

## New Orleans East Industrial Canal Crossing

Safety and Access Planning
State Project \# H. 972422.1 RPC Task A-1.22 IHNC

Stage 0 Feasibility Study June 2022
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## New Orleans East Industrial Canal Crossing Stage 0 Feasibility Study

## BKI Project \#: NO.19.019

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## Introduction

## Project Overview

This Stage 0 Feasibility Study, conducted by the Regional Planning Commission (RPC) and the City of New Orleans, evaluates the feasibility of a potential walking and bicycling crossing of the Inner Harbor Navigational Canal (IHNC), locally referred to as the Industrial Canal, connecting New Orleans East to the remainder of the city. The study identifies, from existing bridges, a feasible crossing with high potential for increasing accessibility to/from New Orleans East and lays out a conceptual plan for improving its safety for non-motorized users. Additional potential connections identified by the Project Management Committee (PMC) for the selected bridge crossing are included.

## Project Area Description

The project focuses on four bridge crossings of the upper segment of the IHNC between Lake Pontchartrain and the Gulf Intracoastal Waterway (GIWW).

- Seabrook Vehicular Bridge, or Senator Ted Hickey Bridge (Leon C. Simon Dr/LA 1264)
- Danziger Bridge (Chef Menteur Hwy/US Hwy 90)
- I-10 High Rise Bridge
- Almonaster Avenue Bridge

The project area is located on the upper segment of the IHNC which the above bridges connect. Surrounding areas include parts of New Orleans East as well as portions of the Gentilly and Desire areas to the west of the canal. Notable destinations in the project area include the University of New Orleans (UNO), Southern University at New Orleans (SUNO), and Walmart (Chef Menteur Hwy) west of the canal and New Orleans Lakefront Airport and a CSX Gentilly Yard east of the canal.

Figure 1: Project Area Map


Source: BKI, 2022, prepared with data provided by the New Orleans Regional Planning Commission

## Purpose and Need for this Project

The purpose of this proposed project is to provide a safe crossing over the IHNC for people walking and bicycling. This project is necessary because there is no adequate crossing currently available, and this is inhibiting access to services and opportunities on either side of the canal. The IHNC is a particular barrier to residents surrounding the canal, who are more likely to live in low-income households or households without a car. Furthermore, the IHNC completely separates New Orleans East from the remainder of the city. The project would connect New Orleans to the citywide bicycle network in the short-term, and in the long-term, it would help fulfill the recommendations of the New Orleans Bikeway Blueprint, which includes crossings on three of the four bridges in this study's purview.

## Project Management Committee (PMC) Participation and Coordination

A PMC was established to guide the study's technical approach, review findings, and offer recommendations. Additionally, the PMC led public outreach and served as a liaison to elected officials. The committee was comprised of various key stakeholders, including state agencies, local government departments, and advocacy organizations as detailed below.

- Regional Planning Commission
- City of New Orleans
- Office of Transportation
- Department of Public Works
- Roadwork NOLA - Mobility \& Safety Outreach
- Neighborhood Engagement Team - Districts D \& E
- DOTD District 02
- Port of New Orleans
- Regional Transit Authority
- Bike Easy

The PMC met in person three times to review progress and guide the study. The first PMC meeting in January served to provide a briefing of preliminary findings on the four bridges and a description and discussion of the technical approach for the remainder of the study. In between meetings, key members coordinated with each other and the consultant team on public outreach and other aspects of the study according to their expertise, including critical design input from the City's Department of Public Works (DPW).

The Mayor's Office of Transportation kept the Office of Community Engagement informed of the project while representatives from the Neighborhood Engagement Teams for Districts D and E served as points of contact for those areas of the city most directly impacted by the project. Along with Roadwork NOLA's Mobility \& Safety Outreach coordinator, these community engagement specialists provided invaluable input throughout the course of the study that influenced the bridge selection. Additionally, the consultant team reviewed and incorporated recent outreach efforts performed as part of the Moving New Orleans Bikes project completed in 2020. The initial public outreach of this Stage 0 Feasibility Study has laid the groundwork for comprehensive community engagement in future stages of project development.

The primary purpose of the second meeting, in April, was for the PMC to recommend one of the four bridge facilities to move forward into the conceptual design phase of the study. A comprehensive presentation of findings at this meeting was followed by briefings to City Council Districts D \& E as well as conference calls with DOTD, RTA, and PMC members from the City to coordinate and settle on a bridge selection to move forward into preliminary design. The final PMC meeting at the beginning of June served to present preliminary design concepts to the committee and facilitated a thorough group discussion on this aspect of the study. The City's DPW presented a concept to note key design aspects and elements recommended for inclusion in the final conceptual design cost estimates.

All meeting materials can be found in Appendix A, including sign-sheets, presentations, and meeting minutes.

## Background

RPC provided an Area of Interest (AOI) map that highlights block groups in and around the Project Limits specifically designated for environmental justice awareness based on a variety of underlying factors (Figure 2 and Appendix A). The map serves to elevate awareness in environmental justice and help assure that outreach efforts and representation in this and future stages of the development process adhere to Title VI.
"Title VI prohibits discrimination on the basis of race, color, or national origin in any programs and activities receiving federal financial assistance. Sec. 601: no person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

As detailed on the previous page, this study sought to lay the groundwork for community engagement by keeping the City's Office of Community Engagement informed of this technical feasibility study's progress as well as working closely with Neighborhood Engagement Teams in Districts $D$ and $E$ for initial input and to prepare their communities for extensive community involvement in future stages of development beyond this study.

