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THE JOB IMPACT OF TRANSPORTATION REAUTHORIZATION

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America continues to reel from the worst recession in 75 years, with nationwide unemployment above 9% for the past 12 months. While the American Recovery and Reinvestment Act successfully mitigated the severity and length of the downturn, robust economic recovery, though hoped for, is far from guaranteed.

Transportation investments represent an opportunity for Congress to kick the economy into a higher gear by creating millions of well-paying jobs while simultaneously addressing the backlog of repair and maintenance in transportation that has been growing for decades. The average rush hour commuter has seen annual delays nearly triple since 1982 (Puentes 2008), wasting billions of gallons of gasoline that pollute our air and threaten our national security through our dependence on foreign oil. This increased traffic congestion—along with deep cuts in transit service across the country (Transportation for America 2010)—reduces mobility, which leads to segmented labor markets (thus hurting businesses) and exacerbated poverty (Talukdar 2008).

The current transportation policy, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (known as "SAFETEA-LU"), expired last fall, and it has since been extended on a short-term basis multiple times as Congress struggles to write and pass a full six-year reauthorization. This report examines the job impact of different transportation policies, exploring both how many and what types of jobs would be created. The analysis compares investments under the current policy with an alternative transportation funding scenario, developed by Transportation for America (T4A), that increases investments in repair and maintenance, public transportation, and livable communities.

This paper finds that:

- The mix of investments in the T4A proposed reauthorization would support more jobs than the current policy baseline. The T4A proposal would support 14,400 direct and indirect jobs for each billion dollars of transportation investment (or 7.2 million jobs from the entire $500 billion proposal), while the SAFETEA-LU baseline would support 13,700 jobs per billion dollars.

- Overall, transportation investment would disproportionately benefit those hardest hit by the recession, providing a higher proportion of jobs to low-wage workers and workers without a college degree relative to the overall economy. These characteristics hold equally for the SAFETEA-LU baseline and the T4A proposal.
- The T4A proposal creates a higher share of unionized jobs than the SAFETEA-LU baseline, although both scenarios entail job impacts that are more unionized than the overall economy.

Methodology

The first question that arises in this sort of modeling exercise is how to characterize the policy impulse for the model to analyze. That is, we need to know how federal, state, and local policies will change spending levels overall and across industries. In the current case, these inputs are the investment flows that result from a policy decision to increase infrastructure investments in certain transportation projects.

These investment flows are then inputed into our jobs model. The first step requires judgments both on how much spending is being called for and into which industries the spending flows. Generally, this judgment has been based on research reports, interviews with experts, and other sources to get a sense of how the overall spending package will be allocated to the different industrial sectors identified in our model.

Jobs model

Once inputs have been specified, we use experience gained in previous research merging industrial data on input-output relationships with household-level data on demographic and labor market variables to characterize the job outcomes that would result from the change in industrial mix accompanying increased infrastructure investment.

The jobs model allows us to identify both the (relative) number and type of jobs created for a given amount of spending in a particular industry. It should be noted that these results do *not* include the re-spending effects that stem from the increased incomes of workers hired as a result of spending. That is, we include, for example, the workers directly hired in the construction industry as well as the workers newly hired by industries that supply construction (heavy equipment, for example), but we do not include the effect of construction and heavy equipment workers subsequently spending their wage income. New waitstaff hired at a diner near a construction site to handle increased demand from the site's workers, for example, are not captured in this structural analysis. Their re-spending effects are generally better captured in the short-run macroeconomic multiplier estimates presented in earlier papers (Bivens, Irons, and Pollack 2009).

It is also important to note that these estimates are based on currently existing patterns of employment across sectors. As such, the final results tell us how many and what kinds of jobs would be created with our current economy. However, to the extent that the new investments are aimed at transforming the economy or labor market, our results are not precisely indicative of the true impact. For example, policy restrictions on the kinds or quality of jobs created and specific policy targeting of job creation would lead to different outcomes than estimated here. The numbers presented here compose an estimated baseline for policy makers to consider.

