



NFEnergía
puerto rico

NFEnergía LLC

San Juan Micro-Fuel Handling Facility

**Resource Report 5
Socioeconomics**

**Docket No.
CP21-____-000**

September 15, 2021

NFEnergía LLC
SAN JUAN MICRO-FUEL HANDLING FACILITY
RESOURCE REPORT 5—SOCIOECONOMICS

Minimum Filing Requirements for Environmental Reports:	Addressed in Section:
1. Describe the socioeconomic impact area.	Section 5.1
2. Evaluate the impact of any substantial immigration of people on governmental facilities and services and plans to reduce the impact on the local infrastructure.	N/A
3. Describe on-site manpower requirements and payroll during construction and operation, including the number of construction personnel who currently reside within the impact area, will commute daily to the site from outside the impact area, or will relocate temporarily within the impact area.	Section 5.2.1
4. Determine whether existing housing within the impact area is sufficient to meet the needs of the additional population.	N/A
5. Describe the number and types of residences and businesses that will be displaced by the project, procedures to be used to acquire these properties, and types and amounts of relocation assistance payments.	N/A
6. Conduct a fiscal impact analysis evaluating incremental local government expenditures in relation to incremental local government revenues that will result from construction of the project. Incremental expenditures include, but are not limited to, school operating costs, road maintenance and repair, public safety, and public utility costs.	Sections 5.3.1, 5.4.3, and 5.5

NFEnergía LLC
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RESOURCE REPORT 5—SOCIOECONOMICS

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ACRONYMS AND ABBREVIATIONS

CBG	census block group
EO	Executive Order
FERC	Federal Energy Regulatory Commission
FSU	floating storage unit
LNG	liquefied natural gas
MFH Facility	San Juan Micro-Fuel Handling Facility
NEPA	National Environmental Policy Act
NFEnergía	NFEnergía LLC
PREPA	Puerto Rico Electric Power Authority
USCB	United States Census Bureau
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency

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SAN JUAN MICRO-FUEL HANDLING FACILITY
RESOURCE REPORT 5—SOCIOECONOMICS

5.0 RESOURCE REPORT 5—SOCIOECONOMICS

NFEnergía LLC (“NFEnergía”) is seeking authorization from the Federal Energy Regulatory Commission (“FERC”) under Section 3 of the Natural Gas Act to continue operating the San Juan Micro-Fuel Handling Facility (“MFH Facility”), a liquefied natural gas (“LNG”) import and regasification facility. The MFH Facility is located on approximately 6.1 paved and fenced acres of an industrial area at Wharves A and B of the Puerto de San Juan (Port of San Juan), Puerto Rico, which is situated among existing industrial uses in the north of Puerto Rico where it can supply power generation sources serving nearby load centers using minimal additional infrastructure. To operate the MFH Facility, “pocket-sized” LNG vessels (also called “shuttle vessels”) bring LNG into the San Juan Harbor where the LNG is transferred from the shuttle vessel to a non-jurisdictional floating storage unit (“FSU”) vessel that is semi-permanently moored adjacent to the MFH Facility site. The FSU transfers LNG onshore where certain quantities remain liquefied and are transloaded onto trucks for over-the-road delivery to end users and certain quantities are regasified and made available to Units 5 and 6 of the adjacent San Juan Power Plant via a 75-foot long, 10-inch diameter segment of power plant piping. The MFH Facility has a regasification capacity of 130 million standard cubic feet per day and a truck loading capacity of 87.52 million standard cubic feet per day.

NFEnergía initially developed the MFH Facility to serve its commercial customers via a truck loading operation for distribution of LNG for regasification and use at behind-the-fence power generation facilities across Puerto Rico—typically multinational companies with manufacturing operations. In July 2018, Puerto Rico Electric Power Authority (“PREPA”) issued a request for proposals to retrofit Units 5 and 6 of the San Juan Power Plant to enable dual-fuel capability and to supply PREPA with natural gas. NFEnergía participated in that competitive process and was chosen as the successful bidder. PREPA and NFEnergía entered into a contract to effectuate the award in March 2019 and the MFH Facility began operating in March 2020 and became fully operational in May 2020.

FERC’s National Environmental Policy Act (“NEPA”) review process requires that an applicant submit an Environmental Report consisting of up to 13 individual resource reports. This resource report is consistent with and meets or exceeds all applicable FERC filing requirements. A checklist showing the status of FERC’s filing requirements for Resource Report 5 (18 Code of Federal Regulations § 380.12) is included before the table of contents.

Resource Report 5 describes the existing socioeconomic conditions and potential impacts from MFH Facility-related operational activities. Sections 5.1 through 5.5 summarize baseline socioeconomic conditions in the vicinity of MFH Facility operations, including population and demographics, economy and employment, housing, public services, transportation, and tax revenues. Section 5.6 addresses the expected environmental justice impacts of the MFH Facility’s operation on minority and low-income communities.

The socioeconomic data used in this evaluation were obtained from United States Census Bureau (“USCB”) online databases; the data source is provided in each summary table in the following sections.

5.1 Population and Demographics

The primary population center in the MFH Facility area is the municipality of San Juan. Smaller municipalities that also border San Juan Harbor include Cataño and Guaynabo. Table 5-1 summarizes the census data for population, density, and land area for these municipalities. Data for Puerto Rico are included for comparative purposes. The population from 2010 to 2019 has decreased more than 10 percent in each municipality.

Table 5-1: Population Characteristics.

Commonwealth/ Municipality	Population (2010)	Population (2019 estimate)	Population Percent Change (2010 to 2019)	Population Density (persons per square mile) a	Land Area (square miles) a
Puerto Rico	3,726,157	3,193,694	-14.3	1,088	3,423.8
San Juan	395,326	318,441	-19.5	8,262	47.9
Cataño	28,140	23,121	-17.9	5,808	4.9
Guaynabo	97,924	83,728	-14.5	3,550	27.6

Source: USCB, Quick Facts
(<https://www.census.gov/quickfacts/fact/table/guaynabomunicipiopiortorico,catanomunicipiopiortorico,sanjuanmunicipio puertorico,PR/PST045219>)

^a Population density and land area are available only for 2010.

Hispanic or Latino residents make up the majority of the population in Puerto Rico and all three municipalities have similar percentages (table 5-2). Additionally, all three municipalities have similar percentages of African-American residents ranging between 7.2 and 13.3 percent.

Table 5-2: Demographic Characteristics.

Commonwealth/ Municipality	Hispanic or Latino ^b (percent)	Black or African- American ^a (percent)	White alone, Not Hispanic or Latino ^b (percent)	American Indian and Alaska Native ^a (percent)	Asian ^a (percent)	Native Hawaiian and Other Pacific Islander ^a (percent)	Two or More Races (percent)
Puerto Rico	3,275,919 (98.7)	386,676 (11.7)	31,723 (1.0)	6,838 (0.2)	6,237 (0.2)	269 (<0.1)	175,649 (5.3)
San Juan	328,550 (97.9)	44,472 (13.3)	5,053 (1.5)	1,244 (0.4)	1,199 (0.4)	75 (<0.1)	17,862 (5.3)
Cataño	24,026 (99)	3,181 (13.1)	218 (0.9)	7 (<0.1)	48 (0.2)	0 (0)	937 (3.9)
Guaynabo	85,548 (98.4)	6,236 (7.2)	1,104 (1.3)	152 (0.2)	44 (0.1)	0 (0)	3,564 (4.1)

Source: USCB, American Community Survey 2015–2019 5-year estimates.

^a Includes persons reporting only one race.

^b Hispanics may also be included in certain other race categories; therefore, totals may not equal 100 percent.

5.2 Economy and Employment

Table 5-3 provides a summary of employment and income data. The median household income of San Juan and Guaynabo municipalities (\$22,710 and \$35,928, respectively) is higher than Puerto Rico’s median household income (\$20,359). The median household income of Cataño (\$17,488) is lower than Puerto Rico’s median household income.

