

# Transport Demand and Demographics: Planning for an Aging Society

Dr. Joseph F. Coughlin  
Center for Transportation Studies  
Massachusetts Institute of Technology

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## Who is the Public in "Public Transportation?"

- Many different "publics" comprise the potential transit market.
- Traditional focus of public transportation:
  - Journey-to-work (suburb-to-city)
  - Students
  - Elderly
  - Inner-city poor

Dr. Joseph F. Coughlin  
Massachusetts Institute of Technology  
Room 1-235, Cambridge, MA 02139  
617.253.4978 Email: [coughlin@mit.edu](mailto:coughlin@mit.edu)

## Demographics, Markets and Transit

- Increasing socio-economic complexity requires that we question existing (often 3-4 decades old) assumptions.
- Changing economy (24 hour workplace), housing patterns (suburbanization), and diversity in age (aging population) are driving radically different transit patterns and needs.
- Consequently, the transportation planner/operator must be as sensitive to individual characteristics of riders (consumers) as any firm selling a product or service.
- Transit must appeal and provide value to multiple publics to attract, grow and sustain regular customers.

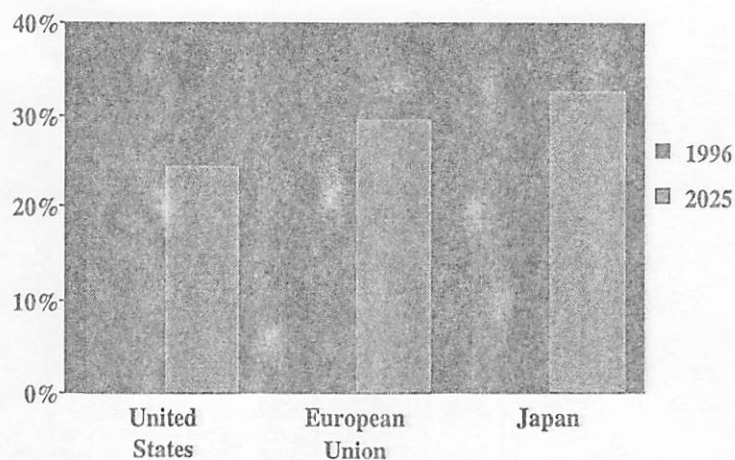
## We Are Older

- Today, 12% of the population is 65+
- By 2020, older adults will number between 17-20% (or 50 million) of the US population
- Transportation planners must prepare for a population where at least 1 in 5 or 1 in 4 people may be elderly

## What is Old?

- *Chronological* -- retirement age
- *Physiological* -- reduced vision, less flexibility, diminished strength
- *Cognitive* -- increased confusion, reduced concentration

## Comparative Aging Trends



Percent of Population Age 60 and Over

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## All Seniors are Not the Same

- Old does not mean disabled
- Old does not mean institutionalized -- only 10% of those 65-85 and 25% of those adults 85+ are institutionalized
- Gender matters -- most are and will be women



## Mobility Remains Important Throughout Life

- Journey-to-Work accounts for only 25% VMT
- Mobility is critical to continued access to health care, social, shopping and other activity centers
- Today's elderly lead an increasingly active lifestyle, e.g., recreation, continued work, wide range of social activities

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## Improved Senior Health and Socio-Economic Factors Predict Increased Travel Demand

Improved Health    Increased Education    Greater Income

Increased Levels  
of Activity and  
Demand  
for Mobility

## Improved Senior Health and Socio-Economic Factors Predict Increased Travel Demand (cont.)

- Improved Economic Welfare
  - Over 60% of older Americans in metropolitan areas are middle or high income
- Higher Education Levels
  - Number of seniors with four or more years of college doubled in last 20 years
- Improved Health
  - Nearly 75% are in good-excellent health
- Independent Living
  - 80% live alone or with a spouse

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## Why Not Drive?

- Choice
- Safety concerns -- self regulation may mean self-imposed limits on mobility
- Physical impairment



## Costs of Elder Isolation

Direct	Indirect
•Health	•Loss of human capital, e.g., volunteers
•Well-being	•Health care costs to society
•Social connectivity	•Stress and productivity of care givers

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## Urban Transit Planning and the Elderly

Issue is typically defined  
(but not always correctly)  
as related to:

- Disabled community  
(Americans with Disabilities  
Act or ADA)
- Social welfare or urban  
poverty initiatives



## What Would Make Transit More Attractive?

*(ranked response of 75+ surveyed older adults)*

- Reliable scheduling
- Improved stations and bus stops
- Enhanced physical accessibility to vehicles
- Better security
- Courteous drivers

