I-85 Corridor LRT Feasibility Study
Overview of LRT Technologies

Presented to the Gwinnett Village CID and
Gwinnett Place CID

October 29, 2008

Meeting Agenda

- ✓Project Background & Tasks
- ✓Technology Overview
- ✓Technology Advantages / Disadvantages
- ✓Discussion -- Goals, Priorities

Project Background

- ✓ Study Sponsored by Gwinnett Village CID and Gwinnett Place CID
- ✓ Assess Feasibility of Light Rail Transit in I-85 Corridor, Connecting to MARTA Rail
- ✓ Coordinate with Gwinnett County, MARTA, ARC, GRTA & Others
- ✓ Schedule – Complete by March 2009
- ✓ Project Team – HDR Engineering

Project Tasks

1. Goals and Objectives
2. Conceptual Engineering of Alignment
3. Identify Potential Station Locations
4. Limited Environmental Assessment
5. Evaluate Capital and Operating Costs
6. Consider Funding Opportunities

Heavy Rail

Heavy Rail Characteristics

- ✓Fully grade-separated fixed guideway
- ✓Steel-wheeled vehicles
- ✓Electric powered third rail

- ✓$150-200 Million per Mile
- ✓Station Spacing: > 1 Mile

Heavy Rail

- ✓Max Speed – 65-75 MPH
- ✓Longer curves
- ✓Carries up to 20,000 persons/hour

- ✓Service Range – Up to 30 miles
- ✓Generally all day, bi-directional service

Heavy Rail

✓Elevated exclusive guideways

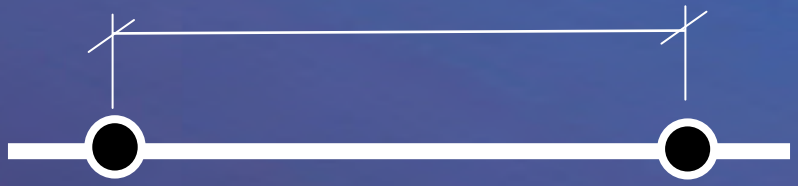
✓Subway tunnel guideways

Light Rail (LRT)

LRT Characteristics

- ✓May be on exclusive guideway or in mixed traffic
- ✓Steel-wheeled vehicles
- ✓Electric overhead power supply

Station Spacing: ¼ to 1 Mile



Light Rail (LRT)

- ✓Service Range – Up to 20 miles
- ✓Speed - 45 to 65 MPH

- ✓Carries up to 10,000 persons/hour
- ✓Generally all day, bi-directional service

High-Cost LRT Design

✓ Sub-grade and elevated guideway and stations

✓ Enhanced station amenities

Examples of High-Cost LRT Systems

Seattle – Sound Transit "Link"

- ✓ Projected opening 2009
- ✓ Cost: ~$179 Million / Mile
- ✓ Alignment: 50% of guideway elevated or sub-grade
- ✓ Stations: 14
- ✓ Stations / Mile: 1

Examples of High-Cost LRT Systems

Los Angeles – LACMTA "Gold Line"

- ✓ Cost: ~ $65-100 Million / Mile
- ✓ Alignment: ~ 30% Subway
- ✓ Stations: 13
- ✓ Stations / Mile: 0.9

Moderate-Cost LRT Design

✓ At-grade alignment with exclusive lanes

✓ Can operate in congested downtown settings

Moderate-Cost LRT Design

✓ Shared guideway runs in mixed-traffic

✓ Minimal station amenities

Examples of Moderate-Cost LRT Systems

Charlotte Area Transit System

- ✓ 9.6 Miles
- ✓ Abandoned and Parallel to Existing Railroad Right-of-Way

- ✓ Stations: 15
- ✓ Stations / Mile: 1.6
- ✓ Cost: ~ $50 Million / Mile
- ✓ 17,000 Boardings / Day

Examples of Moderate-Cost LRT Systems

Austin – Capital Metro Red Line

- ✓Diesel-electric Light Rail DMU vehicles
- ✓No overhead catenary
- ✓Stations: 9