How many jobs?

Calculating the total number of jobs supported by a given stream of infrastructure investment takes two steps. First, we translate a given amount of infrastructure spending into the number of jobs directly supported in the receiving industries. Second, we then calculate how many jobs are needed to produce the output in supplier industries that expand to support the output generated by the industries directly receiving the investment flows. The construction industry (for example) is a purchaser of cement, steel, heavy equipment, as well as less obvious supplies—such as accounting and legal services. These supplier industries will need to expand to support final output of the construction industry when it expands.

It is important to note that the number of jobs supported by infrastructure spending that is output from the jobs model is a measure of gross, not net, job creation. That is, if a given amount of infrastructure spending supports 1 million jobs in total, this does not mean that the economy as a whole will see a net increase in employment of 1 million. Rather, a portion of these 1 million jobs may be pulled from currently employed sectors of the economy. Again, the macroeconomic multipliers identified in previous work are far superior in assessing the net job creation impacts of infrastructure spending.

That said, the gross jobs numbers identified in our model do convey important information:

- They give a good relative ranking of the labor intensity of different kinds of spending and can, by themselves, allow judgments to be made about the best place to engage in investment spending if the goal is to generate the greatest number of job opportunities in the economy.
- The gross number of jobs created must be combined with the types of jobs created that will allow researchers to judge how relative labor demand for different sub-populations in the labor market will fare. This point will be made plain in the section below, which examines how the number and type of jobs created through infrastructure spending result in changing demands for workers with different educational attainments.

What kinds of jobs?

To estimate the characteristics of jobs created through infrastructure spending, we use data from the Current Population Survey (CPS) to calculate the share of each industry's employment by relevant categories (gender, race, ethnicity, wage levels, etc.). To ensure we have a large enough sample size, we pool together data from 2005 to 2007.

To match up the CPS data on demographic and labor market variables with the Bureau of Labor Statistics (BLS) data on industry input-output relationships, we construct a crosswalk between the industry coding schemes used in the respective datasets. The crosswalk matches up both the CPS and the BLS industry codes to the North American Industrial Classification System, or NAICS that maps cleanly onto both the CPS and BLS data. (This crosswalk is available from the author upon request.)

Next, we multiply the number of jobs created in each industry (either through direct spending or through supplier effects) by the industry demographic shares and then sum these up across industries to get the total number of jobs in each category (both direct and supplier jobs) that are created through a given amount of infrastructure spending.

Updates to the model

In February we published an analysis of T4A's smaller one-year job creation proposal (Bivens and Pollack 2010). Since that analysis, we have made a few changes to the jobs model.

First, we have updated the BLS employment requirements matrix to the latest 2008 release. Many industries in the matrix were slightly altered, and the total matrix was expanded from 201 industries to 202, necessitating a change in the BLS-CPS crosswalk.

Second, the previous version of the model suffered from the exceedingly broad BLS and CPS industry "construction," which does not capture the differences between commercial vs. residential construction or heavy vs. light construction. It also makes highway/bridge and transit investments appear to have similar job outputs because both share the construction input. This is despite the fact that recent reports have found that transit investments—because less money is spent on land acquisition and more on labor—generally create more jobs than highway or bridge investments (see Heintz et al. 2009; Bernstein et al. 2010; and Economic Development Research Group 2009).

