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Tower 55 Multimodal Improvement Project Economic Impact Results

TIGER II Assessment

August 6, 2010

HDR Corporation
Decision Economics

Risk Analysis · Investment and Finance
Economics and Policy

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Impact Results

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1: TOWER 55 (FORT WORTH) AT-GRADE IMPROVEMENT PROJECT ECONOMIC IMPACT RESULTS – AUGUST 6, 2010 (FOR TIGER II ASSESSMENT)

1.1 ECONOMIC IMPACTS DURING CONSTRUCTION OF THE FACILITY

Table 1 shows the estimated cost of the proposed facility (as of August 2010) classified by broad type of costs. As Table 1 shows, the total costs including the costs of Engineering, Construction, and Right of Way are estimated at \$91.19 million. Table 2 shows the quarterly distribution of project costs developed based on the anticipated construction schedule of the project, in percentage terms. As the table shows, the project is expected to be completed over a period of about 2 years from the fourth quarter of 2010 to the third quarter of 2012.

BNSF Railway (BNSF) and Union Pacific Railroad (UPRR) intend to source materials domestically, based upon BNSF's and UP's belief of the capacity of domestic suppliers to meet the aggressive construction schedule desired for TIGER job-stimulus criteria, and to supply materials that create the lasting value and low life-cycle costs that are sought by the TIGER program. Therefore, the economic impact analysis assumes that all expenditures shown in Table 1 would be made domestically.

Impacts of Construction Activity

Overall Impact on Economic Activity in the United States

In order to estimate the impact of construction activity, the expenditures shown in Table 1 were simulated with the IMPLAN economic impact software using the 2007 data for the United States. The reported results represent thus estimates of impacts generated across all of the U.S.

Table 1 shows the classification of the project cost categories into IMPLAN industrial sectors. It can be seen in this table that the majority of costs will fall into the construction industry. A relatively small fraction of the costs related to planning and engineering were classified into the architectural, engineering, and planning services industry. Costs related to right of way were excluded from the analysis as these costs are frequently in their essence a transfer and do not recirculate in the economy in the same manner as other project expenditures.

Table 3 shows the quarterly employment impact of the project construction estimated by IMPLAN. As the table shows, the estimated employment impact, or the number of job-years created each quarter, ranges from a total of 12.5 job-years in Q4 of 2010 to 368 job-years in Q4 of 2011. The cumulative impact of the project (i.e., the sum across all quarters) amounts to 1,783.3 job-years of employment including 670.8 direct job-years, 396.6 indirect job-years, and 715.9 induced job-years. During the 2-year construction period, the project will thus support each year on average 891 jobs that would last the entire year.

Table 4 shows the employment impact estimated using the employment impact multiplier recommended by the Council of Economic Advisors (CEA), 1 job per \$92,000 of government expenditures, or 10.8 jobs per \$1 million of government expenditures. According to the CEA's recommendations, 64% of jobs created should be applied to Direct and Indirect jobs, while 36% should be applied to Induced jobs. As this table shows, according to these multipliers the cumulative impact of the project amounts to 970.8 job-years, including 621.3 direct and indirect job-years, and 349.5 induced job-years. During the 2-year construction period, the project will thus generate on average 485.4 jobs each year that would last the entire year.

Comparing the results reported in Table 3 and Table 4, it can be seen that the employment impacts estimated with IMPLAN are much higher than those based on the CEA-estimated multiplier. The difference may be due to certain methodological assumptions as well as the level of analysis. The CEA multiplier represents an industrial average, whereas the multipliers in IMPLAN are specific for the industries directly affected – construction and engineering and planning services – which tend to be relatively labor-intensive.

Table 5 shows the estimated effect on value added. As the table shows, the cumulative effect on GDP amounts to \$133.54 million, including \$38.84 million of direct GDP, \$37.46 million indirect GDP, and \$57.23 million of induced GDP. The quarterly impact over the period of analysis from Q4 2010 to Q3 2012 fluctuates in a pattern that corresponds to the patterns of employment impact. The average annual value added to the economy by the project during its 2-year construction period amounts to \$66.77 million.

