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## Light Rail

## Streetcar

## Bus Rapid Transit

Express Bus /  
Arterial Rapid Transit

<b>Runs on</b>	<b>Rails</b> built into street mostly in <b>dedicated lane</b>	<b>Rails</b> built into street in <b>shared traffic lane</b>	In <b>roadway</b> mostly in <b>dedicated lane</b>	In <b>roadway</b> in <b>shared traffic</b>
<b>Powered by</b>	<b>Electric</b> power from overhead lines	<b>Electric</b> power from overhead lines	Generally <b>diesel-electric hybrid</b> engines	Generally <b>diesel-electric hybrid</b> engines
<b>Speed</b>	<b>Quick</b> generally 25- 45 mph with 1-2 stops/mile	<b>Slow</b> generally 5-25 mph with 3-5 stops/mile	<b>Quick</b> generally 25-45 mph with 1-4 stops/mile	<b>Fairly quick</b> generally 25-45 mph with 1-4 stops / mile
<b>Reliability</b>	<b>Very reliable:</b> dedicated lanes and traffic signal priority	<b>Inconsistent:</b> slow boarding, traffic congestion, frequent stops	<b>Reliable:</b> dedicated lanes and traffic signal priority	<b>Moderately reliable:</b> traffic congestion but traffic signal priority
<b>Frequency</b>	5-15 min.	5-15 min.	5-15 min.	10-30 min.
<b>Passenger Capacity</b>	220-440 per train	60 per car	150 per bus	60-90 per bus
<b>Cost to build a mile (avg)</b>	\$30-50M	\$7.5M	\$15-35M	\$2-4M
<b>Ongoing operating costs</b> (includes drivers, fuel, etc)	<b>Relatively low</b> , due to larger capacity vehicles and less frequent replacement	<b>Moderate:</b> lower capacity, but less frequent replacement need	<b>Moderate:</b> larger capacity, but higher fuel and replacement costs	<b>Higher</b> , due to fuel costs, more drivers, and replacement needs
<b>Attracts new riders</b>	Excellent	Very good	Good	Fair
<b>Increases land value and Attracts new development</b>	<b>Substantial</b> , often by 25%	<b>Yes</b> but wide range	<b>Unproven</b> , potentially 8%	<b>No</b>
<b>Best Usage</b>	High rider corridors, major destinations, large development potential	Downtown circulator, tourist destinations, large development potential	Medium-high rider corridors, spaced out destinations	Lower cost commuter travel over longer distances, upgrade from bus

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All figures are based on U.S. averages  
published in reliable sources.

What's the Difference?  
What's the Fuss?



Light Rail



Streetcar

Bus Rapid  
Transit (BRT)Express Bus  
(ART)

**Different Modes of  
Rapid Transit**

TRANSPORTATION  
RIDERS UNITED

TRANSPORTATION  
RIDERS UNITED

TRANSPORTATION  
RIDERS UNITED



## What is Light Rail?



Link Light Rail, Tacoma, WA Photo: SoundTransit

**Light rail** is a small electric train that runs at street level on tracks built into the road, generally in its own dedicated lane. It has stations where people buy tickets, then board through multiple doors, making stops brief. Trains can travel quickly by being mostly separated from traffic and by being able to keep traffic lights green as they approach.

Light rail trains are usually made up of double train-cars, which can hold up to 220 people. Because of this high capacity, light rail trains need fewer drivers and are best for relatively busy routes.

Cities like Minneapolis, Dallas, and Salt Lake City have built light rail, attracting between \$4 and \$8 in investment for every \$1 spent to build them.



## What is Streetcar?



San Francisco Market Line streetcar. Photo: Laurence J. Krieg

**Streetcars** are similar to light rail, but are smaller, run more slowly, and have stops every few blocks. The purpose of a streetcar system is to help people get around in a downtown area over relatively short distances.

The streetcar shown above is a “heritage” model, but there are many modern streetcars as well. Streetcars and light rail trains can actually run on the same tracks, and often do in European cities.

Streetcars have recently been built in Portland and other US cities. They generally attracted between \$3 and \$5 private investment for each dollar spent to build them.



## What is Bus Rapid Transit?



Los Angeles Orange Line BRT. Photo: Laurence J. Krieg

**Bus Rapid Transit (BRT)** is a relatively new transit mode that is similar to light rail but uses buses running in their own dedicated lane of the road and stopping only a few times every mile.

True BRT is different from other bus systems because they stop only at stations, not at street corners. Riders pay in advance, thus speeding stop times, and there is never a step up to get aboard.

BRT is less expensive to build than light rail, but it is more expensive than express buses, because of cost of building or separating lanes, building stations, and changing the way traffic signals work. BRT is more expensive to operate and maintain than light rail, because more drivers are needed and they require diesel fuel.

Cleveland and LA are among the few US cities that have built BRT. There has been a property value increase averaging 8% near their stops.



## What is Arterial Rapid Transit?



Los Angeles Metro Rapid bus. Photo: WikiMedia

**Arterial Rapid Transit (ART)** is a kind of **express bus** system that runs in regular road lanes, but stops less frequently than regular buses. Like BRT, riders generally pay before they get on.

Ideally, traffic lights will stay green when an ART bus approaches, but that depends on changing the way the traffic lights work all along the route.

ART is the least expensive system to put in place, because it doesn't require building any special lanes or rails for the buses to run on. But it also returns the least value for the investment. ART line has not been shown to improve property values or attract development.