

Economic Implications from Proposed Public Transportation Capital Funding Cuts

Key Findings:

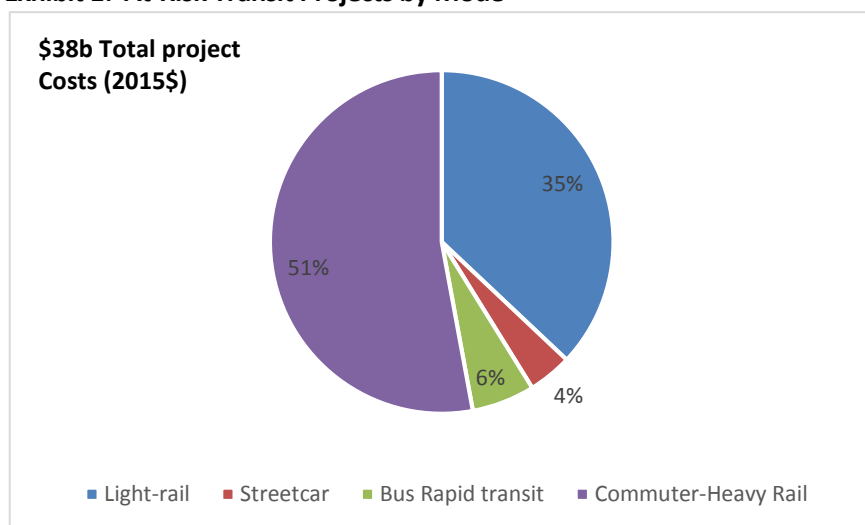
- The Administration's proposed funding cuts for transit capital projects would jeopardize \$38 billion of planned projects. These projects would support 502,000 jobs within the span of constructing these projects -- representing project construction jobs, transit equipment manufacturing jobs and wider multiplier effects on jobs associated with parts & materials suppliers and worker re-spending. The time span for completion of these projects vary, but overall, they would be completed over a period of slightly more than ten years, representing an annual average of 49,000 jobs supported each year over that period.
- A possible loss of \$90 billion in economic output due to the reduced hard-hat employment and their associated spending.
- After the capital spending is finished and new transit lines are operational, there would also be ongoing, permanent economic growth and development impacts enabled by the transportation improvements and associated economic productivity gains. Based on a review of past transit studies, it is likely that impacts of the completed projects would grow to over time to a level of 300,000 or more jobs added in the affected regions.
- The jobs generated by construction spending effects would occur during the years in which construction takes place, and end when the projects are completed. The economic development effects would start once the projects are completed and transit services open, leading to cumulative job growth over time that would reach the estimated levels 10-20 years after projects are completed.

Background

The proposed Federal Budget would affect nearly \$40 billion of transit capital projects across the country that have yet to get either a full funding or small starts grant agreement in place (see Appendix A). The proposed budget would immediately remove \$20 billion from the Capital Improvement Grants program offered through the Federal Transit Administration – roughly 50 percent of the total project costs associated with 53 now “at-risk” projects.¹ (see Exhibit 1.)

¹ One additional project was on the “list of at-risk projects” but did not have cost information – the Hudson Tunnel project (NY-NJ).

Exhibit 1: At-Risk Transit Projects by Mode



Source: Table 1, Annual Report on Funding Recommendations FY 2017, FTA, 2016

The national economic impacts of indefinitely postponing these projects’ federal funding is based on the premise that without the planned federal funding, these projects would have too large a funding shortfall to proceed. That assumes that local agency project sponsors would be facing a substantial hurdle to replace the planned federal contribution. Exhibit 2 lists the types of “at risk” transit projects.

Exhibit 2: Project Frequency and Construction Phase

# of Projects	Mode	Construction Years
10	Light-rail	Multiple
7	Streetcar	Multiple
23	Bus Rapid Transit	Multiple
13	Commuter-Heavy Rail	Multiple
53	All Mode	2017 – 2029

Capital Funding Shortfall Impact

There are three ways to view job impacts of the federal transit funding loss.

- The first is to calculate the loss of construction, manufacturing and other related jobs associated with the planned capital spending.
- The second is to calculate the foregone long-term economic development effects that would otherwise be expected to occur if these projects had occurred as planned.
- The third is to consider the net difference between job creation associated with public transportation investment and job creation associated with alternative use of the same federal funds for defense spending.

This study addresses all three issues.

Loss of Investment Spending

To calculate the lost jobs associated with federal transit capital matching funds, we examined the mix of spending associated with new start projects in the funding queue. Most projects would require some expenditure for rolling stock for example, but not all. Some would add a few stations, while others may not. Some would expend to build parking capacity for riders, others would construct power substations for power conversion projects or new electrified services. Given the range of mode types within the list, we relied upon the Bureau of Transportation Statistics National Transit Database 2014, for the allocation of capital outlays by the four categories in Exhibit 2 (note that we used an average of the shares for commuter and heavy rail categories). Exhibit 3 then condenses the project list into two basic categories – rail and bus.

