

# Webinar- Importance of Multi-Modal Transit Connections and Fare Policy for Regional Transit Mobility & Equity

Thomas Marchwinski  
Metro North RR (Previously with NJ Transit)

# Importance of Multi-Modal Transit Systems & Fare Policy to Enhance Regional Mobility

- ◆ Focus on Multiple Transit Modes, especially fixed guideways
- ◆ Examples of systems with significant use of multiple transit modes to function as a system
- ◆ Fare Policies that have developed to encourage intermodal usage with examples
- ◆ Data focus on NE cities with survey and real examples
- ◆ Upcoming changes with technology, Census definitions

# What is Multi-Modal Transit?

- ◆ Individual Transit Modes are different types of service and technology. Except for walking, which all transit customers must do, all other individual transit modes encompass multi-modal. This can include auto, taxi, and rideshare access to transit
- ◆ Over 40 metropolitan areas now have multi-modal transit. This includes bus transit plus one transit mode on its own fixed guideway for at least part of the trip. This includes various rail and light rail modes as well as Bus Rapid Transit (BRT)
- ◆ Over 20 metropolitan areas have at least two fixed guideway transit modes (typically some type of rail transit)
- ◆ Access to Transit can take multiple forms. Larger metro areas also have more riders using more than one transit mode for a trip

# Types of Transit Modes

## ◆ Transit Fixed Guideway Modes Include:

- ◆ **Rapid Transit-3<sup>rd</sup> Rail, High Capacity, Grade Separated.** Examples include the NYC Subway system, BART in San Francisco Bay, WMATA in Washington DC
- ◆ **Commuter Rail-** Railroad cars, Partial Grade Separation, electric and diesel power. Typically long distance w/express service. NJ Transit, Metro-North, Chicago area {METRA} and newer systems in Salt Lake City, New Mexico, Seattle, Dallas
- ◆ **Light Rail, Trolley, Streetcar-** Medium Capacity, some Grade Separation, mixed with traffic. Multiple US cities for Light Rail, trolleys are both new (Seattle, Tampa) or old (New Orleans)
- ◆ **Other- Ferry, Bus Rapid Transit (BRT) -**with own right of way. Medium Capacity, long or short distance (water) or BRT guideway with mixed traffic or traffic priority. Pittsburgh, Los Angeles (BRT), NJ-NY, Seattle, Boston ferries



# What is Fixed Guideway Transit?

- “Premium” Service, typically with majority of service on a dedicated Right-Of-Way
- Attracts more “Choice” riders, who typically can drive, and have access to a car. This compares to regular Local Bus Transit riders of which in most locations the majority do not have access to a car
- Fixed Guideway Service has travel time, reliability advantages vs. Bus Transit because of its own guideway removed from traffic
- Sense of Permanent Facility attracts additional ridership, investment
- Fixed Guideway transit represents a major investment. Over time, multi-modal guideway networks develop in the larger metro areas.

# Access to Transit

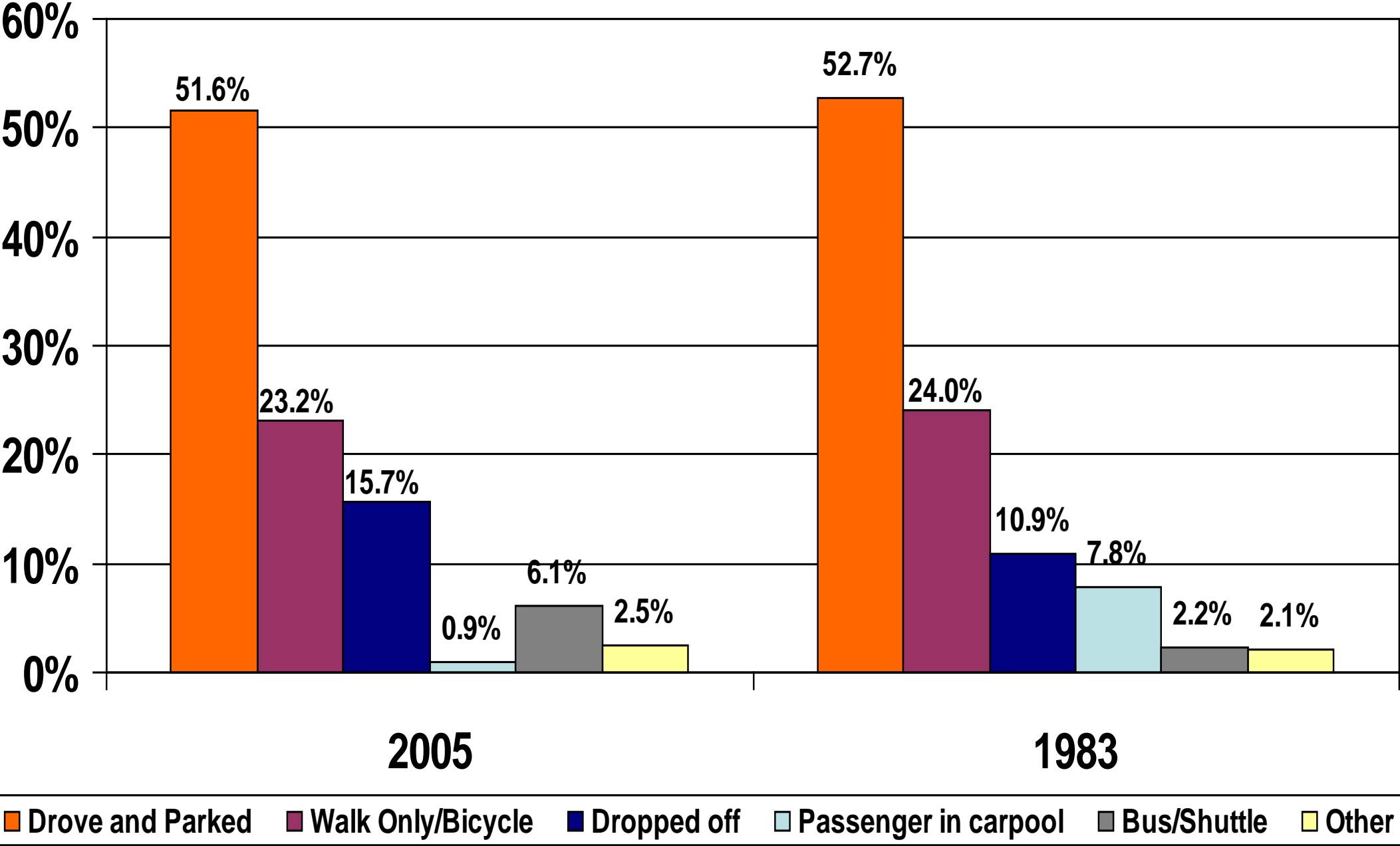
How Riders travel from Home to  
Access Transit Modes

