







Rail 101

High Capacity Transit Modes

 SOUND TRANSIT

				
	Commuter Rail	Light Rail	Diesel Multiple Unit (DMU)	Streetcar
Capacity	7 car train = 945 to 1,750	4 car train = 296 to 800	1 car train	1 car train
	250+ per car (includes 135 seated)	200 per car (includes 74 seated)	200 per car (108 seated)	160 per car (includes 30 seated)
Vehicle Speed	up to 79 mph	up to 55 mph	up to 79 mph	up to 40 mph
Height	15.9 feet	10 feet	13.25 feet	11.9 feet
Width	10 feet	8 feet	9.75 feet	8 feet
Length	85 feet	95 feet	134 feet	66 feet

Commuter Rail

Characteristics

- Can be operated either by diesel fuel or electricity.
- Used for local or regional service, typically longer distances, between a central city and surrounding communities.
- Usually operates in existing rail corridor along freight and/or passenger rail lines.
- Moves more people for longer distances with fewer stops along the way.
- Commuter rail trains can travel at higher speeds and get passengers to their destination faster.
- Vehicles manufactured with a heavier structure to comply with industry standards since commuter rail typically operates within an existing railroad corridor.
- Interior is designed to provide a comfortable ride for longer distances.



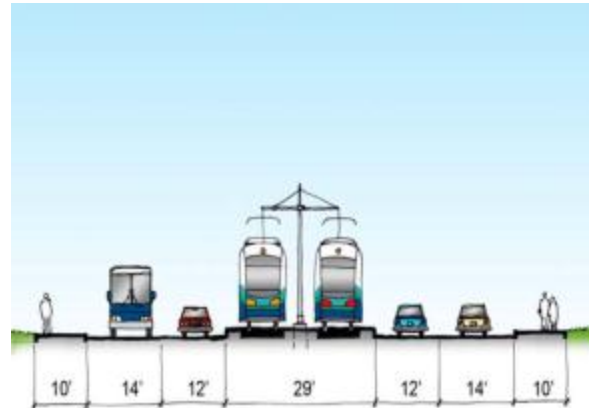
Sounder Commuter Rail, Everett Station

Light Rail

Characteristics

- Typically powered by overhead electrical wires, it has a lighter frame than a traditional train.
- Light rail operates primarily in its own right-of-way at-grade, aerial and in tunnels.
- Fast and frequent service.
- Link Light Rail powered by 1500 volt overhead.