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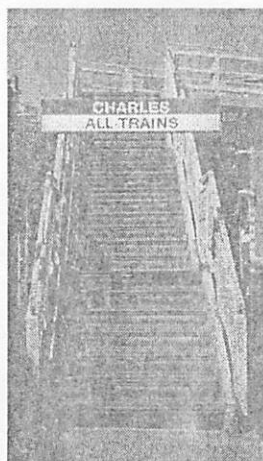
## Reliable Scheduling

- Anticipation, waiting and frustration
- Systems to notify of schedule changes and estimated arrival times



## Improved Stations and Bus Stops

- Physical accessibility
- Seating at station and surrounding community
- Signage -- color and size
- Security -- lighting and visibility of operators



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## Transit Planning for Throughput or People?



- Anticipate the characteristics of those riders likely to use the station most, e.g., a station near a hospital is likely to serve people with higher levels of frailty
- Plan for the long term, ensure that a station does not become an “accessibility island”

## Enhanced Accessibility to Vehicles

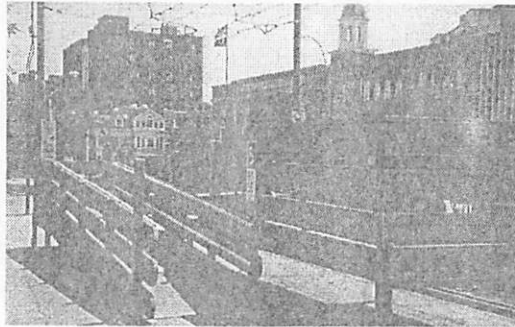
- Reduced flexibility and physical strength, e.g., weak knee joints, makes access to a bus or rail vehicle difficult



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## Standards Compliance Versus Customer Service Planning

- ADA compliance or "professional standards" may not always make sense
- Regulatory guidelines are typically minimum requirements -- exceeding a standard is never a violation



## Stations, Vehicles *and* People Transit Operator Customer Service

- Courteous drivers, e.g., sensitive to sudden accelerations.
- Operator visibility and helpful



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## Characteristics of Transportation Services for Seniors

- Viable transportation options *not* alternative transportation
- Provision of quality service -- reliability, safety, cost, and responsiveness
- Provision of all levels of service to all types of seniors -- elderly does not necessarily mean disabled

## Public Transportation Improvements Attractive to Older Adult Consumers

	<i>Vehicle</i>	<i>Station Area</i>	<i>Operations</i>
Reduced Flexibility	<ul style="list-style-type: none"> <li>•Low-floor entry</li> <li>•Hand rails</li> </ul>	<ul style="list-style-type: none"> <li>•Universal design for accessibility</li> </ul>	<ul style="list-style-type: none"> <li>•Easy/seamless fare collection</li> </ul>
Impaired Vision	<ul style="list-style-type: none"> <li>•Improved signage and markings of vehicles</li> </ul>	<ul style="list-style-type: none"> <li>•Large signage with lighting</li> </ul>	<ul style="list-style-type: none"> <li>•Frequent station and in-vehicle announcements</li> </ul>
Diminished Strength/Endurance	<ul style="list-style-type: none"> <li>•Enforced reserved seating</li> <li>•Assistance with packages/bundles</li> </ul>	<ul style="list-style-type: none"> <li>•Seating at station and in surrounding community</li> <li>•Covered/shaded station area</li> </ul>	<ul style="list-style-type: none"> <li>•Controlled acceleration by drivers</li> </ul>
Perceptions of Personal Safety and Security	<ul style="list-style-type: none"> <li>•Cleanliness</li> <li>•Friendly drivers and operators</li> <li>•Operator visibility</li> </ul>	<ul style="list-style-type: none"> <li>•Lighting</li> <li>•Open space planning</li> <li>•Operator visibility</li> </ul>	<ul style="list-style-type: none"> <li>•Routing &amp; scheduling at off-peak hours</li> <li>•Automatic vehicle location</li> <li>•Announce schedule changes</li> </ul>