Exhibit 3: Composition of Capital Spending by Mode

Project Component	Thousands of Constant 2015 Dollars		Budget share	
	RAIL (incl. LRT)	Bus (incl. Streetcar)	RAIL	Bus
Guideway ^{1/}	\$16,701,892	\$1,427,748	48%	39%
Buildings/Facilities ^{2/}	\$5,346,179	\$462,536	15%	13%
Rolling Stock ^{3/}	\$3,565,004	\$806,166.73	10%	22%
Equipment ^{4/}	\$3,371,081	\$427,885	10%	13%
Other Infrastructure ^{5/}	\$2,086,453	\$170,413	6%	5%
Design & Engineering ^{6/}	\$3,452,290	\$368,450	10%	10%
TOTAL	\$34,522,900	\$3,684,500	100%	100%

1/ Rail and dedicated bus lanes for the exclusive use of transit vehicles. May include both at-grade, elevated, and tunneled track or paved lanes dedicated to buses.
2/ Includes passenger stations or stop facilities, administrative buildings, and maintenance facilities.
3/ Passenger vehicles (bus and rail).
4/ Includes fare revenue collection equipment and communications and information system (e.g. passenger information systems, equipment for signal priority).
5/ Includes parking facilities as well as power stations.
6/ Spending on professional services related to the design and engineering of transit projects.

Using a national IMPLAN input-output model (2015), NAICS-sector mapping and assumptions on the local purchase coefficients (LPC's) on key categories² consistent with the 2014 APTA Economic Impact Update report, Exhibit 4 shows the job, labor income and value-added implications across the construction interval. Exhibit 5 presents the average annual impact for various metrics.

² U.S. content in rolling stock (76%), guideway steel (81%), and fare collection/signaling equipment (87%).

Exhibit 4: National Impacts from At-risk Transit Capital Activity over the Interval

Type	Component	Employment	Thousands of Constant 2015 Dollars		
			Income	GDP	Output
Rail	Guideway	218,669	\$12,370,991	\$18,880,683	\$36,692,421
	Building Facilities	87,762	\$4,983,578	\$7,459,651	\$14,343,131
	Rolling Stock	31,136	\$2,017,038	\$3,185,187	\$8,672,697
	Equipment	25,282	\$1,911,329	\$3,157,609	\$6,354,989
	Parking-Utility Infra.	32,241	\$1,855,536	\$2,915,679	\$5,536,826
	Design & Engineering	62,899	\$4,206,571	\$5,630,282	\$10,191,240
	All Components	457,989	\$27,345,043	\$41,229,090	\$81,791,303
BUS	Guideway	18,801	\$1,063,674	\$1,623,385	\$3,154,861
	Building Facilities	7,622	\$433,555	\$647,732	\$1,240,158
	Rolling Stock	5,517	\$359,520	\$624,910	\$1,825,050
	Equipment	3,379	\$246,651	\$411,699	\$856,039
	Parking-Utility Infra.	2,600	\$151,681	\$237,058	\$489,549
	Design & Engineering	6,752	\$451,562	\$604,393	\$1,093,998
	All Components	44,671	\$2,706,644	\$4,149,177	\$8,659,654
Combined Bus + Rail:		502,660	\$30,051,687	\$45,378,267	\$90,450,957

Exhibit 5: Average Annual National Impacts from At-risk Transit Capital Activity

Total Impact on...	Employment	Thousands of Constant 2015 Dollars		
		Labor Income	GDP	Output
Rail	38,166	\$2,278,754	\$3,435,758	\$6,815,942
Bus	11,168	\$676,661	\$1,037,294	\$2,164,914
Combined	49,334	\$2,955,414	\$4,473,052	\$8,980,855

Note: Rail interval spans 2017 to 2029, and BUS projects span an interval 2017 to 2021.

Foregone Long-term Economic Development Impacts

Besides short-term impacts of foregone construction activities and equipment purchases, there are longer-term impacts of foregone regional economic growth and development associated with transit investments. These are jobs generated by additional economic growth occurring as a result of enhanced productivity in the economy, including effects of improved labor market access and traffic congestion reduction with improved travel time reliability. (These jobs are over and above those supported by added spending on transit operations.)

There is a history of ex-post studies that have documented actual impacts of major transit lines, and ex-ante studies that have calculated the projected impacts of planned lines. We reviewed those studies, and examined the mix of 53 currently proposed transit investment projects awaiting federal matching funds. Based on that analysis, we identified the likely range of long term economic development impacts.

From a subset of transit projects which we investigated among this list of at-risk project proposals and others projects' literature, there is a propensity to attract additional ridership and generate benefits for them, their employers, and the retail stores or restaurants they travel to. The associated effect is roughly between 10 and 20 additional daily riders per invested million dollars invested. This range can be considerably higher for BRT projects.

Additionally, the long term economic development impact from major transit projects can be assessed in terms of the expected number of additional jobs generated as a result of completing those projects. The subset of transit studies that were reviewed demonstrated long term impacts on their regional economies, averaging between 8 and 20 jobs per million dollars invested. Using the low-end of this range, the total number permanent jobs generated by the \$38 billion of transit investment would be expected to grow over time, and exceed 300,000 more jobs than would exist without those investments. The additional job growth would be expected to occur over a period of 10-20 years after these projects are constructed and operational.