Table 1: Project Costs, by Category with Classification into IMPLAN Industrial Sectors

CATEGORY OF EXPENDITURE/ COST	Total	IMPLAN INDUSTRY NUMBER	IMPLAN INDUSTRY NAME
Project Approval/Environmental Document	\$0.75	369	Architectural, engineering, and related services
Plans Specifications & Estimate	\$2.36	369	Architectural, engineering, and related services
ROW	\$1.87		Not included in assessment
Construction	\$86.21	36	Construction of other nonresidential structures
Total	\$91.19		
Total without ROW	\$89.32		

Table 2: Distribution of Project Costs, by Quarter, in Percent of Category of Expenditures

	4Q-2010	1Q-2011	2Q-2011	3Q-2011	4Q-2011	1Q-2012	2Q-2012	3Q-2012
Construction	0.0%	2.5%	13.2%	22.1%	21.4%	14.8%	17.2%	8.8%
Project Approval, Planning and Other Costs	19.3%	80.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3: IMPLAN-Estimated Employment Impact of Project Expenditures: Number of Jobs-Years Created, by Quarter, Total, and Annual Average

Effect Type	4Q-2010	1Q-2011	2Q-2011	3Q-2011	4Q-2011	1Q-2012	2Q-2012	3Q-2012	Total Job-Years	Average Number of Jobs per Year*
Direct	4.6	35.2	85.6	142.9	138.8	95.5	111.2	57.1	670.8	335.4
Indirect	2.3	19.0	50.9	85.0	82.5	56.8	66.2	34.0	396.6	198.3
Induced	5.6	40.3	90.9	151.7	147.3	101.4	118.1	60.6	715.9	358.0
Total	12.5	94.5	227.4	379.6	368.6	253.6	295.4	151.7	1,783.3	891.7

NOTE: (*) Number of jobs lasting the entire year during the 2-year construction period

Table 4: Employment Impact of Project Expenditures Based on CEA Employment Multiplier, Number of Jobs-Years Created, by Quarter, Total, and Annual Average

Effect Type	4Q-2010	1Q-2011	2Q-2011	3Q-2011	4Q-2011	1Q-2012	2Q-2012	3Q-2012	Total Job-Years	Average Number of Jobs per Year*
Direct and Indirect	4.2	32.2	79.3	132.5	128.6	88.5	103.1	52.9	621.3	310.7
Induced	2.3	18.1	44.6	74.5	72.4	49.8	58.0	29.8	349.5	174.7
Total	6.5	50.3	124.0	207.0	201.0	138.3	161.1	82.7	970.8	485.4

NOTE: (*) Number of jobs lasting the entire year during the 2-year construction period

Table 5: IMPLAN-Estimated Value Added Impact of Project Expenditures Generated, by Quarter, and Total, in Millions of \$

Effect Type	4Q-2010	1Q-2011	2Q-2011	3Q-2011	4Q-2011	1Q-2012	2Q-2012	3Q-2012	Total Value Added	Average Value Added per Year
Direct	\$0.36	\$2.40	\$4.89	\$8.17	\$7.94	\$5.46	\$6.36	\$3.27	\$38.84	\$19.42
Indirect	\$0.19	\$1.69	\$4.83	\$8.06	\$7.83	\$5.38	\$6.27	\$3.22	\$37.46	\$18.73
Induced	\$0.45	\$3.22	\$7.26	\$12.13	\$11.78	\$8.10	\$9.44	\$4.85	\$57.23	\$28.61
Total	\$0.99	\$7.31	\$16.99	\$28.36	\$27.54	\$18.95	\$22.07	\$11.33	\$133.54	\$66.77

Comments on the Type/Quality of Jobs Created

Table 6 shows the IMPLAN-estimated cumulative employment impacts by industry. As the table shows, the largest impact is in the construction industry and the architectural, engineering and related services industry.

Specifically, the project is estimated to create (or preserve) nearly 647 job-years of employment in the construction industry. The populations most likely to benefit from these expanded employment opportunities are local populations around the project area.

In addition, the project will create or preserve nearly 91.5 job-years of employment in the architectural, engineering and related services industry (23.9 direct, 64.5 indirect, and 3.1 induced). The jobs in this category can be considered high-quality with relatively high remuneration and experience, and high learning opportunities.

