



Main >> Local >> Detroit

Search | Help



Light Rail vs. Bus Rapid Transit

National activities and implications for metro Detroit

December, 2002

Background

Testifying before the U.S. House of Representatives Subcommittee on Highways and Transit in June, 2002, the General Accounting Office (GAO) recommended that federal start-up money be stretched to serve a greater number of lower-cost transit projects (1).

The GAO suggests that bus rapid transit fits very well into the "lower-cost" category and should be given greater consideration by the Federal Transit Administration when it ranks prospective projects for receipt of federal "New Starts" grants. With federal funds generally becoming more scarce as national priorities shift in Washington, the days of large, regional new rail transit projects may be numbered.

The GAO also recognizes the growing trend of new project sponsors to apply for much less than the 80% funding cap allowed under TEA-21 in an effort to compete with the nearly 200 projects requesting federal New Starts grants. This has, and will continue to force project sponsors to come to Washington with up to 50% of its funding already identified through local sources and other public grants.

The potential implications for late entrants like metro Detroit are obvious. After years of donating its federal gasoline tax proceeds to other states' transit projects, metro Detroit may end up in a struggle to fund any regional transit

project with federal grants. That assumes we can ever agree on what constitutes "regional" and "transit project".

(1) General Accounting Office Document GAO-02-840T.

National Transit Activity

The GAO bases its recommendations, in part, on a study it conducted for Congress in September 2001, analyzing bus rapid transit operations and demonstration projects, and light rail operations (2). Through data collection and interviews with transit officials, capital and operating costs are compared for each mode, as well as socio-economic and market issues.

Capital Costs in year 2000 dollars:

Light rail projects averaged \$34.8 million per mile, ranging from a low of \$12.4 million with Sacramento's Original Line to \$118.8 million in Buffalo.

Bus rapid transit projects averaged \$0.7 million per mile for BRT on arterial streets, \$9.0 million per mile for BRT in HOV lanes, and \$13.5 million per mile for BRT in dedicated busways.

Following is a list of projects analyzed, with unit capital cost (2000 dollars) in millions:

LIGHT RAIL	Cap Ex / mile	BUS RAPID TRANSIT	Cap Ex / mile
Baltimore		Houston (busway)	
-Central Line	\$ 18.8	-Katy	\$ 10.1
-Three extensions	\$ 16.4	-North	\$ 10.4
Buffalo	\$ 118.8	-Northwest	\$ 11.2
Dallas		-Gulf	\$ 8.5
-S&W Oak Cliff	\$ 31.2	Los Angeles (busway)	
-Park Lane	\$ 58.6	-El Monte Busway	\$ 11.6
Denver		Miami (busway)	\$ 7.4
-Central Corridor	\$ 24.4	Pittsburgh (busway)	

-SW Extension	\$ 20.3	-South Busway	\$ 14.7
Los Angeles		-East Busway	\$ 25.6
-Blue Line	\$ 43.4	-West Busway	\$ 55.0
-Green Line	\$ 49.0	TOTAL (Busway)	\$ 13.5
NE New Jersey		Dallas (HOV Lane)	
-Hudson Bergen	\$ 99.2	-I 30	\$ 3.6
Pittsburgh	\$ 31.0	-I 35E	\$ 1.8
Portland		Denver (HOV Lane)	
-Barnfield	\$ 26.6	-I 25	\$ 37.6
-Westside/Hillsboro	\$ 56.6	Houston (HOV Lane)	
Sacramento		-Southwest	\$ 10.3
-Original line	\$ 12.4	-Eastex	\$ 7.5
-Mather Field Rd ext.	\$ 15.4	Seattle (HOV Lane)	
Salt Lake City		-I 5	\$ 1.8
-S. Light Rail Line	\$ 21.4	-I 405	\$ 2.4
San Diego		San Diego (HOV Lane)	
-Blue Line	\$ 31.3	-I 15	\$ 5.2
-Orange Line	\$ 23.5	TOTAL (HOV Lane)	\$ 9.0
San Jose		Los Angeles (Arterial)	
-Guadalupe	\$ 26.2	-Wilshire-Whittier	\$ 0.2
-Tasman West	\$ 43.8	-Ventura	\$ 0.2
St. Louis		Orlanda (Arterial)	
-Metrolink	\$ 20.8	-Lymmo	\$ 9.6
TOTAL (Light Rail)	\$34.8	TOTAL (Arterial)	\$ 0.7