# NJT Commuter Rail-Intermodal Daily (2005)

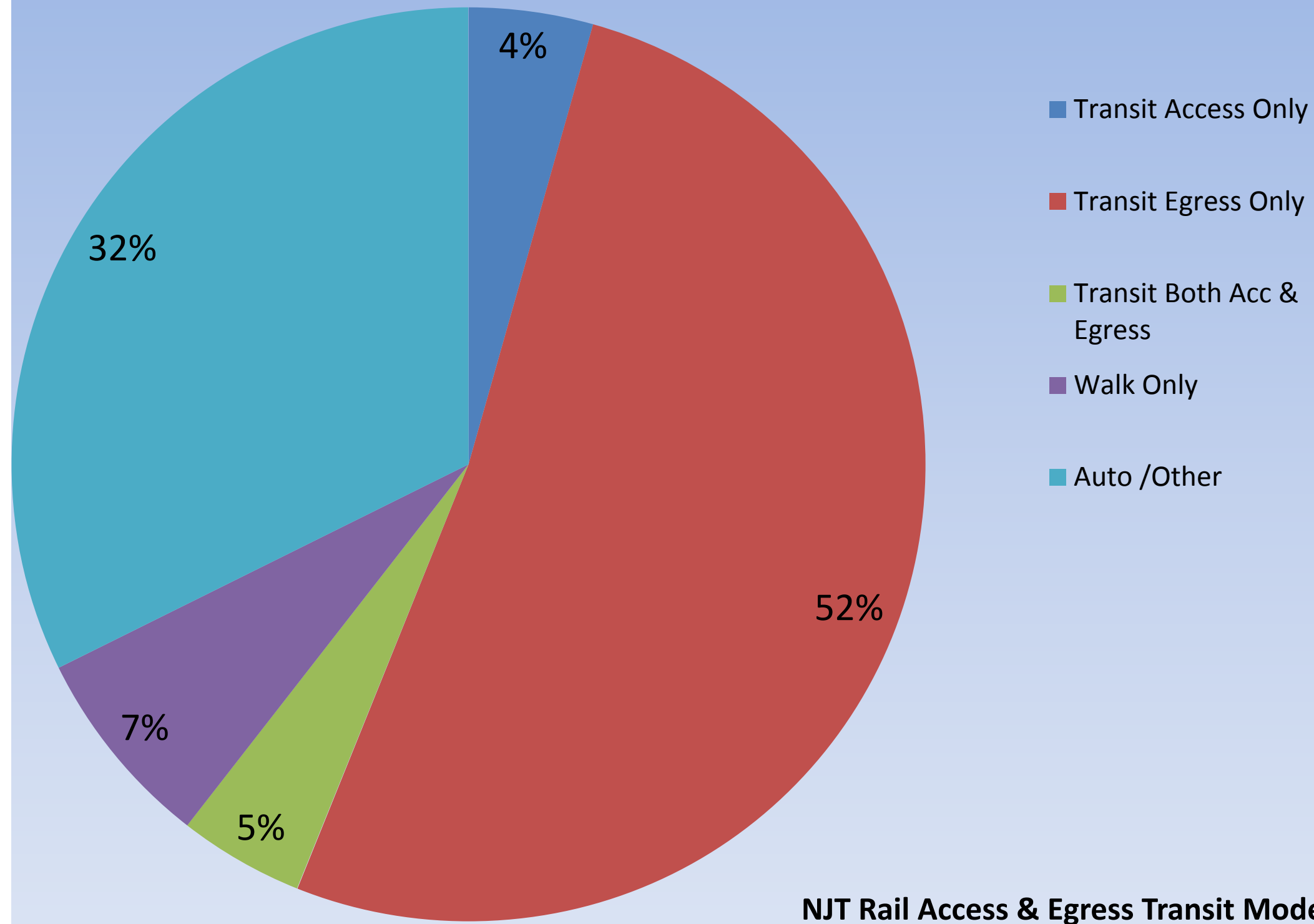
- ◆ About 4.5% of riders accessing rail use transit modes,(bus, light rail, rail) or about 4,500 persons.
- ◆ About 51.7% of rail riders use another transit mode to get from the train to their final destination or about 53,100 persons. 26,000 of these use NYC Subway & 17,000 PATH
- ◆ Overall about 61% of commuter rail riders make at least one part of their trip on connecting transit, or 62,700 persons not counting overlap
- ◆ Only a small proportion of riders (7.1%) walk on both ends of the trip. Also a small share of commuter rail riders use transit on both ends of the trip, about 4.4% or 4,500 riders
- ◆ Significant amount using drive access as shown in Table 1. This has remained relatively constant over 22 years despite a 50% increase in ridership and additional stations
- ◆ Tables 1 through 3 show how intermodal commuter rail system is



