

Benefit Cost Analysis

FY 2017 TIGER Discretionary Grant Program

APPLICANT: Morgan City Harbor and Terminal District

PROJECT TITLE: *Wharf Extension and Enhancement Project*

In what may become the most transformative surface transportation investment in south central Louisiana in years, the Commissioners of the Morgan City Harbor and Terminal District (Port of Morgan City) are requesting funding from the FY 2017 TIGER Discretionary Grant Program for its “*Wharf Extension and Enhancement*” project. This is a capital works project at the Port of Morgan City’s terminal facility located at 800 Youngs Road, Morgan City, Louisiana. This project will support the rehabilitation and renovation of the port’s wharf by extending it 450 feet to the west and enhancing the dock area from its eastern extension over to the landside area, thus providing additional cargo-handling laydown area and a safer cargo transloading zone adjacent to docked vessels.

The Port’s terminal facility is located on the northern bank of the Gulf Intracoastal Waterway (GIWW) in Morgan City, Louisiana, slightly east of the GIWW’s intersection with the Atchafalaya River. USCG statistics indicate that there are over 60,000 transits through this area annually. The port has a dock along the GIWW that has over 120,200 ft² of concreted area; however, the dock only has 800’ linear feet along the Gulf Intracoastal Waterway. This is not sufficient space to berth multiple vessels simultaneously to transload cargo; and, this restricts the growth of business at the Port of Morgan City. This project intends to rectify that problem.

Baseline

The PMC site currently has a total of 28.6 acres with 22.49 acres located inside the U.S. Corps of Engineers’ floodwall and 6.11 acres located between the floodwall and the GIWW. Over the years, the port received funding for infrastructure improvements through the state’s “Ports’ Priority Program.” Since 1990, the port has been awarded \$9.75 million for eight projects. These projects have provided a dock (built in two phases); one 20,000 ft² warehouse; cargo-handling equipment; one active rail spur, and miscellaneous storage areas; but, due to the tremendous state budget deficient, future state funding is non-existent.

The wharf area at the port has approximately 80,000 ft² and is used exclusively for docking and transloading a vessel’s cargo. With a dock length of 800 linear-feet, an authorized 20-ft draft channel and no pilot fees for shippers to pay to travel the Atchafalaya River and/or the GIWW, the port is the ideal location to handle small-to-medium-sized cargo vessels. Specific port cargo

handling equipment includes the following: three forklifts (an 8,000 lb; a 10,000 lb; and one 15,000 lb); a 35-ton cherry picker; and a 40-ton container handler.

Based on records from the port, annual maintenance for the dock totals approximately \$30,000 to \$35,000 per year. Most of this maintenance is related to utilities (i.e., electrical, water) and replacement (i.e., light fixtures, meters).

Over the last decade, business has been very slow at the dock. Repeated attempts by former port operators to draw business to the location failed; however, when a new executive director took over in September 2013, the port itself became the new “port operator” and began an aggressive effort to establish itself as a viable business option for shipping companies.

The port’s location is a great and strategic asset. It is located on the northern bank of the Gulf Intracoastal Waterway approximately 2,000 feet east of its intersection with the Atchafalaya River. The terminal site is located within the incorporated limits of Morgan City and is bisected by Youngs Road. The port has benefited from its central location in close-proximity to the Gulf of Mexico and several heavily traveled inland waterways. The port is well-served by surface transportation systems. For example, the site is located 1.1 mi from U.S. Highway 90, with the city of Lafayette 71 miles to the west; New Orleans is 68 miles to the east; and, the state capital Baton Rouge is 71 miles to the north. The port is, also, served by the Burlington Northern – Santa Fe Railroad (BNSF) which provides railcar shunting services on a weekly basis.

Outer Continental Shelf (OCS) service providers in the general Morgan City area include the port, as well as private sector shipbuilders and large-scale fabrication plants catering to the local, national and international energy markets. These facilities are located primarily along the Atchafalaya River and the Gulf Intracoastal Waterway in the communities of Franklin, Morgan City, Patterson, Bayou Vista, Berwick, Amelia, and Baldwin. In general, this area, including the Port of Morgan City and private offshore-oriented industrial operators located in the aforementioned communities, has been identified as the Morgan City supply base.

Traditionally, a port’s role in a community is to serve as an intermodal transfer point for goods moving between water and land. As with smaller ports such as the PMC, these goods are either consumed or produced within the local markets and industries or are destined for the hinterland. Cargoes typically require water transportation, as well as land-based transportation systems, to reach their delivery point.

In 2014 Purina Mills International (PMI) became the only breakbulk tenant at the Port of Morgan City in over a decade. Purina Mills International ran an import/export breakbulk operation out of the Port of Morgan City. The operating costs were dependent on the vessel size deployed, in addition to the vessels’ utilization. If the PMI operations could continue, the PMC was assumed to be able to handle increased vessel calls in the future to meet volumes two times that of 2014/2015. It was expected that there would be increased trade volume in future years. These increased trade volumes would necessitate either or both of the following: Increased vessel use; and/or, increased number of both, barge trips and ocean trips, in-and-out of the PMC. Future

operations could double revenues earned under those operations. If PMI could continue their operations at the Port of Morgan City, the estimated revenues are summarized in the following table:

IMPACT OF ADDING MORE SHIPS CALLS

Operation	Current Annual Estimate	Future Annual Estimate
Barge	\$33,600	\$67,200
Vessel	\$52,830	\$65,610
Rice Exports	\$54,800	\$54,800
Warehousing	\$21,292	\$121,667
Total	\$162,522	\$309,301

Subject to physical infrastructure at the port, additional vessel calls per month could have the potential for increasing barge and vessel-related revenues. Warehousing revenue can only increase through an increase of rates, as the future estimates of \$121,667 is based on 100% use of the warehouse.

It is important to note, however, beginning in January 2015 and extending through 2016, the region had been inundated with high-water events, including coastal and riverine flooding, for almost eighteen months. This is very unusual, but it was due to the unexpected large amounts of rainfall in eastern Texas, northern Louisiana (i.e., Shreveport/Bossier City; Monroe) and in the northern states of the U.S. The high water deposited tons of sediment (i.e., sand and fluff) into the river channel, causing the Atchafalaya River to lose about five-to-six feet of draft. Instead of having an 18’-20’ draft, the Atchafalaya River now has a draft of 13’-16’. This has negated all the success that PMI was having here at the Port of Morgan City and has been detrimental to other local shipping companies because ships cannot use the river to enter or depart the Port of Morgan City without the risk of running aground; however, this is a temporary situation. The U.S. Army Corps of Engineers began emergency dredging in mid-2016 to remedy the situation. Once the Atchafalaya River is dredged, the Port of Morgan City will be able to handle large ships requiring an 18’-20’ draft.