Operating Costs:

The GAO analyzed operating costs in six cities which had experience operating both light rail and some form of bus rapid transit. They found that operating costs varied considerably from city to city, and depended on what cost

measures were used. They conclude that operating costs between modes are similar, saying "we did not find a systematic advantage for one mode over the other on operating costs."

The six cities included in the operating cost study were Dallas, Denver Los Angeles, Pittsburgh, San Diego and San Jose.

Advantages and disadvantages of each mode:

The GAO reviewed performance and market characteristics of both modes. Their conclusions generally favor bus rapid transit:

- Bus rapid transit is generally more flexible than light rail, with regard to design, expansion, ability to change with changing population patterns, and ability to steer around disabled transit vehicles en route.
- Bus rapid transit operation can be phased in. A rail-based system needs all of its elements in place before operating even a short section of a final line. Bus rapid transit can begin with a street-based system and phase towards a busway.
- Bus rapid transit can be an interim system, while a rail-based system is conceived, designed and constructed.
- Bus service's negative image can be overcome with equal service characteristics. Transit operators told GAO that there is a public bias toward rail transit. Researchers told GAO that riders have no preference if service is equal. Federal Transit Agency officials who reviewed the draft report told GAO that the negative bus image was "probably due to congested streets, slow boarding and fare collection, and traffic lights."
- Light rail is seen as a stimulus to community economic development. Transit operators told GAO that light rail stimulates economic development along the rail lines, and were either unsure or had not seen similar economic response along bus rapid transit routes. Federal Transit Agency officials said that the public equates a sense of permanence of high-quality service to rail and rail stations, stimulating economic development within walking distance of rail stations.
- Light rail systems are usually expanded over time. GAO cites examples of light rail projects in most cities that did not stop building after the initial line, veiled as a warning that once approved for federal grant funding, a light rail project sponsor will likely come back later for more federal funding.

(2) General Accounting Office Document GAO-01-984

Implications for metro Detroit

If and when metro Detroit submits an acceptable application to the Federal Transit Administration for New Starts funding of a significant regional transit project, we should expect both intense competition from other cities for scarce federal funds and an expectation at FTA that we have done our homework regarding the feasibility of bus rapid transit in the project design. The City of Detroit may be in a better strategic and political position than the region to obtain some level of funding for starter projects in the short term, but the competition and bus-conscious thinking at the federal level remain hurdles to overcome.

Metro Detroit has conducted several publicly-funded transit studies in the past decade which have either been dismissed or are in some stage of completion (3). The light rail and commuter rail studies are independent analyses and have never been consolidated into a regional rail-based plan. The SpeedLink bus rapid transit study leaned heavily toward buses at the outset and was not intended as a multi-modal transit plan. The City of Detroit has its own plans, recently announced, which serve the city's needs with light rail.

Some of the more active transit-oriented groups in town have their own ideas regarding regional transit needs. The Michigan Association of Railroad Passengers is preparing a regional rail plan which includes both commuter rail and intercity passenger rail service. Transportation Riders United has published a Woodward light rail preliminary study.

The Detroit Area Regional Transportation Authority (DARTA) is intended to be the region's clearinghouse for transit planning and should be the local agency most recognized in Washington for sponsorship of a regional transit project. Metro Detroit has historically been uneasy about cooperating fully on most regional issues, so objective recognition and analysis of multi-modal transit opportunities to determine if there can be identified a unique regional transit plan having a significant, positive regional return on investment will be a challenge for DARTA.

(3) A compilation of transit studies is available at the "[World-Class Transit](#)" page of this website.

HOME