To remedy this, we created three new construction categories: roads and bridges (new), roads and bridges (repair), and mass transit. We designed these input categories to be consistent with the findings of the jobs model created by the Political Economy Research Institute (Heintz et al. 2009), which uses a combination of input/output data from

TABLE 1

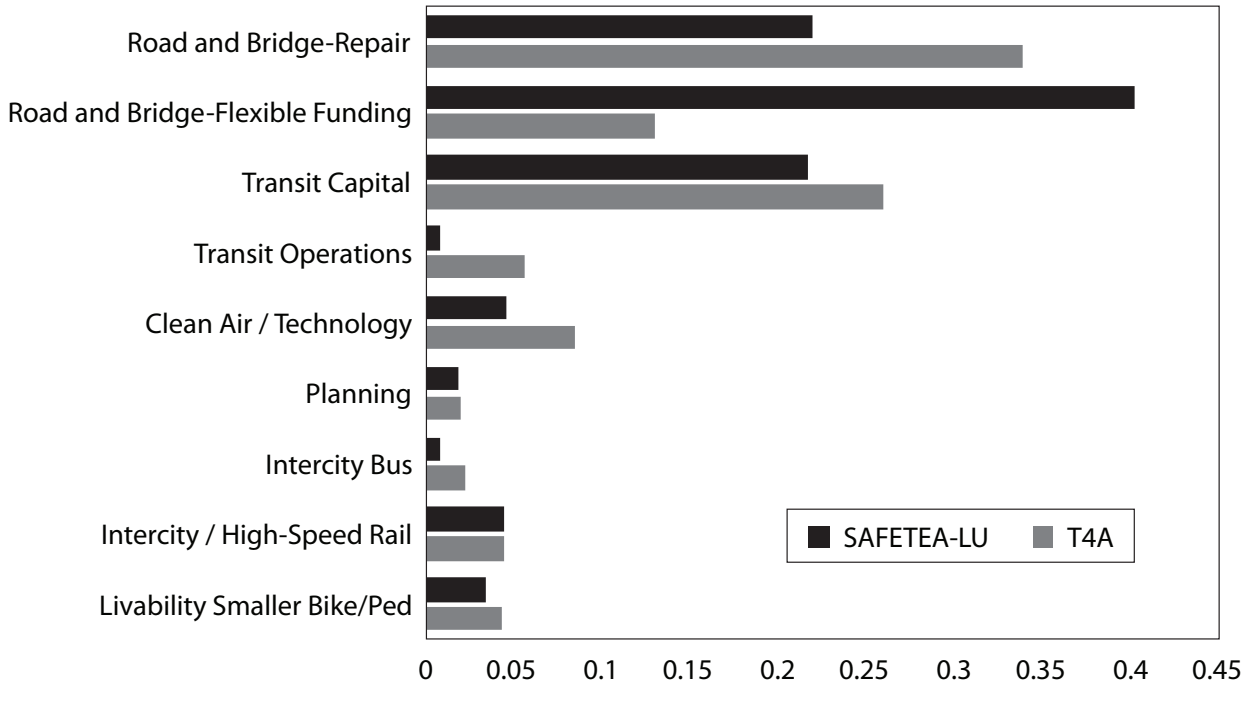
Reauthorization options

	SAFETEA-LU		T4A	
EPI category	***Billions of dollars***	***Share of total***	***Billions of dollars***	***Share of total***
Road and bridge - New (flexible funding)	$201.1	40%	$65.0	13%
Road and bridge - Repair	109.8	22	169.0	34
Transit capital	108.6	22	130.0	26
Transit operations	4.1	1	28.0	6
Clean Air / technology	23.2	5	42.4	8
Planning	9.3	2	10.0	2
Intercity bus	4.2	1	11.5	2
Intercity / High-speed rail	22.6	5	22.5	4
Livability smaller bike/ped	17.1	3	21.7	4
Total	**500**		**500**	

SOURCE: Transportation for America.

FIGURE A

Comparison of SAFETEA-LU and T4A by program



SOURCE: Transportation for America.

the Bureau of Economic Analysis and IMPLAN, an independent macroeconomic model. We found these findings both reliable and methodologically similar enough to our own analysis. This change only affected the number of jobs created—these synthetic construction categories were still crosswalked with the CPS construction category, so the job characteristics of the construction investments remain unchanged.

Inputs

This brief estimates the job impacts of two different transportation policies, comparing investments under the current policy with an alternative transportation funding scenario, authored by Transportation for America, that increases investments in repair and maintenance, public transportation, and livable communities. Both spending proposals are displayed below in **Table 1** and **Figure A**.