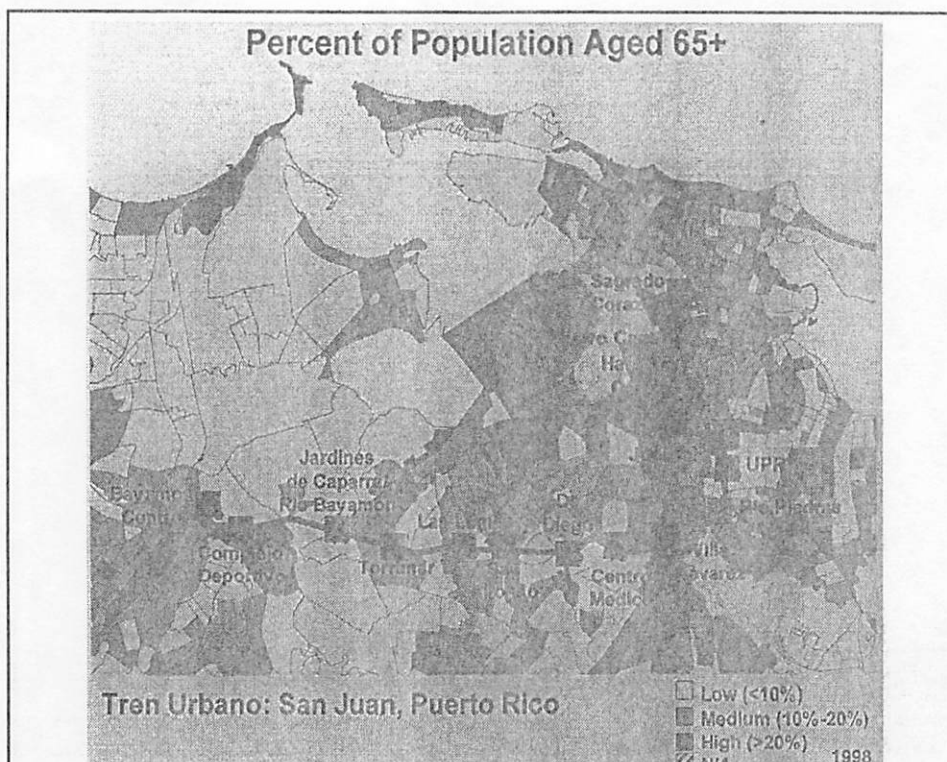
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## Tren Urbano Stations in Communities with Concentrations of Older Adults >20%

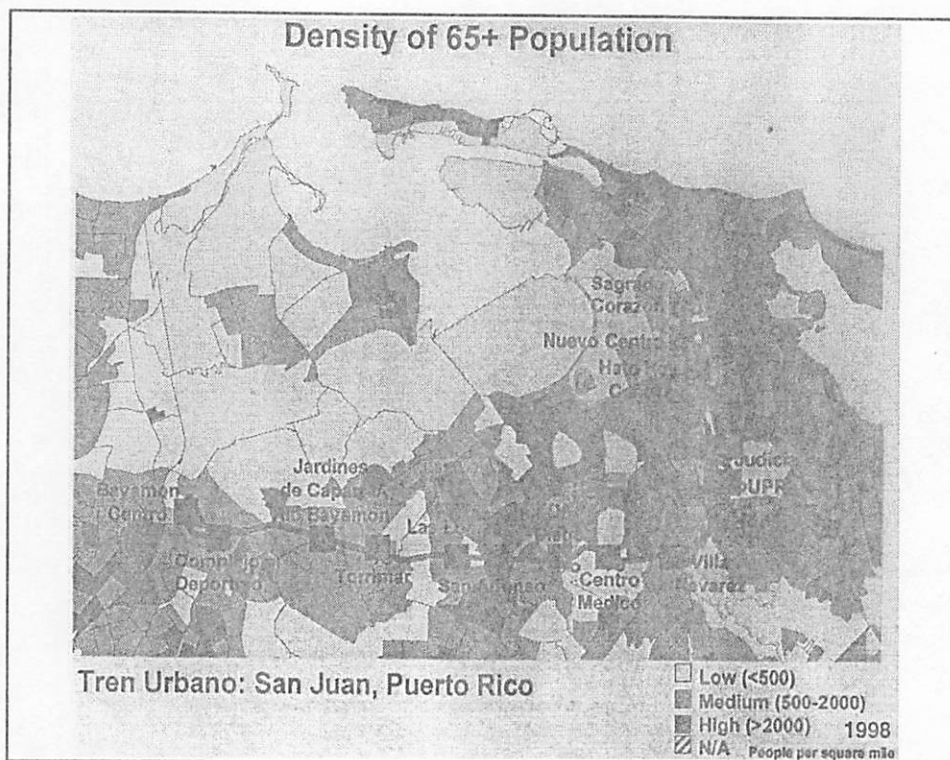
- Seven of 15 stations are in communities with concentrations of older adults >20%

Bayamon Centro	Complejo Deportivo	San Alfonso
Villa Nevarez	Hato Rey Centro	Nuevo Centro
Sagrado Corazon		

- Two stations, Torrimar and Las Lomas, are in communities with older adults that number between 10 and 20% of the population
- Centro Medico may be a station frequently visited by older adults



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