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Economic Analysis in Support of TIGER II Application

South Orient Rail Line – Economic Impact
of Project Construction

HDR | Decision Economics

August 18, 2010

HDR Corporation
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1: SORR RAIL LINE IMPROVEMENT PROJECT ECONOMIC IMPACT RESULTS – AUGUST 10, 2010 (FOR TIGER II ASSESSMENT)

1.1 PROJECT DESCRIPTION

The South Orient rail line (SORR), approximately 391 miles in length, is a state-owned facility that extends from San Angelo Junction (in Coleman County, 5 miles southwest of Coleman) through San Angelo to Presidio at the Texas/Mexico border. The rail line was the subject of abandonment applications until 2001, when TxDOT completed the purchase of the SORR and leased operations on the line to Texas Pacifico Transportation Company, Ltd. (“TXPF”, a subsidiary of Grupo Mexico). Under the terms of the agreement, TxDOT became the railroad’s permanent owner and TXPF obtained a 40-year operating lease with renewal options. TXPF has invested approximately \$8 million in rehabilitation of the infrastructure.

The SORR serves numerous local and regional businesses located along the route, including agricultural interests, steel manufacturers, mining businesses, energy resources, and other miscellaneous customers. It also has one of five rail border crossings between Texas and Mexico, and one of eight between the U.S. and Mexico. Grupo Mexico owns 73% of Ferromex, the Mexican railroad company that connects with SORR at Presidio. This “sister” company relationship between TXPF & Ferromex could promote international traffic on the SORR.

The project is designed to rehabilitate the state-owned South Orient rail line (SORR) from railroad Milepost (MP) 721.52 in Tom Green County (near Knickerbocker Road west of San Angelo, Texas) to MP 882.84 (near U.S. 385 west of Fort Stockton, Texas) in Pecos County. The major activities of the project will be cross tie replacements in critical areas and an extensive rail and tie project between to replace antiquated 70# rail (current mainline track size ranges from 112# to 146# per linear yard) with larger rail and associated ballast and surfacing work as necessary to enable 25 mph track speeds. Some railroad bridge repairs and highway/rail grade crossing surface repairs and improvements are also planned.

The project area encompasses a large oil and gas development region as well as a wind turbine development area. Some energy and mining companies have already located at Fort Stockton and use the line for non-hazardous, non-time sensitive materials movements. Other large energy and mining companies have expressed their interest in locating facilities in the region and are dependent upon rail transportation. Currently hazardous materials (petroleum/natural gas) movements over the SORR are limited by regulation to 5 freight cars per train due to poor track conditions, and speeds are limited to 10 mph from MP 868.0 to MP 882.82 (and beyond to MP 1029). Operational impacts from the condition of the tracks and speed limitations prohibit the use of the SORR for transporting hazardous materials and also make the line non-competitive with other modes of transportation for the movement of some minerals and other traffic. It is important that the SORR be rehabilitated in order to support the development of minerals and energy resources in the region, improve service to existing customers, and foster economic development opportunities. Improving the rail line will also encourage the diversion of freight

from the highway to rail.

This report details the economic impact of the construction related to the South Orient Rehabilitation as described in the TIGER II Grant Application for the project.

1.2 ECONOMIC IMPACTS DURING CONSTRUCTION OF THE FACILITY

Table 1 shows the estimated cost of the proposed facility (as of August 2010) classified by broad types of costs. As Table 1 shows, the total costs including the costs of construction management are estimated at \$25.95 million. Table 2 shows the quarterly distribution of project costs in percentage terms. The project could proceed as soon as funds are awarded, and the project schedule has been developed based on the anticipated construction schedule. 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 second quarter of 2012.

1.2.1 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 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 almost all of the costs will fall into the construction industry. A small amount of the costs related to construction management was classified into the architectural, engineering, and planning services industry.

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 over the construction period, amounts to 74 job-years for a cumulative impact of nearly 518 jobs-years of employment. This includes 194.8 direct job-years, 115.4 indirect job-years, and 207.7 induced job-years. During the nearly 2-year construction period, the project will thus support each year on average 295.9 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 274.6 job-years, including 175.8 direct and indirect job-years and 98.9 induced job-years. During the construction period, the project will thus generate on average 156.9 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 \$38.76 million, including \$11.25 million of direct GDP, \$10.91 million indirect GDP, and \$16.60 million of induced GDP. The quarterly impact over the period of analysis from Q4 2010 to Q2 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 construction amounts to \$22.15 million.

