The Projected Economic Impacts from Container Terminal Development at Gulfport

Update

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Mississippi State Port Authority

TranSystems

EXPERIENCE | Transportation

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1 EXECUTIVE SUMMARY

1.1 Background

A study on the projected economic impacts of the development of a new container terminal at Gulfport was completed in February 2009 by Martin Associates[1]. This study addressed the impacts from the development of large-scale container terminal capacity, including a 50-foot draft channel and a large intermodal rail component, to accommodate up to 3.0 million TEU[2] of throughput[3]. Mississippi State Port Authority (MSPA) requires an update of the economic impacts to address smaller-scale development of container terminal capacity. Three alternative development scenarios, provided to TranSystems by MSPA, consider future throughput under more limited container terminal expansion and the dredging of Gulfport's ship channel to a depth of 45 feet, and with an emphasis on truck-served markets. In the high growth scenario, throughput would reach as much as 1.0 million TEU based on the 45-foot channel and the attraction of new direct calls by ocean carriers operating in the Asia trade lane.

TranSystems undertook to update the economic impacts using a limited methodology that draws on the economic impact ratios (for example, direct jobs per 1,000 TEU of throughput) contained in the previous study prepared by Martin Associates, the benchmarking of economic impact ratios in studies released by other U.S. ports, and benchmarks drawn from the PortKit model developed by the U.S. Maritime Administration (MARAD). This approach provides defensible economic impact results in an expedited and cost-efficient manner.

[1] *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, February 23, 2009, Martin Associates.
[2] TEU – Twenty-Foot Equivalent Unit is a standard unit of measurement of container volume. One 20-foot container equals one TEU and one 40-foot container equals two TEU.
[3] Container throughput comprises loaded inbound and outbound containers, and empty containers.

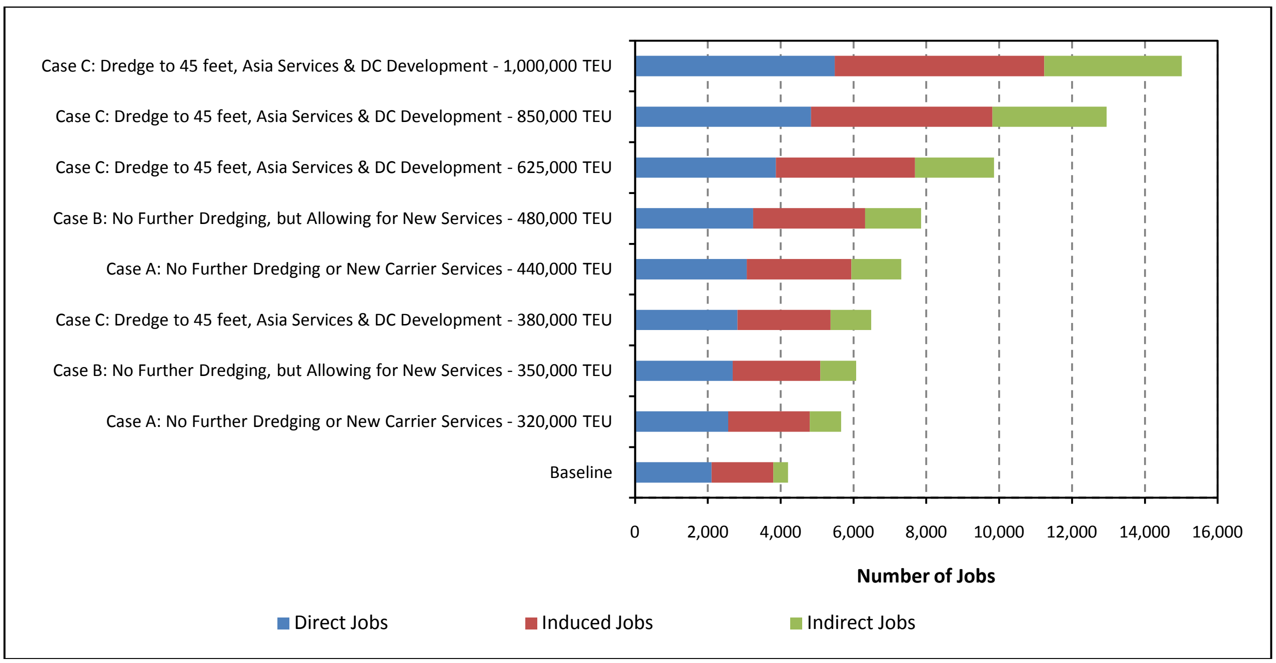
1.2 Summary of Economic Impacts

The Port of Gulfport generates 4,200 direct, induced and indirect jobs for residents of Mississippi under current (2008) operations; this includes the bulk and breakbulk business at the port[4]. Under the alternative throughput scenarios, Gulfport is projected to generate from 5,658 to 15,000 jobs (Figure 1-1). The lower total is driven by growth of existing container business and no further dredging of the Port's ship channel. The upper total is driven by dredging the Port's ship channel to a depth of 45 feet and the capture of Asian trade and related distribution center activity. The future scenarios assume the throughput growth is focused on truck-served markets. These future scenarios also assume no change to the Port's existing bulk and breakbulk business.

The scenarios shown in Figure 1-1 are projected to generate the following additional economic impacts:

- Direct wages and salaries from $80.4 to $202.1 million
- Direct employees supporting re-spending/local consumption from $229.4 to $576.3 million
- Business revenue from $339.3 million to $1,336.6 million
- Businesses making local purchases from $64.8 million to $384.1 million
- State and local taxes from $35.7 million to $94.1 million
- Federal taxes from $68.8 million to $181.1 million

Figure 1-1: Projected Number of Jobs by Future Container Throughput Scenario



Source: TranSystems

[4] Current (2008) impacts are taken from the report by Martin Associates.