Each spending proposal was mapped to an industry in the Bureau of Labor Statistics (BLS) employment requirements matrix classification system. The BLS code and industry description corresponding to each spending flow is identified in **Table 2**. When a given spending flow would theoretically direct money to more than one BLS industry, we split the total spending flow. So, for example, funding associated with transit expansion was split between new construction of transit lines and the purchase of new transit rolling stock. **Figure B** compares the proposals by input industries.[1]

TABLE 2

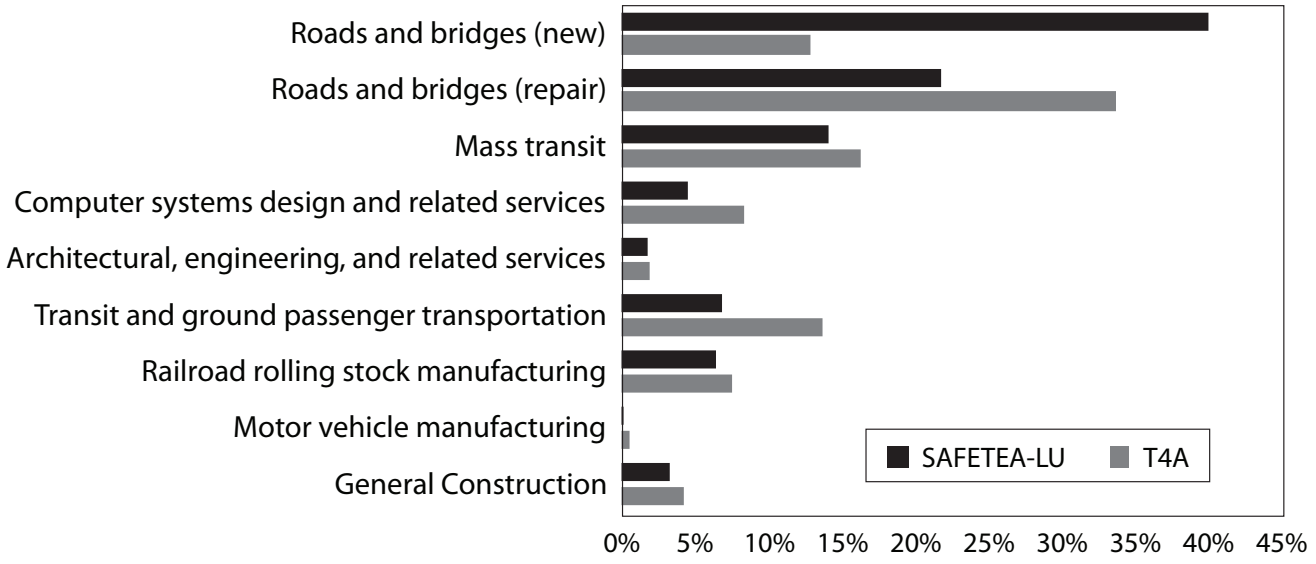
Mapping inputs into BLS

Spending category	Split	BLS classification	
		Code	*Title*
Road and bridge - new (flexible funding)	100%	N/A	Roads and bridges (new)
Road and bridge - repair	100	N/A	Roads and bridges (repair)
Transit capital	50	N/A	Mass transit
	25	92	Railroad rolling stock manufacturing
	25	106	Transit and ground passenger transportation
Transit operating	100	106	Transit and ground passenger transportation
Clean air/technology	100	131	Computer systems design and related services
Planning	100	129	Architectural, engineering, and related services
Intercity bus	75	106	Transit and ground passenger transportation
	25	88	Motor vehicle manufacturing
Intercity/High-speed rail	75	N/A	Mass transit
	25	92	Railroad rolling stock manufacturing
Livability/Bike/Ped	100	15	Construction

SOURCE: Author's analysis.