Almost one half of the population over the age of 16 years is part of the civilian labor force in Puerto Rico. The percentage of the civilian labor force is higher in the three municipalities than for the Commonwealth. The dominant occupations are a combination of education, retail, arts, professional, and scientific services as shown in table 5-3.

Table 5-3: Socioeconomic Conditions.

Commonwealth/ Municipality	Median Household Income (2019 dollars)	Population age 16 years and over, 2019	Civilian Labor Force Participation Rate (percent) 2019	Unemployment Rate (percent)	Top Occupations
Puerto Rico	\$20,539	2,699,404	44.5	14.1	<ul style="list-style-type: none"> • Education services, health care, and social assistance • Retail • Arts, entertainment, recreation, and accommodation and food services
San Juan	\$22,710	272,665	51.7	15.8	<ul style="list-style-type: none"> • Education services, health care, and social assistance • Professional, scientific, and management, and administrative and waste management services • Retail
Cataño	\$17,448	19,927	48.7	21	<ul style="list-style-type: none"> • Education services, health care, and social assistance • Retail • Professional, scientific, and management, and administrative and waste management services
Guaynabo	\$35,928	74,026	53	9.5	<ul style="list-style-type: none"> • Education services, health care, and social assistance • Professional, scientific, and management, and administrative and waste management services • Retail

Source: USCB, 2019 American Community Survey, 5-year estimate.

5.2.1 Operation Impacts on the Economy and Employment

To support operations, NFEnergía employs 21 individuals at the MFH Facility and 57 contracted employees were hired from a pool of contractors to perform various services at specific intervals (see table 5-4), for a total of 78 employees. NFEnergía will continue to require this volume of employees for continued operation of the MFH Facility. All of these workers were hired locally and represent less than a 1 percent increase in the regional workforce. As such, the operation of the MFH Facility has had, and will continue to have, important beneficial impacts on local employment and the economy in the study area.

Table 5-4: Operations Workforce.

Service Type	Number of Contract Employees	Hours/Month	Hours/Year	Frequency
Security Guard Services	12	1920		Daily
Terminal Housekeeping	1	160		Daily
Terminal Pest Control	1	4		Monthly
Terminal Landscaping	2	16		Monthly
Truck Drivers—Small Scale Deliveries	2	64		5-day interval
Surveyors	2	192		Daily
DCS Support	2	64		5-day interval
Mechanical Support	2	64		5-day interval
A/C Maintenance	2	64		5-day interval
Septic Tank Services	2	320		Daily
CCTV / Access Control Maintenance	1	160		Daily
UPS Preventive Maintenance	1	8		Monthly
Vessel Agents	4	128		5-day interval
Line Handlers—Vessel Services	4	128		5-day interval
Launch Boat—Vessel Services	2	64		5-day interval
Gray water disposal—Vessel Services	4	96		Weekly
Provisions—Vessel Services	2	48		Weekly
Med Lab test—Vessel Services	2	8		Monthly
Supplies—Vessel Services	1	5		Monthly
Nitrogen deliveries and system maintenance	1	16		Weekly
Propane—GCU Flare Operation	1	16		Weekly
Denim Water Sampling	1	4		Monthly
Fleet Maintenance	2	16		Monthly
Scales calibration—Truck Loading Rack Scales	2		16	Annually
Gas chromatograph calibration	1		8	Annually
Total	57	3565	24	

5.3 Public Services

Table 5-5 provides the number of fire departments, police departments, and hospitals available in the study area. The Puerto Rico Fire Department has six operational zones, 11 districts, and 91 fire stations. The closest fire station is located within miles of the MFH Facility. The San Juan Police Department is about 2 miles southeast of the MFH Facility. Hospital El Maestro is situated about 2.7 miles southeast of the MFH Facility.

Table 5-5: Public Services.

Commonwealth/Municipality	Fire Stations (number) ^a	Police Departments (number) ^b	Hospitals (number) ^c
Puerto Rico	91	20	48
San Juan	1	3	7
Cataño	1	1	0
Guaynabo	1	3	0

^a San Juan Fire Department (<https://agencias.pr.gov/agencias/bomberos/Pages/default.aspx>).
^b Emergency Services San Juan (<https://sanjuanpuertorico.com/police-emergency-services-san-juan/>).
^c Individual Hospital Statistics for Puerto Rico (https://www.ahd.com/states/hospital_PR.html).
 Note: Long-term extended care, psychiatric care, rehabilitation, cardiovascular centers, or cancer treatment centers are not included in hospital numbers.

5.3.1 Operation Impacts on Public Services

In general, the three surrounding municipalities have public safety and hospital services commensurate with their populations. During routine operations, the MFH Facility will not place additional demands on public services—such as law enforcement and emergency responders, security, fire safety, and medical services—as these services are provided by on-site staff to deal with minor incidents. In the event of an emergency or major incident, however, the MFH Facility will place additional demands on these services in the location of the emergency.

5.4 Transportation

The MFH Facility uses existing road and marine transportation corridors during operation.

5.4.1 Road Transportation

The operation of the MFH Facility, which is accessed by Route 28, involves the loading of LNG of up to 100 trucks per day amounting to a maximum of 200 truck trips per day. The MFH Facility is located at Wharves A and B within the Puerto Nuevo Terminal. On behalf of NFEnergía, Tetra Tech completed a traffic assessment pre-MFH Facility construction. The traffic assessment was performed on weekdays generally between 7:00 a.m. and 5:00 p.m. to quantify existing traffic trips to and from Wharves A and B, as well as traffic at other nearby locations, including two adjacent wharves, Wharves C and D (see memo dated February 8, 2018 in appendix 5A). Tetra Tech reported a total of 48 trips per day at Wharf A (peak 4:00 p.m.–5:00 p.m.), 58 trips per day at Wharf C (peak 3:00 p.m.–4:00 p.m.), and 54 trips per day at Wharf D (peak 3:15 p.m.–4:15 p.m.). Prior to MFH Facility construction, Wharf B had been inactive since March 2015 and, therefore, had no traffic activity. Additionally, Tetra Tech reported 199 trips per day for the adjacent Trailer Bridge facility (peak 4:00 p.m.–5:00 p.m.).

Primary truck access to and from the MFH Facility is provided through tertiary routes (Routes 28 and 24), which connect to the highway network. Routes 28 and 24 are two-lane paved roads with a traffic light at their intersection. The distance traveled along Routes 28 and 24 from the exit drive of Wharves A and B before reaching an on-ramp to the nearest highway, known as the Jose de Diego Expressway (Route 22), is between 0.6 mile and 0.75 mile depending on whether the trucks travel south or west when departing the Puerto Nuevo Terminal. Trucks heading west from Wharves A and B on Route 28 will pass the exit drive to Trailer Bridge.

5.4.2 Marine Transportation

San Juan Harbor is restricted to one-way traffic for deep draft vessels. Between 2015 and 2019, an average of 5,291 trips called on San Juan Harbor annually¹ (USACE, 2019). Each large vessel transiting through the Commonwealth waters must be operated under the direction of a licensed pilot that boards each inbound vessel at the Pilot Boarding Area. Each LNG vessel transits with United States Coast Guard (“USCG”) designated escorts within a 0.5 mile safety zone.

An FSU is semi-permanently moored at Wharves A and B adjacent to the MFH Facility. The shuttle vessels that resupply the FSU generally make an average of 10 roundtrip transits per month, up to 120 calls per year (240 trips per year, inbound and outbound). On average, this represents one shuttle vessel calling every three days. The ship-to-ship LNG transfer to refill the FSU requires approximately 12 hours of pumping time at a rate of 2,500 m³/hour.