2 METHODOLOGY

2.1 Introduction

The economic impacts from the expansion of container handling capacity at Gulfport were estimated by reviewing recent studies on the market outlook for Gulfport and drawing on the methodology used in past economic impact studies; specifically,

- Container throughput[5] scenarios provided by MSPA.
- Economic impact ratios (e.g., impact per 1,000 TEU[6] of throughput) derived from *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, February 23, 2009, Martin Associates.
- Economic impact studies released by other U.S. ports were reviewed to benchmark impact ratios.
- Revised economic impact ratios were applied to the alternative scenarios for container throughput.

2.2 Future Container Throughput Scenarios

Alternative cases for future container throughput at Gulfport are shown in Table 2-1 and were provided to TranSystems by MSPA. Case A assumes there is no deepening of the port's channel and there are no new ocean carrier services. Future expansion of container throughput is all derived from growth of existing services and trades, primarily Central America and the Caribbean. Assumptions for Gulfport's future total throughput are from 260,000 TEU to 440,000 TEU.

Table 2-1: Historical Throughput and Future Container Throughput Scenarios

TEU	2006	2007	2008	2009	2010	Future Throughput Assumptions					
Total Throughput	197,428	206,622	214,074	198,900	212,000						
Case A: No Further Dredging or New Carrier Services						260,000	320,000	375,000	440,000		
Case B: No Further Dredging, but Allowing for New Services						290,000	350,000	410,000	480,000		
Case C: Dredge to 45 feet, New Asia services & Distribution Center Development						290,000	380,000	500,000	625,000	850,000	1,000,000

Source: AAPA and future throughput scenarios from MSPA

Under Case B, Gulfport secures one new weekly service and another carrier consolidates business at Gulfport (by moving cargo from Freeport, TX). This scenario also assumes there is no deepening of the Gulfport ship channel. Assumptions for Gulfport's future total throughput are from 290,000 TEU to 480,000 TEU.

[5] Container throughput comprises loaded inbound and outbound containers, and empty containers.
[6] TEU – Twenty-Foot Equivalent Unit is a standard unit of measurement of container volume. One 20-foot container equals one TEU and one 40-foot container equals two TEU.

The final scenario addresses the impact on throughput if the Gulfport's ship channel is dredged to 45 feet. The deeper channel attracts direct calls by Asian services. This scenario also incorporates the potential for additional distribution center (DC) cargo as a result of the gradual development of DC warehouse space within 60 to 70 miles of Gulfport. Assumptions for Gulfport's future total throughput are from 380,000 TEU to 1.0 million TEU.

2.3 Economic Impact Study, February 2009

The economic impacts from the development of new large-scale container terminal capacity at Gulfport were assessed by Martin Associates in the report *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, February 23, 2009. A copy of the report is provided in the Appendix. Economic impacts presented in the Martin report are summarized in Table 2-3 at the end of Section 2.3. Impacts fall into the following categories:

- Revenue impact – business revenue for firms which provide cargo handling and vessel services.

- Employment impact – jobs created by port activity:
    - Direct jobs generated by the movement of cargo. This includes jobs at the terminal, with railroads and trucking companies moving the cargo to and from the port, and with others involved in the distribution channel – steamship agents, freight forwarders, warehousing, etc.
    - Induced jobs generated throughout the local economy from the spending on local goods and services by those employed in direct jobs.
    - Indirect jobs generated by the local purchase of goods and services by firms active in the cargo handling and distribution process.

- Personal earnings impact – the wages and salaries (excluding benefits) received by those in direct jobs. Re-spending of these earnings generates the induced jobs impact in the local economy.

- Tax impact – federal, state and local taxes paid by firms and employees whose jobs are directly dependent upon and supported by the cargo throughput.

The Martin study considered the impacts from the long term development of large-scale container terminal capacity, which would handle annual throughput of 750,000 TEU, 1.3 million TEU, 2.1 million TEU and 3.0 million TEU at different future phases of operation. The future economic impacts were compared against a baseline that reflected current (2008) operations. Additionally, the economic impacts assume current (2008) bulk and breakbulk operations under each scenario. The long-term container throughput scenarios incorporated a large share of cargo movement by intact intermodal rail service – an estimated 75 percent. The scale of throughput and intermodal rail share, and thus economic impacts, were driven by the vision for significant investment in new container terminal capacity at Gulfport and the eventual dredging of the port's ship channel to 50 feet.

TranSystems converted the Martin report's economic impacts to ratios of impacts per 1,000 TEU of throughput (for the baseline) or impacts per 1,000 TEU of incremental throughput (for Cases 1 to 4). The results illustrate several relationships:

- The incremental container throughput under each future scenario (Cases 1 to 4) has a lower marginal impact on direct and induced jobs, due to the less labor-intensive nature of container terminal operations, compared to the more labor-intensive business mixture of the Port's current operations, which includes bulk and breakbulk cargo.

- The large share of intact intermodal rail cargo under these future scenarios dampens local economic impacts because this traffic passes intact through the Gulfport region and supports jobs at final inland destinations (for example, at inland terminals and distribution centers in Chicago).
- Incremental container throughput supports between 1.1 and 1.3 induced jobs for every direct job.
- Incremental container throughput supports between 0.9 and 1.2 indirect jobs for every direct job.
- The results also show that the future container terminal operations generate higher business revenues per unit of throughput, and thus higher indirect impacts (jobs and purchases of goods and services), compared to Gulfport's existing operations.

In reviewing the Martin report, TranSystems found the Re-spending/Local Consumption impact appears to be sharply overstated for the 3.0 million TEU throughput case (Table 2-2). The total impact of $1.9 billion is 83 percent higher than under the 2.1 million TEU throughput case. This increase is inconsistent with the 35 percent increase in personal earnings, which drives re-spending and local consumption. TranSystems re-estimated the impact to be $1.4 billion, a difference of approximately $0.5 billion from the original projection. In turn, the total personal earnings impact was re-estimated at $2.1 billion instead of $2.6 billion.

