurants. Each of these links is tracked as a within region movement

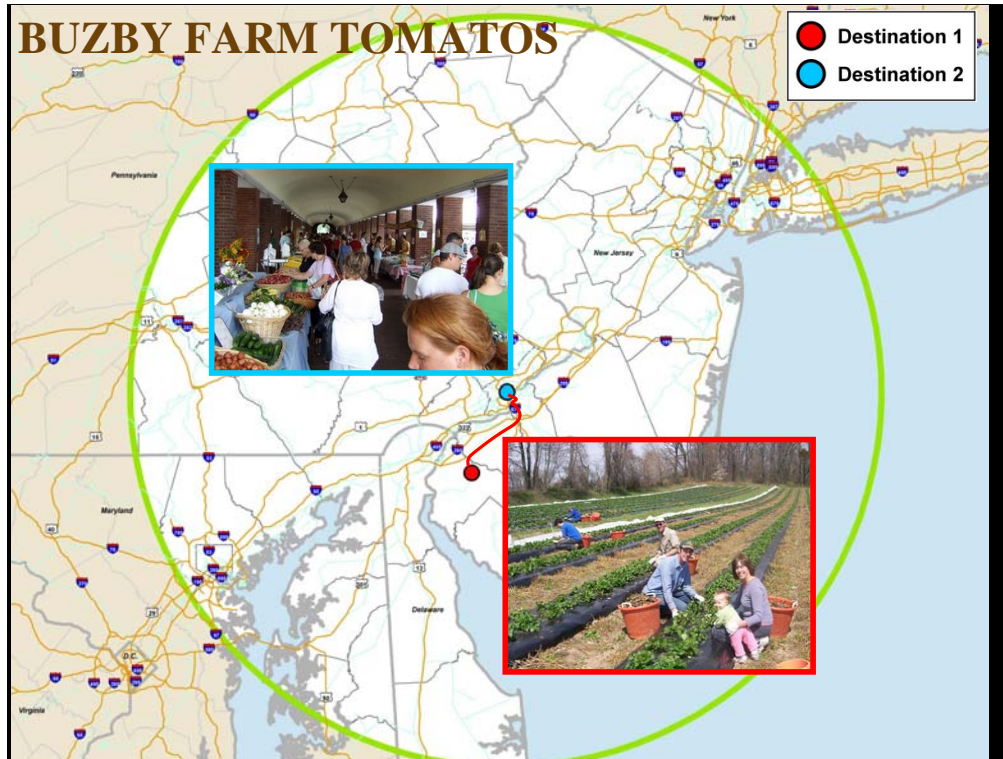
So avocados are an example of a domestic inbound product that goes through a few within region movements before it is consumed within the region



Next is the example of Hatfield Hotdogs, a locally produced product that may be consumed within the region or exported out of the region.

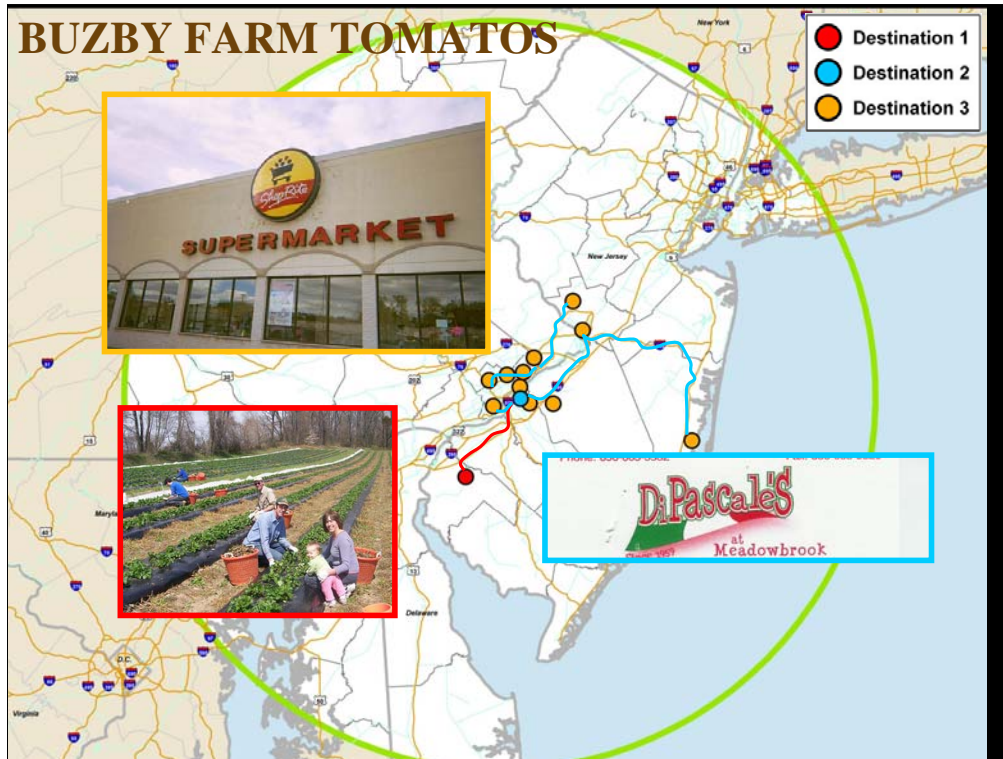
1. The hogs for Hatfield dogs are raised at farms in Indiana, North Carolina, Ohio, and New York, but 65% are raised in Pennsylvania, many in Lancaster county.
2. A hog raised in Lancaster County would be taken to the Hatfield meat processing plant in Montgomery County. This is a within movement of live animals. At the facilities, the dogs are slaughtered and processed and then purchased by various customers.
3. For example, Giant Foods takes meat from the Montgomery County plant to its distribution center in Carlisle Pennsylvania. This is a within movement of meat.
4. The meat will then be transported to Giant food stores which may be within or outside of the region.