FIGURE B

Comparison of SAFETEA-LU and T4A by input industry



SOURCE: Author's analysis.

There are a few significant differences between the two proposals. The SAFETEA-LU baseline continues spending patterns under existing federal transportation policies and programs that encourage new construction over repair, maintenance, and public transportation. In contrast, the T4A proposal focuses its investment on maintaining existing infrastructure, expanding the transit system, and a more strategic and targeted investment in new highway capacity.

Because the point of this analysis is to compare the mix of funding—rather than the overall level of funding—the SAFETEA-LU baseline funding projections were inflated to the T4A funding level ($500 billion). By equalizing the overall funding of the scenarios at a constant level, the job impacts of the investment scenarios can be compared based on the mix of transportation investments rather than overall size. Had we not done this, the T4A proposal would have appeared to create more jobs simply because it funded the transportation system at a higher level.

Findings

Job impact

The model predicts that a $500 billion investment using SAFETEA-LU policy priorities would support 6.9 million direct and indirect jobs, while a $500 billion proposal from T4A would support 7.2 million jobs. The difference in job impact is due to the difference in policy and spending priorities between the two investment scenarios. The T4A proposal focuses on more labor intensive sectors of the economy, such as repair and maintenance, public transportation, and livable communities.

The T4A proposal begins by investing more in the maintenance and repair of the existing transportation system, which creates more jobs per dollar than investments in new capacity. A new overpass, for example, requires huge amounts of steel beams, rebar, and concrete, along with heavy machinery. New capacity also often involves land costs, either purchasing the rights-of-way or the land itself. By contrast, maintenance and repair projects do not have as costly capital and land expenses, so a larger share of each repair dollar goes toward job creation.

TABLE 3

Direct and indirect jobs supported through a $500 billion SAFETEA-LU baseline

	Direct	Indirect	Total	Direct	Indirect	Total	Overall economy*
Job characteristics					***(% of total)***		
Totals	4,212,988	2,643,703	6,856,691	61%	39%	100%	
Gender							
Male	3,677,452	1,667,962	5,345,415	87%	63%	78%	60%
Female	535,536	969,870	1,505,405	13	37	22	40
Race							
White	2,670,249	1,800,533	4,470,781	63%	68%	65%	67%
Black	311,193	303,769	614,962	7	12	9	11
Hispanic	1,081,315	382,369	1,463,684	26	14	21	15
Asian	77,307	107,640	184,947	2	4	3	4
Other	72,925	43,521	116,445	2	2	2	2
Union status							
Covered	689,196	256,416	945,612	16%	10%	14%	12%
Non-covered	3,523,793	2,381,416	5,905,208	84	90	86	88
Education							
Less than high school	947,606	302,195	1,249,802	22%	11%	18%	11%
High school only	1,705,469	886,818	2,592,286	40	34	38	31
Some college	1,042,598	761,699	1,804,297	25	29	26	30
BA or greater	517,315	687,120	1,204,436	12	26	18	28
Wage quintiles							
First (lowest)	530,245	499,907	1,030,152	13%	19%	15%	19%
Second	965,258	541,423	1,506,681	23	21	22	21
Third	1,020,860	552,525	1,573,385	24	21	23	20
Fourth	960,989	534,314	1,495,302	23	20	22	20
Fifth (highest)	735,637	509,663	1,245,300	17	19	18	20

* This calculation was made by weighting jobs with hours worked.

SOURCE: Author's analysis of BLS and Census data.

Public transportation, in which the T4A proposal also invests heavily, also creates more jobs per dollar than investments in the traditional mix of transportation projects for many of the same reasons that advantage maintenance and repair over new capacity. Public transportation investments require less money for land and capital, although this varies across types of investments; for example, investments in new rail systems tend to have higher land costs than bus systems. Transit operations investments are even more labor intensive, as they require few non-labor inputs beyond routine capital maintenance.