Table 2-2: Review of Re-spending/ Local Consumption Impact in Martin Associates Report

	Case 1	Case 2	Case 3	Case 4
Total Throughput TEU	750,000	1,304,107	2,100,147	3,000,000
Personal Earnings				
Direct	$157,361,000	$239,759,000	$358,135,000	$485,171,000
Re-spending/Local Consumption	$448,748,000	$683,720,000	$1,021,292,000	$1,868,734,000
Indirect	$66,254,000	$110,316,000	$173,618,000	$244,523,000
Total	$672,363,000	$1,033,795,000	$1,553,045,000	$2,598,428,000
Direct		+52%	+49%	+35%
Re-spending/Local Consumption		+52%	+49%	+83%
Indirect		+67%	+57%	+41%
TranSystems Revision				
Re-spending/Local Consumption				$1,383,560,000
Total				$2,113,254,001

Source: TranSystems derived from *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, February 23, 2009, Martin Associates

Table 2-3: Projected Economic Impacts, Martin Associates, February 2009 Report

All Values in 2008 Dollars		Baseline	Case 1	Case 2	Case 3	Case 4
Total Throughput TEU		214,074	750,000	1,304,107	2,100,147	3,000,000
Incremental Throughput TEU (difference from Baseline)			535,926	1,090,033	1,886,073	2,785,926
Total Economic Impacts						
Jobs						
	Direct	2,100	3,900	5,900	8,800	12,000
	Induced	1,700	4,000	6,000	9,000	12,200
	Indirect	400	2,500	4,200	6,600	9,400
Total		4,200	10,400	16,100	24,400	33,600
Personal Earnings						
	Direct	$61,498,000	$157,361,000	$239,759,000	$358,135,000	$485,171,000
	Re-spending/Local Consumption	$175,374,000	$448,748,000	$683,720,000	$1,021,292,000	$1,383,560,000 [1] *($1,868,734,000)*
	Indirect	$9,996,000	$66,254,000	$110,316,000	$173,618,000	$244,523,000
Total		$246,868,000	$672,363,000	$1,033,795,000	$1,553,045,000	$2,113,254,000 [1] *($2,598,428,000)*
Business Revenue		$183,962,000	$969,948,000	$1,615,018,000	$2,541,759,000	$3,579,801,000
Local Purchases		$15,096,000	$266,736,000	$444,130,000	$698,984,000	$984,445,000
State/Local Taxes		$26,662,000	$72,615,000	$111,650,000	$167,729,000	$228,232,000
Federal Taxes		$51,349,000	$139,851,000	$215,029,000	$323,033,000	$439,558,000
Economic Impacts per 1,000 TEU of Throughput (Baseline) or Incremental Throughput (Case 1 to 4)						
		Baseline	Case 1	Case 2	Case 3	Case 4
Jobs (per 1,000 TEU)						
	Direct	9.8	3.4	3.5	3.6	3.6
	Induced	7.9	4.3	3.9	3.9	3.8
	Indirect	1.9	3.9	3.5	3.3	3.2
Personal Earnings ($ per 1,000 TEU)						
	Direct	$287,274	$178,874	$163,537	$157,278	$152,076
	Re-spending/Local Consumption	$819,221	$510,097	$466,358	$448,508	$433,675 [2]
	Indirect	$46,694	$104,973	$92,034	$86,753	$84,183
$ Per 1,000 TEU						
Business Revenue		$859,338	$1,466,594	$1,312,856	$1,250,109	$1,218,926
Local Purchases		$70,518	$469,542	$393,597	$362,599	$347,945
State/Local Taxes		$124,546	$85,745	$77,968	$74,794	$72,353
Federal Taxes		$239,866	$165,138	$150,161	$144,047	$139,346

(1) TranSystems recalculated the Re-spending/Local Consumption impact for the 3.0 million TEU throughput case (see discussion in Section 2.3). The amount from the original report is shown in brackets.
(2) Based on TranSystems estimate.

Source: TranSystems derived from *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, February 23, 2009, Martin Associates

2.4 Other Economic Impact Studies

TranSystems reviewed economic impact studies released by other U.S. ports[7] to further understand the relationship between container throughput, its composition (intermodal rail share) and economic impacts. The review of economic impact studies for seven ports found:

- An average of 4.1 direct jobs per 1,000 TEU of throughput.
- An average of 3.6 direct jobs per 1,000 TEU of throughput at those ports with a large share (up to 70 percent) of intact intermodal cargo in total throughput. This average ratio is consistent with the ratios calculated for Cases 1 to 4 in Table 2-3 above, as these future scenarios incorporate a high share of intact intermodal rail traffic in total throughput.
- An average of 4.3 direct jobs per 1,000 TEU of throughput at those ports with a small share (30 percent and under) of intact intermodal cargo in total throughput.

An additional point of reference is the U.S. Maritime Administration's (MARAD) Port Economic Impact Kit (PortKit), which was released in December 2000 to provide a tool for assessing the economic impact of the port industry and port related investments on local communities. The MARAD PortKit applies broader state multipliers to estimate economic impacts. This differs from the economic impact study prepared by Martin Associates, which incorporates interviews and inputs specific to the Gulfport area and thus generates a more refined assessment of economic impacts. However, in support of the analysis in this study, the MARAD PortKit is useful for establishing extremes for testing the relationship between intermodal rail share of throughput and direct jobs. Using the PortKit:

- A container terminal with 100 percent intact intermodal cargo generates as few as 3.1 direct jobs per 1,000 TEU of throughput, and
- A container terminal with zero percent intact intermodal cargo generates up to 4.5 direct jobs per 1,000 TEU of throughput.

The above broad range for direct job impacts is consistent with and supports the findings from the review of economic impact studies at other U.S. ports and the impact ratios derived from the study prepared by Martin Associates.

