How Do Smart Growth Cities Take On Rocket Increase of E-Commerce?
Assessing Effective Strategies for California Cities
Outline

• Background
• Challenges of Urban Growth
• E-Commerce & Retail Trends
• What is Smart Growth?
• California Sustainable Growth Initiatives
• Challenges for Urban Goods Movement
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Background
Challenges of Urban Growth

• World is becoming more urbanized, with greater commercial activity and demand for goods and services than ever before

• Automobile-oriented urban development has led to:
  • Increased GHG emissions
  • Increased quantity of impervious surfaces
  • Loss of open space
E-Commerce

Consumer Trends

• Younger generations are buying more goods online
• 16-percent growth in e-commerce in 2018
• CFMP 2019 public outreach survey:
  • 60% receive 1-2 online deliveries per month.
  • 35% receive 3-5 deliveries per month
  • 3% receive more than 5 deliveries per month
  • 2%- no response

Source: U.S. Census Bureau’s 2017 Annual Retail Trade Survey.
Emerging Land Use Utilization Trends

- In 2018, 87% decrease in retail space opened in 54 largest U.S. markets
- Biggest unknown for cities: long-term impact of e-commerce on sales tax revenue, land use, and infrastructure

Source: USA Today, “Macy’s is closing these 68 stores: Is yours on the list?” (2017)
E-Commerce Growth in California

Fulfillment and Distribution Centers

• New e-commerce fulfillment and distribution centers:
  • Inland Empire
  • Bakersfield
  • Stockton

• Average size between 50,000 and 500,000 sq. ft. and proximate to urban centers

Source: Amazon Blog, “Amazon’s impact in Southern California” (2018)
E-Commerce
Growth in California

Air Cargo Growth in CA Airports

- Due to proximity to airports/seaports and cities, Amazon’s nine new hubs cluster around:

  - Los Angeles
  - San Francisco
  - San Diego
  - Sacramento
  - San Jose

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<th>California’s Top Air Cargo Airports</th>
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What is Smart Growth?

• Planning philosophy that aims to promote:
  • Compact development
  • Mixed land uses
  • Range of feasible transportation options

• Goal is ultimately to increase livability of cities by providing a range of transportation, housing, and commercial options at increased density

USEPA Smart Growth Principles

1. Mix land uses
2. Take advantage of compact building design
3. Create a range of housing opportunities and choices
4. Create walkable neighborhoods
5. Foster distinctive, attractive communities with a strong sense of place
6. Preserve open space, farmland, natural beauty, and critical environmental areas
7. Strengthen and direct development towards existing communities
8. Provide a variety of transportation choices
9. Make development decisions predictable, fair, and cost effective
10. Encourage community and stakeholder collaboration in development decisions
California Sustainable Growth Initiatives

**AB 32**
- Passed in 2006
- Requires California to reduce GHG emissions to 1990 levels by 2020
- Gives CARB authority over sources of GHG emissions, including those from transportation

**SB 375**
- Passed in 2008
- CARB sets regional targets for GHG reduction
- Designed as a ‘bottom up’ approach, directly involving cities and counties in achieving goals

**SB 743**
- Passed in 2013
- Intended to balance congestion management needs with statewide goals related to infill development, GHG reduction, and public health
- Focus on VMT as operational metric
Challenges of Rapid E-Commerce Growth for Cities

- Increased demand for curb space
- Increased congestion in downtown business districts and residential areas
  - Replacement of some personal automobile trips with delivery truck trips
- Increased conflict with active transportation users – delivery trucks block bike lanes and/or their pallets block sidewalks
Best Practices
Urban Consolidation Centers

• Padova, Italy

  • Developed Cityporto logistics scheme for freight in 2004

  • Includes urban consolidation center, a fleet of eco-friendly vehicles, and an ITS system

  • Cityporto vehicles are afforded benefits not available to independent freight transport operators:

    • 24-hour entry into the city
    • Permission to use bus lanes
    • Dedicated loading bays

  • Participation is voluntary

Dynamic Routing/Intelligent Transportation Systems (ITS)

• Detroit, USA
  
  • Dynamically routing trucks using real-time traffic data has yielded as much as a 45% reduction in drive time compared to historical congestion data

• Vienna, Austria
  
  • ILOS (Intelligent Freight Logistics in Urban Areas)
  • Floating car data used to optimize routes in real-time
  • Benefits include:
    • Reduced travel time
    • Reduced emissions
    • Reduced costs

Neighborhood Package Pickup Points / Automated Parcel Systems

- Amazon
  - Has deployed neighborhood-based lockers and apartment-based lockers
  - Customers/tenants can have deliveries made to a secure locker for retrieval
  - Located in over 900 U.S. cities and in apartment complexes representing over 850,000 units
  - Functions for both package delivery and return/retrieval

Off-Peak / Overnight Deliveries

• New York City, USA
  • Pilot program from 2009-2010
  • Participating businesses asked to switch distribution and receiving activities to off-hours (7PM-6AM) for >= 1 month
  • 25 receivers and 8 carriers participated

• Barcelona, Spain
  • Municipal government collaborated with two supermarket operators to develop system for quiet nighttime deliveries
  • Utilized adapted trucks and quiet unloading methods

Source: Efficient Urban Freight – Best Practices
Future Considerations

AVs / Automation

Traditional Urban Planning

Future Proofing of Infrastructure