TABLE 4

Direct and indirect jobs supported through a $500 billion T4A proposal

Job characteristics	Direct	Indirect	Total	Direct	Indirect	Total	Overall economy*
				(% of total)			
Totals	4,238,809	2,864,957	7,103,766	60%	40%	100%	
Gender							
Male	3,590,309	1,796,723	5,387,032	85%	63%	76%	60%
Female	648,500	1,061,843	1,710,344	15	37	24	40
Race							
White	2,653,360	1,910,859	4,564,219	63%	67%	64%	67%
Black	392,871	363,583	756,455	9	13	11	11
Hispanic	1,025,957	417,070	1,443,027	24	15	20	15
Asian	94,521	119,918	214,439	2	4	3	4
Other	72,099	47,137	119,237	2	2	2	2
Union status							
Covered	762,376	318,040	1,080,416	18%	11%	15%	12%
Non-covered	3,476,433	2,540,527	6,016,960	82	89	85	88
Education							
Less than high school	891,536	323,793	1,215,328	21%	11%	17%	11%
High school only	1,697,243	968,811	2,666,055	40	34	38	31
Some college	1,074,237	826,509	1,900,746	25	29	27	30
BA or greater	575,794	739,454	1,315,247	14	26	19	28
Wage quintiles							
First (lowest)	540,957	539,343	1,080,300	13%	19%	15%	19%
Second	963,109	590,939	1,554,047	23	21	22	21
Third	1,021,842	603,121	1,624,964	24	21	23	20
Fourth	961,052	578,774	1,539,826	23	20	22	20
Fifth (highest)	751,850	546,390	1,298,239	18	19	18	20

* This calculation was made by weighting jobs with hours worked.

SOURCE: Author's analysis of BLS and Census data.

Job characteristics

The types of jobs created through transportation investments would also disproportionately benefit both those hardest hit by the recession and those who have been on the losing end of structural trends in the labor market over the past few decades.

Income inequality has been growing for decades, leading to stagnating wages for most Americans even as each worker's output has skyrocketed. Simply put, more and more of the benefits of the economy have been captured by the wealthiest Americans. This trend has been the single largest impediment to raising the living standards of typical American workers.

Much (though far from all) of this rise in wage inequality is attributable to the rapid increase in the "college premium" since 1979. The college premium refers to the pay advantage enjoyed by workers who have completed a four-year college degree that persists even after controlling for other relevant labor market characteristics, such as gender, race, ethnicity, experience, and region of residence, for example. In 1979 the college premium was roughly 50% (college workers earned wages that were 50% higher than those of non-graduates), and by 2007 it had risen to roughly 80% (Bivens, Irons, and Pollack 2009).

The mix of jobs created by both the SAFETEA-LU baseline and T4A proposal pushes against these trends. Over 80% of the jobs under each scenario would be filled by workers without a four-year college degree, relative to the economy-wide average of 72% (**Tables 3** and **4**). Yet despite lower education, most of these workers would actually be paid better—fewer jobs would fall into the lowest wage quintile and more would fall into the middle of the wage distribution. About 20% of the jobs would be filled by Hispanics, compared to 15% of the overall economy.

While the model is a useful tool, it has particular difficulty estimating unionization rates. It finds that unionization rates resulting from the investments in the T4A proposal (and to a lesser extent the SAFETEA-LU baseline) are marginally higher than those in the overall economy. It is likely, however, that the actual unionization rates of the job impacts are much higher than the model predicts.

Why? For one, although the changes to the model that incorporated PERI research adjusted for the overly aggregated BLS construction industry, this only corrected the overall job impact. Each new industry input had the same job characteristics as the generic construction industry, which suffers from low unionization. Furthermore, commercial and infrastructure construction, which are more relevant to transportation investments, tend to be much more heavily unionized. The low unionization rates within the construction industry are almost certainly due to the residential construction sector.