Alternatives

In conducting this Benefit Cost Analysis for the FY 2017 TIGER Discretionary Grant proposal being submitted by the Morgan City Harbor and Terminal District, several alternatives to this project are offered for consideration.

1. No Build Alternative

Under this premise, the project is not implemented and no additional space is built. While there may be minimal business growth, it would be far less than what would occur if the dock is extended and the eastern dock enhancement is completed. If the “No Build” Alternative is selected, then the port’s dock infrastructure remains the same and no additional space is created; therefore, ships and barges will be delayed in transloading their cargo, or they may have to wait for space on the dock to clear, while idling in the waterway, making them a water hazard for vessel traffic along the GIWW and Atchafalaya River. This will prolong the unnecessary and inefficient use of fuel, the ship/barge and crews.

Also, under the “No Build Alternative,” ships and vessels could be “hipped” to each other at the dock, but this is inefficient due to the need to move ships and barges back-and-forth and because “hipped” vessels/barges at the dock jut-out into the waterway, posing as a marine hazard.

2. Build Another Dock

This is not an option for several reasons:

- a. There are no available accessible waterfront properties within the jurisdiction of the Port of Morgan City, let alone one with rail service (like at the port). While there is an island across from the facilities of the Port, it is undeveloped, lacks utility service and accessible only by a small-capacity cable-pulled ferry. If port-related vehicles (i.e., cargo trucks) and other vehicles would need to reach this island, then a multi-million bridge (tall enough to provide over 200 ft. of air-space clearance over the GIWW) would have to be built. This is cost prohibitive; and, there is no land available to build such a bridge.
- b. If land was available for development, additional costs would be incurred to purchase the property and then to develop the land into a port facility. Then there would be costs for development (i.e., land clearance, roads, utilities, etc.) a new dock and apron; building accessible roads to the new facility; and, the long-term permitting process. The cost for this would be far more than what is being requested from FY 2017 TIGER Discretionary Grant Program,
- c. Also, since the port could import cargo from a foreign country and be visited by a foreign-flagged vessel, the new dock/facility would have to go through

the rigorous process of having the site become a USCG-regulated Section 105 Facility. That would require the performance of a Facility Security Assessment, and the creation of a new facility security plan (FSP), or at the very least, the creation of an amendment to the current FSP.

3. Rental of Another Dock

Renting another dock may seem to be less expensive at first glance; but, there are no other sites available in the Port of Morgan City jurisdiction that has a dock with rail service, as it currently exists at the Port of Morgan City. In addition, there are no available docks to rent in the district that could provide the same service to vessels and barges that are currently being serviced at the Port of Morgan City (including a rail spur and being designated as a USCG-regulated 105 facility).

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Long-Term Outcome and Types of Societal Benefits

The Port of Morgan City’s analysis estimated the project’s expected benefits with respect to each of the five long-term outcomes that the USDOT specified under “Selection Criteria” in the FY 2017 TIGER Discretionary Grant Notice of Funding. For purposes of this project, the analysis focuses on the following long-term outcomes:

- Quality of Life
- Economic Competitiveness
- Safety
- State of Good Repair
- Environmental Sustainability

Each of the five expected outcomes are analyzed separately below, each followed by two matrices showing costs and benefits.

A. Quality of Life

By improving the dock along the GIWW, businesses will be able to ship their goods along Louisiana waterways and access the nation’s inland waterway system. This will remove a great deal of truck traffic from the local, state and national highways and byways. In addition, this will reduce the amount of emissions that develop as a result of vehicles on the roadways, as well as reduce the number of traffic accidents since fewer vehicles will be on the highways.

Also, the grant proposal addresses the need to support existing communities. Since the jurisdiction of the Port of Morgan City includes the city of Morgan City and the town of Berwick, the Port helps to sustain these municipalities and the surrounding unincorporated areas of St. Mary Parish, as well as the surrounding parishes of Terrebonne, St. Martin, Iberia and Assumption by being an economic engine, creating jobs for the local region, creating vibrant communities and helping to support the local tax base. The Port alleviates traffic on the local roadways by providing the water system as a marine highway for the shipping of materials, which reduces the wear-and-tear on local roadways and bridges and the amount of pollution from automobiles and trucks.

Also, the Port’s request improves the “Quality of Life” of communities and neighborhoods. The Port is located near a residential area. Seaports are usually located in great cities and are a key reason why certain communities flourish. “When discussing livability, one cannot overlook how quality of life in America is improved by providing our citizens the world’s most robust access to market goods. Because of seaports, consumers enjoy less expensive options for purchasing food, clothing, medicine, fuel, technology, finished goods and building materials. Having less-expensive choices has allowed American families to better weather the economic downturn” (Nagle, 2010).

Additionally, this project will improve the quality of living and working environments and the experience of people in communities across the United States by shifting cargo operations to the marine modes of transportation and reducing the number of trucks that transport cargo on interstate highways. The project is positive for several measures of livability, including the following: congestion cost savings at the PMC, congestion cost savings on roads, and noise avoidance on roads.

Truck miles avoided in the build scenario mean less congested roads. The cost that truck-driven congestion imposed on other vehicles can be substantial. Improvements at the port, by making rail freight more efficient, reduce diversion to trucks and congestion for all the vehicles that remain on the highways, shorten travel times, and decrease vehicle operating expenses.

Under existing conditions, cargo operations at the PMC are not optimal because of the imperfect state of the dock. This creates congestion at the PMC that impacts the amount of time spent handling cargo/containers. Implementation of the project would reduce current and future levels of congestion at the port.

Therefore, the build scenario implies reduced operational times per vehicle at the port, lower vehicle emissions and noise, and reduced maintenance and repair of the vehicles and the yards. Although all these benefits are tangible and sensible, due to the lack of data to substantiate assumptions and the intension to produce conservative estimates of benefits, port officials can only evaluate congestion time savings for truck drivers at the port.