5.4.3 Operation Impacts on Transportation

5.4.3.1 Road Transportation

Trucking operations require up to 200 trips per day year round. The number of daily trips to Wharves A and B, where the MFH Facility is located, represents a moderate increase in weekday traffic (152 additional trips) when compared to traffic prior to MFH Facility construction. This change represents threefold increase in trips per day. As a result of this increase, traffic delays can occur, especially during peak hours. A feasible, non-emergency alternative route to Wharves A and B that could help minimize traffic delays during peak hours is not available. Exiting Puerto Nuevo at a different location would require an agreement with the terminal management entity as well as access control to comply with USCG and Transportation Security Administration Transportation Worker Identification Credentials. A study completed to assess logistics challenges during the recovery effort after Hurricane Maria in 2017, indicates that Puerto Rico’s highway network could handle 1,000 to 2,000 additional trucks per hour without the risk of congestion. However, within San Juan, significant delays on highways could be experienced if more than 400 additional trucks per hour entered the highway network. Trucks transporting fuel have not contributed to significant congestion on the highway network (Resnick et al., 2020).

5.4.3.2 Marine Transportation

Shuttle vessels calling on the MFH Facility receive a pilot for the trip through San Juan Harbor, and protocols call for them to be escorted by the USCG. During operations, an average of up to 10 shuttle vessel calls are anticipated per month, up to 120 calls per year. Based on the maximum shuttle vessel transits per year, operation of the MFH Facility can result in up to a 4.5 percent increase in vessel traffic in San Juan Harbor. However, it is assumed that with increased LNG import and usage in Puerto Rico, import of diesel fuel (and the associated vessel transits) will decrease. Further, given the coordinated scheduling and limited number of projected shuttle vessel visits, the operation of the MFH Facility does not have an adverse impact on traffic in San Juan Harbor.

¹ The number of calls reported by the United States Army Corps of Engineers includes domestic and foreign commercial cargo and does not include cruise ships, fishing vessels, yachts, navy, and research vessels.

5.5 Tax Revenues

Operation of the MFH Facility will continue to result in increased tax revenues for the municipality of San Juan and Puerto Rico. NFEnergía has a 15-year tax decree in place with the government of Puerto Rico. Puerto Rico will collect \$31.65 million in income tax during the 2021 through 2035 time period (table 5-6). The operation of the MFH Facility will also generate revenues of \$20.28 million in volume of business, personal property, and real property taxes for the municipality of San Juan during this time period (table 5-7).

During operation of the MFH Facility, Puerto Rico will collect income taxes on labor income associated with the operational workers, as well as additional revenues given the multiplier effect of their activities in the local economy. Puerto Rico income tax revenue from the MFH Facility for 2021 (\$0) and 2022 (\$146,000) is reduced due to accelerated deductions taken for income tax purposes. As shown in table 5-6, Puerto Rico income tax revenue during the subsequent 2023 through 2035 period will remain consistent at \$2.34 million annually. Over the entire 2021 to 2035 period, Puerto Rico will collect a total of \$31.65 million in income tax revenue.

Although sales taxes will be charged by vendors and therefore are not paid directly by NFEnergía to the municipality, this analysis includes them in the following calculation for the sake of completeness. During operation of the MFH Facility from 2021 through 2035, Puerto Rico will collect \$349,000 in sales taxes annually, resulting in a total of \$5.24 million in sales tax revenue, as shown in table 5-6.

During operation of the MFH Facility, the municipality of San Juan will collect additional business taxes, personal property taxes, and real property taxes. As shown in table 5-7, San Juan will collect \$1.15 million in tax revenue in 2021 and \$1.37 million in tax revenue annually from 2023 through 2031. During the entire 2021-2035 period, the municipality of San Juan will collect a total of \$20.28 million in tax revenue from these specific tax categories.

Table 5-6: Fiscal Impacts of Operations, 2021 through 2035—Puerto Rico Income and Sales Taxes (thousands of 2021 dollars).

Year	Income Tax	Sales Tax	Total
2021	\$0	\$349	\$349
2022	\$146	\$349	\$495
Annually 2023 through 2035	\$2,424	\$349	\$2,773
Total: 2021 through 2035	\$31,653	\$5,238	\$36,891

Table 5-7: Fiscal Impacts of Operations, 2021 through 2035—San Juan Volume of Business, Personal Property and Real Property Taxes (thousands of 2021 dollars).

Year	Volume of Business Tax	Personal Property Tax	Real Property Tax	Total
2021	\$359	\$151	\$639	\$1,149
2022	\$577	\$151	\$639	\$1,366
Annually 2023 through 2035	\$577	\$151	\$639	\$1,366
Total: 2021 through 2035	\$8,433	\$2,262	\$9,585	\$20,280

5.6 Environmental Justice

Executive Order (“EO”) 12898 on environmental justice recognizes the importance of using the NEPA process to identify and address, as appropriate, any disproportionately high and adverse health or environmental effects of federal programs, policies, and activities on minority populations and low-income populations. Federal requirements and guidelines around environmental justice stem from EO 12898 and subsequent guidance from the Council on Environmental Quality, the United States Environmental Protection Agency (“USEPA”) and other agencies. In January 2021, President Biden issued EO 14008, which requires federal agencies to “make achieving environmental justice part of their missions.” Agency specific guidance for implementing the EO is still pending.

In accordance with federal guidelines, this environmental justice assessment collected demographic and poverty level data for the geographical area potentially directly affected by the operation of the MFH Facility to determine if minority and low-income populations are present. The USCB 2015 to 2019 American Community Survey data and the USEPA’s Environmental Justice Mapping and Screening Tool, which references the USCB 2014 to 2018 American Community Survey data, were used as sources.

Individuals who identify as any race other than white, non-white Hispanic, or Latino are considered minority (USEPA, 2021). About 99 percent of the population in Puerto Rico is Hispanic or Latino. Environmental justice populations are defined by the Council on Environmental Quality as locations that have a “meaningfully greater” percentage of minorities than the general population has, or locations in which minorities comprise more than 50 percent of the affected area’s population (CEQ, 1997).

Unlike federal guidance on minority populations, there is no quantitative definition of what proportion of low-income populations constitutes an environmental justice population. Low-income populations are defined by the USEPA as households where the income is less than or equal to twice the federal poverty level (USEPA, 2019). It is calculated as a percentage of those for whom the poverty ratio was known, as reported by the USCB. In 2020, the federally-defined poverty threshold for an individual under age 65 is \$13,465 (USCB, 2020). Guidelines suggest using an appropriate poverty threshold and comparing the low-income population in an affected area to a reference population (Federal Interagency Working Group on Environmental Justice and NEPA Committee, 2016).

Federal recommendations include considering additional demographic factors related to age (pursuant to EO 13045, Protection of Children from Environmental Health Risks and Safety Risks) and language to help determine the presence of environmental justice populations. As previously noted, environmental justice involves the meaningful participation of potentially affected populations in the decision making process of a proposed activity. Age populations and “linguistically isolated” populations in which no one in the household age 14 and over speaks English “very well”, or speaks English only (USEPA, 2021), often face barriers to engagement.

To define an analysis area and identify a potentially impacted environmental justice population, federal guidance advises using an “appropriate unity of geographic analysis” that does not “artificially dilute or inflate” the population (CEQ, 1995). The selected area may be a neighborhood census tract or block group, a governing body’s jurisdiction, or other similar geographic unit. The census block group (“CBG”) is the smallest geographic unit for which USCB demographic data are available.

This assessment defines that analysis area as the CBGs within a 1-mile radius of the MFH Facility and data is compared to the municipality. Tables 5-8 and 5-9 provide environmental justice demographic indicator data to identify potential environmental justice populations within the analysis area of the MFH Facility.

Table 5-8: Environmental Justice Demographic Indicators—Race and Ethnicity.

