

Table 1: Projects Included in this Study, listed alphabetically by city name

City	Project	AA/DEIS/MIS/EA Year	FEIS Year	FFGA Year	Opening Year	Forecast Year
Baltimore	Central LRT Double Tracking*	2000	NA	2001	2006	2020
Boston	South Boston Piers Phase 1	1992	1993	1994	2004	2010
Chicago	Metra UP West*	1998	NA	2001	2006	2020
Chicago	Metra North Central*	1998	NA	2001	2006	2020
Chicago	Metra Southwest*	1998	NA	2001	2006	2020
Chicago	Douglas Branch Reconstruction*	2000	NA	2001	2005	2020
Dallas	North Central LRT Extension	1996	1997	1999	2002	2010
Denver	Southeast LRT	1997	1999	2000	2006	2020
Memphis	Medical Center Extension*	1997	NA	2000	2004	2020
Miami	South Florida Tri-Rail Upgrades	1998	1999	2000	2007	2015
Minneapolis	Hiawatha LRT	1982	1985/1999	2001	2004	2020
Newark	Newark Elizabeth MOS 1	1997	1998	2000	2006	2015
Northern New Jersey	Hudson Bergen MOS 1 & MOS 2**	1992	1996	1996/2000	2000-2006	2010
Pittsburgh	Stage II LRT Reconstruction*	1996	NA	2001	2004	2005
Portland	Interstate MAX LRT	1998	1999	2000	2004	2015
Sacramento	South LRT Phase 1	1996	1997	1997	2003	2015
Salt Lake City	University & Medical Center Extensions**	1997	1999	2000/2001	2001/2003	2020
San Diego	Mission Valley East LRT	1997	1998	2000	2005	2015
San Francisco	BART to SFO	1995	1996	1997	2003	2010
San Juan	Tren Urbano	1995	1995	1996	2005	2010
Washington	Largo Extension	1996	1999	2000	2004	2020

* These projects performed a single Environmental Assessment or were categorical exclusions.

** The Hudson Bergen projects and Salt Lake City projects represent four distinct FFGAs. In each case, they were planned and developed as single projects but were later divided for construction. These projects are considered single projects in this analysis.

The body of this report addresses the findings that have been gleaned from the project data. The details of any specific project are referenced only to illustrate points of interest. The following sections discuss the summary results for capital costs and ridership. Project Profiles in the Appendix – one for each project – include more detailed information on each project’s development history, the scope of the project as conceived and executed and other information necessary to interpret the summary statistics.

Table 3 shows that, by the time that the FFGA is executed, the as-built costs generally come close to the costs estimated for the original FFGA. However, there are notable exceptions. There were four projects that cost 30 percent more than estimated in the original FFGA. One small project – Memphis Medical Center Extension – was 20 percent under the FFGA inflation-adjusted budget.

Table 3: As-built Capital Costs, as a Percentage of Predictions, listed by as-built cost

Project	Mode	As Built Capital Cost, as a percentage of Estimate (adjusted for inflation)		
		AA/DEIS/MIS PE Entry	FEIS/EA FD Entry	Original FFGA
Memphis Med Center LRT	LRT	161.4%	85.2%	79.3%
Metra UP West	CR	107.4%	75.6%	82.8%
Baltimore Central LRT Double-Tracking	LRT	100.7%	101.0%	98.2%
Metra SW Corridor	CR	103.7%	85.1%	97.0%
Salt Lake City University/Medical Ext. ³	LRT	NA	101.6%	93.9%
Newark Rail Link MOS-1	LRT	114.6%	116.5%	96.4%
Metra North Central	CR	105.9%	91.5%	96.4%
Sacramento South LRT (Phase 1)	LRT	108.4%	106.6%	99.5%
Interstate MAX LRT Extension ²	LRT	NA	104.2%	100.7%
Pittsburgh Stage II Reconstruction ⁴	LRT	NA	NA	106.0%
S. Florida Tri-Rail Double Tracking ⁵	CR	NA	104.7%	104.4%
Largo Metrorail Extension	HR	113.7%	98.6%	103.3%
Dallas North Central LRT ⁶	LRT	131.4%	107.7%	94.9%
Chicago Douglas Branch ¹	HR	99.8%	92.3%	93.2%
South Boston Piers Transitway - Phase 1	BRT	150.7%	125.7%	131.2%
Mission Valley East LRT Extension	LRT	130.9%	130.9%	118.7%
Minneapolis Hiawatha Corridor LRT	LRT	285.9%	128.9%	135.8%
Denver Southeast Corridor ⁷	LRT	145.4%	102.9%	103.2%
BART Extension to SFO	HR	130.0%	126.1%	130.9%
Hudson-Bergen MOS 1 & 2	LRT	188.8%	185.2%	95.3%
San Juan Tren Urbano	HR	205.3%	170.2%	174.0%
Average of 21 projects		140.2%	111.8%	106.2%

NOTES:

1 The Douglas Branch project was a reconstruction of an existing line and did not have a planning study that documented the cost estimates prior to PE entry.

2 The Interstate MAX project scope was significantly reduced during PE so there is no valid comparison possible between the AA/DEIS and the actual project as constructed.

3 The Salt Lake City project scope was significantly reduced during PE so there is no valid comparison possible between the AA/DEIS and the actual project as constructed.

4 The Stage II Reconstruction project scope was significantly reduced during just before the FFGA so there is no valid comparison possible between the earlier estimates and the actual project as constructed. In this case, the scope was reduced because of cost overruns and funding difficulties. The actual cost of the reduced scope project was nearly equal to the planned project that was over twice as long.

5 Significant portions of the Tri-Rail project were already under construction when the project entered PE. There is no specific cost estimate for the scope of the actual FFGA project until this project entered final design.

6 The Dallas project increased in scope during project development by replacing planned single track segments with double track. This increase in scope was most likely responsible for the cost increase between AA and as-built. FTA decided to include the AA/DEIS cost estimate in the analysis because the nature of this scope change differed from the projects that were excluded because of scope changes. The excluded projects experienced major reductions in the length of their alignments while the length of the Dallas project remained fairly consistent.

7 The Denver project experienced scope and design changes in PE due to a major expansion in scope of the highway portion of this multi-modal project.