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

CATEGORY OF EXPENDITURE/ COST	Total	IMPLAN INDUSTRY NUMBER	IMPLAN INDUSTRY NAME
Construction Management	\$0.68	369	Architectural, engineering, and related services
Construction	\$25.27	36	Construction of other nonresidential structures
Total	\$25.95		

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
Construction and Construction Management	14.3%	14.3%	14.3%	14.3%	14.3%	14.3%	14.3%

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	Total Job-Years	Average Number of Jobs per Year*
Direct	27.8	27.8	27.8	27.8	27.8	27.8	27.8	194.8	111.3
Indirect	16.5	16.5	16.5	16.5	16.5	16.5	16.5	115.4	65.9
Induced	29.7	29.7	29.7	29.7	29.7	29.7	29.7	207.7	118.7
Total	74.0	517.9	295.9						

NOTE: (*) Number of jobs lasting the entire year during the 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	Total Job-Years	Average Number of Jobs per Year*
Direct and Indirect	25.1	25.1	25.1	25.1	25.1	25.1	25.1	175.8	100.4
Induced	14.1	14.1	14.1	14.1	14.1	14.1	14.1	98.9	56.5
Total	39.2	274.6	156.9						

NOTE: (*) Number of jobs lasting the entire year during the 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	Total Value Added	Average Value Added per Year
Direct	\$1.61	\$1.61	\$1.61	\$1.61	\$1.61	\$1.61	\$1.61	\$11.25	\$6.43
Indirect	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$10.91	\$6.23
Induced	\$2.37	\$2.37	\$2.37	\$2.37	\$2.37	\$2.37	\$2.37	\$16.60	\$9.49
Total	\$5.54	\$38.76	\$22.15						

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.

Specifically, the project is estimated to create (or preserve) nearly 189.6 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 25 job-years of employment in the architectural, engineering and related services industry (5.2 direct, 18.8 indirect, and 0.9 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 21.8 job-years in the food-services industry, 13.4 jobs in wholesale trade, and 6.1 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, in ready-mix concrete manufacturing, in plate work and fabricated structural product manufacturing, and in ornamental and architectural metal products 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
36	Construction of other new nonresidential structures	189.6	0	0	189.6
369	Architectural, engineering, and related services	5.2	18.8	0.9	25
413	Food services and drinking places	0	3.4	18.4	21.8
319	Wholesale trade	0	5.9	7.5	13.4
360	Real estate	0	3.5	9.5	13.1
382	Employment services	0	6.2	5.1	11.2
394	Offices of physicians, dentists, and other health practitioners	0	0	8.3	8.3
397	Hospitals	0	0	8.2	8.2
329	Retail - General merchandise	0	0.9	5.6	6.5
324	Retail - Food and beverage	0	0.9	5.5	6.4
388	Services to buildings and dwellings	0	3.1	3	6.1
335	Truck transportation	0	3.5	2.2	5.7
398	Nursing and residential care facilities	0	0	5.6	5.6
414	Automotive repair and maintenance, except car washes	0	2.9	2.1	5
320	Retail - Motor vehicle and parts	0	0.8	3.9	4.7
354	Monetary authorities and depository credit intermediation	0	1.8	2.9	4.7
367	Legal services	0	2.3	2.4	4.7
356	Securities, commodity contracts, investments, and related activities	0	1.1	3.3	4.4
331	Retail - Nonstore	0	0.5	3.5	4
381	Management of companies and enterprises	0	2	2	4
368	Accounting, tax preparation, bookkeeping, and payroll services	0	2.1	1.7	3.8
327	Retail - Clothing and clothing accessories	0	0.4	3.1	3.5
357	Insurance carriers	0	0.6	2.9	3.4
330	Retail - Miscellaneous	0	0.5	2.7	3.2
39	Maintenance and repair construction of nonresidential maintenance and repair	0	1.6	1.5	3.1
323	Retail - Building material and garden supply	0	0.4	2.5	2.9
411	Hotels and motels, including casino hotels	0	1	1.8	2.7
355	Nondepository credit intermediation and related activities	0	0.7	1.8	2.6
374	Management, scientific, and technical consulting services	0	1.3	1.3	2.6
325	Retail - Health and personal care	0	0.4	2.1	2.5
351	Telecommunications	0	0.9	1.6	2.5

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
358	Insurance agencies, brokerages, and related activities	0	0.4	2.1	2.5
186	Plate work and fabricated structural product manufacturing	0	2.2	0.1	2.2
161	Ready-mix concrete manufacturing	0	1.4	0	1.4
187	Ornamental and architectural metal products manufacturing	0	1.3	0.1	1.4
95	Sawmills and wood preservation	0	0.6	0.1	0.7
166	Cut stone and stone product manufacturing	0	0.2	0	0.3
	Other	0	41.8	82.4	124.2
	Total	194.8	115.4	207.7	517.9