Examples of Moderate-Cost LRT Systems

Minneapolis – Metro Transit "Hiawatha" Line

- ✓ Cost: ~ $60 Million / Mile
- ✓ Alignment: 72% at-grade / 28% subway
- ✓ Stations: 17
- ✓ Stations / Mile: 1.5

Advantages / Disadvantages of LRT

Advantages

- ✓ Relatively lower cost compared to heavy rail
- ✓ Variety of guideway configurations possible
- ✓ Encourages station-area development
- ✓ Less noise and vibration

Disadvantages

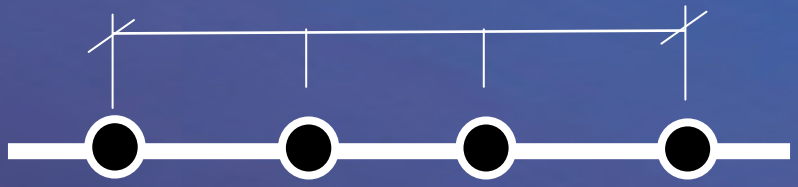
- ✓ Often requires exclusive right-of-way
- ✓ Overhead wires often considered aesthetically unpleasing
- ✓ Lower capacity than heavy rail

Modern Streetcar

Modern Streetcar Characteristics

- ✓New "Old" Technology – "Pedestrian Accelerator"
- ✓In-street Running
- ✓Electric Powered

Station Spacing: ¼ to ½ mile



Modern Streetcar

- ✓ Shared guideway runs in mixed-traffic
- ✓Service Range – 2 to 10 Miles

- ✓ Average Speed – 8-15 MPH
- ✓Maximum Speed – 35-55 MPH
- ✓2,000 Passengers/Hour