Geographical Area	Population	Hispanic or Latino (percent)	Black or African-American (percent)	White alone, Not Hispanic or Latino ^p (percent)	American Indian and Alaska Native (percent)	Asian (percent)	Native Hawaiian and Other Pacific Islander (percent)	Two or More Races (percent)	Minority Population (percent) ^b
Puerto Rico	3,318,447	3,275,919 (98.7)	386,676 (11.7)	31,723 (1.0)	6,838 (0.2)	6,237 (0.2)	269 (<0.1)	175,649 (5.3)	3,244,196 (99)
San Juan Municipality	335,468	328,550 (97.9)	44,472 (13.3)	5,053 (1.5)	1,244 (0.4)	1,199 (0.4)	75 (<0.1)	17,862 (5.3)	323,497 (98.5)
CBG 72127007004 2 ^a	400	382 (96)	18 (5)	18 (5)	0 (0)	0 (0)	0 (0)	37 (9)	382 (96)
Guaynabo Municipality	86,937	85,548 (98.4)	6,236 (7.2)	1,104 (1.3)	152 (0.2)	44 (0.1)	0 (0)	3,564 (4.1)	85,833 (98.7)
CBG 72061040200 1 ^a	315	287 (91)	9 (6)	19 (6)	0 (0)	0 (0)	0 (0)	0 (0)	296 (94)
CBG 72061041001 1 ^a	590	590 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	590 (100)
CBG 72061041001 2 ^a	1,056	1,051 (100)	0 (0)	5 (<0.1)	0 (0)	0 (0)	0 (0)	97 (9)	1,051 (100)
CBG 72061040103 1 ^a	1,476	1,476 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,476 (100)

Source: USCB, 2021. American Community Survey 2015-2019 5-year estimates (Commonwealth and Municipality). USEPA, based on EJSCREEN, American Community Survey 2014-2018 5-year estimates (CBG).

^a CBG within a 1-mile radius of MFH Facility.

^b Minority population was calculated by subtracting the white-only population from the total population for each geographical area.

Table 5-9: Environmental Justice Demographic Indicators—Income, Age, Language, and Education.

Geographical area	Household Below Poverty (percent) ¹	Low-Income Household (percent) \$26,930	Linguistically Isolated (percent)	Population Under Age 5 (percent)	Population over Age 64 (percent)	Population with Less Than High School Education (percent)
San Juan Municipality	54,322 (39)	21,175 (15)	82,828 (25)	15,448 (5)	70,072 (21)	25,557 (12)
CBG 721270070042 ^a	57 (22)	73 (28)	177 (44.3)	0 (0)	158 (40)	40 (10)
Guaynabo Municipality	5,707 (23)	2,819 (11)	11,441 (16.4)	2,914 (4)	14,272 (20)	3,909 (8)
CBG 720610402001 ^a	8 (5)	0 (0)	81 (25.7)	46 (15)	149 (47)	27 (11)
CBG 720610410011 ^a	142 (70)	0 (0)	179 (30.3)	62 (11)	111 (19)	138 (37)
CBG 720610410012 ^a	141 (34)	99 (24)	280 (26.5)	41 (4)	160 (15)	88 (10)
CBG 720610401031 ^a	234 (48)	106 (22)	340 (23)	93 (6)	316 (21)	203 (19)

Source: USEPA, Based on EJSCREEN, USCB 2014–2018 American Community survey data.
^a Census tract with Terminal Facilities Census tract within a 1-mile radius of MFH Facility.
 Gray indicates reference populations.
 Green indicates populations at least 20 percent greater than reference populations.

5.6.1 Minority Populations

As discussed above, federal guidelines for identifying an environmental justice population provide that either the geographic unit of analysis has a minority population greater than 50 percent or it has a “meaningfully greater” percentage of minorities than the reference population. While a “meaningfully greater” threshold is not clearly defined, guidelines suggest that 20 percentage points greater than the reference population is within the reasonable threshold (Federal Interagency Working Group on Environmental Justice and NEPA Committee, 2016). According to the federal guidelines, disproportionately affected minority populations do not occur within 1 mile of the MFH Facility (see table 5-8).

5.6.2 Low-Income Populations

As noted earlier, low-income populations are defined by the USEPA as households where the income is less than or equal to twice the federal poverty level. This assessment collected the low-income statistics estimated by the USEPA and based on USCB 2014 to 2018 American Community Survey data. The same methodology used to identify minority populations was applied to identify low-income populations. The low-income population percentages in the analysis area for the MFH Facility are summarized in table 5-9.

Of the five block groups within a 1 mile radius of the MFH Facility, one block group has more than 50 percent of the households below the poverty level, and that group and one additional block group also meets the “meaningfully greater” test for poverty levels.

5.6.3 Other Environmental Justice Populations

Using estimates by the USEPA and based on USCB 2014 to 2018 American Community Survey data, age, language, and education statistics were collected to further assess whether vulnerable and marginalized populations are present within the analysis area.

The under age 5, over age 64, limited education, and linguistically isolated population percentages in the analysis area are summarized in table 5-9. One block group has a population over 64 that exceeds the meaningfully greater threshold, and one other block group has a population with less than a high school education that exceeds the meaningfully greater threshold. There are no CBGs within the analysis area that have identified populations under age 5 or linguistically isolated populations that exceed the meaningfully greater threshold.

5.6.4 Impacts on Minority and Low-Income Populations

In instances when environmental justice populations are identified, federal guidance provides for the consideration whether the action, here being continued operations of the MFH Facility, results in impacts that disproportionately affect the identified environmental justice populations within the analysis area. This assessment identified three different CBGs within the analysis area as environmental justice populations. These include CBG 720610402001 due to the over age 64 population, CBG 720610410011 due to households below poverty level and education level, and CBG 720610401031 due to households below poverty level.

The impacts from continued operation of the MFH Facility on the natural and human environment are identified and discussed in the impact-specific resource reports. Potentially adverse environmental effects on surrounding communities, including minority and low-income communities, associated with the MFH Facility, were avoided, minimized, and/or mitigated, as discussed in those reports. For example, continued operation of the MFH Facility will not result in any impacts on groundwater resources, soil resources, cultural resources, recreation, or land use, and impacts on other resources such as fish, wildlife, and noise would be intermittent, minor, and negligible. In each case, continued operations would not result in any significant adverse impacts.

However, continued operations of the MFH Facility would ensure that key economic and environmental benefits continue to occur for minority and low-income communities, including reduced energy costs and reduced area emissions. In particular, the purpose of the MFH Facility is to import LNG to San Juan, Puerto Rico for regasification and use at the adjacent PREPA power generation facility, and to deliver a portion of natural gas via truck deliveries to commercial customers. The natural gas provided to the PREPA power generation facility is used to off-set the historic use of diesel fuel at the facility and by commercial customers. Additionally, the MFH Facility's continued operation supports lower fuel costs to NFEnergía's customers. In particular, PREPA's continued use of natural gas supplied by the MFH Facility to power Units 5 and 6 will ensure the continuation of dramatically lower power costs for residents and businesses in Puerto Rico. Natural gas is historically substantially cheaper than diesel² and, burning natural gas instead of diesel provides even greater reductions in the cost for electricity to customers (Siemens Industry, 2019). PREPA estimated cost savings of \$500 million over the next five years that will

² According to Siemens Industry (2019), "natural gas has been significantly less expensive since 2009 compared to premium liquid fuels such as diesel and residual fuel oil".

result in fuel cost savings for its electricity consumers (PREPA, 2019). The MFH Facility's operation also ensures continued delivery of natural gas throughout Puerto Rico, which enables NFEnergía's customers to take advantage of lower operational costs when compared with historically high cost power sources, such as diesel. Further, an increase in the number and type of fuel suppliers in Puerto Rico is necessary to reduce the likelihood of supply chain disruptions and to stimulate competition, thus lowering costs.

In addition to the economic benefits, continued operations of the MFH Facility will bring environmental benefits to the environmental justice communities. The MFH Facility is located in an area that is currently designated as nonattainment for sulfur dioxide. MFH Facility-provided and cleaner-burning natural gas, when substituted for diesel fuel, assists in improving the air quality in the San Juan area and provides an environmental benefit to minority and low-income communities.

The economic benefits as a result of reduced energy costs associated with replacing diesel fuel for natural gas at the PREPA power generation facility, along with the reduced sulfur dioxide air emissions that will help San Juan's efforts to achieve attainment, provide economic and environmental benefits to minority and low-income populations.