The job impact of these investments on unionization is important because the de-unionization of the U.S. workforce over the last few decades has been another key contributing factor to rising inequality (DiNardo, Fortin, and Lemieux 1996). Unions provide bargaining power to many workers who otherwise lack it in the modern U.S. economy. Consequently, the union "wage-and-benefit premium" (that wage-and-benefit advantage enjoyed by union members that persists even after controlling for other relevant labor market characteristics) averages roughly 15%, and is much larger for lower-wage workers. This disproportionate advantage that unions provide to low-wage workers is a key reason why de-unionization has led to a much less equal U.S. economy. Since 1979, unionization rates have fallen by more than half, from 27% of the workforce to 12.3%. Higher unionization of the workforce would lead to higher wages, more economic security, and an economy that delivers more broadly shared prosperity.

TABLE 5

Industry and occupation breakout for SAFETEA-LU baseline

Broad Industries/Occupations	Direct	Indirect	Total
Broad industries			
Natural resources and mining	0	62,418	62,418
Construction	3,618,619	4,011	3,622,630
Manufacturing – total	145,188	602,921	748,109
Wholesale trade	0	180,075	180,075
Retail trade	0	307,048	307,048
Information	0	107,085	107,085
Financial activities	0	135,068	135,068
Professional and business services	139,159	393,003	532,162
Education services	0	4,394	4,394
Leisure and hospitality	0	136,098	136,098
Other services	0	295,105	295,105
Utilities	0	11,327	11,327
Transportation and warehousing	310,021	149,208	459,228
Government – total	0	197,982	197,982
Broad cccupations			
Management, business, and finance	430,815	394,869	825,684
Professional	186,650	360,775	547,425
Service	53,473	214,244	267,716
Sales & related	48,706	311,478	360,184
Office & admin. support	267,273	404,580	671,853
Farm, fish, forest	1,809	22,940	24,749
Construction & extraction	2,526,840	64,687	2,591,526
Install, maintain, & repair	232,143	130,501	362,644
Production	138,271	345,835	484,106
Transport	327,009	387,924	714,933

Industry breakouts	Direct	Indirect	Total
Industry breakouts			
Truck transportation	0	63,869	63,869
Rail transportation	0	12,396	12,396
Transit			
Transit and ground	310,021	7,621	317,642
Local govt. transit	0	177,520	177,520
Warehousing	0	9,940	9,940
Construction	3,618,619	4,011	3,622,630
Manufacturing			
Cement and concrete	0	58,060	58,060
Iron and steel mills	0	7,524	7,524
Steel product	0	4,625	4,625
Aluminum	0	2,981	2,981
Nonferrous metal	0	2,546	2,546
Industrial machinery	0	1,135	1,135
Metalworking machinery	0	3,043	3,043
Engine, turbine, and power transmission	0	1,310	1,310
Motor vehicle	884	763	1,646
Motor vehicle body and trailer	0	1,874	1,874
Motor vehicle parts	0	15,645	15,645
Railroad rolling stock	144,305	228	144,533
Other transportation	0	154	154
Ports			
Water transportation	0	71	71
Support activities for transportation	0	13,831	13,831

SOURCE: Author's analysis of BLS and Census data.

TABLE 6

Industry and occupation breakout for T4A proposal

Broad Industries/Occupations	Direct	Indirect	Total
Broad industries			
Natural resources and mining	0	59,236	59,236
Construction	3,229,748	6,938	3,236,686
Manufacturing – total	170,174	591,147	761,321
Wholesale trade	0	186,967	186,967
Retail trade	0	281,471	281,471
Information	0	119,062	119,062
Financial activities	0	144,495	144,495
Professional and business services	216,132	408,949	625,081
Education services	0	4,422	4,422
Leisure and hospitality	0	139,911	139,911
Other services	0	322,005	322,005
Utilities	0	11,830	11,830
Transportation and warehousing	622,755	151,023	773,778
Government – total	0	374,563	374,563
Broad cccupations			
Management, business, and finance	433,291	423,814	857,105
Professional	235,178	375,412	610,590
Service	77,884	234,082	311,967
Sales & related	51,445	308,741	360,186
Office & admin. support	276,417	433,140	709,557
Farm, fish, forest	1,617	21,444	23,061
Construction & extraction	2,260,642	67,627	2,328,269
Install, maintain, & repair	239,972	141,950	381,921
Production	144,172	346,800	490,972
Transport	518,191	505,557	1,023,748