[7] Baltimore, Houston, Los Angeles, Oakland, Port Everglades, Seattle, and Tacoma

2.5 Assumptions for Updated Economic Impacts

The economic impacts from projected growth in container throughput under the alternative scenarios are calculated using the following assumptions:

- Economic impacts are calculated for the incremental increase in container throughput between the baseline and the forecast year, as shown in Table 2-4.

Table 2-4: Projected Incremental Container Throughput

	Baseline 2008	Future Throughput Assumptions					
Total Throughput TEU	214,074						
Case A: No Dredging or New Carrier Services		260,000	320,000	375,000	440,000		
	Incremental TEU (difference from 2008)	45,926	105,926	160,926	225,926		
Case B: No Further Dredging, but Allowing for New Services		290,000	350,000	410,000	480,000		
	Incremental TEU (difference from 2008)	75,926	135,926	195,926	265,926		
Case C: Dredge to 45 feet, New Asia Services & Distribution Center Development		290,000	380,000	500,000	625,000	850,000	1,000,000
	Incremental TEU (difference from 2008)	75,926	165,926	285,926	410,926	635,926	785,926

Source: TranSystems derived from container throughput scenarios provided by *MSPA* and *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, February 23, 2009, Martin Associates

- In Cases A and B, projected incremental container throughput is driven by existing trade lanes. Under Case C, the new Asia services primarily handle cargo within the immediate truck-served hinterland of Gulfport. Therefore, in all three cases, it is assumed intermodal rail cargo will remain a minor component of Gulfport's container throughput. By contrast, intermodal rail was the majority share (up to 75 percent) of throughput under the forecast scenarios used to derive economic impacts in the Martin Associates report. Import and export cargo driven by the immediate hinterland of Gulfport generates greater economic impacts than intermodal cargo, since a larger share of the handling process (for example, warehousing) remains within the Port's local hinterland.

- The direct jobs generated by the incremental throughput are estimated by assuming a ratio of 4.3 direct jobs per 1,000 TEU of throughput (based on the benchmarking of economic impact studies discussed earlier). The direct jobs generated by the incremental throughput are then added to the baseline 2008 number of direct jobs to arrive at total projected direct jobs generated by each future throughput level.

- Incremental induced and indirect jobs are estimated by applying a ratio of 5.2 induced jobs per 1,000 TEU of throughput and 4.3 indirect jobs per 1,000 TEU of throughput. The incremental induced and indirect jobs are then added to the baseline totals to arrive at future estimates of total induced and indirect jobs generated by each future throughput level.

- Other impacts (personal earnings, business revenue, tax, etc.) are estimated using a similar approach as the calculation of job impacts. These dollar impacts are estimated by applying the dollar per 1,000 TEU of throughput ratios developed in Table 2-3.

- The economic impacts are calculated in 2008 dollars to allow comparison with the results presented in the Martin Associates report. As reference, the Bureau of Labor Statistics reported the consumer price index (CPI) declined by 0.4 percent in 2009 and increased by 1.8 percent in 2010.[8]

Table 2-5 summarizes the assumptions applied to generate the economic impacts presented in Section 3.

Table 2-5: Assumptions for Projected Economic Impacts

Economic Impact		Per 1,000 TEU of Incremental Throughput
Jobs		
	Direct	4.3
	Induced	5.2
	Indirect	4.3
Personal Earnings		
	Direct	$178,874
	Re-spending/Local Consumption	$510,097
	Indirect	$104,973
Business Revenue		$1,466,594
Local Purchases		$469,542
State/Local Taxes		$85,745
Federal Taxes		$165,138

Source: TranSystems

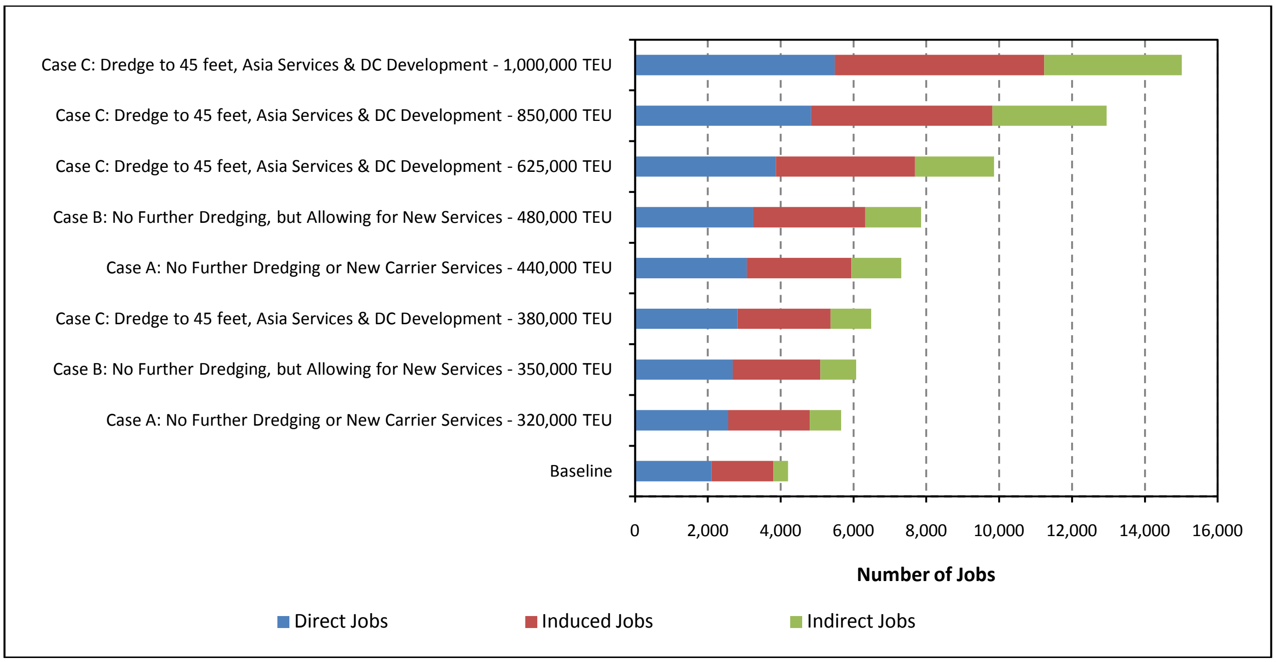
[8] Consumer Price Index – All Urban Consumers for small to medium sized cities in the South, reported by the Bureau of Labor Statistics.