# Exhibit 1- Access modes to the NJT Commuter Rail System 1983-2005







**NJT Rail Access & Egress Transit Modes  
EXHIBIT 2**

# Intermodal Transit –Metro North Commuter Rail

- Second Largest Commuter Rail System in USA. 220,000 riders on weekdays
- Amount of multi-modal use depends on market and type of trip as shown on Exhibit 3
- More park-ride and auto access for longer trips to Manhattan CBD for work. Some auto for intermediate suburb to suburb
- “Reverse” Commuters from NYC to suburban job centers are mostly transit dependent, have lower incomes
- About 36% of riders to Manhattan transfer to subway at Grand Central Terminal. Shows importance of intermodal terminal

# Metro North Rail Access & Egress Modes by Market –Weekdays 2007

	<b>Work Travel to Manhattan</b>	<b>Non Work Travel to Manhattan</b>	<b>Intermediate Travel</b>	<b>Reverse Work Travel</b>	<b>Outbound Discretionary Travel</b>
<b>Number of Travelers</b>	75,500	21,200	14,400	11,500	3,200
<b>% with Car Available</b>	86%	74%	59%	27%	41%
<b>Access Mode (Top 2)</b>	Drive Alone (51%) Walk (27%)	Drive Alone (36%) Walk (26%)	Drive Alone & Walk (29%) Walk (29%)	Subway (39%) Walk (32%)	Subway (60%) Walk (22%)
<b>Egress Mode (Top 2)</b>	Walk (62%) Subway (34%)	Subway (45%) Walk (40%)	Walk (60%) Bus (18%)	Walk (61%) Picked Up (15%)	Picked Up (40%) Walk (27%)
<b>Median Household Income</b>	\$173,800	\$120,200	\$80,000	\$72,000	\$86,800

# Access Mode Varies Depending on Transit Mode & Location

- **Exhibit 4** shows access modes to multiple transit modes in New Jersey. Majority of rail modes such as North Jersey Commuter rail, PATCO Rapid Transit, & River Line LRT have **majority of ridership using auto and park-ride access**
- Only Hudson Bergen Light Rail (HBLRT) a 15 mile new line with very high residential density (15+ housing units per gross acre) can support mostly walk-on ridership. Express bus riders also have much higher walk access
- Local Bus by comparison is 70% walk, 5% auto access and 20% another transit mode. Premium modes are mostly more auto dependent unless in high density areas.
- **Exhibit 5** shows that access to Trenton to Camden River Line LRT stations varies depending on type of station. Most transit lines have variations in access to transit. River Line has 3% bicycle access because of on-vehicle bike storage

## Exhibit 4-How Riders Access Fixed Guideway Transit By System in New Jersey

<b>System/ Service</b>	<b>Auto Modes</b>			<b>Non-Auto Modes</b>		
	<b>Park - Ride *</b>	<b>Auto Drop- Off</b>	<b>Total % Auto</b>	<b>Walk /Bike</b>	<b>Transit</b>	<b>Other</b>
NJT North Jersey Commuter Rail	52%	16%	<b>68%</b>	23%	8%	1%
<b>PATCO Rapid Transit</b>	69%	6%	<b>75%</b>	16%	7%	2%
River Line LRT '04	41%	11%	<b>52%</b>	27%	18%	3%
Atlantic City Line '06	38%	12%	<b>50%</b>	19%	28%	3%
North Jersey Express Bus to NYC	37%	8%	<b>45%</b>	50%	4%	1%
NJT Hudson-Bergen LRT	20%	3%	<b>23%</b>	66%	9%	2%

# Exhibit 5-River Line LRT access Mode by Station Type



Type of Station	Drive-Park	Drop-Off	Walk	Bike	Bus	Rail or Rapid Transit	Multi modal Other
Trenton Stations (3)	14%	7%	32%	6%	15%	21%	3%
Downtown Camden (4)	5%	8%	26%	3%	28%	26%	4%
Regional Park-Rides (3)	77%	13%	4%	0%	4%	0%	2%
Town Center & Other (10)	51%	12%	29%	1%	4%	0%	2%
<b>TOTAL</b>	<b>41%</b>	<b>11%</b>	<b>25%</b>	<b>2%</b>	<b>10%</b>	<b>8%</b>	<b>3%</b>