Comparison to National Impacts related to Defense Spending

We make no comment on the inherent value of national security. The 2014 APTA Economic Impact Update report (in Exhibit 4-4) cited 'total job impacts per \$1 billion of outlay' for various alternative uses of federal monies. Federal defense spending was associated with 8,555 total jobs per \$1 billion based on a 2007 study from UMASS-Amherst, PERI. A more recent study of federal defense outlays³ shows 5,467 total jobs per \$1 billion for 2018 when a \$30 billion envisioned cut was under consideration with the Budget Control Act of 2011. This compares to what is implied in Exhibit 4 for combined transit projects at-risk – namely 13,160 total jobs per \$1 billion of transit capital outlay.

The difference between the 2012 and 2007 study results on defense outlay stimulus is explained by different wages and productivity in the national economy, different modeling approaches, and different composition of defense outlays.



This study was conducted by the Economic Development Research Group, with direction from Darnell Grisby, Director-Policy Development and Research, American Public Transportation Association

³³ June 2012 conducted by the INFORUM Group, University Maryland-College Park, on behalf of the National Association of Manufacturers.

Appendix A: List of 53 Projects Included in Analysis

Metro Area	Project Name	Stage of Development
Albany, NY	River Corridor/Blue Line Bus Rapid Transit	SSPD
Albany, NY	Washington/Western Bus Rapid Transit Line	SSPD
Albuquerque, NM	Rapid Transit Project	SSPD
Baton Rouge, LA	TramLinkBR Streetcar	SSPD
Chicago, IL	South Shore Line Northwest Indiana Connectivity Plan	CCPD
Chicago, IL	West Lake Corridor Project	NSPD
Dallas, TX	CBD Second Light Rail Alignment (D2)	CCPD
Dallas, TX	DART Red and Blue Line Platform Extensions	CCPD
Durham, NC	Durham-Orange LRT Project	NSPD
Durham, NC	North-South Bus Rapid Transit Project	SSPD
El Paso, TX	Montana RTS Corridor	SSPD
Flagstaff, AZ	Transit Spine BRT	SSPD
Grand Rapids, MI	Laker Line BRT	SSPD
Indianapolis, IN	Red Line All-Electric BRT	SSPD
Jacksonville, FL	First Coast Flyer East Corridor BRT	SSPD
Jacksonville, FL	First Coast Flyer Southwest Corridor BRT	SSPD
Kansas City, MO	Prospect MAX	SSPD
Los Angeles, CA	Downtown Streetcar	SSPD
Los Angeles, CA	Santa Ana/Garden Grove Streetcar Project	NSE
Los Angeles, CA	Westside Purple Line Extension Section 3	NSPD
Miami, FL	Wave Streetcar	SSPD
Milwaukee, WI	East-West Bus Rapid Transit	SSPD
Minneapolis, MN	METRO Blue Line Extension	NSE
Minneapolis, MN	METRO Orange Line BRT	SSPD
Minneapolis, MN	Southwest LRT	NSE
New York, NY	Canarsie Line Power and Station Improvements	CCPD
New York, NY	Hudson Tunnel Project	NSPD
New York, NY	Portal North Bridge Project	NSPD
New York, NY	Second Avenue Subway Phase 2	NSPD
New York, NY	Woodhaven Boulevard Select Bus Service	NSPD

Metro Area	Project Name	Stage of Development
Orlando, FL	SunRail Connector to the Orlando International Airport	SSPD
Orlando, FL	SunRail Phase II North	SSPD
Phoenix, AZ	South Central LRT Extension	NSPD
Phoenix, AZ	Tempe Streetcar	SSPD
Portland, OR	Powell-Division Transit and Development	SSPD
Reno, NV	Virginia Street BRT Extension	SSPD
Riverside, CA	Redlands Passenger Rail Project	SSPD
Sacramento, CA	Downtown Riverfront Streetcar Project	SSPD
San Francisco, CA	Peninsula Corridor Electrification Project	CCE
San Francisco, CA	SMART Regional Rail - San Rafael to Larkspur Extension	SSPD
San Francisco, CA	Transbay Corridor Core Capacity Project	CCPD
San Jose, CA	BART Silicon Valley Phase II - Extension to San Jose and Santa Clara	NSPD
Seattle, WA	Federal Way Link Extension	NSPD
Seattle, WA	Lynnwood Link Extension	NSE
Seattle, WA	Madison Street Corridor Bus Rapid Transit	SSPD
Seattle, WA	Seattle Streetcar Center City Connector	SSPD
Seattle, WA	Swift II BRT	SSPD
Seattle, WA	Tacoma Link Expansion	SSPD
Spokane, WA	Spokane Central City Line	SSPD
Tampa, FL	Central Avenue BRT project	SSPD
Washington, DC	National Capital Purple Line	NSE
Washington, DC	West End Transitway	SSPD

CCE = Core Capacity Engineering

CCPD = Core Capacity Project Development

NSE = New Starts Engineering

NSPD = New Starts Project Development

SSPD = Small Starts Project Development