Hatfield dogs are an item that is produced locally and both exported for consumption and consumed locally.



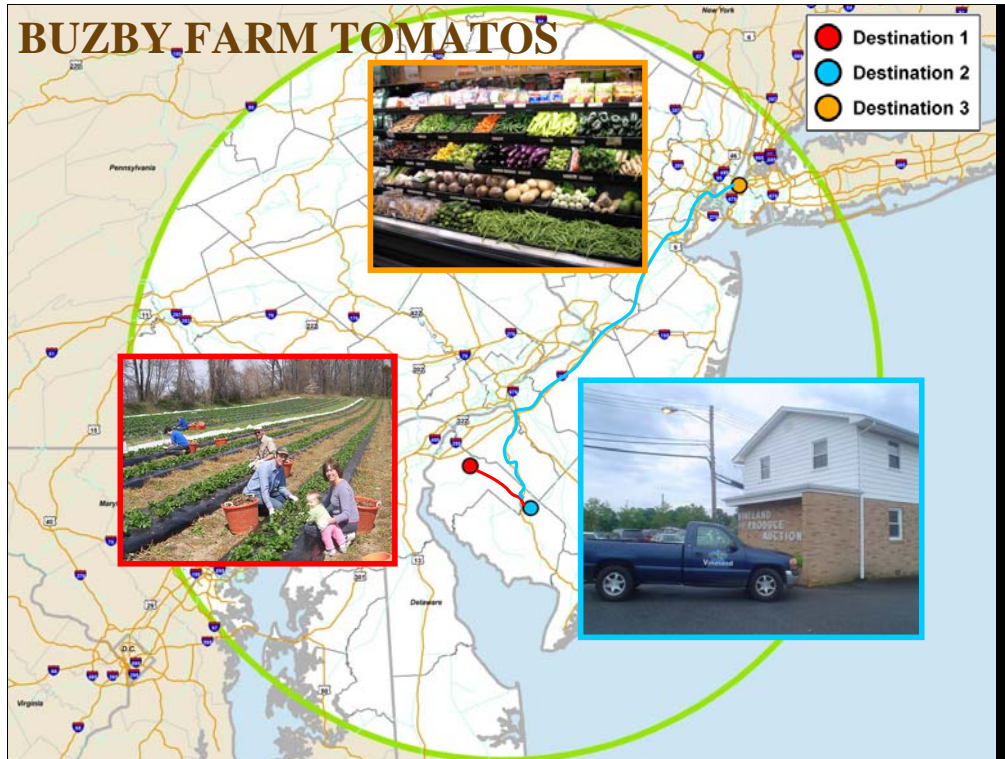
Finally, we'll look at Buzby tomatoes, an example of a locally produced and locally consumed product

1. Buzby farm is in Woodstown New Jersey
2. They market about 10-15% of their produce directly to consumers at the Headhouse farmer's market in Philadelphia



They also distribute their produce right off the farm to retailers and wholesalers.

1. For example, Steve DiPascale runs a farm stand in Pennsauken, New Jersey
2. He will sell to consumers or to restaurants and delis from his farm stand. He even runs his own deli that features Buzby farm tomatoes in its hoagies while the tomatoes are in season
3. Steve also works as a broker and picks up tomatoes from the 18 shop rites in the area



Finally, Buzby farms sells via auction

1. Bringing tomatoes to Vineland Auction in New Jersey
2. Donald Meyers is a broker with a platform there where he collects produce and
3. brings it to grocery stores in New York City

All of these movements are within movements of other ag products, both locally produced and locally consumed.

PART 2: Food Freight Analysis

- **Other Food Transportation Studies within the Region**
- **Greater Philadelphia's Food Freight Analysis Framework**
- **Supply Chain Case Studies**
- **Conclusions**



CONCLUSIONS



- ❧ *Both the Food FAF and the case studies:*
 - ❧ *Support the findings of the previous studies*
 - ❧ *Support the findings of Part 1, Interconnected Food System*
- ❧ *The Food FAF:*
 - ❧ *Demand is predicted to exceed local supply and rely on more domestic and international imports*
 - ❧ *Food produced within the region is consumed within the region, as seen by the low outbound movements*
- ❧ *The Supply Chain Case Studies:*
 - ❧ *Supply chain based on cultivating business relationships*
 - ❧ *Easier to track local products*

To conclude, we found that some of our assertions from Part 1 held true in Part 2.

QUESTIONS

NEXT STEPS

NEXT STEPS

☞ *Review Part 2*

☞ *Sub-committee of Study Advisory Committee; commit to review document and provide feedback*

☞ *Commence Part 3: Resource Assessment & Part 4: The Food Economy*

☞ *Collect data (SAC members)*

☞ *Agricultural Land Base and Industry*

☞ *Labor and Retail statistics*

☞ *Inventories*

NEXT STEPS

☞ *Next SAC Meetings:*

☞ *Tuesday, 3/31: Part 3 and Part 4*

☞ *Wednesday, 6/17: The Complete Greater Philadelphia Food System Study*

**ONE MINUTE
REPORTS**

THANK YOU!

FOR MORE INFORMATION

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