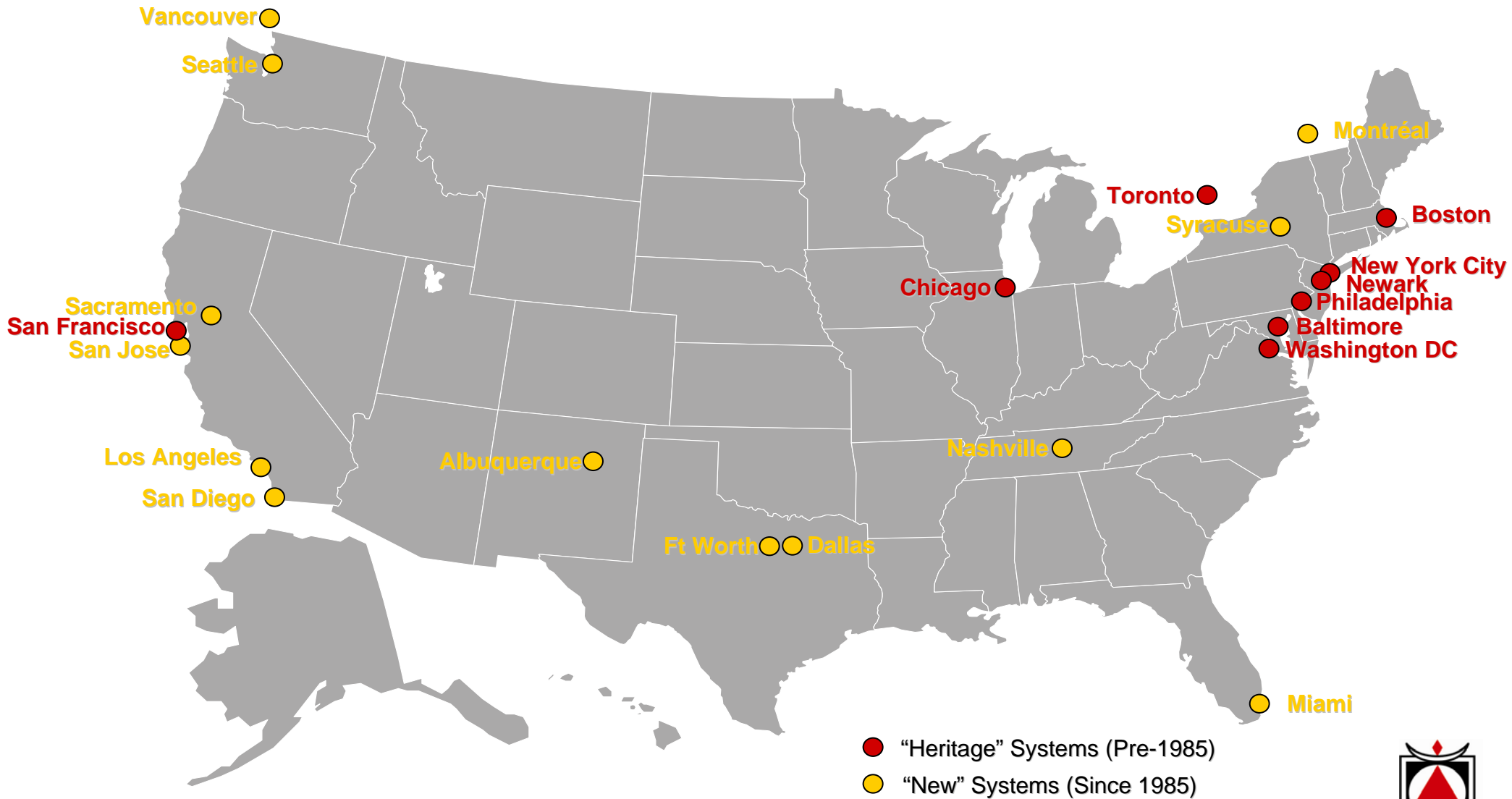


# Commuter Rail Overview



# North American Commuter Rail Systems

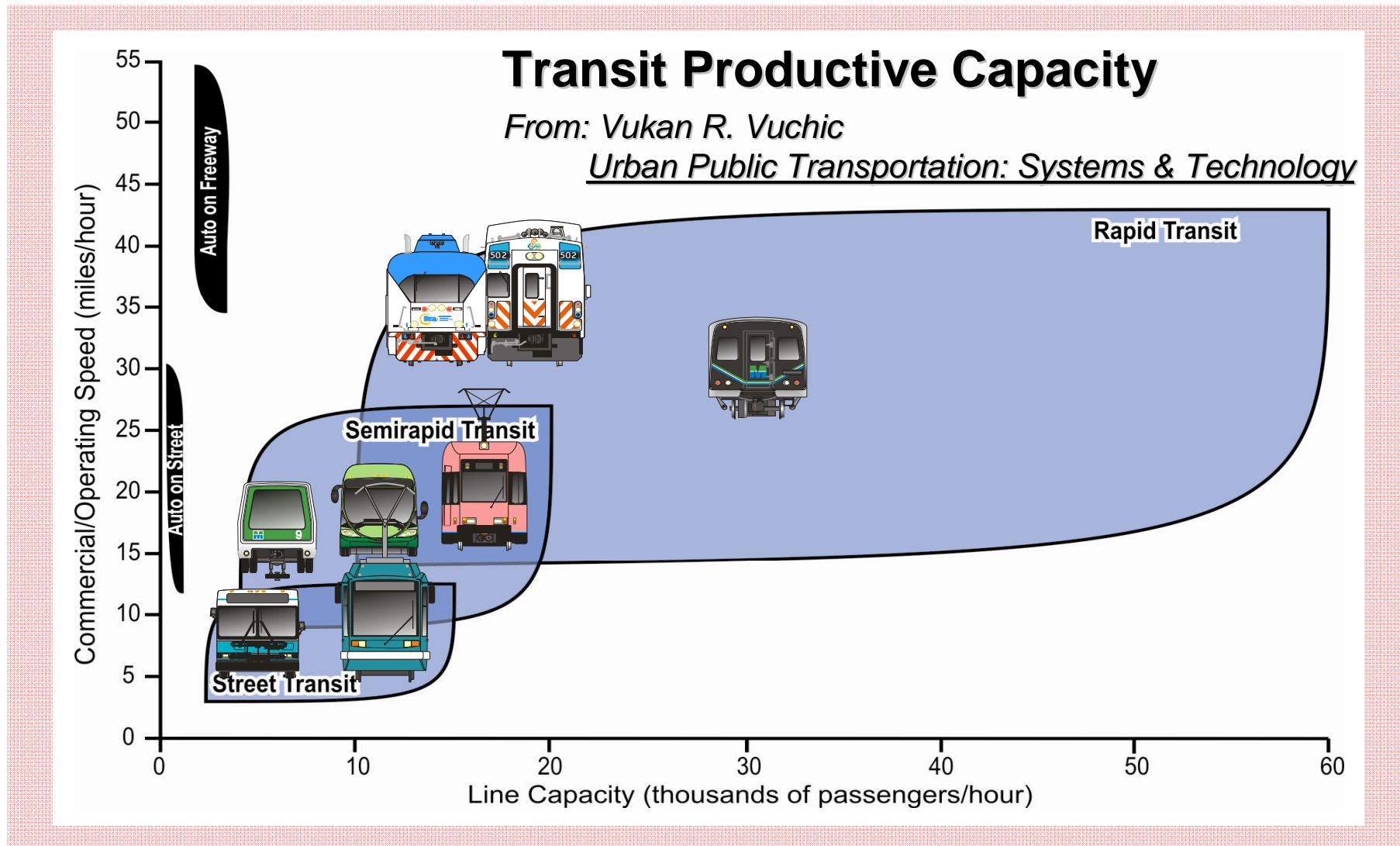


# What is Commuter Rail?

- A Form of Rapid Transit
  - Moves people at speeds greater than automobile traffic in a corridor
    - Typically 35 to 45 mph “commercial” speeds
- Focus on Longer-Distance, Regional Travel Markets
  - 20- to 50-mile line lengths
  - Stops typically spaced every one to four miles
  - Heavy reliance on park-ride access
- Joint Use of Existing Railroad Infrastructure
  - Emphasis on fewer, longer trains
  - FRA vs. FTA regulatory environment