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Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Trucking Time Benefit

Year	Calendar Year	Annual Truck Miles Saved	Annual Number of Trips Saved	Annual Number of Hours Saved at 21.82 hours per trip	Annual Payroll Dollars Saved for Travel Time at \$23.70 per hour	NPV of Travel Time Savings 7.0%	NPV of Travel Time Savings 3.0%
1	2018	9,216,000	5,760	125,683	\$2,978,692	\$2,783,824	\$2,891,934
2	2019	9,216,000	5,760	125,683	\$2,978,692	\$2,601,705	\$2,807,703
3	2020	9,216,000	5,760	125,683	\$2,978,692	\$2,431,500	\$2,725,925
4	2021	9,216,000	5,760	125,683	\$2,978,692	\$2,272,430	\$2,646,529
5	2022	18,432,000	11,520	251,366	\$5,957,384	\$4,247,532	\$5,138,891
6	2023	18,432,000	11,520	251,366	\$5,957,384	\$3,969,656	\$4,989,215
7	2024	18,432,000	11,520	251,366	\$5,957,384	\$3,709,959	\$4,843,898
8	2025	19,200,000	12,000	261,840	\$6,205,608	\$3,611,720	\$4,898,764
9	2026	19,200,000	12,000	261,840	\$6,205,608	\$3,375,440	\$4,756,082
10	2027	19,968,000	12,480	272,314	\$6,453,832	\$3,280,801	\$4,802,257
11	2028	20,736,000	12,960	282,787	\$6,702,057	\$3,184,099	\$4,841,708
12	2029	20,736,000	12,960	282,787	\$6,702,057	\$2,975,793	\$4,700,688
13	2030	20,736,000	12,960	282,787	\$6,702,057	\$2,781,115	\$4,563,774
14	2031	20,736,000	12,960	282,787	\$6,702,057	\$2,599,173	\$4,430,849
15	2032	21,504,000	13,440	293,261	\$6,950,281	\$2,519,102	\$4,461,121
16	2033	21,504,000	13,440	293,261	\$6,950,281	\$2,354,301	\$4,331,185
17	2034	21,504,000	13,440	293,261	\$6,950,281	\$2,200,281	\$4,205,034
18	2035	22,176,000	13,860	302,425	\$7,167,477	\$2,120,598	\$4,210,137
19	2036	22,176,000	13,860	302,425	\$7,167,477	\$1,981,867	\$4,087,512
20	2037	22,176,000	13,860	302,425	\$7,167,477	\$1,852,212	\$3,968,458
					\$117,813,468	\$56,853,108	\$84,301,667

ASSUMPTIONS

- 1 barge = 3,500 tons; 1 truck = 25 tons

-8 Barges/month X 3,500 tons/barge = 28,000 tons/month

-(28,000 tons/month) / (25 tons/truck) = 1,120 trucks off of road/month

-(1,120 trucks off of road/month) X (12 months/year) = 13,440 trucks off road/year

-The 1200 mile trip with a 55 MPH Average Takes 21.82 Hours Per Trip

-We did not adjust for load/unload time as the barges will have load/unload time as well

-The Payroll Cost Per Hour came from the Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis; Table 3 (Revision)

-We used a 7.0% and a 3.0% Discount Rate

-There may be some immaterial mathematical inconsistencies due to rounding of fractional amounts.

Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Increased Barge Time Cost

Year	Calendar Year	Annual Truck Miles Saved	Annual Number of Trips Saved	Annual Number of Barge Trips Per Year	Annual Number of Hours for the Barge Trips	Annual Payroll Dollars Incurred for Travel Time at \$51.21 Per Hour	NPV of Travel Time Savings 7.0%	NPV of Travel Time Savings 3.0%
1	2018	9,216,000	5,760	96	5,376	\$275,305	\$257,294	\$267,286
2	2019	9,216,000	5,760	96	5,376	\$275,305	\$240,462	\$259,501
3	2020	9,216,000	5,760	96	5,376	\$275,305	\$224,731	\$251,943
4	2021	9,216,000	5,760	96	5,376	\$275,305	\$210,029	\$244,605
5	2022	18,432,000	11,520	192	10,752	\$550,610	\$392,577	\$474,961
6	2023	18,432,000	11,520	192	10,752	\$550,610	\$366,895	\$461,127
7	2024	18,432,000	11,520	192	10,752	\$550,610	\$342,892	\$447,696
8	2025	19,200,000	12,000	200	11,200	\$573,552	\$333,812	\$452,767
9	2026	19,200,000	12,000	200	11,200	\$573,552	\$311,974	\$439,580
10	2027	19,968,000	12,480	208	11,648	\$596,494	\$303,227	\$443,848
11	2028	20,736,000	12,960	216	12,096	\$619,436	\$294,290	\$447,494
12	2029	20,736,000	12,960	216	12,096	\$619,436	\$275,037	\$434,460
13	2030	20,736,000	12,960	216	12,096	\$619,436	\$257,044	\$421,806
14	2031	20,736,000	12,960	216	12,096	\$619,436	\$240,228	\$409,520
15	2032	21,504,000	13,440	224	12,544	\$642,378	\$232,827	\$412,318
16	2033	21,504,000	13,440	224	12,544	\$642,378	\$217,596	\$400,309
17	2034	21,504,000	13,440	224	12,544	\$642,378	\$203,360	\$388,649
18	2035	22,176,000	13,860	231	12,936	\$662,453	\$195,996	\$389,121
19	2036	22,176,000	13,860	231	12,936	\$662,453	\$183,174	\$377,787
20	2037	22,176,000	13,860	231	12,936	\$662,453	\$171,190	\$366,784
						\$10,888,885	\$5,254,636	\$7,791,564

ASSUMPTIONS

-It takes 1200 miles for one one-way trip for barge/truck

-Years 1-4 is calculated at 30 trips annually

-Years 5-20 is calculated at additional trips due to construction completed

-8 barge trips per month X 12 months/year =96 barge trips/year (Years 1-4)

-56 hours /barge trip

-We did not adjust for load/unload time as the barges will have load/unload time as well

-We used a 7.0% and a 3.0% Discount Rate

-The average barge trip has one deck hand and one captain and takes 56 hours

(Deck Hand \$17.32/hour + Captain \$33.89/hour = \$51.21/hour average)

-Tug Captains

Salary Range \$33.89/hour

The U.S. Bureau of Labor Statistics includes tugboat captains in its category of captains, mates and pilots of water vessels. These professionals command the operations of ships and other water vessels and may supervise workers. Their average salary as of May 2010 was \$33.89/hour, or \$70,500/year

http://www.ehow.com/info_77433256_average-salary-deckhand.html

-There may be some immaterial mathematical inconsistencies due to rounding of fractional amounts.

B. Economic Competiveness

This grant proposal enhances the port's economic competitiveness, as well as for the companies that will use the port's facilities. Implementing the infrastructure extension and enhancement project improves its capacity to handle exports and/or imports. For example, there will be additional berthing space for ships to transload cargo; and, there will be additional lay-down areas of concrete.