5.7 References

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APPENDIX 5A TRAFFIC STUDY MEMO

To: Capt. Mark Lane, Lee Evans – New Fortress Energy

Cc: Rob Woodland, P.E., Tt Principal Traffic Engineer

From: Fernando Pagés Rangel, P.E.

Date: 8 February 2018

Subject: Final Traffic Assessment Memo

Traffic Counts at Puerto Nuevo

The purpose of the traffic counts was to quantify existing traffic activity associated with Wharves A, B, C and D at Puerto Nuevo. Traffic counts were collected at the access driveway serving Wharves A and B and Ayacol's Gate C and Gate D driveways on Monday, January 29, 2018 and again on Tuesday, January 30, 2018. A detailed summary of the traffic counts collected as part of this study are provided in the Appendix. The traffic counts indicate:

Wharf A currently generates approximately 8 vehicles (4 entering trips and 4 exiting trips) during the weekday morning peak hour (from 7:45 to 8:45 AM), 26 vehicle trips (14 entering trips and 12 exiting trips) during the weekday midday peak hour (from 11:15 AM to 12:15 PM) and 14 vehicle trips (7 entering trips and 7 exiting trips) during the weekday evening peak hour (from 4:00 to 5:00 PM).

Wharf B Wharf B has been inactive since March 2015 and does not currently generate any traffic.

Wharf C currently generates approximately 25 vehicles (12 entering trips and 13 exiting trips) during the weekday morning peak hour (from 7:00 to 8:00 AM), 14 vehicle trips (6 entering trips and 8 exiting trips) during the weekday midday peak hour (from 11:45 AM to 12:45 PM) and 18 vehicle trips (6 entering trips and 12 exiting trips) during the weekday evening peak hour (from 3:00 to 4:00 PM).

Wharf D currently generates approximately 8 vehicles (1 entering trip and 7 exiting trips) during the weekday morning peak hour (from 8:30 to 9:30 AM), 16 vehicle trips (3 entering trips and 13 exiting trips) during the weekday midday peak hour (from 11:15 AM to 12:15 PM) and 13 vehicle trips (2 entering trips and 11 exiting trips) during the weekday evening peak hour (from 3:15 to 4:15 PM).

Trailer Bridge Facility

Supplemental traffic counts were also conducted at the Trailer Bridge facility on Tuesday January 30, 2018, to capture existing traffic levels at the adjacent wharf facility. The traffic counts indicate that the Trailer Bridge facility currently generates approximately 59 vehicles (36 entering trips and 23 exiting trips) during the weekday morning peak hour (from 7:00 to 8:00 AM), 102 vehicle trips (29 entering trips and 73 exiting trips) during the weekday midday peak hour (from 11:15 AM to 12:15 PM) and 38 vehicle trips (12 entering trips and 26 exiting trips) during the weekday evening peak hour (from 4:00 to 5:00 PM).

In comparison, the anticipated operations at the proposed permanent Micro Fuel Handling facility would service an estimated 13 to 40 trucks per day. This equates to a maximum of 80 truck trips per day (40 entering trucks and 40 exiting trucks). Consequently, the proposed Micro Fuel Handling facility will not result in a noticeable impact on future traffic operations of the roadways and intersections serving the wharves at Puerto Nuevo.

Summary of Traffic Observations

Tetra Tech has prepared a figure to highlight the key traffic observations made during the data collection phase of our study (See Figure 1 Attached). A brief description of the key traffic observations is provided below.

Limited Available Sight Distance at the Access Driveway to Wharves A and B

The available sight distance at the project site access driveway on Route 28 (serving Wharves A and B) is limited due to the existing curvature of Route 28 (approaching the access driveway from the northwest) and other obstructions located within the drivers line of sight (including the existing property fence and scrub brush vegetation along the south side of Route 28 along curve. This restricts the available sight distance at the access driveway looking to and from the northwest on Route 28 to a maximum of approximately 250 feet.

The limited driver's sight distance looking to and from the northwest could impact traffic safety for left-turn entering and exiting movements at the access driveway. Vehicles attempting to turn left from the access driveway onto Route 28 may not have sufficient view of oncoming traffic to safely enter onto Route 28. In addition, vehicles on Route 28 waiting to turn left into the site access driveway could be struck from behind, resulting in potential rear-end collisions. A sketch of the available sight distance at the access driveway to Wharves A and B is provided in the Appendix.

Potential measures to enhance the available sight distance at the site access driveway to Wharves A and B should be addressed prior to construction of the permanent LNG Fuel Handling facility. Potential mitigation measures to improve the available sight distance at the access driveway include trimming of the existing scrub brush located within the public right-of-way, posting of advisory speed limits in advance of the curve on Route 28, reconstruction of the existing fence line at the entrance of the access driveway, and if required, possible turn-restrictions at the access driveway.

Intersection of Route 28 and Route 24

The recent hurricanes have disabled the existing traffic signal equipment at the intersection of Route 24 and Route 28. Temporary police officer control is currently provided at the intersection (from roughly 6:00 AM to 3:00 PM) to help manage traffic flow through this heavily-traveled intersection. Photos of the Route 24/Route 28 Intersection are provided in the Appendix

At the time of the study, it was noted that a bucket truck was observed at the intersection on January 30, 2018 and it appeared that electrical wiring for a replacement traffic signal has been initiated. However, no traffic signal heads have been installed as of the last site visit on February 1, 2018. As currently envisioned, primary truck access to the proposed LNG Fuel Handling facilities would be provided through this intersection. However, with or without a traffic signal, this intersection will continue to experience significant traffic congestion during the weekday morning and weekday evening commuter peak periods.

Traffic Operations at the Trailer Bridge Driveways

The Trailer Bridge facility is currently accessed from driveways located on both sides of Route 28. We note that there is limited on-site stacking space available between the edge of the road and the gates controlling access to the main facility located on the north side of Route 28. This resulted in tractor trailers parking along both sides of Route 28 at the entrance of the facility during weekday midday peak periods causing traffic congestion along Route 28 as vehicles had to significantly reduce their travel speeds in order safely pass parked vehicles waiting to enter the Trailer Bridge facility. While through traffic was generally able to continue past the Trailer Bridge site, the parked tractor trailers also reduced the available sight distance for vehicles exiting the Trailer Bridge facilities. This required vehicles exiting the Trailer Bridge facility to nose out into the intersection to see past the parked vehicles. This

contributed to traffic congestion along Route 28 and could result in a potential traffic safety issue for vehicles exiting the Trailer Bridge facility.

Pothole on Route 28 at Guaynato Bulk Terminal Driveway

A large pothole located on Route 28 at the Guaynato Bulk Terminal driveway causes significant traffic backups on Route 28 southbound during the weekday morning commuter peak periods (from 7:00 to 8:30 AM). Vehicle queues on Route 28 were observed to extend past the main access road to the PREPA San Juan Steam Plant, the access driveway to Wharves A and B, and the Trailer Bridge Facility, and all the way back to the intersection of Route 28 and Route 24 (located approximately 3,800 feet or roughly 3/4 of a mile from the pothole). Several frustrated drivers were observed making U-turns along Route 28 to escape the traffic congestion. Photos of the pothole and resulting vehicle queues on Route 28 are provided in the Appendix.

Traffic Congestion on Calle Monterrey at Handlebar (Bar and Grille)

Calle Monterrey has been identified as a possible secondary truck access route for the proposed temporary and permanent LNG Fuel Handling facilities. This route would serve trucks approaching the site from Route 2 westbound attempting to avoid traffic congestion at the intersections of Route 28 and Route 24. While Calle Monterrey is a permissible truck route, vehicles parked along both sides of the road (in the vicinity of Handlebar Bar & Grille) greatly reduce the effective travel width of the roadway. This primarily impacted traffic flow during the late weekday afternoon peak periods (the bar and grille opens at 4:00 PM). However, other businesses along Calle Monterrey were also observed to be parked along the roadside during other times of the day. Photographs of the traffic congestion on Calle Monterrey in front of the Handlebar (Bar and Grille) are provided in the Appendix.