Industry breakouts	Direct	Indirect	Total
Industry breakouts			
Truck transportation	0	61,645	61,645
Rail transportation	0	11,671	11,671
Transit			
Transit and ground	622,755	7,581	630,336
Local govt. transit	0	352,293	352,293
Warehousing	0	10,831	10,831
Construction	3,229,748	6,938	3,236,686
Manufacturing			
Cement and concrete	0	52,439	52,439
Iron and steel mills	0	7,487	7,487
Steel product	0	4,593	4,593
Aluminum	0	2,923	2,923
Nonferrous metal	0	2,646	2,646
Industrial machinery	0	1,198	1,198
Metalworking machinery	0	3,224	3,224
Engine, turbine, and power transmission	0	1,752	1,752
Motor vehicle	2,421	840	3,260
Motor vehicle body and trailer	0	2,431	2,431
Motor vehicle parts	0	20,964	20,964
Railroad rolling stock	167,753	271	168,024
Other transportation	0	194	194
Ports			
Water transportation	0	76	76
Support activities for transportation	0	15,143	15,143

SOURCE: Author's analysis of BLS and Census data.

Endnotes

1. Industry descriptions are available on the BLS Web site or from the author upon request.

References

Bernstein, Scott, William Schroeer, and Phineas Baxandall. 2010. "What We Learned From the Stimulus." Smart Growth America, U.S. PIRG, and Center for Neighborhood Technology. January 5. http://www.smartgrowthamerica.org/documents/010510_whatwe-learned_stimulus.pdf

Bivens, Josh, and Ethan Pollack. 2010. "An Analysis of Transportation for America's Jobs Proposals." Economic Policy Institute Issue Brief #271. Economic Policy Institute, Washington, D.C.: EPI. February 4. http://www.epi.org/publications/entry/ib271/

Bivens, Josh, John Irons, and Ethan Pollack. 2009. "Transportation Investments and the labor market: How many jobs could be generated and what type?" Economic Policy Institute Issue Brief #252. Washington, D.C.: EPI. April 7. http://epi.3cdn.net/c3b007692d5f2d665d_zam6b984i.pdf

DiNardo, John, Nicole M. Fortin, and Thomas Lemieux 1996. Labor market institutions and the distribution of wages,1973-1992: A semiparametric approach. *Econometrica.* Econometric Society, Vol. 64, No. 5, pp. 1001-44, September. http://www-personal.umich.edu/~jdinardo/Pubs/dfl1996.pdf

Economic Development Research Group. 2009. "Job Impacts of Spending on Public Transportation: An Update." April 29. http://www.apta.com/gap/policyresearch/Documents/jobs_impact.pdf

Heintz, Robert, James Pollin, and Heidi Garrett-Peltier. 2009. "How Infrastructure Investments Support the U.S. Economy: Employment, Productivity and Growth". *Political Economy Research Institute*, Amherst, Mass. January. http://www.peri.umass.edu/236/hash/efc9f7456a/publication/333/

Puentes, Robert. 2008. "A Bridge to Somewhere: Rethinking American Transportation for the 21st Century." *Brookings Institution*, Washington, D.C. June 12. http://www.brookings.edu/reports/2008/06_transportation_puentes.aspx

Talukdar, Debabrata. 2008. Cost of being poor: Retail price and consumer price search differences across inner-city and suburban neighborhoods. *Journal of Consumer Research*, October.

Transportation for America. 2010. "Stranded at the Station: Mapping the Transit Funding Crisis" http://t4america.org/resources/transitfundingcrisis/