# Major Intermodal Terminals

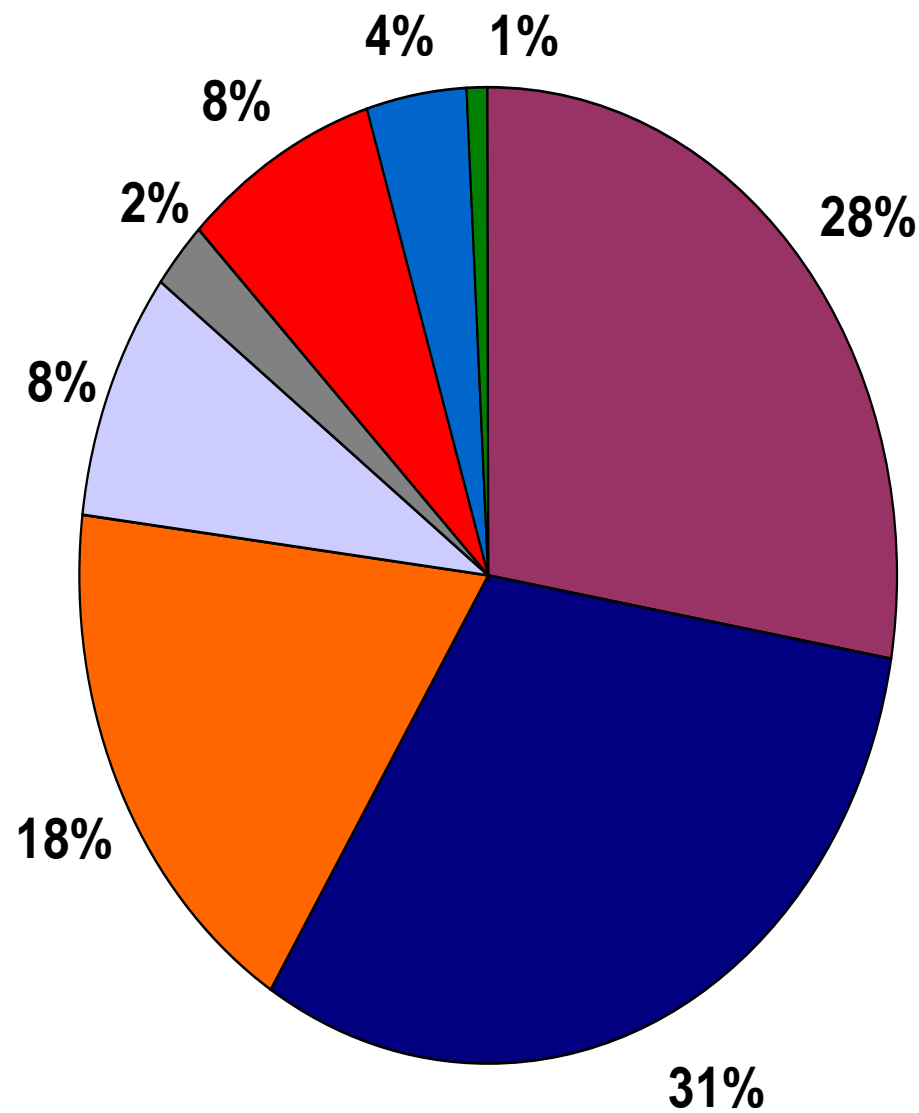
- Typically in CBD or near CBD of major cities
- Have multiple transit modes and stations. Facilitate transfers between multiple modes
- Important Destinations nearby within walking distance and/or major connections between transit modes
- Examples include Grand Central Terminal in NYC, LA Union Station, Washington Union Station. Newer intermodal terminals include Denver Union Station, Miami Intermodal Center (partially completed)
- Exhibits 6 shows commuter rail rider connections at Hoboken Terminal in NJ, which has 5 transit modes (Commuter Rail, Light Rail, Rapid Transit, Ferry, and Local Bus)

# Intermodal Terminals- Grand Central

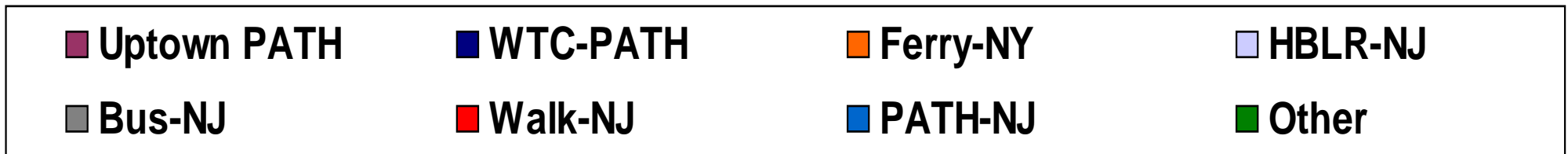




# Exhibit 6-Where do NJT Rail Riders go after Exiting Hoboken Station 2005



2005



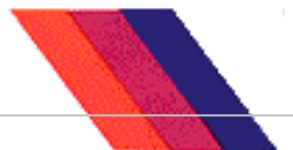
# Fare Policy & Multimodal Transit

- ◆ Most transit agencies originally were private companies with separate fare policies. Most multimodal trips had to pay two separate or multiple fares.
- ◆ Public Agencies took over transit systems in 1960's through the 1980's. In addition, newer Transit systems were public agencies from the start of new service, especially with new rail and LRT systems.
- ◆ Public Agencies started to integrate some fares between modes, especially rail & bus with “feeder bus “ fares, “Uni-Ticket”
- ◆ Legacy Commuter Rail systems remained with distance based fares, and steep discounts for multi-ride monthly tickets