At-grade alignment, center running



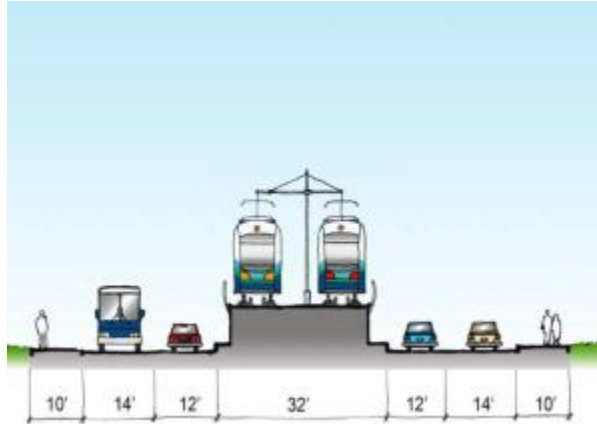
At-grade alignment, side running



Graphic Source: East Link Project Final EIS – Sound Transit 2011

Light rail: various horizontal & vertical alignments

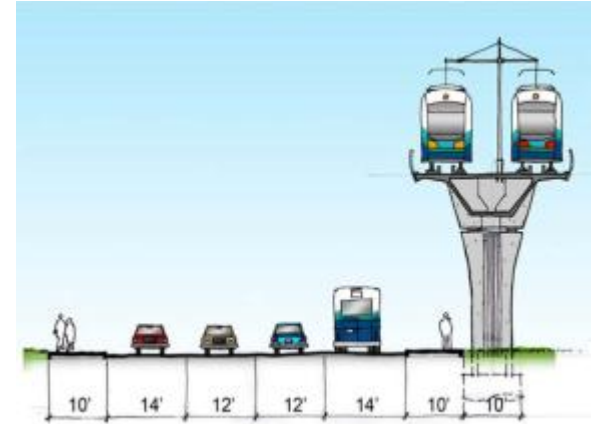
Retained fill - center running



Elevated - center running

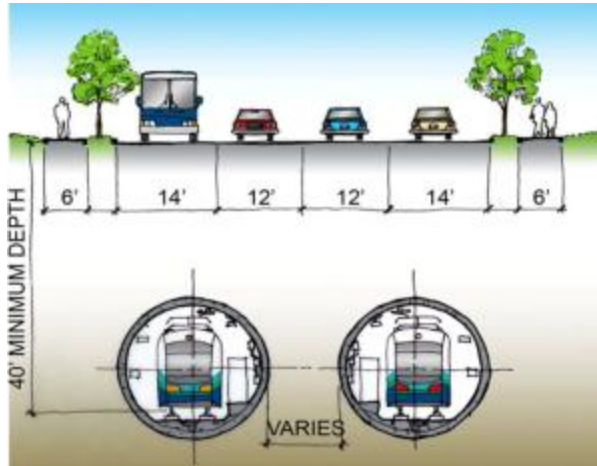


Elevated - side running

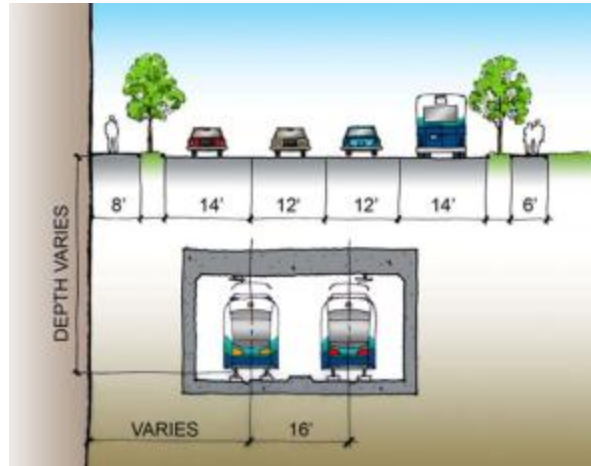


Light Rail: various horizontal & vertical alignments

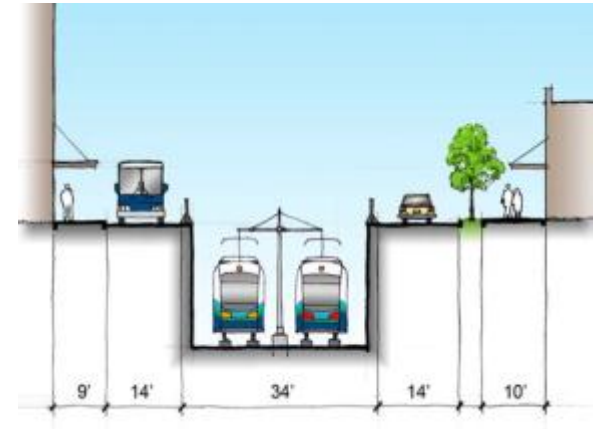
Bored tunnel



Cut and cover tunnel

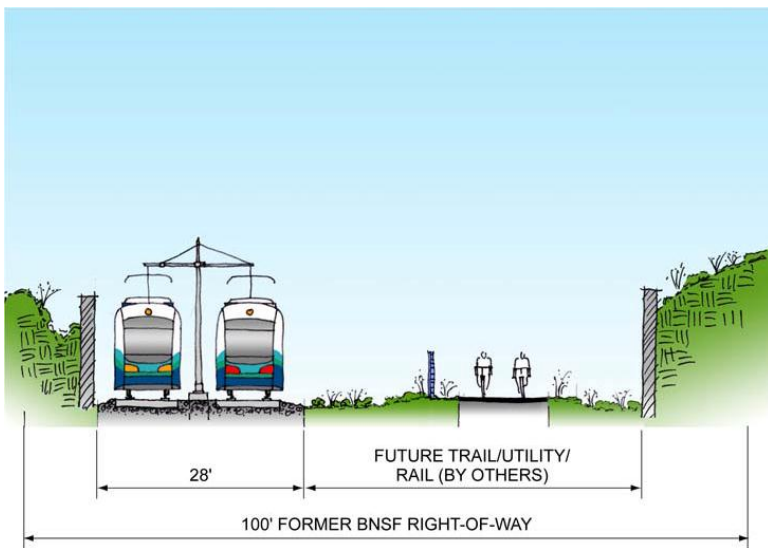


Retained cut – center running



Shared Right of Way

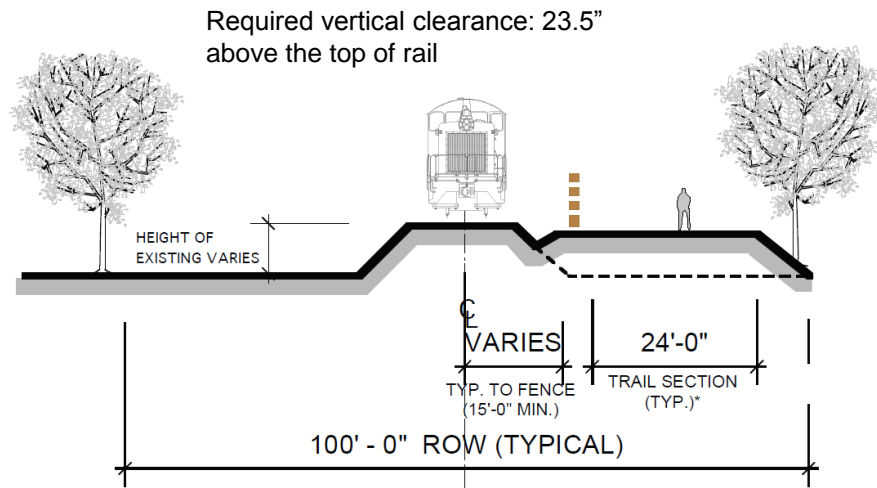
Light Rail in the RR Right-of-Way



Typical Section

Graphic Source: East Link Project Final EIS – Sound Transit 2011

Commuter Rail and Mixed-use Trail



TYPICAL EMBANKMENT SECTION

Graphic Source: BNSF Eastside Corridor Commuter Rail Feasibility Study, Sound Transit/PSRC 2009