Summary of Existing Uses at the Puerto Nuevo Facility

Tenants of the wharves and adjacent quay areas at the port have changed over recent years. Based on discussions with Mr. Hernan Ayala-Rubio (Executive Vice President at Ayacol), Tetra Tech has prepared a preliminary map of the existing tenants presented in Figure 2.

Calle Portuaria Closed to Through Traffic

At one time (2003) Calle Portuaria appeared to be open to all users at the port. However, to provide controlled access to the Ayacol facilities located on both sides of Calle Portuaria, Ayacol has erected gates at the east and west ends of Calle Portuaria (to connect the quay areas under their control). While this allows all of the Ayacol activity associated with Wharves E, F, G and H to pass through Ayacol's central gate located off Route 2, the existing gates effectively relocated the connection between Wharves A, B and C and the primary access to the Puerto Nuevo facility provided via the grade-separated interchange on Route 2.

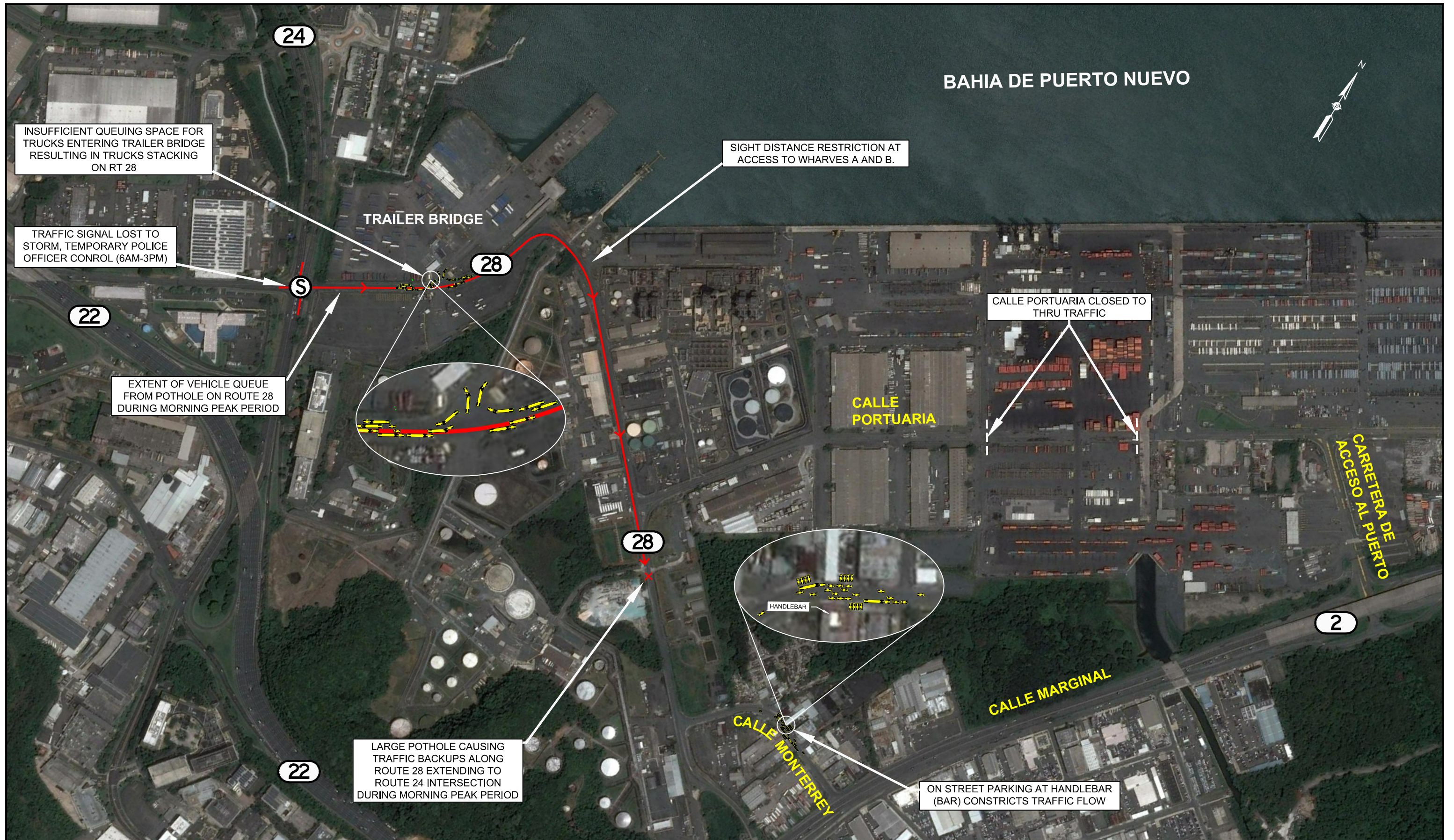
The preliminary truck routes identified for the proposed temporary and permanent Micro Fuel Handling facilities are presented in Figures 3 and 4, respectively.

Mr. Ayala-Rubio has indicated that additional access to Wharves A, B and C through the Ayacol facility may be provided, if needed, for emergency access and /or alternative access to Route 2/Carretera De Acceso AL Puerto Interchange. Given the limited available sight distance for left-turn movements entering and exiting the access driveway serving Wharves A and B, and the existing traffic congestion noted at the intersection of Route 28 and Route 24, and along portions of Route 28 and Calle Monterrey, it is recommend that the project team explore the potential of providing additional truck access through the Ayacol facility to and from the proposed LNG Fuel Handling facilities. This may require the relocation of planned project support buildings along the southern property boundary

of the permanent facility. Alternative truck routes illustrating a potential connection between the grade separated interchange at Route 2 and the temporary and permanent Micro Fuel Handling facilities are presented in Figures 5 and 6, respectively.

Site Photos

Numerous site photos were taken during the data collection phase of the traffic study. The photos have been organized and tabulated for future use by the project team.



LEGEND

- | | |
|--|--|
|  AYACOL |  PAN AMERICAN GRAIN |
|  TOTE |  PREPA SAN JUAN STEAM PLANT |
|  BACARDI |  P.R.T. |
|  TERRASA TRUCKING |  TRAILER BRIDGE |