# Fare Policy Move to Greater Integration of Multimodal Transit

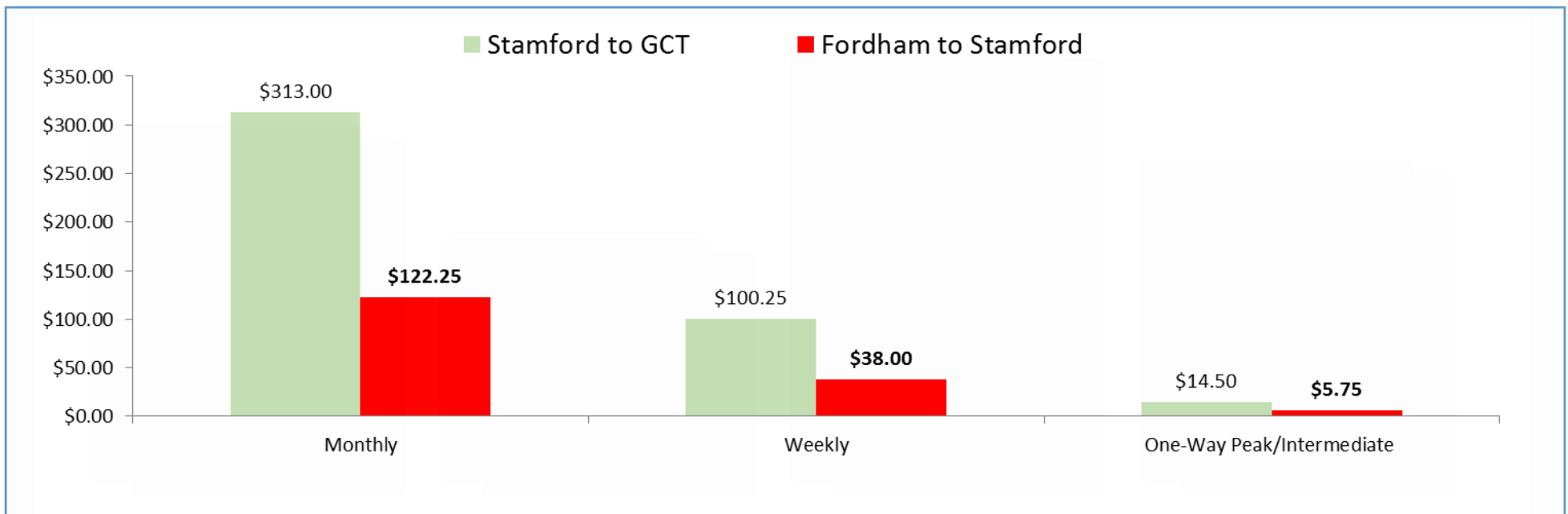
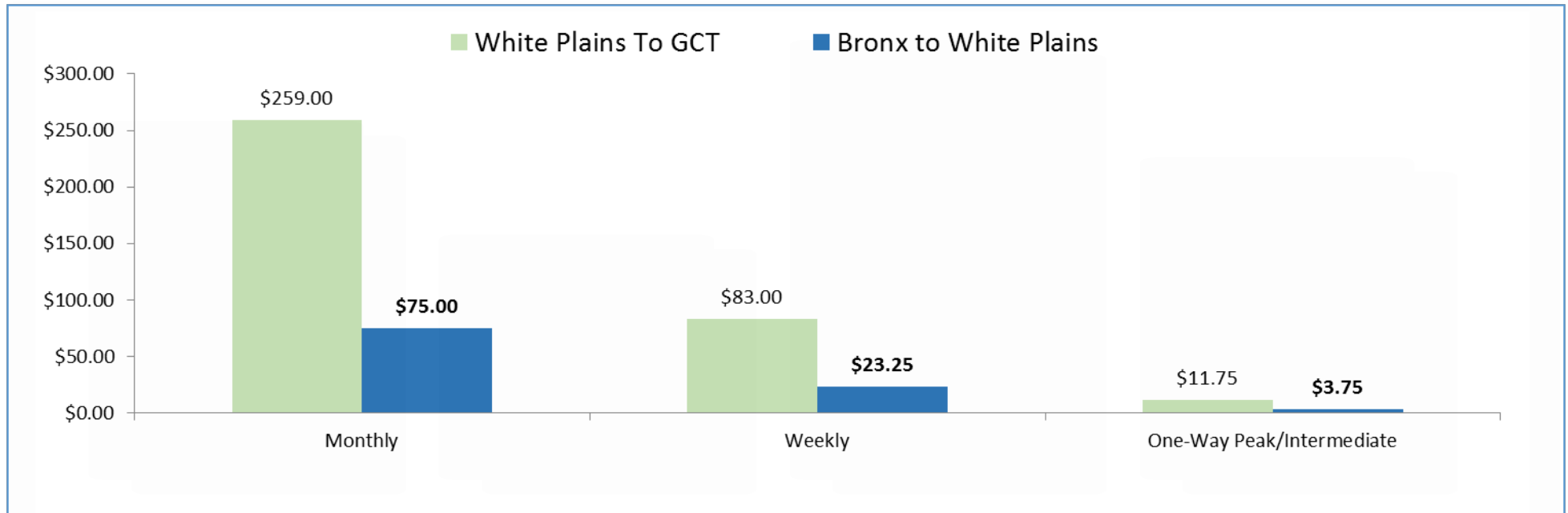
- ◆ Metro-North Railroad in Suburban NY & CT. pioneered lower fares for certain markets like “Reverse” and Suburb to Suburb commuters
  - ◆ Larger discount on rail fares for Non-Manhattan locations, such as Bronx to Greenwich, Stamford, CT and White Plains NY
  - ◆ Locations became suburban office centers near rail stations. Fare Policy resulted in large increase in reverse ridership. Now accounts for 11% of Metro North ridership
  - ◆ Exhibits 7 through 9 show change in fares and ridership
- ◆ 1990’s-NYC Transit Authority eliminated Two Zone transit trips using both Subway and Bus with new technology of stored value cards
- ◆ Led to large increase in ridership as a result of 50% decrease in fare. Must use within 2 hours for free transfer. Unlimited Metro Card also saved money