Diesel Multiple Unit (DMU)

Characteristics

- A multiple unit train, consisting of self-propelled carriages powered by on-board diesel engines.
- DMUs require no separate locomotive, as the diesel engines are incorporated into one or more of the coaches.
- Only FRA compliant DMU systems are permitted on freight rail corridors.



Capital MetroRail, Austin, TX

Streetcar

Characteristics

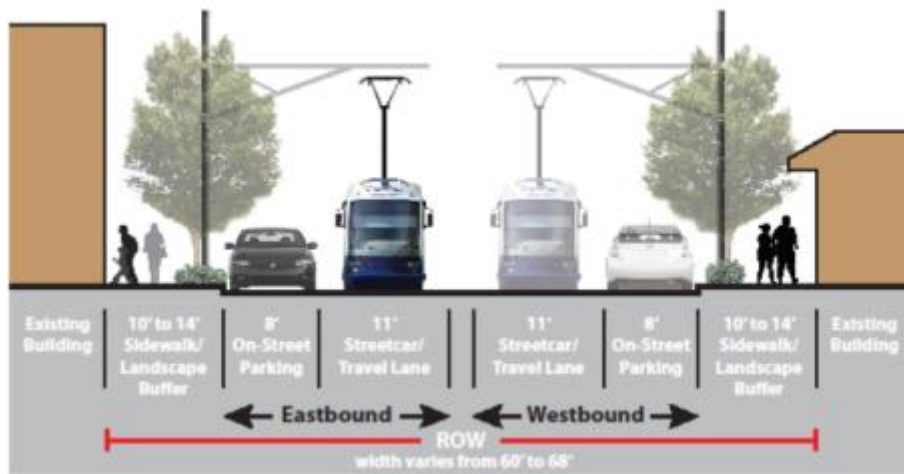
- Because of its lighter size and turning radius, has the ability to operate along crowded city streets and within tight urban corridors.
- Ideal for frequent stops, where quick acceleration and deceleration are necessary.
- Can operate in street with mixed traffic.
- Seattle Streetcar powered by 750 volt overhead.



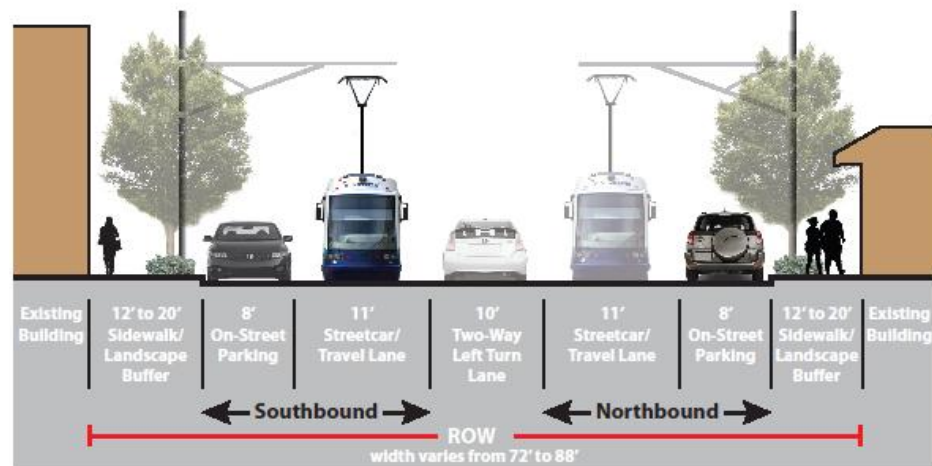
South Lake Union Streetcar, Seattle

Streetcar

Center running



Center running with turn lane



The image features a dark grey horizontal banner across the center. On the left side of the banner is the Sound Transit logo, which consists of a stylized white 'S' and 'T' combined into a single symbol. To the right of the logo, the words 'SOUNDTRANSIT' are written in a bold, white, sans-serif font. Below 'SOUNDTRANSIT', the slogan 'RIDE THE WAVE' is written in a smaller, white, sans-serif font. The background of the entire image is a close-up of a transit vehicle with a white upper section and a blue lower section, separated by a wavy teal and blue graphic. The vehicle has several dark windows and some small white signs.

SOUNDTRANSIT
RIDE THE WAVE