BUS RAPID TRANSIT FACT SHEET

BRT SYSTEMS SUMMARY

The following are major components of BRT, and the best systems have most or all of these features:

1. Exclusive Lanes.

- Exclusive lanes increase speed and reduce travel time, making BRT more competitive with car travel.
- Unlike rail, transit vehicles can leave the exclusive lane to take passengers directly to their destination.
- Exclusive lanes also can provide emergency vehicles with congestion-free routes.
- Exclusive lanes can be built next to highways, in the medians of arterial streets, in abandoned rail corridors, and in tunnels.
- There are several BRT systems that carry more than 10,000 passengers per hour in the peak direction. Most US light rail systems carry between 1,500 and 3,000 passengers per hour in the peak direction.

2. Stations. Stations come in many shapes and sizes, both on the surface and underground.

- First, they provide a seamless, sheltered connection to transit vehicles. Vehicle doors line up precisely with the station, enabling fast unloading and boarding to reduce the vehicle wait time (known as "dwell" time).
- Second, the best stations ensure that passengers pay their fare before entering the station, rather than on the vehicle. In many recent systems, fare collection is accomplished with a smart-card reader and a turnstile at the station entrance, or particularly in the US, a "proof of payment" system is used.
- Third, the best stations provide passengers with options to access the station without using a car. These options include feeder bus systems and pedestrian and bicycle access.
- Finally, the best stations serve as focal points for economic development.
- Spacing along arterial streets ranges upward from about 1,000 feet to over 4,000 feet

3. Vehicles.

- The best BRT vehicles have multiple doors for entry and exit and are designed to "dock" with the station, similar to a rail system.
- Clean propulsion systems are available, such as hybrid electric and CNG.
- Some vehicles even have optical or magnetic guidance, enabling them to maneuver without a driver, as well as on-board electronic information displays.
- Vehicle capacities vary greatly depending on the size and design. A vehicle catalog, prepared by Weststart-Calstart for the US Department of Transportation, may be referenced from the website, http://www.gobrt.org/resources.html.

4. Service.

- BRT provides frequent, all day service.
- This service is depicted with simple, intuitive maps, not complicated bus schedules.
- With BRT, transfers that otherwise would be required with rail technology, is eliminated because passengers can board BRT vehicles near their homes, and vehicles can then access exclusive lanes to provide a direct trip to the final destination.
- BRT also can provide passengers with the choice of express or local services. Most rail systems have only one track in each direction.
- Studies show BRT attracts long distance and intermediate distance trips

5. Intelligent Transportation Systems (ITS).

- BRT uses ITS systems to track vehicle locations, control traffic signals, and provide vehicle arrival information. This information can also be provided directly to passenger cell phones.

Source:
"Go BRT! High Quality Rapid Transit For the 21st Century--", Breakthrough Technologies Institute – Washington, DC

BUS RAPID TRANSIT PROS AND CONS

	PROS	CONS
SERVICE EFFICIENCIES	◆ BRT can save travel time by 25 to 50% compared to conventional bus systems ◆ On-time service, reduced wait time, and shorter travel times ◆ A system with dedicated lanes can operate at 2-3.5 minutes/mile versus 3.5 to 5 minutes/mile in mix flow traffic ◆ A shorter time to implement compared to light rail ◆ BRT can be deployed more quickly, and in greater quantities than rail systems.	◆ Lead time to implement ◆ Performance levels where there are limitations to providing non-exclusive lanes
COST/VALUE	◆ In the US, a typical heavy rail system can cost $200 million or more per mile to construct, and a typical light rail system can cost $70 million per mile or more. By contrast, the most expensive BRT's cost around $25 million per mile. Some very competitive systems have been built for significantly less. ◆ A properly designed BRT system can serve more neighborhoods and provide better service than a comparably-priced rail system.	◆ Securing funding for operations that do not require a sales tax increase ◆ Intense competition for federal and state funds ◆ Right-of-way acquisition, if required, can be expensive
FLEXIBLE DESIGN	◆ BRT systems are flexible – vehicles can operate on neighborhood streets and on designated roadways. Customers can choose between express and local routes; transfers can be avoided or eliminated ◆ BRT can be developed incrementally, allowing systems to be installed over-time or scaled up as community needs and demands change	◆ Traffic engineering can be complicated and expensive to design for good travel speeds and ITS solutions
TECHNOLOGY	Available ITS technologies include: ◆ Priority signalization ◆ Passenger Information systems ◆ Automatic monitoring of schedules and routes using GPS ◆ Bus priorities at freeway ramps, toll plazas, bridge, or tunnel approaches ◆ Optical guidance systems that enable BRT to function without a driver	◆ Vehicle selection in the American bus market is limited; long lead times for new vehicle designs ◆ Overseas procurement of vehicles is costly and parts take time to ship ◆ Maintenance of optical guidance systems
AFFECT ON NEIGHBORHOOD AND ADJACENT LAND USES	◆ BRT can promote positive changes in local land use, encouraging redevelopment opportunities along the corridor and enhancing property values ◆ Zoning changes next to TODs can improve the value of and benefit properties along the corridor ◆ Park and ride lots	◆ Lack of continuity in pedestrian facilities along BRT corridors can threaten mobility and transit access; needs to be addressed with station design ◆ Affect on neighborhoods including concern about noise, safety, parking on local residential streets, and affect to the property values of single family homes ◆ Requires extensive public outreach to address service design and location of bus stops ◆ Increased traffic on local streets next to stations
REGIONAL COOPERATION	◆ Possibility of connections to regional centers and services that take people out of the cars, especially during peak hours of the day	◆ Challenge of coordination and consensus between many different jurisdictions and the regional transit body on facilities and operations ◆ Integration of development plans along the corridor
ENVIRONMENT	◆ BRT can take advantage of compressed natural gas (CNG), hybrid technology, and other clean technologies, and may in the future be powered by zero emissions fuel cells ◆ An electric transit system powered by coal and other fossil fuels has greater CO_2 emissions than a modern BRT system, and BRT has much greater potential to reduce CO_2 emissions over the long term. BRT is the first, and so far the only, mass transit technology certified under Kyoto Protocol	
PUBLIC IMAGE	◆ Design of stations and bus stops are becoming more sophisticated with new advances in system design ◆ Improved ridership and return users of BRT	◆ Public acceptance of public transportation investments with regard to safety and cleanliness

Source:
TCRP Bus Rapid Transit Volume 1: Case Studies in Bus Rapid Transit
FTA Fact Sheets on US BRT programs, http://www.gobrt.org/resources.html