# What is Commuter Rail?



# What is Commuter Rail?



## LIGHT RAIL



**STATION SPACING: 1/2 TO 1 MILE      SYSTEM EXTENT: 15 TO 20 MILES**  
**MAXIMUM SPEED: 65 MPH      AVERAGE SPEED (WITH STOPS): 25 MPH**



## COMMUTER RAIL



**STATION SPACING: 2 TO 4 MILES      SYSTEM EXTENT: 20 TO 75 MILES**  
**MAXIMUM SPEED: 79 MPH      AVERAGE SPEED (WITH STOPS): 45 MPH**



## INTERCITY RAIL

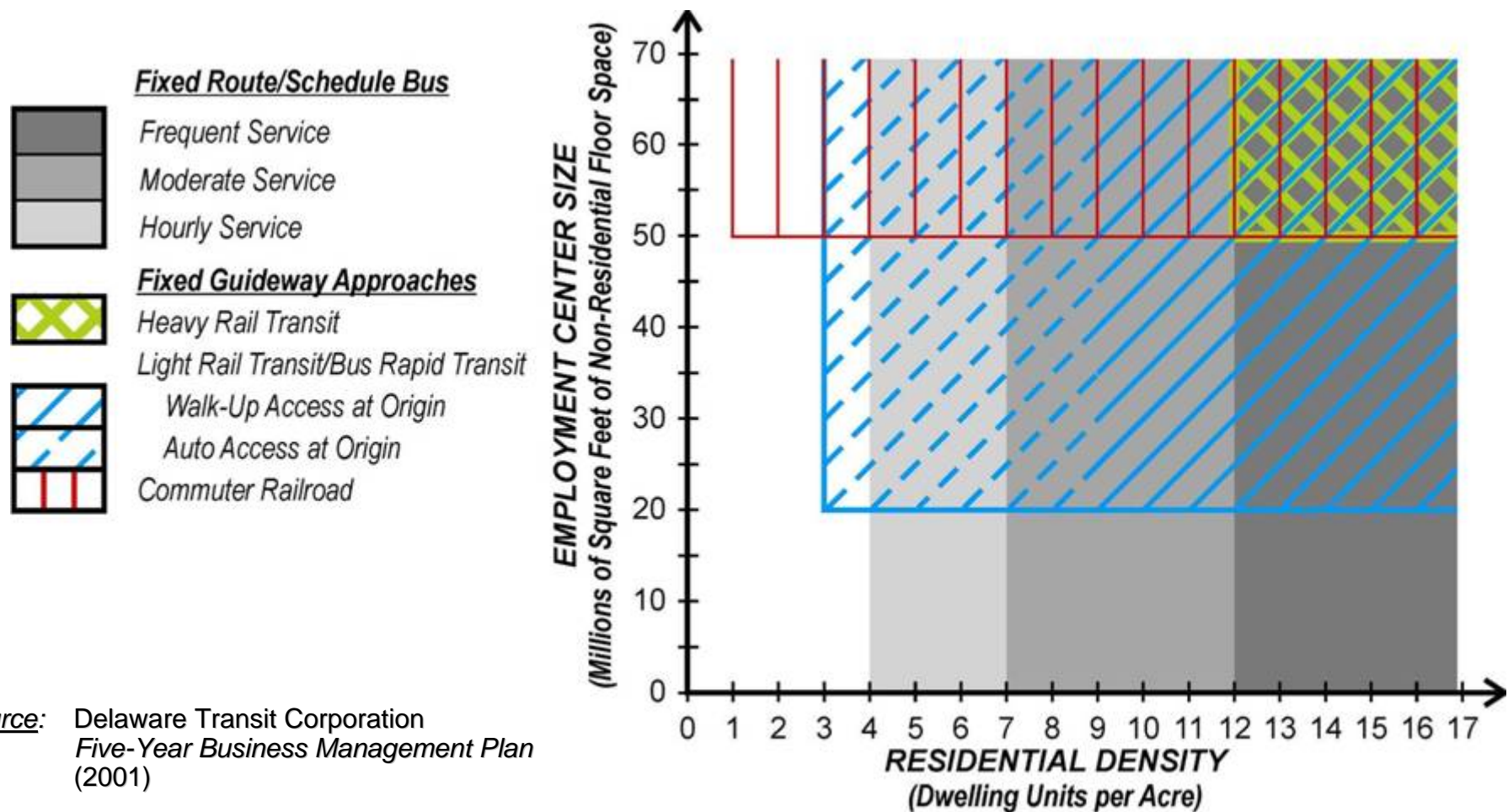


**STATION SPACING: 20 TO 30 MILES      SYSTEM EXTENT: 50 TO 300 MILES+**  
**MAXIMUM SPEED: 110 MPH      AVERAGE SPEED (WITH STOPS): 55 MPH**



# Focus on Regional Travel Markets

- Most cost-effective transit mode in areas of lower residential densities



Source: Delaware Transit Corporation  
Five-Year Business Management Plan  
(2001)