FIGURE 3
TEMPORARY FUEL HANDLING FACILITY
TRUCK ROUTES
SAN JUAN, PUERTO RICO



FIGURE 4
MICRO FUEL HANDLING FACILITY
TRUCK ROUTES
SAN JUAN, PUERTO RICO



FIGURE 5
TEMPORARY FUEL HANDLING FACILITY
ALTERNATIVE TRUCK ROUTES
SAN JUAN, PUERTO RICO



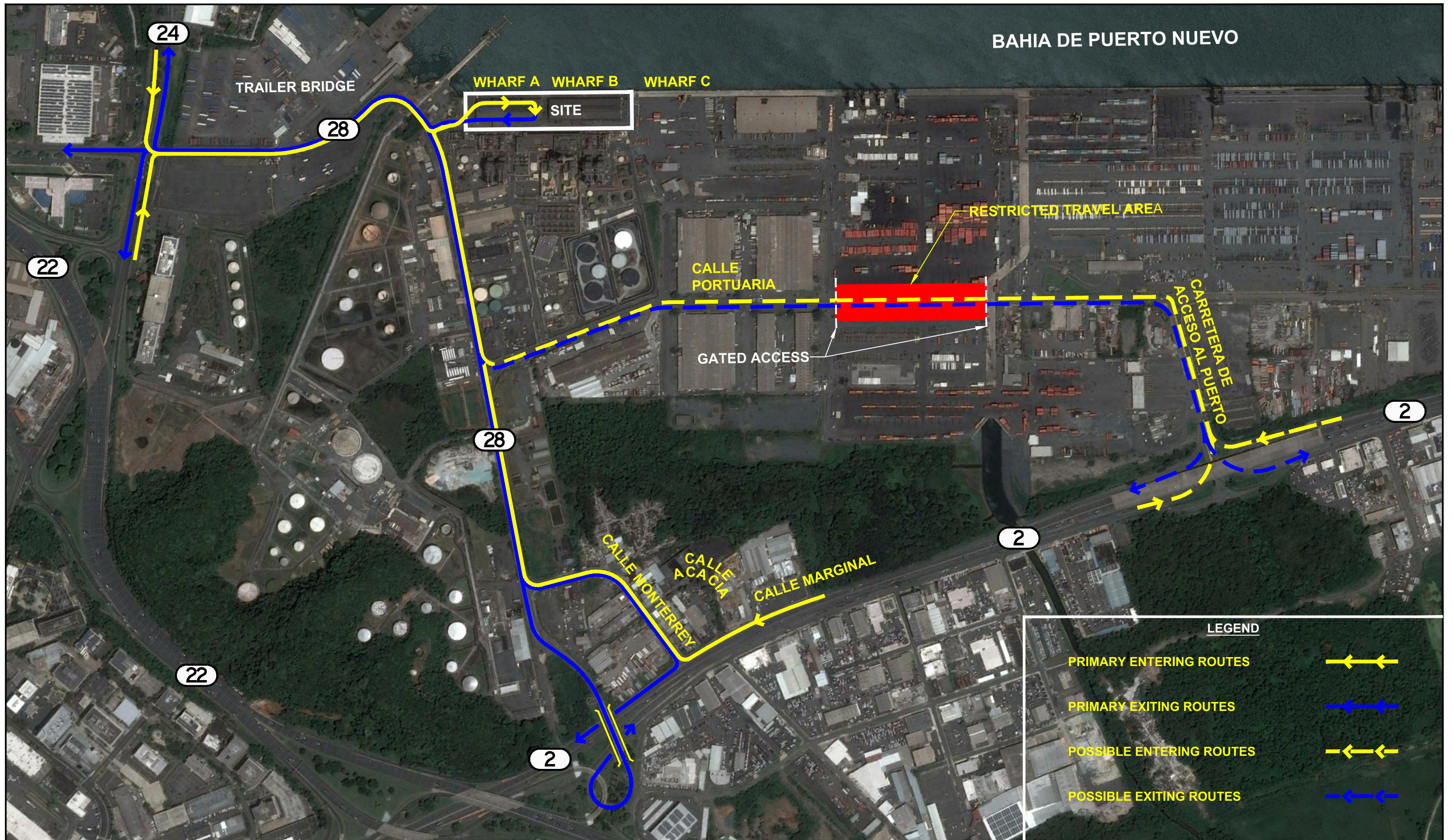


FIGURE 6
MICRO FUEL HANDLING FACILITY
ALTERNATIVE TRUCK ROUTES
SAN JUAN, PUERTO RICO



Appendix

**Available Sight Distance
Access Driveway
To Wharves A & B**

Available Sight Distance at Access Drive to Wharves A & B

Red lines denote line of sight of driver waiting to exit on to Route 28 from Access Road serving Wharves A & B



Limited Available Sight Distance from the driveway looking to and from the northwest On Route 28 (around corner).



Available Sight Distance looking left from Wharves A & B access drive approximately 1,500 Feet.



View from Wharves A & B Access Drive looking to the right from driveway onto Route 28



Fence and Brush partially obstruct view for exiting vehicles. Available Sight Distance limited to approximately 250 Feet.



View facing Access driveway to Wharves A & B from Route 28 (can't see driveway or vehicles waiting to turn left into Access driveway to Wharves A & B)



Sharp Corner on Route 28 just before access driveway to Wharves A & B (can't see driveway or vehicles waiting to turn left into Access driveway to Wharves A & B)

Police Officer Control at Route 28 and Route 24

Intersection of Route 28 and Route 24 - Traffic Signal Equipment Lost To Storm













Traffic Congestion Route 28 at Handlebar Bar & Grille

Calle Monterrey Congestion Handlebar Northbound









Pothole On Route 28

Pothole on Route 28 (South of San Juan Power Plant) results in significant vehicle queues during weekday morning peak periods. Vehicle queue from pothole extends back past San Juan Power Plant access road, the access driveway to Wharves A & B and Trailer Bridge Facility, all the way back to the intersection of Route 28 at Route 24.







Vehicle Queue Extending beyond at Access Driveway to Wharves A & B



Vehicle Queue on Route 28 at Trailer Bridge Facility



Vehicle Queue at Trailer Bridge



Vehicle Queue extends to Intersection of Route 24 and Route 28 during morning peak hours



Port Facility Circulation Roadways





Hwy

28

2

Carri Puerto Rico
María Kennedy

Traffic Counts

Traffic Count Summary

Time Period	Access to Wharf A			Ayacol Gate C			Ayacol Employee Parking Lot at Gate C			Ayacol Gate D		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
AM PEAK HOUR	7:00-8:00 AM			7:45-8:45 AM			7:45-8:45 AM			8:30-9:30 AM		
Passenger Cars	1	3	4	21	10	31	6	2	8	2	2	4
Heavy Vehicles	<u>0</u>	<u>0</u>	<u>0</u>	<u>6</u>	<u>0</u>	<u>6</u>	-	-	-	<u>3</u>	<u>3</u>	<u>6</u>
Total	1	3	4	27	10	37	6	2	8	5	5	10
MID PEAK HOUR	12:00-1:00 PM			11:15 AM-12:15 PM			11:15 AM-12:15 PM			11:45 AM-12:45 PM		
Passenger Cars	11	10	21	21	38	59	3	7	10	12	8	20
Heavy Vehicles	<u>0</u>	<u>7</u>	<u>7</u>	<u>10</u>	<u>1</u>	<u>11</u>	-	-	-	<u>1</u>	<u>7</u>	<u>8</u>
Total	11	17	28	31	39	70	3	7	10	13	15	28
PM PEAK HOUR	4:45-5:45 PM			3:00-4:00 PM			3:00-4:00 PM			3:15-4:15 PM		
Passenger Cars	2	2	4	17	20	37	3	5	8	No Data. Count board malfunction		
Heavy Vehicles	<u>1</u>	<u>1</u>	<u>2</u>	<u>4</u>	<u>4</u>	<u>8</u>	-	-	-			
Total	3	3	6	21	24	45	3	5	8			

Based on traffic count conducted on Monday January 29, 2018

Traffic Count Summary

Time Period	Access to Wharf A			Ayacol Gate C			Ayacol Employee Parking Lot at Gate C			Ayacol Gate D		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
AM PEAK HOUR	7:45-8:45 AM			7:00-8:00 AM			7:00-8:00 AM			8:30-9:30 AM		
Passenger Cars	2	3	5	8	8	16	8	1	9	0	2	2
Heavy Vehicles	<u>2</u>	<u>1</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>9</u>	-	-	-	<u>1</u>	<u>5</u>	<u>6</u>
Total	4	4	8	12	13	25	8	1	9	1	7	8
MID PEAK HOUR	11:15 AM-12:15 PM			11:45 AM-12:45 PM			11:45 AM-12:45 PM			11:15 AM-12:15 PM		
Passenger Cars	9	7	16	6	8	14	2	7	9	1	6	7
Heavy Vehicles	<u>5</u>	<u>5</u>	<u>10</u>	<u>0</u>	<u>0</u>	<u>0</u>	-	-	-	<u>2</u>	<u>7</u>	<u>9</u>
Total	14	12	26	6	8	14	2	7	9	3	13	16
PM PEAK HOUR	4:00-5:00 PM			3:00-4:00 PM			3:00-4:00 PM			3:15-4:15 PM		
Passenger Cars	6	6	12	2	12	14	5	4	9	1	7	8
Heavy Vehicles	<u>1</u>	<u>1</u>	<u>2</u>	<u>4</u>	<u>0</u>	<u>4</u>	-	-	-	<u>1</u>	<u>4</u>	<u>5</u>
Total	7	7	14	6	12	18	5	4	9	2	11	13