3 PROJECTED ECONOMIC IMPACTS

3.1 Projected Economic Impacts

The Port of Gulfport generates 4,200 direct, induced and indirect jobs for residents of Mississippi under current (2008) operations; this includes the bulk and breakbulk business at the port. Under the alternative throughput scenarios, Gulfport is projected to generate from 5,658 to 15,000 jobs (Figure 3-1). The lower total is driven by growth of existing container business and no further dredging of the Port's ship channel. The upper total is driven by dredging the Port's ship channel to a depth of 45 feet and the capture of Asian trade and related distribution center activity. The future scenarios assume the throughput growth is focused on truck-served markets. These future scenarios also assume no change to the Port's existing bulk and breakbulk business.

Figure 3-1: Projected Number of Jobs by Future Container Throughput Scenario



Source: TranSystems

Under Case A and 440,000 TEU of throughput (no dredging and only growth of existing container business) Gulfport:

- Generates 3,071 direct jobs and these direct jobs
  - Receive $101.9 million in wages and salaries,
  - Support another $290.6 million of wages and local consumption expenditures through the re-spending of direct earnings, and
  - The re-spending supports 2,866 induced jobs

- Businesses providing services
  - Receive $515.3 million in revenue,
  - Make $121.2 million in local purchases, and
  - The local purchases support 1,371 indirect jobs in the local economy.

- Activity generates $46.0 million in state and local taxes area and $88.7 million of federal taxes.

Under Case B and 480,000 TEU of throughput (no dredging, growth of existing container business and the addition of new container services) the Port:

- Generates 3,243 direct jobs and these direct jobs
    - Receive $109.1 million in wages and salaries,
    - Support another $311.0 million of wages and local consumption expenditures through the re-spending of direct earnings, and
    - The re-spending supports 3,072 induced jobs

- Businesses providing services
    - Receive $574.0 million in revenue,
    - Make $140.0 million in local purchases, and
    - The local purchases support 1,543 indirect jobs in the local economy.

- Activity generates $49.5 million in state and local taxes area and $95.3 million of federal taxes.

Under Case C and 625,000 TEU of throughput (dredging to 45 feet and the addition of new Asian services and distribution center activity) the Port:

- Generates 3,867 direct jobs and these direct jobs
    - Receive $135.0 million in wages and salaries,
    - Support another $385.0 million of wages and local consumption expenditures through the re-spending of direct earnings, and
    - The re-spending supports 3,820 induced jobs

- Businesses providing services
    - Receive $786.6 million in revenue,
    - Make $208.0 million in local purchases, and
    - The local purchases support 2,167 indirect jobs in the local economy.

- Activity generates $61.9 million in state and local taxes area and $119.2 million of federal taxes.

Under Case C and 1.0 million TEU of throughput the Port:

- Generates 5,479 direct jobs and these direct jobs
    - Receive $202.1 million in wages and salaries,
    - Support another $576.3 million of wages and local consumption expenditures through the re-spending of direct earnings, and
    - The re-spending supports 5,755 induced jobs

- Businesses providing services
    - Receive $1,336.6 million in revenue,
    - Make $384.1 million in local purchases, and
    - The local purchases support 3,779 indirect jobs in the local economy.

- Activity generates $94.1 million in state and local taxes area and $181.1 million of federal taxes.

The projected economic impacts are presented in the following tables:

- Table 3-1: Projected Economic Impacts of Case A – No Further Dredging or New Carrier Services
- Table 3-2: Projected Economic Impacts of Case B – No Further Dredging, but Allowing for New Services
- Table 3-3: Projected Economic Impacts of Case C – Dredge to 45 Feet, Asia Services & Distribution Center Development

Table 3-1: Projected Economic Impacts of Case A – No Further Dredging or New Carrier Services

All Values in 2008 Dollars		Baseline [2]	Future Throughput Assumptions			
Throughput TEU [1]		214,074	260,000	320,000	375,000	440,000
Jobs						
	Direct	2,100	2,297	2,555	2,792	3,071
	Induced	1,700	1,937	2,247	2,530	2,866
	Indirect	400	597	855	1,092	1,371
Total		4,200	4,832	5,658	6,414	7,309
Personal Earnings						
	Direct	$61,498,000	$69,712,967	$80,445,407	$90,283,477	$101,910,287
	Re-spending/Local Consumption	$175,374,000	$198,800,715	$229,406,535	$257,461,870	$290,618,175
	Indirect	$9,996,000	$14,816,990	$21,115,370	$26,888,885	$33,712,130
Total		$246,868,000	$283,330,672	$330,967,312	$374,634,232	$426,240,592
Business Revenue		$183,962,000	$251,316,796	$339,312,436	$419,975,106	$515,303,716
Local Purchases		$15,096,000	$36,660,186	$64,832,706	$90,657,516	$121,177,746
State/Local Taxes		$26,662,000	$30,599,925	$35,744,625	$40,460,600	$46,034,025
Federal Taxes		$51,349,000	$58,933,128	$68,841,408	$77,923,998	$88,657,968

(1) Future throughput assumptions provided by MSPA

(2) Baseline taken from *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, Martin Associates

Source: TranSystems

Table 3-2: Projected Economic Impacts of Case B – No Further Dredging, but Allowing for New Services