Modern Streetcar

✓ Smaller, lighter vehicles

✓ Limited stop amenities

Examples of Modern Streetcar Systems

Portland Streetcar

- ✓ Cost: $16 Million / Mile
- ✓ Stops: 42
- ✓ Stops / Mile: 5.3

Examples of Modern Streetcar Systems

Seattle Streetcar - South Lake Union Line

- ✓ Cost: $18 Million / Mile
- ✓ Stops: 11
- ✓ Stops / Mile: 4.2

Advantages / Disadvantages of Streetcar

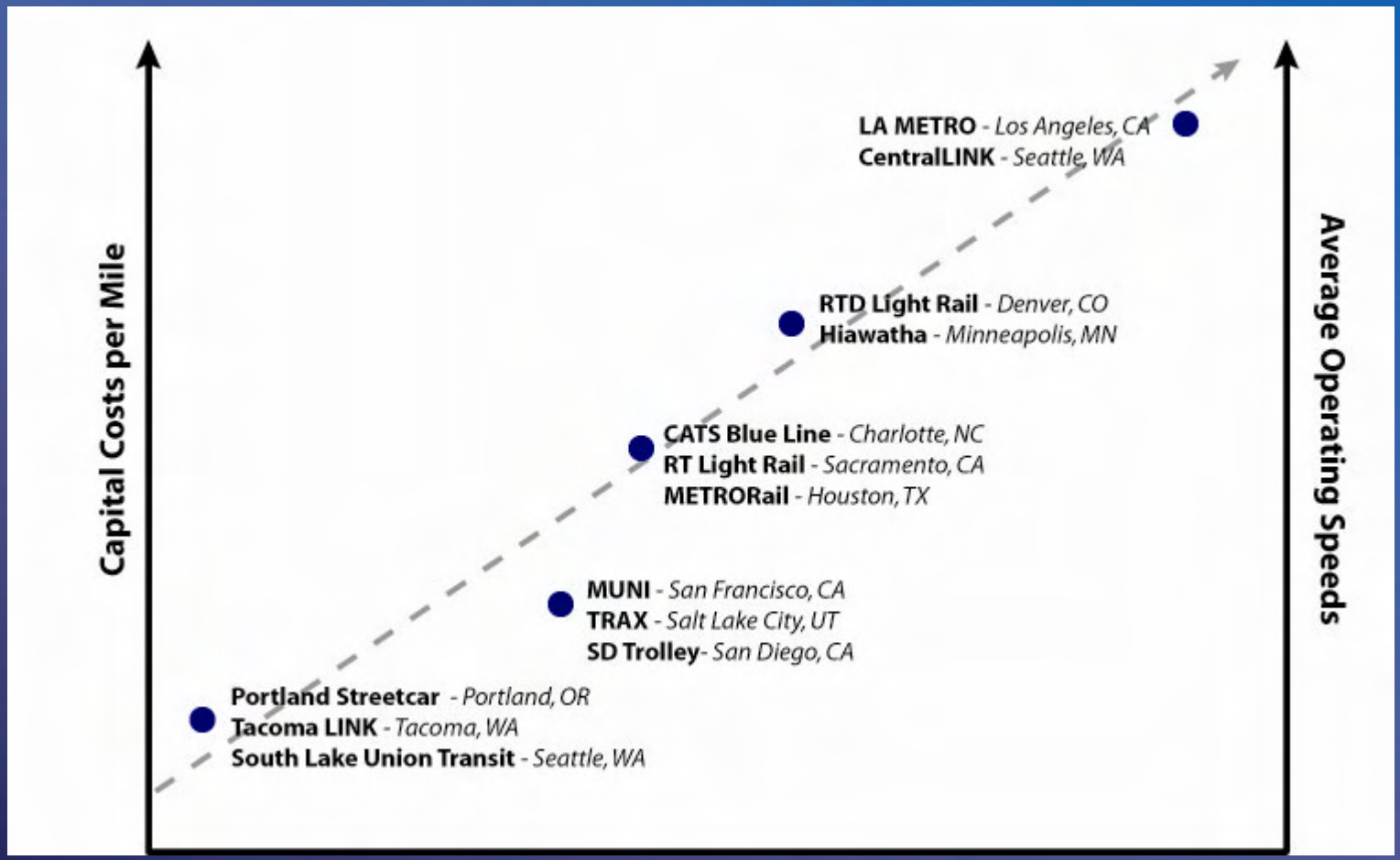
Advantages

- ✓ Typically lowest cost among rail transit alternatives
- ✓ Enhances real estate development potential along streetcar corridor
- ✓ Supports pedestrian-oriented trips

Disadvantages

- ✓ Slower than LRT
- ✓ Interaction with mixed-flow traffic
- ✓ Lower capacity compared to LRT and heavy rail vehicles

Comparing HRT, LRT, and Streetcar



Rail Technology Systems in the U.S.

	Heavy Rail	Light Rail Exclusive Right of Way	Light Rail Shared Right of Way	Streetcar
Cost/Mile	$150-250 million	$60-100+ million	$25-60 million	$15-30 million
Seated Capacity/Train	512	225	225	50
Service Range	Up to 30 Miles	Up to 20 Miles	Up to 15 Miles	2 to 8 Miles
Maximum Speed **Average Speed**	65-75 MPH 30-35 MPH	55-65 MPH 30-35 MPH	45-55 MPH 15-25 MPH	35-55 MPH 8-15 MPH
Station Spacing	> 1 Mile	1/2 to 1 Mile	1/2 to 1 Mile	¼ to ½ Mile

Discussion Items

Project Priorities

- ✓ Congestion Relief?
- ✓ Redevelopment Potential?
- ✓ Regional Integration?
- ✓ Cost-Effectiveness?
- ✓ Impact Avoidance?

Discussion Items

Alignment and Station Location Issues

- ✓ Norcross / MARTA Terminal
- ✓ Horizontal Alignment (I-85, Industrial Spur Track/Brook Hollow/Beaver Ruin)
- ✓ Vertical Alignment (At-Grade with Selected Flyovers?)
- ✓ Station Locations
- ✓ Initial End-of-Line (Gwinnett Place)
- ✓ Ultimate End-of-Line (Arena)