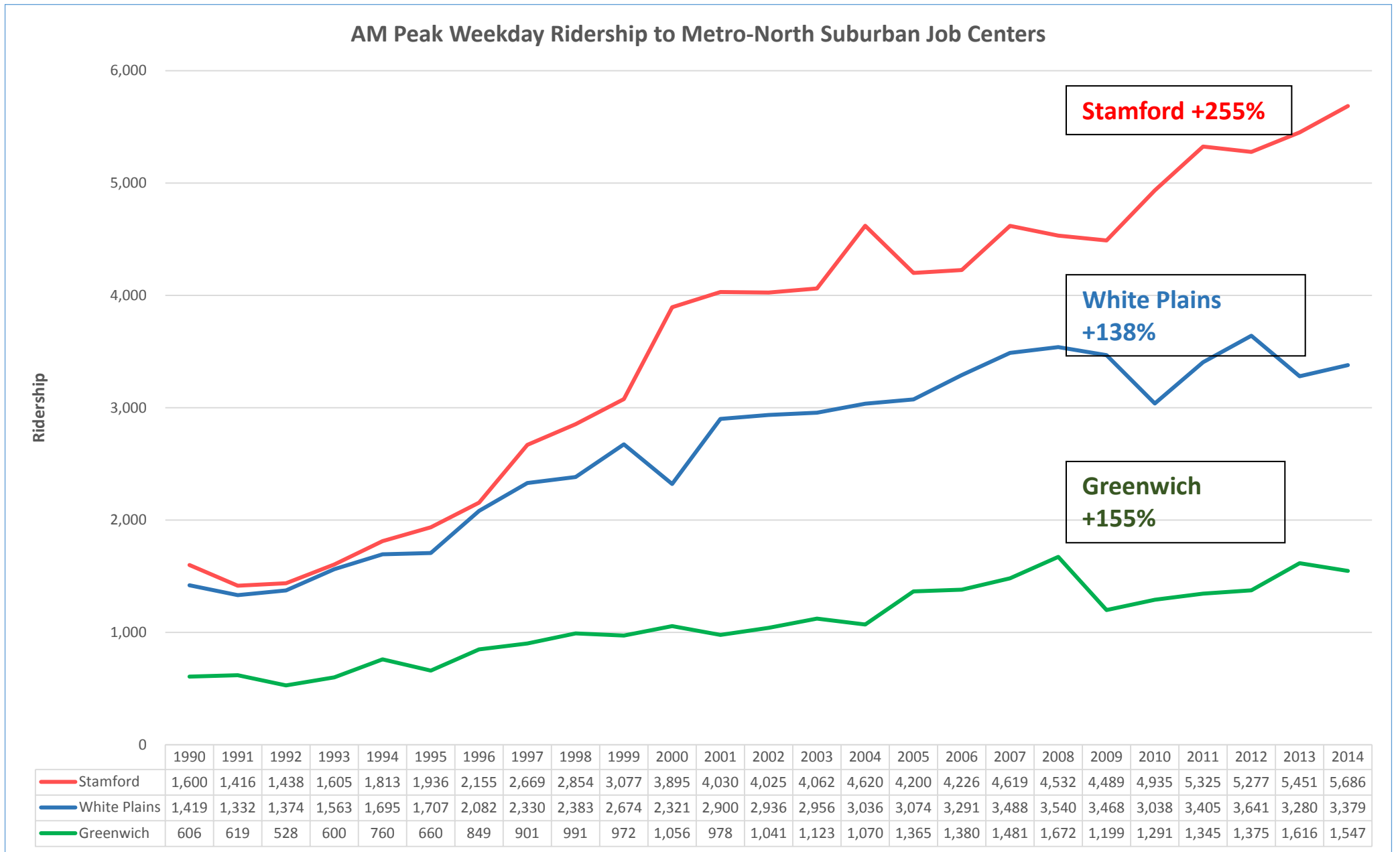
# MNR Low Intermediate Fare Structure East of Hudson

- MNR has a significant lower intermediate fare structure compared to the fare structure to/from Manhattan.
- This lower fare structure was implemented in the early 1980's to increase ridership
- Targeted marketing Initiatives and low fares has increased ridership by +127% since 1990.
- AM Reverse Market share
  - NYC to/from White Plains 35%
  - NYC to/from (Stamford/Greenwich) 43%
  - 11% to 13% for suburban intermediate work trips in 2013
- Key Markets include:
  - Bronx to White Plains
  - Lower Westchester to White Plains
  - Fordham to Stamford/Greenwich
  - New Haven to Stamford
- MNR does not differentiate between peak vs. off-peak Intermediate fares

# MNR Comparison of to/from Manhattan Fares vs. Low Intermediate Fares Exhibit 7



# Metro-North, ridership to suburban job centers increasing significantly, especially to Stamford- Exhibit 8



\* Ridership is based on station “off” counts from both inbound and outbound trains.

MTA

MetroCard®



Insert this way / This side facing you

# Future Trends in Intermodal Transit-Fare Policy

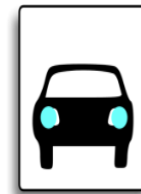
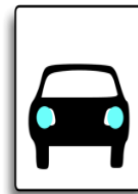
- New Technologies will allow ability to customize fares for markets, by time period, and encourage intermodal transfers. A number of transit agencies now have mobile ticketing via cell phone apps
- Recent APTA report indicates that ridesharing services (Uber, Lyft) can aid transit by making connections for the “last mile” from transit to final destinations.
  - Majority of Ridesharing trips are on weekends and especially after 8 PM at night when transit services are reduced and not as competitive
- Region Wide Transit Ticket acceptable on multiple modes and multiple carriers are ideal for encouraging multi-modal trips. Examples in use include Clipper Card in SF Bay Area, London Oyster



# Exhibit 9-What is the “right amount” to pay for commutation for work?

- Debatable; Center For Neighborhood Transit(CNT) recommends that a combination of **45%** of HH costs for housing and transportation be used, with transportation being **15%** of HH income.

- Affordability Index =  $\frac{\text{Housing Costs} + \text{Transportation Costs}}{\text{Income}}$



Annual Cost { Housing **\$20,000** } + { Transit Fare **\$2,400** } + { 2 Cars X 7,450 each } = **\$14,900**

**\$82,900 HH Income required to meet the Affordability Index**

=  $\frac{\text{\$20,000 Housing} + \text{\$17,300 Commuting Costs}}{45\% \text{ of Income}}$

- For one car household \$66,300 HH income required to meet the Affordability Index.

# Future Trends in Multi-Modal Transit

- ◆ Issues that will be becoming Important Include:
  - ◆ **Equity in Transportation Fares-** Recent studies show that housing and transportation costs should be no more than 45% of Household Income. Many Low Income riders have hard time paying for transit
    - ◆ Some agencies like Seattle King County Transit implementing use of half-fare for qualifying low income families that can document income
    - ◆ Exhibit 9 shows example of how to calculate appropriate costs of transportation and housing. Saving one car helps
  - ◆ **Self Driving Cars- Are they Transit if linked in Platoons as some companies are researching?** Possibility of 0 car auto occupancy can lower regional car occupancy
  - ◆ **Other- Change in Census Definitions of Transit- To be implemented in 2018, Light Rail will finally be a mode in ACS surveys. Also railroad will be redefined to include inter-city rail. Will indicate real transit ridership**



# Taking it to the Streets....



....Mode Shift in Action

Amber Blake  
City of Durango  
Director of Transportation and Sustainability



# Taking it to the Streets

From Planning  
to Engagement  
to implementation

- Why is it important
- Steps to be taken
- How Durango does it
- The impact its had
- Mode shift in Action
- How can you do it