All Values in 2008 Dollars		Baseline	Future Throughput Assumptions			
Throughput TEU		214,074	290,000	350,000	410,000	480,000
Jobs						
	Direct	2,100	2,426	2,684	2,942	3,243
	Induced	1,700	2,092	2,401	2,711	3,072
	Indirect	400	726	984	1,242	1,543
Total		4,200	5,245	6,070	6,896	7,859
Personal Earnings						
	Direct	$61,498,000	$75,079,187	$85,811,627	$96,544,067	$109,065,247
	Re-spending/Local Consumption	$175,374,000	$214,103,625	$244,709,445	$275,315,265	$311,022,055
	Indirect	$9,996,000	$17,966,180	$24,264,560	$30,562,940	$37,911,050
Total		$246,868,000	$307,148,992	$354,785,632	$402,422,272	$457,998,352
Business Revenue		$183,962,000	$295,314,616	$383,310,256	$471,305,896	$573,967,476
Local Purchases		$15,096,000	$50,746,446	$78,918,966	$107,091,486	$139,959,426
State/Local Taxes		$26,662,000	$33,172,275	$38,316,975	$43,461,675	$49,463,825
Federal Taxes		$51,349,000	$63,887,268	$73,795,548	$83,703,828	$95,263,488

(1) Future throughput assumptions provided by MSPA

(2) Baseline taken from *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, Martin Associates

Source: TranSystems

Table 3-3: Projected Economic Impacts of Case C – Dredge to 45 Feet, Asia Services & Distribution Center Development

All Values in 2008 Dollars		Baseline	Future Throughput Assumptions					
Throughput TEU		214,074	290,000	380,000	500,000	625,000	850,000	1,000,000
Jobs								
	Direct	2,100	2,426	2,813	3,329	3,867	4,834	5,479
	Induced	1,700	2,092	2,556	3,175	3,820	4,981	5,755
	Indirect	400	726	1,113	1,629	2,167	3,134	3,779
Total		4,200	5,245	6,483	8,134	9,854	12,950	15,014
Personal Earnings								
	Direct	$61,498,000	$75,079,187	$91,177,847	$112,642,727	$135,001,977	$175,248,627	$202,079,727
	Re-spending/Local Consumption	$175,374,000	$214,103,625	$260,012,355	$321,223,995	$384,986,120	$499,757,945	$576,272,495
	Indirect	$9,996,000	$17,966,180	$27,413,750	$40,010,510	$53,132,135	$76,751,060	$92,497,010
Total		$246,868,000	$307,148,992	$378,603,952	$473,877,232	$573,120,232	$751,757,632	$870,849,232
Business Revenue		$183,962,000	$295,314,616	$427,308,076	$603,299,356	$786,623,606	$1,116,607,256	$1,336,596,356
Local Purchases		$15,096,000	$50,746,446	$93,005,226	$149,350,266	$208,043,016	$313,689,966	$384,121,266
State/Local Taxes		$26,662,000	$33,172,275	$40,889,325	$51,178,725	$61,896,850	$81,189,475	$94,051,225
Federal Taxes		$51,349,000	$63,887,268	$78,749,688	$98,566,248	$119,208,498	$156,364,548	$181,135,248

(1) Future throughput assumptions provided by MSPA

(2) Baseline taken from *The Projected Economic Impacts of the Development of a Container Terminal at Gulfport*, Martin Associates

Source: TranSystems

4 APPENDIX – MARTIN ASSOCIATES REPORT

THE PROJECTED ECONOMIC IMPACTS OF THE DEVELOPMENT OF A CONTAINER TERMINAL AT GULFPORT

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THE PROJECTED ECONOMIC IMPACTS OF THE DEVELOPMENT OF A CONTAINER TERMINAL AT GULFPORT

The purpose of this report is to measure the potential economic impacts of the development of a new container terminal at the Port of Gulfport, Gulfport, MS. The analysis is based on the development of a long term projection of container throughput that could potentially be moved via a new container terminal located at Gulfport, MS. The container throughput projection and underlying market analysis and modal split analysis was provided to Martin Associates by CH2M HILL. The contemplated container terminal is assumed to begin operations at a future unspecified date, while construction of the terminal will occur over a ten year period prior to the terminal opening. In the first year of operation, the terminal is expected to handle 750,000 TEUs, growing to 3 million TEUs over a period of time. It is also anticipated that in order to handle this volume of containers, 75% of the containers will move via rail into the Midwestern and Southeastern portions of the US, an area that has previously been served via land bridge services via the West Coast Ports and the Southeastern Ports of Savanna, Charleston, Norfolk and Jacksonville. The economic impact of the projected container throughput was evaluated using the Martin Associates' economic impact model developed as part of our recent study for the Port of Gulfport (2007), as well as economic relationships between container throughput and maritime services (terminal operational levels, longshoremen productivity, freight forwarders, steamship agents, chandlers, etc.) developed from economic impact studies conducted by Martin Associates for major container ports such as Los Angeles, Long Beach, Oakland, Seattle and Tacoma.

1. IMPACT METHODOLOGY

The movement of containers via the new container terminal as well as current port bulk and break bulk operations will contribute to the local and regional economies by generating business revenue to local and national firms providing vessel and cargo handling services. These firms, in turn, provide employment and income to individuals, and pay taxes to state and local governments. The impact of the port operations is not reduced to a single number, but instead, the operations of the Gulfport container terminal and the continuation of the Port's current bulk and break bulk activity will create several impacts. These are the revenue impact, employment impact, personal income impact, and tax impact. These impacts are non-additive. For example, the income impact is a part of the revenue impact, and adding these impacts together would result in double counting.

1.1 Business Revenue Impact

At the outset, activity at the new container terminal and exiting port operations will generate business revenue for firms which provide handling and vessel services. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire people to provide the services, to purchase goods and services, and to make Federal, state and local tax payments. The remainder is used to pay stockholders, retire debt, make investments, or held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the local economy are those portions paid out in salaries to local employees, for local purchases by individuals and businesses directly dependent on the seaport, in contributions to state and local taxes, and in lease payments and wharfage, dockage and handling fees.