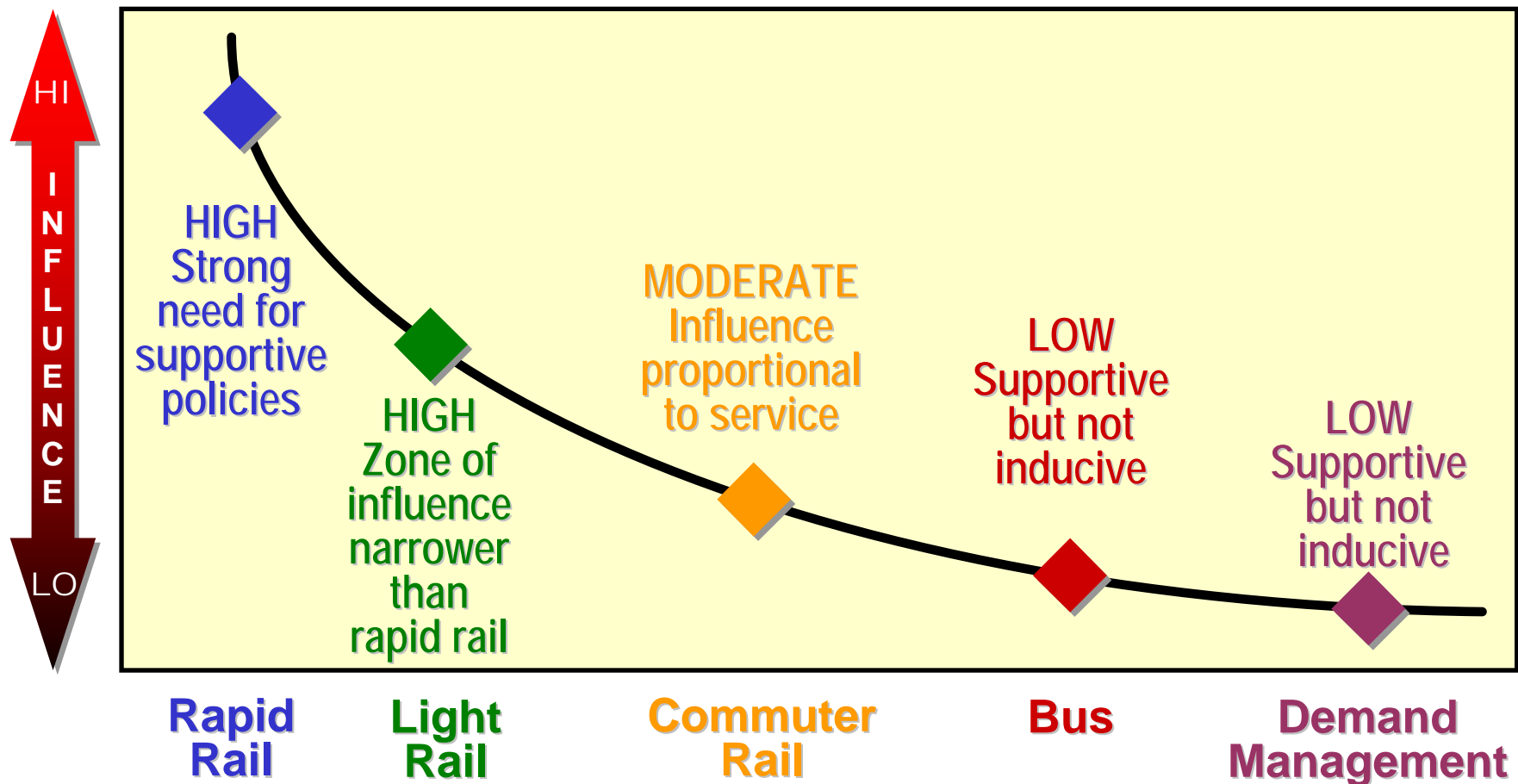
# Focus on Regional Travel Markets

- Heavy reliance on park-ride access



# Focus on Regional Travel Markets

- Moderate influence on transit supportive land uses





# Joint Use of Railroad Infrastructure

Sharing railroad facilities can:

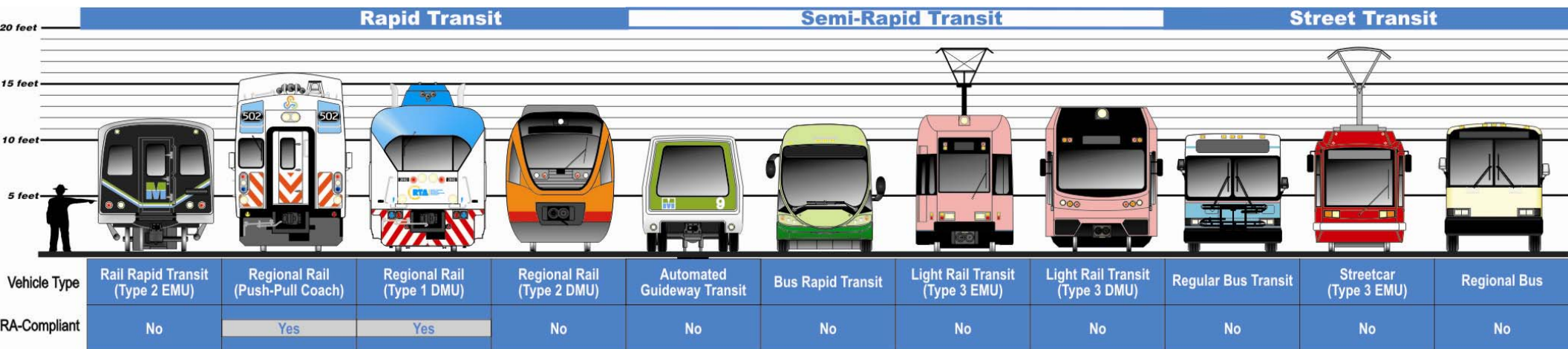
- Reduce start-up and on-going O&M costs
- Restrict service frequencies and growth
  - Often results in fewer, longer trains



# Joint Use of Railroad Infrastructure

Shared facilities with railroads results in FRA regulation:

- Prescriptive safety, operating & rolling stock requirements
  - Results in larger, heavier rolling stock than other modes
  - Leads to less frequent, longer train service strategy





# Commuter Rail Rolling Stock



## Multiple Rolling Choices

- Locomotive-Hauled or Self-Propelled (“MU”) Coaches
- Electric or “Diesel”
  - “Diesel” actually “Diesel-Electric”
- FRA Compliant or Not