The project will also promote the creation and preservation of jobs for lower-income and lower-skill level workers. For example, as the table shows, the project will create or preserve 75.3 job-years in the food-services industry, 45.9 jobs in wholesale trade, and 21 jobs in the services to building industry. The project will also generate several jobs in various sectors of the retail industry, automotive repairs, truck transportation, and hotels.

The table also shows that the project will create or preserve several jobs in industries that provide support or inputs to the construction industry, for example, 4.9 jobs in ready-mix concrete manufacturing, 7.6 jobs in plate work and fabricated structural product manufacturing, 4.8 jobs in ornamental and architectural metal products manufacturing, and 3.4 jobs in wood-windows and doors and millwork manufacturing.

Table 6: IMPLAN-Estimated Employment Impact of Project Expenditures, Number of Jobs, by Industry (for Selected Industries), Cumulative over Project Construction Cycle

IMPLAN Industry Number	Industry Description	Cumulative Employment Impact (Job-Years), by Type			
		Direct	Indirect	Induced	Total
		Direct*	Indirect	Induced*	Total*
36	Construction of other new nonresidential structures	646.9	0	0	646.9
369	Architectural, engineering, and related services	23.9	64.5	3.1	91.5
413	Food services and drinking places	0	11.8	63.5	75.3
319	Wholesale trade	0	20	25.8	45.9
360	Real estate	0	12.2	32.7	45.1
382	Employment services	0	21.5	17.5	39
394	Offices of physicians, dentists, and other health practitioners	0	0	28.7	28.7
397	Hospitals	0	0	28.2	28.2
329	Retail - General merchandise	0	3.2	19.3	22.6
324	Retail - Food and beverage	0	3.1	19.1	22.2
388	Services to buildings and dwellings	0	10.6	10.3	21
335	Truck transportation	0	12	7.5	19.5
398	Nursing and residential care facilities	0	0	19.2	19.2
414	Automotive repair and maintenance, except car washes	0	9.9	7.2	17.1
367	Legal services	0	7.9	8.3	16.2
354	Monetary authorities and depository credit intermediation	0	6.3	9.8	16.1
320	Retail - Motor vehicle and parts	0	2.6	13.3	16
425	Civic, social, professional, and similar organizations	0	5.3	10.7	15.9
356	Securities, commodity contracts, investments, and related activities	0	3.8	11.5	15.3
381	Management of companies and enterprises	0	7	6.9	13.9
331	Retail - Nonstore	0	1.9	12	13.8
368	Accounting, tax preparation, bookkeeping, and payroll services	0	7.2	5.9	13.1
327	Retail - Clothing and clothing accessories	0	1.4	10.5	11.9
357	Insurance carriers	0	2	9.9	11.9
330	Retail - Miscellaneous	0	1.7	9.4	11.1
39	Maintenance and repair construction of nonresidential maintenance and repair	0	5.6	5.1	10.7
323	Retail - Building material and garden supply	0	1.3	8.7	10
411	Hotels and motels, including casino hotels	0	3.4	6	9.4

Table 6: IMPLAN-Estimated Employment Impact of Project Expenditures, Number of Jobs, by Industry (for Selected Industries), Cumulative over Project Construction Cycle (Cont'd)

IMPLAN Industry Number	Industry Description	Cumulative Employment Impact (Job-Years), by Type			
		Direct	Indirect	Induced	Total
		Direct*	Indirect	Induced*	Total*
374	Management, scientific, and technical consulting services	0	4.5	4.4	9
355	Nondepository credit intermediation and related activities	0	2.5	6.3	8.8
358	Insurance agencies, brokerages, and related activities	0	1.6	7.2	8.8
325	Retail - Health and personal care	0	1.3	7.3	8.5
351	Telecommunications	0	3.1	5.4	8.5
186	Plate work and fabricated structural product manufacturing	0	7.4	0.2	7.6
161	Ready-mix concrete manufacturing	0	4.8	0.1	4.9
187	Ornamental and architectural metal products manufacturing	0	4.6	0.3	4.8
99	Wood windows and doors and millwork	0	3.1	0.3	3.4
95	Sawmills and wood preservation	0	2.1	0.2	2.3
Other		0	135.4	274.1	409.2
Total		670.8	396.6	715.9	1783.3