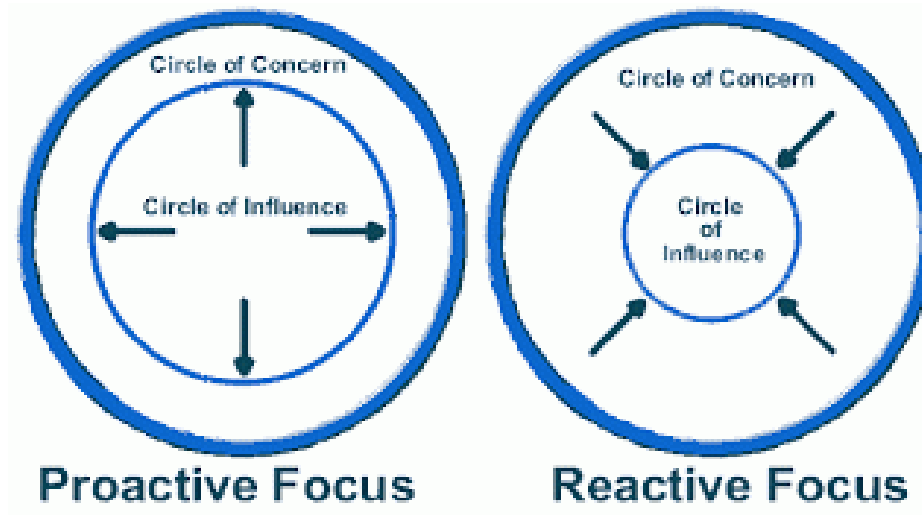
# Why is it important

---

Where are you now?

Where do you want to be when?

Being Proactive.



# You're a Planner...

---

- What's the purpose
- What's in it for your participants
- Is what you're doing effective



# You're a Planner...

---

## Agency

Planning

Preparing

Participating

Do it all over again

## Public

Preparing

Participating

Do it all over again



# Engagement

on all levels by all stakeholders  
is the key to success....





# The City of Durango

---

Population about 17,500 City, 54,000 County

2009 - Multi Modal Programs Established

2012 – Multi Modal Transportation Master Plan adopted

2013 – CO medium-sized Transit Agency of the Year

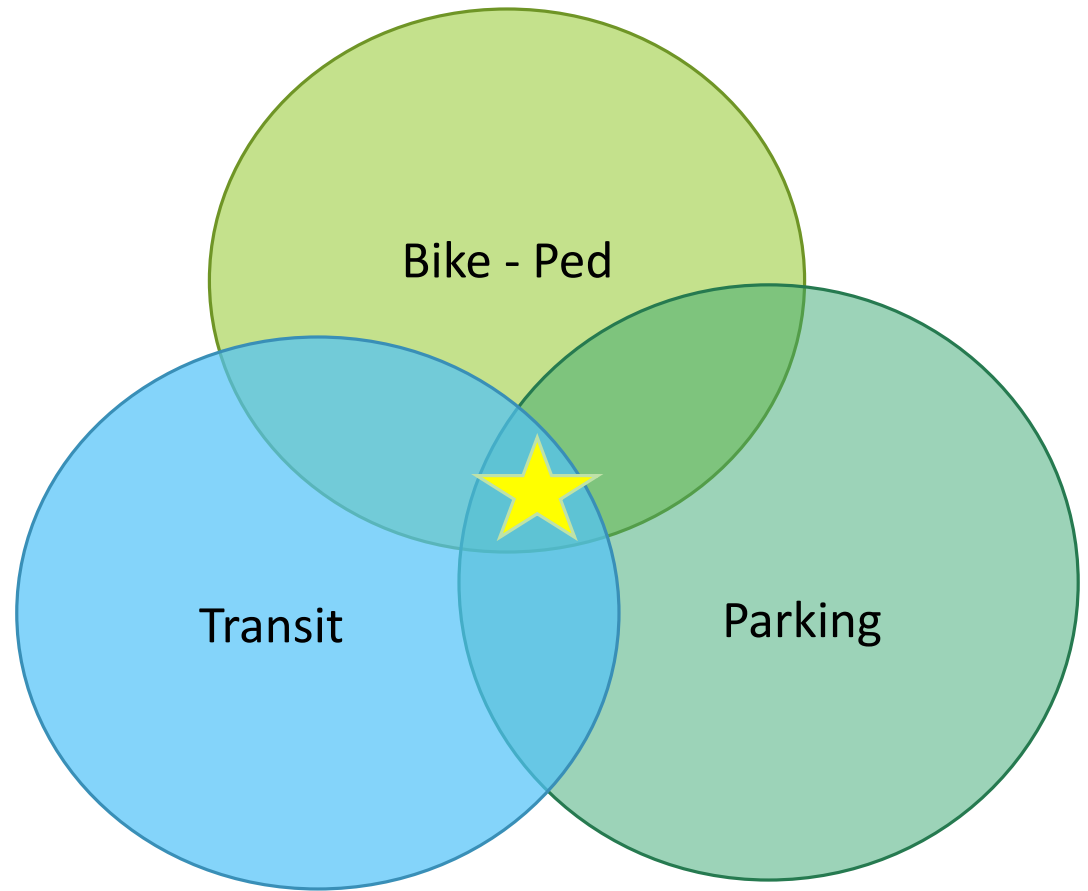
2014 ACS data - 10% mode share non-motorized

Gold Level Bicycle Friendly Community

Very engaged citizens and businesses



# Transportation Demand Management



A small shift can make a large impact.