# Commuter Rail Rolling Stock

***Locomotive with Superliner Coaches  
(Intercity Amtrak Train)***



# Commuter Rail Rolling Stock

***Locomotive with  
Single Level Push-Pull  
Coaches***





# Commuter Rail Rolling Stock

***Locomotive with  
“Bi-Level” Push-Pull Coaches***



# Commuter Rail Rolling Stock

*Locomotive with  
“Tri-Level” Push-Pull Coaches*





# Commuter Rail Rolling Stock

***Diesel-Electric or  
Electric Locomotives***



# Commuter Rail Rolling Stock

***Self-Propelled Electric Coaches***  
***("EMU")***





# Commuter Rail Rolling Stock

## *Self-Propelled Diesel Coaches ("DMU")*





# Commuter Rail Rolling Stock

## *Self-Propelled Diesel Coaches (“DMU”)*

- *Single-Level*
- *Bi-Level*





# Commuter Rail Rolling Stock

## Non-Compliant DMUs

- Allowable, but...
- Involved FRA Process
- Constrained Service



## Option for Light Branch Lines

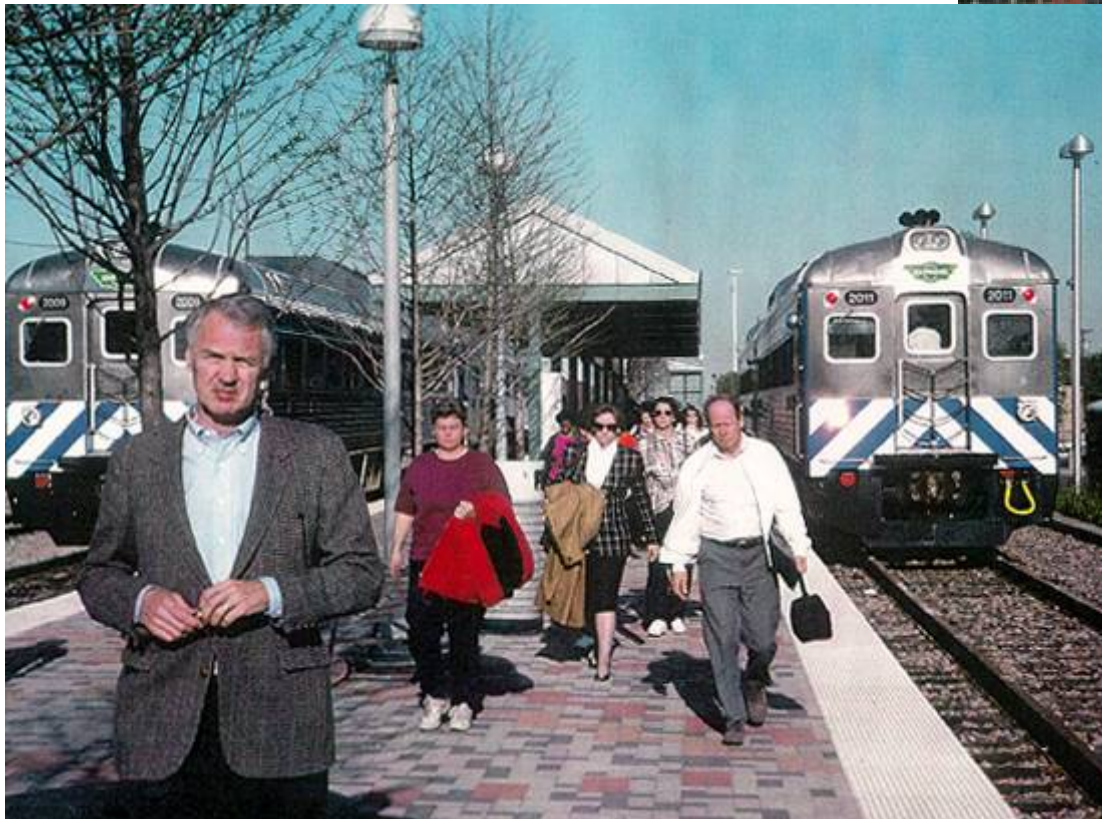
- South Jersey, Ottawa  
Austin, San Diego





# Commuter Rail

***What's the best choice?***



***It depends...***



# Commuter Rail Overview