1.2 Employment Impact

The employment impact of the current port operations and the proposed container terminal consists of three levels of job impacts.

- Direct employment impact - jobs directly generated by the movement of the containers via the terminal, as well as the current levels of business at the Port of Gulfport. Direct jobs generated by the break bulk, bulk and containers include jobs with railroads and trucking companies moving cargo between inland origins and destinations and the marine terminals, longshoremen, steamship agents, freight forwarders, stevedores, warehousing and distribution center operations, etc.

- Induced employment impact - jobs that are created throughout the local economy because individuals directly employed by the activity at the port and proposed container terminal will spend their wages locally on goods and services such as food, housing and clothing. These jobs are held by residents located throughout the region, since they are estimated based on local and regional purchases. Martin Associates has developed a Gulfport specific induced model using data supplied by the US Bureau of Economic Analysis Regional Input-Output Modeling System (RIMS II), and US Bureau of Census data for the Gulfport Metropolitan Area.

- Indirect Jobs - jobs that are created locally due to purchases of goods and services by firms, not individuals. These jobs include jobs with local office supply firms, maintenance and repair firms, parts and equipment suppliers, etc. The local purchases likely to be made by a major container terminal are based on relationships developed by Martin Associates for economic impact studies for the Ports of Los Angeles, Long Beach, Seattle, Oakland and Tacoma.

1.3 Personal Earnings Impact

The personal earnings impact is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to handling the import and export containers. Re-spending of these earnings throughout the regional economy for purchases of goods and services is also estimated. This, in turn, generates additional jobs -- the induced employment impact. This re-spending throughout the region is estimated using a regional personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within the Gulfport area. The direct earnings are a measure of the local impact since they are received by those directly employed by seaport activity.

1.4 Tax Impact

Federal, state and local tax impacts are tax payments to the state and local governments by firms and by individuals whose jobs are directly dependent upon and supported by (induced jobs) activity at the container terminal.

2. KEY IMPACT ASSUMPTIONS

As part of the development of the baseline economic impact model for the Port of Gulfport in 2006, Martin Associates interviewed local service providers, including tug operations, pilots, freight forwarders and customhouse brokers, agents, surveyors, chandlers, trucking firms and railroads. Based on the data gathered during those interviews, as well as an updated induced impact model and local re-spending multiplier developed for this current container terminal study, Martin Associates developed the baseline economic impact model used in this analysis. To model expected employment by container terminal operators, longshoremen, freight forwarders/customhouse brokers, chandlers, ship repair operations, surveyors, warehouse and distribution centers, CFS operations, environmental support firms, bunkering firms, etc., Martin Associates developed employment, revenue and income relationships from our previous economic impact studies conducted for key container operations at other ports throughout the United States.

Jobs with trucking firms are estimated based on the share of containers that will likely move to and from the terminal via truck, as well as the average truck distance now served by current operations at the Port of Gulfport. Job impacts with linehaul rail are based on the average rail linehaul distance to key origin and destination points in the Southeast and Midwest, the number of crew changes on a typical rail linehaul move, and relationships between intermodal lifts and rail yard employment. Rail revenue is estimated based on the average rail rates charged per container out of Gulf Ports.

3. POTENTIAL ECONOMIC IMPACTS OF THE PROPOSED GULFPORT CONTAINER TERMINAL

It is assumed that the current level of non-containerized operations at the Port of Gulfport will continue during the period of the contemplated container terminal's development and future operation. It is further assumed that container throughput will grow from 750,000 TEUs at the start of operations to planned capacity of approximately 3 million TEUs at full build out of the first container terminal module. Under these assumptions, the annual economic impacts of the port operations at increasing levels of future throughput are presented in Exhibit 1.

Exhibit I
Estimated Annual Economic Impacts of the Proposed Gulfport Container Terminal and Current Bulk and Break Bulk Operations.
(All Dollar Values in 2008 Dollars)

JOBS	Baseline	750,000 TEU's	1,304,107 TEU's	2,100,147 TEU's	3,000,000 TEU's
DIRECT	2,100	3,900	5,900	8,800	12,000
INDUCED	1,700	4,000	6,000	9,000	12,200
INDIRECT	400	2,500	4,200	6,600	9,400
TOTAL	4,200	10,400	16,100	24,400	33,600
PERSONAL EARNINGS (1,000)					
DIRECT	$61,498,000	$157,361,000	$239,759,000	$358,135,000	$485,171,000
RE-SPENDING/LOCAL CONSUMPTION	$175,374,000	$448,748,000	$683,720,000	$1,021,292,000	$1,868,734,000
INDIRECT	$9,996,000	$66,254,000	$110,316,000	$173,618,000	$244,523,000
TOTAL	$246,868,000	$672,363,000	$1,033,795,000	$1,553,045,000	$2,598,428,000
BUSINESS REVENUE	$183,962,000	$969,948,000	$1,615,018,000	$2,541,759,000	$3,579,801,000
LOCAL PURCHASES	$15,096,000	$266,736,000	$444,130,000	$698,984,000	$984,445,000
STATE/LOCAL TAXES	$26,662,000	$72,615,000	$111,650,000	$167,729,000	$228,232,000
FEDERAL TAXES	$51,349,000	$139,851,000	$215,029,000	$323,033,000	$439,558,000
RELATED USER IMPACTS					
RELATED USER JOBS	NA	58,000	79,000	161,000	230,000
RELATED USER INCOME	NA	$2,480,000,000	$3,378,000,000	$6,884,000,000	$9,835,000,000
TOTAL VALUE OF OUTPUT	NA	$10,190,000,000	$14,049,000,000	$28,532,000,000	$40,652,000,000
TOTAL FEDERAL AND STATE TAXES	NA	$799,000,000	$1,088,000,000	$2,217,000,000	$3,167,000,000

This exhibit shows that the current operations at the Port of Gulfport generates about 4,200 direct, induced and indirect jobs for residents of Mississippi. The 2,100 directly generated jobs under current operations received $61.5 million in direct wages and salaries, for an average salary of about $30,000. Because of the local purchases by the 2,100 direct jobs holders, 1,700 induced jobs with support services providers were supported in the Gulfport region. The re-spending of the direct $61.5 million of earnings supported another $175.4 million of wages and local consumption expenditures.[1] Businesses providing services to the current level of operations received about $184.0 million and made $15.1 million of local purchases. These local purchases supported the 400 indirect jobs in the local economy. The current operations also generate $26.7 million of direct, induced and indirect state and local taxes and about $51.3 million of total Federal taxes.

