The Community Impacts of E-Commerce Growth: A Case Study of Berks County, PA

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Big Picture

• How will e-commerce warehouse growth impact Berks county?
Proximity to Markets

- Pittsburgh (260 mi)
- Baltimore (110 mi)
- Philadelphia (60 mi)
- NYC (130 mi)

The City College of New York
Short Term Decisions

• Should communities:
  • approve development?
  • incentivize development?

• What transportation improvements are needed for
  • truck traffic?
  • job access?

• What utility/community service improvements are needed?
What are the benefits and costs of e-commerce development in Berks County?

- Job creation
- Tax revenue
- Associated residential and commercial development
- Traffic
- Environmental Impacts
- Utility demands
- Public safety
- Opportunity cost
Warehouse Variables

• Many warehouses being built on spec
• Some building characteristics specific to use
  • Building Height
  • Refrigeration
• Variables:
  • Trip demand (e.g. 3x higher for automated)
  • Hours of operation
  • Number and type of jobs (e.g. 50 – 1000)
  • Tax revenue
Job Types

- Construction
- Warehouse
  - Management
  - Picking
  - Operations
- Trucking
- Secondary Jobs
  - Related industries (e.g. packaging manufacturer)
  - Service industries

- Wages
- Working conditions
- Potential for growth
- Specialized training
Warehouse Employment Variables

- Total jobs
- New jobs vs. replaced jobs
- Type of jobs
  - Local vs. regional vs. long distance
  - Manual vs. automated
- Access to jobs
  - Modes of travel to work
  - Opportunities for education/training
Zoning Issues

- **Approvals/Taxing Authorities**
  - County Planning Commission - recommend
  - Township Planning Commissions
  - Township Supervisors
  - School Boards – 18 districts, must approve LERTA
  - PennDOT – highway permit for entrance
  - Environmental approvals
  - Stormwater issues
  - Sewer

- **Tax Incentives**
  - Local Economic Revitalization Tax Assistance (LERTA)
  - Job creation

- **Relief/Variances Sought**
  - Height restrictions
  - Bridge proximity to stream
  - Fire code exits
  - Parking lot landscaping
    - Truck vs. car parking
    - Obstruction of Loading Docks
Community Concerns – Transportation and Emergency

• Truck Traffic
  • Collisions
  • School bus stops
  • Detour traffic on local roads
  • Ramp obstructions
  • Driveway obstructions
  • Inadequate turning radius/encroachment
  • Sight distance
  • Pavement/bridge damage

• Truck overnight parking
• Emergency access
• Fire protection
  • Demand
  • Tank refill rate
  • Distance to exits
Community Concerns – Other Issues

- Construction
  - Noise
  - Dust
  - Water quality (Nitrate in soil, well contamination)

- Operations
  - Noise
  - Light pollution
  - Air quality

- Decreased property values (?)
- Reduced “quality of life” (e.g. views, “rural character”)
- Endangered species
- Wetlands
- Building damage (from vibration)
- Crime (traffic violations, prostitution)
- Sewage processing demand
- High legal cost to contest development
What do we know from existing warehouses?

Preliminary Results
Data

• Safegraph
  • Observed monthly device visits
    • By day
    • By hour
    • Same day brands
  • Device home census block group

• Longitudinal Employer Household Dynamics (LEHD) Origin Destination Employment Statistics (LODES)
  • Overall distribution of transportation and warehousing employment
  • Intra-county distribution of transportation and warehousing employment
  • Employment characteristics
Time Distributions of Warehouse Activity (1)

Saddle Creek

- % Of Max Observations
- Months: Aug to Dec

Americold

- % of Max Observations
- Months: Jan to Dec

Graphs showing time distributions for Saddle Creek and Americold, with varying activity levels across different months.
Time Distributions of Warehouse Activity (2)
Time Distributions of Warehouse Activity (3)

USPS

Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec

0  | 5   | 10  | 15  | 20  | 25  | 30  | 35  | 40  | 45  | 50  | 55  | 60  | 65  | 70  | 75  | 80  | 85  | 90  | 95  | 100
Net Change by Hour
<table>
<thead>
<tr>
<th></th>
<th>Saddle Creek</th>
<th>Americold Logistics</th>
<th>Amazon Distribution</th>
<th>Amazon Returns</th>
<th>USPS Reading</th>
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</thead>
<tbody>
<tr>
<td>Total Days Observed</td>
<td>153</td>
<td>365</td>
<td>365</td>
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<td>365</td>
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<tr>
<td>Same Day Truck Stop Locations</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><em>Love's</em></td>
<td></td>
<td>2.12</td>
<td>3.16</td>
<td>4.32</td>
<td>0.21</td>
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<tr>
<td><em>Pilot Flying J</em></td>
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<td>9.46</td>
<td>3.16</td>
<td>0.10</td>
<td>0.37</td>
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<tr>
<td><em>Travel Centers of America</em></td>
<td></td>
<td>1.98</td>
<td>1.08</td>
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<td>0.34</td>
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<tr>
<td>% Visits same day to truck stop</td>
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<td>13.56</td>
<td>7.40</td>
<td>4.41</td>
<td>0.92</td>
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Local Employment
Next Steps

• Expanded employment analysis
• Route mapping
• Transit route assessment
• Safety impacts
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Questions?

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