This project will rebuild the physical infrastructure of the Port which will improve the local business climate. Infrastructure improvements can get goods and services to their markets. Inadequate infrastructure decreases access to economic opportunities and the ability to integrate into wider state, national and international markets. Programs to build and enhance ports bestow substantial economic benefits, such as job creation and business creation and retention to a community. Modernizing physical infrastructure can help improve the image of a distressed region, too.

If additional companies can use the port, more people can be hired to work at the port. An increase in jobs will off-set any losses that are occurring elsewhere in the local economy. With more people working, there will be an increase in local spending, business revenue and tax dollars for government programs.

Also, export/trade development and promotion enables firms to expand their market area and possibly extend the life-cycle of products or services that have exhausted their existing markets. Typically, firms do not have the resources to explore or develop an export marketing plan. Exporting can contribute to a firm's sales volume and create new jobs for the local economy.

St. Mary Parish's transportation network gives it access to the entire NAFTA region, in which U.S. companies can export products and services with low tariffs.

Also, the Port's request will improve the area's resiliency during emergencies, such as hurricanes. By having updated, modernized facilities, the Port will be able to remain in operation when a hurricane approaches. All other area ports will be out of operation for a while since they are not protected from a storm's tidal surge or high winds. Most of these area ports could be out of business for weeks, as what happened when Hurricanes Katrina, Rita, Gustav and Ike impacted this area. The Port of Morgan City could serve as an alternate site for them until they are able to return to full operations. When a storm hits this region, a lot of physical damage is done to neighboring ports and their employees evacuate this area, leaving the other ports without a workforce. Because the Port of Morgan City is considered a "safe harbor," it could provide these area ports with a location to bring in relief equipment and organize their recovery efforts.

The BCA contained in this application concludes that the “Wharf Extension and Enhancement” project will promote economic competitiveness with shipper cost savings in association with truck diversion to rail and marine transportation modes. In the no-build scenario, diversion to trucks is anticipated, creating a bottleneck that increases the generalized costs of fuel, time, reliability, and other items for shippers. The implementation of the project allows shippers that would have diverted to continue operations at the lower costs of maritime freight (especially for low inventory-cost commodities) realizing direct monetary cost savings.

Barge transportation is the most fuel-efficient mode of freight movement moving one ton of cargo 576 miles per gallon versus moving a ton of cargo only 155 miles by truck. Fuel cost savings reduces shipping and export costs to the users, agricultural producers and manufacturers. Factors involved in the assessment of economic competitiveness include the following:

- Reduces Shippers’ Costs
 - Less time for ship to stay in port/travel time savings
 - Less Labor Costs
 - Less Equipment Rental Costs
 - Less Fuel Costs
 - Due to less idling in River
 - Due to less distance for equipment to store cargo
 - No Pilot Fees
- Can transload multiple ships simultaneously
- Can store more cargo on dock area
- Improves and enhances long-term system efficiency in USA
- Based on a one-way 1200-mile trip to deliver cargo, there is Fuel Cost savings of \$86,946,323 (NPV 7%) and one of \$128,923,820 (NPV 3%).

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Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Trucking Fuel Benefit

Year	Calendar Year	Annual Truck Miles Saved	Gallons of Fuel Saved (Avg. 6 MPG)	Annual Fuel Savings (Cost \$4.01/Gal)	NPV of Fuel Savings 7.0%	NPV of Fuel Savings 3.0%
1	2018	9,216,000	1,536,000	\$6,159,360	\$5,756,411	\$5,979,961
2	2019	9,216,000	1,536,000	\$6,159,360	\$5,379,824	\$5,805,788
3	2020	9,216,000	1,536,000	\$6,159,360	\$5,027,872	\$5,636,687
4	2021	9,216,000	1,536,000	\$6,159,360	\$4,698,946	\$5,472,512
5	2022	18,432,000	3,072,000	\$12,318,720	\$8,783,077	\$10,626,236
6	2023	18,432,000	3,072,000	\$12,318,720	\$8,208,483	\$10,316,734
7	2024	18,432,000	3,072,000	\$12,318,720	\$7,671,480	\$10,016,247
8	2025	19,200,000	3,200,000	\$12,832,000	\$7,468,341	\$10,129,699
9	2026	19,200,000	3,200,000	\$12,832,000	\$6,979,758	\$9,834,660
10	2027	19,968,000	3,328,000	\$13,345,280	\$6,784,064	\$9,930,142
11	2028	20,736,000	3,456,000	\$13,858,560	\$6,584,102	\$10,011,719
12	2029	20,736,000	3,456,000	\$13,858,560	\$6,153,366	\$9,720,115
13	2030	20,736,000	3,456,000	\$13,858,560	\$5,750,810	\$9,437,005
14	2031	20,736,000	3,456,000	\$13,858,560	\$5,374,589	\$9,162,141
15	2032	21,504,000	3,584,000	\$14,371,840	\$5,209,016	\$9,224,737
16	2033	21,504,000	3,584,000	\$14,371,840	\$4,868,239	\$8,956,056
17	2034	21,504,000	3,584,000	\$14,371,840	\$4,549,756	\$8,695,200
18	2035	22,176,000	3,696,000	\$14,820,960	\$4,384,987	\$8,705,752
19	2036	22,176,000	3,696,000	\$14,820,960	\$4,098,119	\$8,452,186
20	2037	22,176,000	3,696,000	\$14,820,960	\$3,830,018	\$8,206,006
				\$243,615,520	\$117,561,259	\$174,319,581

ASSUMPTIONS

-1,200 miles per trip

-6 Miles Per Gallon is the Average MPG of the Trucks

-We used \$4.01 Per Gallon for Fuel

-We did not adjust the dollar amounts for inflation over time

-We used a 7.0% and a 3.0% Discount Rate

-There may be some immaterial mathematical inconsistencies due to rounding of fractional amounts.

Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Increased Barge Fuel Cost

Year	Calendar Year	Number of TEU (Loads) Per year	Annual Number of Barge Trips Per Year	Annual Number of Barge Miles Per Year	Annual Number in Tons of Barge Freight	Annual Gallons of Barge Fuel Used	Annual Cost of Barge Fuel Used	NPV of Fuel Used 7.0% (F/(1.07)^	NPV of Fuel Used 3.0% (F/(1.03)^
1	2018	7,680	96	115,200	192,000	400,000	\$1,604,001	\$1,499,066.62	\$1,557,283
2	2019	7,680	96	115,200	192,000	400,000	\$1,604,001	\$1,400,996.84	\$1,511,925
3	2020	7,680	96	115,200	192,000	400,000	\$1,604,001	\$1,309,342.84	\$1,467,888
4	2021	7,680	96	115,200	192,000	400,000	\$1,604,001	\$1,223,684.90	\$1,425,134
5	2022	15,360	192	230,400	384,000	800,001	\$3,208,003	\$2,287,261.49	\$2,767,251
6	2023	15,360	192	230,400	384,000	800,001	\$3,208,003	\$2,137,627.56	\$2,686,652
7	2024	15,360	192	230,400	384,000	800,001	\$3,208,003	\$1,997,782.77	\$2,608,400
8	2025	16,000	200	240,000	400,000	833,334	\$3,341,669	\$1,944,881.98	\$2,637,945
9	2026	16,000	200	240,000	400,000	833,334	\$3,341,669	\$1,817,646.71	\$2,561,111
10	2027	16,640	208	249,600	416,000	866,667	\$3,475,336	\$1,766,684.65	\$2,585,976
11	2028	17,280	216	259,200	432,000	900,001	\$3,609,003	\$1,714,611.27	\$2,607,220
12	2029	17,280	216	259,200	432,000	900,001	\$3,609,003	\$1,602,440.44	\$2,531,282
13	2030	17,280	216	259,200	432,000	900,001	\$3,609,003	\$1,497,607.89	\$2,457,555
14	2031	17,280	216	259,200	432,000	900,001	\$3,609,003	\$1,399,633.54	\$2,385,976
15	2032	17,920	224	268,800	448,000	933,334	\$3,742,670	\$1,356,515.72	\$2,402,277
16	2033	17,920	224	268,800	448,000	933,334	\$3,742,670	\$1,267,771.70	\$2,332,308
17	2034	17,920	224	268,800	448,000	933,334	\$3,742,670	\$1,184,833.37	\$2,264,377
18	2035	18,480	231	277,200	462,000	962,501	\$3,859,628	\$1,141,924.68	\$2,267,125
19	2036	18,480	231	277,200	462,000	962,501	\$3,859,628	\$1,067,219.33	\$2,201,092
20	2037	18,480	231	277,200	462,000	962,501	\$3,859,628	\$997,401.24	\$2,136,982
							\$63,441,592	\$30,614,936	\$45,395,761
ASSUMPTIONS									
-The Average Number of Truck Loads (TEU) Per Barge is 80									
-The Trip Miles for the Barge is 1200 (This is the same as the Trucks)									
-The Average Tons per TEU is 25									
-The Average Fuel Consumption for the Barge is 576 Miles Per Ton Per Gallon									
-A Barge Uses 1 Gallon of Fuel to Move 1 Ton of Cargo 576 Miles									
(1 Ton/ 576 miles x 2000 Tons / Barge Load X 1200 Miles Per Round Trip = 4,166.67 Gallons of Fuel Per Barge Trip)									
-We used \$4.01 Per Gallon for Fuel									
-We did not adjust the dollar amounts for inflation over time									
-We used a 7.0% and a 3.0% Discount Rate									
-As referred to above, the Value of the Costs of Truck Crashes was \$91,112									
-There may be immaterial mathematical inconsistencies due to rounding of fractional amounts									
-96 barges/year X 80 TEUs/barge = 7,680 TEUs/year									
-96 barge trips/year X 1200 miles/trip = 115,200 miles/year									
-7,680 TEUs/year X 25 avg tons/TEU = 192,000 avg tons/year									

C. Safety

There are safety benefits that will be derived from this project. For example, by being able to bring in more ships to the port's dock to transport cargo, less trucks will be on the highway. This will reduce the number of truck-related traffic accidents and deaths.

Barge transportation has fewer accidents per mile than other modes of freight transportation. It is estimated that the annual truck miles saved by diverting freight transportation to the marine corridor could reduce accidents due to the reduction of miles traveled by truck anywhere between 9,216,000 to 22,176,000 miles per year over time.

Safety benefits derived from this project are as follow:

- Increases space for machine equipment and humans to co-exist on dock, reducing chances for collision on dock;
- Increase in space allows drivable equipment (i.e., forklifts, trucks) to operate on east extension without going into water possibility
- Reduces ship/barge traffic accidents by getting ships/vessels out of waterway
- Reducing collisions on highways is a major benefit from this project. There is a reduction in collisions on the highway, generation cost savings amounting to \$10,096,681 (NPV 7%) and of \$14,971,336 (NPV3%).

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Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Trucking Reduced Collision Benefit

Year	Calendar Year	Annual Truck Miles Saved	Reduced Accidents @ .63 per million miles traveled	Annual cost of truck collision savings \$91,112 Avg. Cost	NPV of Collision Savings 7.0%	NPV of Collision Savings 3.0%	
1	2018	9,216,000	5.80608	\$529,004	\$494,396	\$513,596	
2	2019	9,216,000	5.80608	\$529,004	\$462,052	\$498,637	
3	2020	9,216,000	5.80608	\$529,004	\$431,824	\$484,113	
4	2021	9,216,000	5.80608	\$529,004	\$403,574	\$470,013	
5	2022	18,432,000	11.61216	\$1,058,007	\$754,344	\$912,646	
6	2023	18,432,000	11.61216	\$1,058,007	\$704,995	\$886,064	
7	2024	18,432,000	11.61216	\$1,058,007	\$658,874	\$860,257	
8	2025	19,200,000	12.096	\$1,102,091	\$641,427	\$870,001	
9	2026	19,200,000	12.096	\$1,102,091	\$599,464	\$844,661	
10	2027	19,968,000	12.57984	\$1,146,174	\$582,657	\$852,861	
11	2028	20,736,000	13.06368	\$1,190,258	\$565,483	\$859,868	
12	2029	20,736,000	13.06368	\$1,190,258	\$528,489	\$834,823	
13	2030	20,736,000	13.06368	\$1,190,258	\$493,915	\$810,508	
14	2031	20,736,000	13.06368	\$1,190,258	\$461,603	\$786,901	
15	2032	21,504,000	13.54752	\$1,234,342	\$447,382	\$792,277	
16	2033	21,504,000	13.54752	\$1,234,342	\$418,114	\$769,201	
17	2034	21,504,000	13.54752	\$1,234,342	\$390,761	\$746,797	
18	2035	22,176,000	13.97088	\$1,272,915	\$376,610	\$747,703	
19	2036	22,176,000	13.97088	\$1,272,915	\$351,972	\$725,926	
20	2037	22,176,000	13.97088	\$1,272,915	\$328,945	\$704,782	
					\$20,923,193	\$10,096,881	\$14,971,633

ASSUMPTIONS

-The Value of Collision Reduction Based Upon 2001-2003 Average Costs of Truck Crashes

Source: Ted Miller, Eduard Zaloshnja, Rebecca Sicer, Revised Cost of Large Truck and Bus Involved Crashes (2006), Adjusted to 2005 Dollars; US DOT Federal Motor Carrier Safety Administration Commercial Motor Vehicle Facts, Nov. 2007

-One barge = 80 trucks

-A one-way trip from Morgan City, LA to Minneapolis, MN is 1200 miles (barge/truck)

-We used a 7.0% and a 3.0% Discount Rate

-There may be some immaterial mathematical inconsistencies due to rounding of fractional amounts.

Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Increased Barge Collision Cost

Year	Calendar Year	Number of TEU (Loads) Per year	Annual Number of Barge Trips Per Year	Annual Number of Barge Miles Per Year	Increased Accidents @ .028 for Every Billion Miles Collisions	Annual Cost of Barge Collision Incurred at an \$91,112 Avg Cost	NPV of Annual Maintenance Cost 7.0%	NPV of Annual Maintenance Cost 3.0%
1	2018	7,680	96	115,200	0.000115	\$10.50	\$9.81	\$10.19
2	2019	7,680	96	115,200	0.000115	\$10.50	\$9.17	\$9.89
3	2020	7,680	96	115,200	0.000115	\$10.50	\$8.57	\$9.61
4	2021	7,680	96	115,200	0.000115	\$10.50	\$8.01	\$9.33
5	2022	15,360	192	230,400	0.000230	\$20.99	\$14.97	\$18.11
6	2023	15,360	192	230,400	0.000230	\$20.99	\$13.99	\$17.58
7	2024	15,360	192	230,400	0.000230	\$20.99	\$13.07	\$17.07
8	2025	16,000	200	240,000	0.000240	\$21.87	\$12.73	\$17.26
9	2026	16,000	200	240,000	0.000240	\$21.87	\$11.89	\$16.76
10	2027	16,640	208	249,600	0.000250	\$22.74	\$11.56	\$16.92
11	2028	17,280	216	259,200	0.000259	\$23.62	\$11.22	\$17.06
12	2029	17,280	216	259,200	0.000259	\$23.62	\$10.49	\$16.56
13	2030	17,280	216	259,200	0.000259	\$23.62	\$9.80	\$16.08
14	2031	17,280	216	259,200	0.000259	\$23.62	\$9.16	\$15.61
15	2032	17,920	224	268,800	0.000269	\$24.49	\$8.88	\$15.72
16	2033	17,920	224	268,800	0.000269	\$24.49	\$8.30	\$15.26
17	2034	17,920	224	268,800	0.000269	\$24.49	\$7.75	\$14.82
18	2035	18,480	231	277,200	0.000277	\$25.26	\$7.47	\$14.84
19	2036	18,480	231	277,200	0.000277	\$25.26	\$6.98	\$14.40
20	2037	18,480	231	277,200	0.000277	\$25.26	\$6.53	\$13.98
						\$415	\$200	\$297

ASSUMPTIONS

- The Value of the Increased Barge Collision Cost was set at \$91,121 , the same as the Truck Collision Cost as a result of Non-Availability of Barge Collision Cost Statistics
- The Increased Cost of Barge Collision is .028 for Each Billion Ton Miles
- 8 barges travel to MN each month X 12 months = 96 barges/year. Increase in barges occur after completion of project.
- It's a 1200 mile trip by barge to MN one way. Barges do not return to Morgan City.
- We used a 7.0% and a 3.0% Discount Rate
- As referred to above, the Value of the Costs of Truck Crashes was \$91,112
- There may be immaterial mathematical inconsistencies due to rounding of fractional amounts

D. State of Good Repair

The proposed project is consistent with efforts to maintain transportation facilities in a state of good repair. The new dock improvement will eliminate existing inefficiencies and eliminate a physical barrier to the layout of cargo storage by providing a flat, rigid and consistent surface (concrete) to increase safety and reduce transit time, generally increasing functionality and the efficient movement of goods and services through the PMC. The “Wharf Extension and Enhancement” project will upgrade surface transportation assets. The port has out-grown its existing dock. If left unimproved, the port will fail in reaching an effective mode.

The project is part of a phased capital improvement plan developed by port officials and the public to upgrade port facilities and expand capacity at its riverfront facilities to meet existing demands and attract new business. The proposed project is capitalized up-front, using asset management approaches to optimize long-term cost structure. The cost estimate of \$15,000,000 was derived from a breakdown of construction items from a preliminary design analysis and based on recent bid prices for similar projects, including factors for contingencies and inflation. The local office of the international engineering firm Moffatt and Nichol, who is extremely experienced in all phases of construction projects, provided the construction cost estimate and project timeline.

Consequently, the following benefits are derived from this project:

- Reduced maintenance and repair costs
- Keeps facility open to handle ships and cargo
- More area to store cargo
- Improves Port’s existing infrastructure
- Maintaining a dock in good condition can prolong the use of it for years beyond its normal life-cycle. It appears that over the years, with maintenance, preservation and upgrades, there are benefits that may total approximately \$549,130 (NPV 7%) and \$798,533 (NPV 3%).

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Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Maintenance and Operations Cost

Year	Calendar Year	Annual Maintenance Cost	NPV of Annual Maintenance Cost 7.0% (F/(1.07)^	NPV of Annual Maintenance Cost 3.0% (F/(1.03)^
1	2018	\$39,000	\$36,449	\$37,864
2	2019	\$41,000	\$35,811	\$38,646
3	2020	\$44,000	\$35,917	\$40,266
4	2021	\$46,000	\$35,093	\$40,870
5	2022	\$48,000	\$34,223	\$41,405
6	2023	\$51,000	\$33,983	\$42,712
7	2024	\$51,000	\$31,760	\$41,468
8	2025	\$51,000	\$29,682	\$40,260
9	2026	\$51,000	\$27,741	\$39,087
10	2027	\$51,000	\$25,926	\$37,949
11	2028	\$59,000	\$28,030	\$42,623
12	2029	\$59,000	\$26,197	\$41,381
13	2030	\$59,000	\$24,483	\$40,176
14	2031	\$59,000	\$22,881	\$39,006
15	2032	\$59,000	\$21,384	\$37,870
16	2033	\$67,000	\$22,695	\$41,752
17	2034	\$67,000	\$21,210	\$40,536
18	2035	\$67,000	\$19,823	\$39,355
19	2036	\$67,000	\$18,526	\$38,209
20	2037	\$67,000	\$17,314	\$37,096
		\$1,103,000	\$549,130	\$798,533

ASSUMPTIONS:

-We Did not Adjust the Dollar Amounts for Inflation over time

-We Used a 7.0% and a 3.0% Discount Rate

-The Annual Maintenance Cost Per Year will provide funds for maintaining, replacing light systems, electrical boxes/wiring, pipes/valves, and fendering systems.