# Planning for people

---



Data collection

Vision

Policy Statement

75 Public Meetings

Implementation Focused

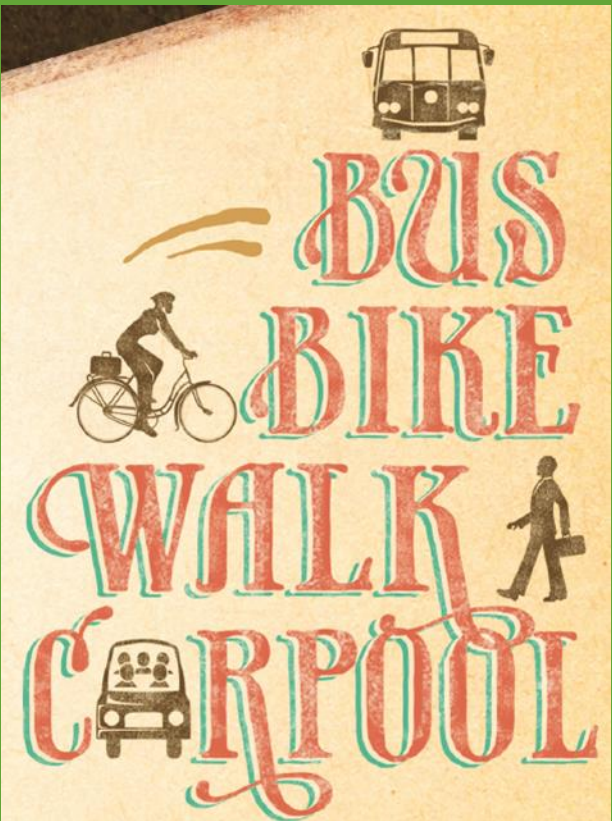
# Planning for people

---

The vision of the Durango Multi Modal Transportation Master Plan is to create a fully connected transportation network that provides for an outstanding transit, walking and bicycling community.

A measure of achieving this vision is that a **middle-school age child would be able to access transit, walk or bike independently throughout the City of Durango and its environs.**





## Leading the way...

Coordination

Way to Go! Club

Integrated Parking Program

Partnerships

Upcoming projects & Funding

# Coordination

---



Organizational Structure

Internal

External

Public

# The impact it has had and how

Multi Modal Transportation Master Plan

Increased Ridership

Mode Shift

Transit Impact Fees

Community Partnerships

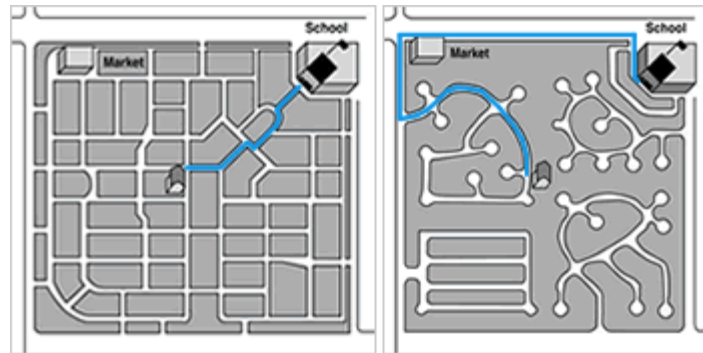
Engagement



# Development Review

---

- ❑ What's needed
- ❑ How does your service connect
- ❑ Will you provide service
- ❑ Type of development
- ❑ Create standards



Transportation and Growth Management Oregon Guide  
for Reducing Street Widths



# Long Range Plans & Land Use Development Code

---

Encourage Participation through

Engage your Transit Community

Understand how it can benefit your system

Connectivity



# Time to Play.... Mode Shift in Action

---

Clean Commute Week

Business Commuter Challenge

Winter Bike to Work Day

Safe Routes to School

Momentum

Travel Training

Way to Go! Club



# The Way to Go! Club:

## Durango's Sustainable Transportation Incentive Program

---

**2015 Totals: 560 Members / 57,839 trips / 830,040 miles / 714,454 tons CO2**

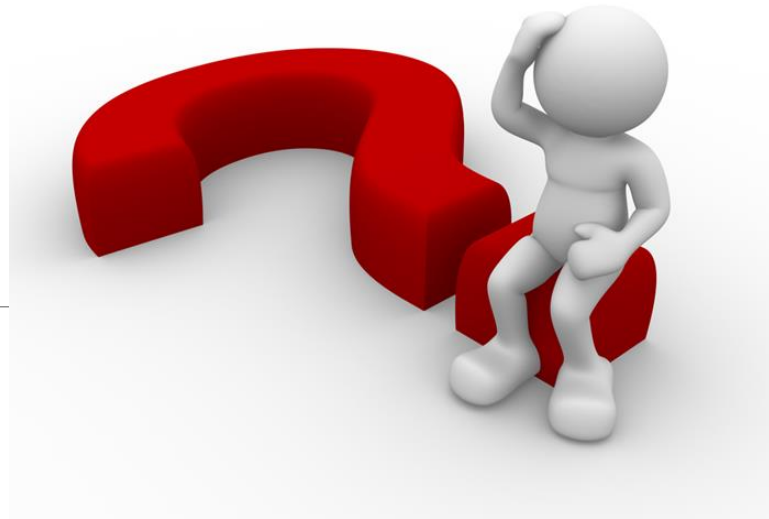
- >> **NEW Website & Mobile Interface**  
Launched January 2016!
- >> **NEW WTG!C Key Tag Program**  
Discounts at local businesses!
- >> **NEW Prizes**  
Smith, Osprey, Hydroflask, Nerdwax,  
Klean Kanteen, Outdoor Tech & More!



**The Way to Go! Club allows you to earn point rewards as you enjoy all the other benefits of sustainable transportation – walking, biking, busing and carpooling!**

# Questions?

---



Amber Blake  
City of Durango  
Director, Transportation & Sustainability  
[www.durangogov.org](http://www.durangogov.org)  
[Amber.blake@durangogov.org](mailto:Amber.blake@durangogov.org)  
970-375-4949

Thomas Marchwinski  
Deputy Director Market Analysis and  
Fare Policy  
MTA Metro North Railroad  
Operations Planning and Analysis  
212-340-2105  
[Marchwinski@mnr.org](mailto:Marchwinski@mnr.org)