Based on traffic count conducted on Tuesday January 30, 2018

Ayacol to Wharf D

Tuesday, January 30, 2018

Start Time	Passenger Cars By Movement												Heavy Vehicles By Movement												All Vehicles By Movement												TOTALS	PEAK HOUR	HV% By Movement											
	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
7:00 AM	0	0	-	-	-	-	-	5	2	1	-	1	0	0	-	-	-	-	0	0	0	0	-	0	0	-	-	-	-	5	2	1	-	1	9					0%	0%	0%	0%							
7:15 AM	0	0	-	-	-	-	-	0	1	0	-	0	0	0	-	-	-	-	0	0	0	0	-	0	0	-	-	-	-	0	1	0	-	0	1					0%	0%									
7:30 AM	0	0	-	-	-	-	-	1	0	0	-	0	1	0	-	-	-	-	0	1	0	-	0	0	-	-	-	-	1	1	0	-	0	3	100%				0%	100%										
7:45 AM	0	0	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	0	2	0	-	0	0	-	-	-	-	0	2	0	-	0	2						100%										
8:00 AM	0	0	-	-	-	-	-	1	0	0	-	0	0	0	-	-	-	-	0	0	0	-	0	0	-	-	-	-	1	0	0	-	0	1					0%											
8:15 AM	0	0	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	0	0	1	-	1	0	-	-	-	-	0	0	1	-	1	2							100%	100%								
8:30 AM	0	0	-	-	-	-	-	1	0	0	-	0	0	0	-	-	-	-	1	1	1	-	0	0	-	-	-	-	2	1	1	-	0	6	100%	100%			50%	100%	100%									
8:45 AM	0	0	-	-	-	-	-	2	0	0	-	0	0	0	-	-	-	-	3	0	2	-	0	0	-	-	-	-	5	0	2	-	0	7					60%		100%									
9:00 AM	0	0	-	-	-	-	-	0	0	1	-	0	0	1	-	-	-	-	0	0	2	-	0	0	1	-	-	-	0	0	3	-	0	4			100%					67%								
9:15 AM	0	1	-	-	-	-	-	1	0	1	-	0	0	0	-	-	-	-	0	0	0	-	0	0	1	-	-	-	1	0	1	-	0	3			0%				0%									
9:30 AM	0	0	-	-	-	-	-	0	0	0	-	1	0	0	-	-	-	-	3	0	0	-	0	0	-	-	-	-	3	0	0	-	1	4					100%				0%							
9:45 AM	1	1	-	-	-	-	-	1	0	0	-	0	2	-	-	-	-	-	0	0	1	-	0	1	3	-	-	-	1	0	1	-	0	6			0%	67%			0%		100%							

Start Time	Passenger Cars By Movement												Heavy Vehicles By Movement												All Vehicles By Movement												TOTALS	PEAK HOUR	HV% By Movement											
	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
11:00 AM	0	0	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	0	0	2	-	0	0	0	-	-	-	-	0	0	2	-	0	2								100%							
11:15 AM	0	1	-	-	-	-	-	0	0	0	-	0	1	-	-	-	-	-	0	1	1	-	1	0	2	-	-	-	-	0	1	1	-	1	5			50%				100%	100%	100%						
11:30 AM	0	0	-	-	-	-	-	0	0	0	-	0	2	-	-	-	-	-	0	0	3	-	0	0	2	-	-	-	-	0	0	3	-	0	5			100%					100%							
11:45 AM	1	4	-	-	-	-	-	0	2	3	-	1	0	1	-	-	-	-	2	0	0	-	0	1	5	-	-	-	-	2	2	3	-	1	14	26	0%	20%			100%	0%	0%	0%						
12:00 PM	0	3	-	-	-	-	-	0	0	0	-	2	1	3	-	-	-	-	0	0	2	-	0	1	6	-	-	-	-	0	0	2	-	2	11	35	100%	50%					100%	0%						
12:15 PM	0	0	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	0	0	0	-	0	0								100%							
12:30 PM	0	0	-	-	-	-	-	3	4	0	-	0	0	0	-	-	-	-	0	0	1	-	0	0	0	-	-	-	-	3	4	1	-	0	8	33					0%	0%								
12:45 PM	0	0	-	-	-	-	-	1	0	0	-	0	0	0	-	-	-	-	0	1	0	-	0	0	0	-	-	-	-	1	1	0	-	0	2	21					0%	100%								
1:00 PM	0	0	-	-	-	-	-	3	0	0	-	0	0	0	-	-	-	-	1	0	0	-	0	0	0	-	-	-	-	4	0	0	-	0	4	14					25%									
1:15 PM	1	1	-	-	-	-	-	2	1	0	-	0	1	-	-	-	-	-	1	0	0	-	0	1	2	-	-	-	-	3	1	0	-	0	7	21	0%	50%			33%	0%								
1:30 PM	0	0	-	-	-	-	-	1	0	0	-	0	0	0	-	-	-	-	2	0	4	-	0	0	0	-	-	-	-	3	0	4	-	0	7	20					67%		100%							
1:45 PM	0	0	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	3	0	2	-	1	0	0	-	-	-	-	3	0	2	-	1	6	24					100%		100%	100%						

Start Time	Passenger Cars By Movement												Heavy Vehicles By Movement												All Vehicles By Movement												TOTALS	PEAK HOUR	HV% By Movement											
	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
3:00 PM	0	1	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	0	0	0	-	0	1	-	-	-	-	0	0	0	-	0	1																
3:15 PM	0	0	-	-	-	-	-	0	0	1	-	0	0	2	-	-	-	-	0	0	0	-	2	0	2	-	-	-	-	0	0	1	-	2	5			100%						0%	100%					
3:30 PM	0	0	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	0	0	1	-	0	0	0	-	-	-	-	0	0	1	-	0	1								100%	0%						
3:44 PM	0	0	-	-	-	-	-	0	0	5	-	0	1	1	-	-	-	-	0	0	0	-	0	1	1	-	-	-	-	0	0	5	-	0	7	14	100%	100%					0%							
4:00 PM	0	2	-	-	-	-	-	1	1	0	-	1	0	0	-	-	-	-	0	0	1	-	0	0	2	-	-	-	-	1	1	1	-	1	6	19			0%				100%	0%						
4:15 PM	0	0	-	-	-	-	-	0	0	0	-	0	0	0	-	-	-	-	1	0	0	-	0	0	0	-	-	-	-	1	0	0	-	0	1	15					100%		100%							

Traffic Count Summary

Time Period	Trailer Bridge (North)				Trailer Bridge (South)				Trailer Bridge (Total)			
	↑	↘	↓	↕	↙	↗	↑	↕	↙	↗	↓	↕
	IN	OUT	CROSS	TOTAL	IN	OUT	CROSS	TOTAL	IN	OUT	CROSS	TOTAL
AM PEAK HOUR	7:00-8:00 AM											
Passenger Cars	11	4	2	17	6	2	2	10	17	6	4	27
Heavy Vehicles	13	12	0	25	6	1	0	7	19	13	0	32
Total	24	16	2	42	12	3	2	17	36	19	4	59
MID PEAK HOUR	11:15 AM-12:15 PM											
Passenger Cars	8	11	3	22	11	24	2	37	19	35	5	59
Heavy Vehicles	8	7	0	15	2	26	0	28	10	33	0	43
Total	16	18	3	37	13	50	2	65	29	68	5	102
PM PEAK HOUR	4:00-5:00 PM											
Passenger Cars	3	7	0	10	2	5	0	7	5	12	0	17
Heavy Vehicles	4	8	0	12	3	6	0	9	7	14	0	21
Total	7	15	0	22	5	11	0	16	12	26	0	38

Based on traffic count conducted on Tuesday January 30, 2018