-There may be Immaterial Mathematical Inconsistencies due to rounding of fractional amounts

E. Environmental Sustainability

Environmental costs are increasingly considered as an important component in the evaluation of transportation projects. The environmental impacts of vehicle use and exhaust emissions can impose wide-ranging social costs on people, material, and vegetation. The negative effects of pollution depend not only on the quantity of pollution produced, but, also, on the types of pollutants emitted: carbon monoxide, volatile organic compounds, nitrogen oxides, particulate matter, sulfur dioxide and carbon dioxide, as well as the conditions under which the pollution is released. The environmental cost reduction is calculated as the difference between the cost of vessel pollution and truck pollution.

CO² emissions will be reduced over time due to the reduction of trucking-related carbon emissions. Barge transportation is the most fuel-efficient mode of freight transportation when compared to shipping by rail or truck.

In summary, this project has the following benefits regarding environmental sustainability:

- Reduces emissions
- Less damage to wetlands from idling in river
- Reduces consumption of fossil fuels
- Protecting the environment is important with any project. Based on the various data, there is a CO₂ cost savings of \$6,263,879 (NPV 7%) and \$9,467,021 (NPV 3%).

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Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Trucking Carbon Reduction Emissions Benefit

Year	Calendar Year	Annual Truck Miles Saved	Annual Gallons of Fuel Saved (Avg. 6 MPG)	Annual Metric Tons of CO2 Saved	CO2 Emissions Price Per Metric Ton	Annual Dollars Saved Due to Reduced CO2 Emissions Per Metric Ton	NPV of CO2 Emissions Savings 7.0%	NPV of CO2 Emissions Savings 3.0%
1	2018	9,216,000	1,536,000	15,464	\$24.30	\$375,787	\$351,203	\$364,842
2	2019	9,216,000	1,536,000	15,464	\$24.80	\$383,519	\$334,981	\$361,504
3	2020	9,216,000	1,536,000	15,464	\$25.30	\$391,252	\$319,378	\$358,051
4	2021	9,216,000	1,536,000	15,464	\$25.80	\$398,984	\$304,383	\$354,492
5	2022	18,432,000	3,072,000	30,929	\$26.30	\$813,432	\$579,966	\$701,674
6	2023	18,432,000	3,072,000	30,929	\$26.80	\$828,897	\$552,329	\$694,188
7	2024	18,432,000	3,072,000	30,929	\$27.30	\$844,361	\$525,826	\$686,543
8	2025	19,200,000	3,200,000	32,218	\$27.80	\$895,652	\$521,277	\$707,036
9	2026	19,200,000	3,200,000	32,218	\$28.30	\$911,761	\$495,937	\$698,789
10	2027	19,968,000	3,328,000	33,506	\$28.80	\$964,984	\$490,549	\$718,039
11	2028	20,736,000	3,456,000	34,795	\$29.30	\$1,019,496	\$484,355	\$736,506
12	2029	20,736,000	3,456,000	34,795	\$29.80	\$1,036,894	\$460,393	\$727,257
13	2030	20,736,000	3,456,000	34,795	\$30.30	\$1,054,292	\$437,494	\$717,921
14	2031	20,736,000	3,456,000	34,795	\$30.80	\$1,071,689	\$415,620	\$708,513
15	2032	21,504,000	3,584,000	36,084	\$31.30	\$1,129,423	\$409,355	\$724,934
16	2033	21,504,000	3,584,000	36,084	\$31.80	\$1,147,465	\$388,686	\$715,062
17	2034	21,504,000	3,584,000	36,084	\$32.30	\$1,165,507	\$368,970	\$705,151
18	2035	22,176,000	3,696,000	37,211	\$32.80	\$1,220,535	\$361,112	\$716,936
19	2036	22,176,000	3,696,000	37,211	\$33.30	\$1,239,141	\$342,633	\$706,665
20	2037	22,176,000	3,696,000	37,211	\$33.80	\$1,257,746	\$325,026	\$696,384
						\$18,150,817	\$8,469,472	\$12,800,483

ASSUMPTIONS

- CO2 Emissions from a Gallon of Diesel = 2,778 Grams X 0.99 X (44/12) = 10,084 Grams = 10.1 kg/Gallon = 22.2 Pounds/Gallon/2205 Pounds Per Ton: EPA - Office of Transportation; Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel, 2005 page2; <http://www.epa.gov/otaq/climate/420f05001.pdf>
- 6 Miles Per Gallon is the average MPG of the Trucks
- We used Cost Per Metric Ton for the Cost of Carbon as Shown in the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (February 2010)
- We used a 7.0% and a 3.0% Discount Rate
- There may be some immaterial mathematical inconsistencies due to rounding of fractional amounts.