It is estimated that at start of operations, the proposed container terminal will handle 750,000 TEUs of annual throughput, creating an annual impact of 10,400 direct, induced and indirect jobs, an increase of more than 6,000 total jobs to the local Gulfport economy and residents of Mississippi due to the development of the container terminal. By the time container throughput increases to the 3 million TEUs, it is estimated that the Port of Gulfport will generated 33,600 direct, induced and

1 It is to be emphasized that induced wages are not simply derived by dividing the $175.4 million of re-spending and local consumption by the number of induced jobs, as this would over state induced job holder earnings.

indirect jobs annually. The 12,000 direct job holders are projected to earn $485.2 million of direct wages for an annual salary of about $40,300, in 2008 dollars. The combined impacts of a 3 million TEU container terminal and the continuation of current bulk and break bulk operations at the Port of Gulfport are estimated to generate 12,000 direct jobs, 12,200 induced jobs and 9,400 indirect jobs annually, for a total of 33,600 jobs. The 3 million TEUs will create a total of 29,400 jobs above the continuation of current bulk and break bulk operations A total of $2.6 billion of direct wages and salaries and local consumption expenditures and indirect wages and salaries are estimated to be generated annually with a 3 million TEU container terminal throughput, and the continuation of current bulk and break bulk activity. Businesses (trucking companies, terminal operators/stevedores, railroads, agents, freight forwarders, warehouse operations, etc.) are projected to receive $3.6 billion of annual revenue with a 3 million TEU container terminal throughput, and make $984.4 million of local purchases annually (supporting the 9,400 indirect jobs annually). A total of $228.2 million of state and local taxes are projected to be generated annually with the 3 million TEU terminal throughput. Annual federal tax impacts are estimated at $439.6 million as the result of the 3 million TEUs and the continuation of the current level of bulk and break bulk operations.

In addition to the annual direct, induced and indirect impacts generated by the projected throughput of the terminal, impacts with Mississippi exporters and importers and the services supporting the import and export activity (including manufacturing, distribution centers, support services to truck and rail operations, and other retail support activities) were also estimated. With a 750,000 TEU facility, it is estimated that 58,000 jobs in the State of Mississippi will be related to the projected level of container operations. These related users will receive $2.5 billion of direct, induced and indirect personal earnings, and nearly $800 million of federal, state and local taxes will be related to this level of container activity within the state. The total economic value of the terminal with a 750,000 TEU throughput to the State of Mississippi estimated at $10.2 billion, excluding the direct business revenue of $970 million. With a 3 million TEU throughput, it is estimated that nearly 230,000 related jobs throughout the state will be associated with the project, receiving an annual personal income of $9.8 billion and supporting $3.2 billion of federal, state and local taxes with related users of the terminal. Total economic value of the port users impact is estimated at nearly $40.7 billion annually to the State of Mississippi (excluding the direct business revenue of $3.6 billion) at full build out (in 2008 dollars).

The breakdown of the direct jobs by job category is presented in Exhibit II. As this exhibit shows, the largest growth will be with the local trucking industry, followed by the growth with distribution centers, warehousing and container repair and storage operations, and with members of the International Longshoremen's Association (ILA).

Exhibit II
Distribution of Projected Direct Jobs by Category

Teu'S	750,000	3,000,000
Rail	200	400
Truck	1,500	4,300
Terminal Employees	200	400
ILA	600	1,800
Maritime Support	200	300
Stesmship Agents/Lines	100	400
Freight Forwarders	200	800
Warehouse/Distribution Centers	900	3,600
Total	**3,900**	**12,000**

In addition to the projected annual impacts generated by the throughput of the proposed terminal and the continuation of the current level of bulk and break bulk operations at the Port of Gulfport, CH2M HILL estimates that a total of $1.9 billion of construction expenditures will be made to support the development of the container terminal over a 10 year period. Using data from the US Bureau of Economic Analysis, Regional Input-Output Modeling System for the State of Mississippi, it is estimated that the $1.9 billion of construction activity will support 78 million hours of construction employment over a 10 year period, or about 7.8 million direct, induced and indirect construction labor hours annually. Assuming 2,080 hours for a full time annual job, the 7.8 million person hours created annually translates into about 3,700 direct, induced and indirect construction jobs annually over the 10 year construction period. Associated with these construction jobs is an annual payroll of $12.6 million and an additional $228.4 million of additional annual local purchases for construction supplies and support services. In addition to the jobs, income and local purchases impacts associated with the 10 year construction program, an annual average state and local tax impact of $13.6 million is projected. It is to be emphasized that the timing of the construction expenditures on an annual basis will result in varying levels of job, income, local purchases and tax impacts created annually. These impacts are summarized in Exhibit III.

Exhibit III
Economic Impacts to the State of Mississippi of the Construction of the Terminal

	Over Ten Year Period	Per Year
Total Personhours	78,000,000	7,800,000
Total Wages/Salaries	$126,000,000	$12,600,000.00
Direct Construction Revneue	$1,849,000,000	$184,900,000.00
Local Purchases	$2,284,000,000	$228,400,000.00
State/Local Taxes	$136,000,000	$13,600,000.00