Morgan City Harbor and Terminal District

Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application

Present Value of Increased Barge Carbon Emission Cost

Year	Calendar Year	Number of TEU (Loads) Per year	Annual Number of Barge Trips Per Year	Annual Number of Barge Miles Per Year	Annual Number in Tons of Barge Freight	Annual Gallons of Barge Fuel Used	Annual Metric Tons of CO2 Generated	CO2 Emissions Price Per Metric Ton	Annual Dollars Due to Increased CO2 Emissions Per Metric Ton	NPV of Fuel Used 7.0% (F/(1.07)^	NPV of Fuel Used 3.0% (F/(1.03)^
1	2018	7,680	96	115,200	192,000	400,000	4,027	\$24.30	\$97,861	\$91,459.16	\$95,010.97
2	2019	7,680	96	115,200	192,000	400,000	4,027	\$24.80	\$99,875	\$87,234.61	\$94,141.68
3	2020	7,680	96	115,200	192,000	400,000	4,027	\$25.30	\$101,889	\$83,171.38	\$93,242.43
4	2021	7,680	96	115,200	192,000	400,000	4,027	\$25.80	\$103,902	\$79,266.43	\$92,315.69
5	2022	15,360	192	230,400	384,000	800,001	8,054	\$26.30	\$211,831	\$151,032.90	\$182,727.68
6	2023	15,360	192	230,400	384,000	800,001	8,054	\$26.80	\$215,859	\$143,835.75	\$180,778.24
7	2024	15,360	192	230,400	384,000	800,001	8,054	\$27.30	\$219,886	\$136,933.88	\$178,787.35
8	2025	16,000	200	240,000	400,000	833,334	8,390	\$27.80	\$233,243	\$135,749.44	\$184,124.03
9	2026	16,000	200	240,000	400,000	833,334	8,390	\$28.30	\$237,438	\$129,150.45	\$181,976.33
10	2027	16,640	208	249,600	416,000	866,667	8,726	\$28.80	\$251,298	\$127,747.24	\$186,989.43
11	2028	17,280	216	259,200	432,000	900,001	9,061	\$29.30	\$265,494	\$126,134.33	\$191,798.58
12	2029	17,280	216	259,200	432,000	900,001	9,061	\$29.80	\$270,025	\$119,894.20	\$189,389.90
13	2030	17,280	216	259,200	432,000	900,001	9,061	\$30.30	\$274,555	\$113,930.70	\$186,958.81
14	2031	17,280	216	259,200	432,000	900,001	9,061	\$30.80	\$279,086	\$108,234.34	\$184,508.68
15	2032	17,920	224	268,800	448,000	933,334	9,397	\$31.30	\$294,121	\$106,602.94	\$188,784.99
16	2033	17,920	224	268,800	448,000	933,334	9,397	\$31.80	\$298,819	\$101,220.43	\$186,214.30
17	2034	17,920	224	268,800	448,000	933,334	9,397	\$32.30	\$303,518	\$96,085.93	\$183,633.20
18	2035	18,480	231	277,200	462,000	962,501	9,690	\$32.80	\$317,848	\$94,039.72	\$186,702.13
19	2036	18,480	231	277,200	462,000	962,501	9,690	\$33.30	\$322,693	\$89,227.34	\$184,027.37
20	2037	18,480	231	277,200	462,000	962,501	9,690	\$33.80	\$327,538	\$84,642.14	\$181,350.05
									\$4,726,779	\$2,205,593	\$3,333,462
ASSUMPTIONS											
-The Average Number of Truck Loads (TEU) Per Barge is 80											
-The Trip Miles for the Barge is 1200 (This is the same as the Trucks)											
-The Average Tons per TEU is 25											
-The Average Fuel Consumption for the Barge is 576 Miles Per Ton Per Gallon											
-A Barge Uses 1 Gallon of Fuel to Move 1 Ton of Cargo 576 Miles											
(1 Ton/ 576 miles x 2000 Tons / Barge Load X 1200 Miles Per Round Trip = 4166.67 Gallons of Fuel Per Barge Trip)											
-CO2 Emissions from a gallon of diesel = 2,778 grams X 0.99 X (44/12) = 10,084 grams = 10.1 kg/Gallon = 22.2 Pounds/Gallon/2205 Pounds Per Ton; EPA - Office of Transportation: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel fuel, 2005. page 2; http://www.epa.gov/otaq/climate/420f05001.pdf											
-We did not adjust the dollar amounts for inflation over time											
-We used a 7.0% and a 3.0% Discount Rate											
-There may be immaterial mathematical inconsistencies due to rounding of fractional amounts.											

Morgan City Harbor and Terminal District						
Wharf Extension and Enhancement 2017 TIGER Discretionary Grant Application						
Benefit Cost Summary						
				NPV of 7.0%	NPV of 3%	
		Present Value of Trucking Time Benefit		\$56,853,108	\$84,301,667	
		Present Value of Increased Barge Time Cost		(\$5,254,636)	(\$7,791,564)	
1		Net Present Value of Time Benefit		\$51,598,472	\$76,510,103	
		Present Value of Trucking Fuel Benefit		\$117,561,259	\$174,319,581	
		Present Value of Increased Barge Fuel Cost		(\$30,614,936)	(\$45,395,761)	
2		Net Present Value of Fuel Benefits		\$86,946,323	\$128,923,820	
		Present Value of Trucking Carbon Reduction Emmissions Benefit		\$8,469,472	\$12,800,483	
		Present Value of Increased Barge Carbon Emission Cost		(\$2,205,593)	(\$3,333,462)	
3		Net Present Value of Carbon Reduction Emission Benefit		\$6,263,879	\$9,467,021	
		Present Value of Trucking Reduced Collision Benefits		\$10,096,881	\$14,971,633	
		Present Value of Increased Barge Collision Cost		(\$200)	(\$297)	
4		Net Present Value of Reduced Collision Benefit		\$10,096,681	\$14,971,336	
5		Net Present Value of All Benefits		\$154,905,355	\$229,872,280	
6		Present Value of Maintenance and Operation Costs		\$549,130	\$798,533	
7		Present Value of Construction Costs		\$15,000,000	\$15,000,000	
8		Less Present Value of Remaining Capital Value		(\$2,325,771)	(\$4,983,082)	
9		Net Present Value of All Costs		\$13,223,359	\$10,815,451	
10		Net Present Value = 5 - 9		\$141,681,996	\$219,056,829	
11		Benefit / Cost Ratio = 5/9		(11.71 to 1.00) 11.71	(21.25 to 1.00) 21.25	

Affected Population

The Morgan City Harbor and Terminal District’s “Wharf Extension and Enhancement” will have different impacts over the course of the life-time of the project (estimated to be 50 years). Evidently, by being able to transfer the shipping of cargo from truck, the project will reduce the number of trucks on the highway and reduce the amount of emissions in the atmosphere. This action will, also, reduce the number of accidents on the highway involving trucks. The groups who will benefit from this project include, but are not limited to, the following:

- Shippers/vessel operators
- Local workers

Conclusion

Based on the information included in this analysis, the Morgan City Harbor and Terminal District’s “*Wharf Extension and Enhancement*” project will have a benefit of 21.25 to 1 (at NPV 3.0%) and a 11.71 to 1 benefit ratio (at 7.0% NPV). The project is determined to be feasibly beneficial.

Current Status and Problem to be addressed	Change to Baseline/ Alternatives	Types of Impacts	Population Affected by Impact	Economic Benefit	Summary of Results	Page Reference in BCA
25-year old Dock is not large enough to meet future demands and to expand export/import opportunities	450' foot extension, and additional laydown area of @ 64,000 sf	Increased export/import capacity; time and fuel cost savings; State of Good Repair through the reduction of long-term maintenance and repair costs	Shipping carriers; Exporters and Importers	Monetized value of reduced travel times, fuel consumption, emissions and safety benefits	The benefits to cost analysis indicates a benefit of 21.25 to 1 (at a 3.0% NPV) and 11.71 to 1 (at a 7.0% NPV)	Pages 6-23

References

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