Figure 2: Area of Interest (AOI) Map


Source: New Orleans Regional Planning Commission

The AOI map displays census block groups shown in yellow and dark yellow. The census block groups were included if touched by a 1.5 mile buffer (shown in pink) around the project limits (shown in dark red). The AOI's underlying block group data were provided to the consultant team as a GIS database and used in the creation of Table 1 to provide a basic sense of populations in the study area, but the full geodatabase as provided by RPC is available for future stages of the development process.

For the purposes of this study, a Study Area was further defined to include the project limits as well as much of the buffer zone, though tailored more acutely to the study's focus of people walking and bicycling across the IHNC (Figure 3). The Study Area (Figure 3) was based roughly on the "biking distance" as defined in the New Orleans Bikeway Blueprint ( 10 -minute ride, or 1.67 mile distance). The biking distance was rounded up to a 2-mile distance from the approximate center of the bridges along the roadways they carry. From there, the Study Area's edges were defined based on natural borders, major streets, and census blocks used to explore demographics and perform comparative analyses of previous studies.

Figure 3: Study Area Map


Source: BKI, 2022

Demographics
This section briefly explores the demographics of the Study Area to provide a general sense of the population in the vicinity of the bridges. A later section (Study Area Demand and Need) examines this more closely through an analysis of latent demand for walking and bicycling as well as an equity index that seeks to determine where investment may be needed most. Both assessments are based on previous work that led to the City's Bikeway Blueprint and are a way to consider impacts to surrounding areas that may be disadvantaged.

The equity index in particular is based on metrics that are often used as transit dependent indicators, such as population under 18 and over 65 , as well as environmental justice indictors like minority population. The Study Area has a higher proportion of its population under age 18 than Orleans Parish as a whole. The minority population, at nearly $90 \%$, is much higher than the parish overall (66\%). Except for the areas near UNO and SUNO, the majority of the Study Area is comprised of Transportation Disadvantaged Census Tracts as defined by the U.S. Department of Transportation (USDOT).

Table 1: Study Area Demographics

|  | Study Area |  | Orleans Parish |  |
| :--- | :--- | :--- | :--- | :--- |
| TOTAL POPULATION | 73,472 | $100.00 \%$ | 390,845 | $100.00 \%$ |
|  | $\#$ | $\%$ | $\#$ | $\%$ |
| AGE | 18,684 | $25.43 \%$ | 78,505 | $20.09 \%$ |
| Under 18 | 54,787 | $74.57 \%$ | 257,059 | $65.77 \%$ |
| $18-64$ | 9,704 | $13.21 \%$ | 55,281 | $14.14 \%$ |
| $65+$ |  |  |  |  |
|  | 62,925 | $85.65 \%$ | 232,660 | $59.53 \%$ |
| RACE | 7,665 | $10.43 \%$ | 132,643 | $33.94 \%$ |
| Black | 1,616 | $2.20 \%$ | 18,042 | $4.62 \%$ |
| White | 1,265 | $1.72 \%$ | 7,500 | $1.92 \%$ |
| Other |  |  |  |  |
| Multiple Races | 65,806 | $89.57 \%$ | 258,202 | $66.06 \%$ |
|  |  |  |  |  |
| Minority Population | 71,126 | $96.81 \%$ | 369,432 | $94.52 \%$ |
| Non-Hispanic/Latino | 2,346 | $3.19 \%$ | 21,413 | $5.48 \%$ |
| Hispanic/Latino |  |  |  |  |
| Soure: |  |  |  |  |

Source: ACS 5-Year Estimates 2015-2019

Destinations
Future land use data from the City of New Orleans Master Plan was simplified for the purposes of this analysis. Based on the City's uses as detailed in the master plan, the land use categories were grouped into the six broader categories as follows:

- Residential
- Commercial
- Industrial
- Institutional
- Parks \& Open Space
- Mixed-Use

See Figure 4 on the following page for Study Area's future land use.

Figure 4: Study Area Land Use Map


Source: BKI, 2022
The future land use in the Study Area is predominantly residential (48\% by acreage) with another large portion industrial ( $31 \%$ by acreage). The industrial areas are primarily made up of the New Orleans

Lakefront Airport and the land adjacent to the IHNC and Gulf Intracoastal Waterway GIWW. Commercial areas are concentrated at the major street intersections as well as along US 90 (Gentilly Blvd/Chef Menteur Hwy). Large institutional areas, including UNO and SUNO west of the canal along the lakefront, make up a majority of the institutional use. Additionally, there are eighteen neighborhood schools within the Study Area, almost all of which are located in residential areas. Parks and open space include the golf course in the Pontchartrain Park neighborhood, small neighborhood parks, and other open spaces along Lakeshore Drive near UNO. Pockets of mixed-use development with small-scale commercial interspersed with residential also exist around intersections of major streets.

Transportation
The Study Area presents many transportation challenges with the IHNC, Interstate 10, and railroads serving as barriers to varying degrees to people walking and bicycling. Figure 5 provides an overview of transportation in the area, including existing bike lanes and designated shared use travel lanes.

Figure 5: Project Area Transportation Map


Source: BKI, 2022

## Walking

Comprehensive sidewalk inventory data is not available for this area, but walkability generally corresponds to the basic land uses (see Figure 4). The industrial areas along the IHNC are less walkable than the commercial and institutional areas, which are more likely to feature sidewalks and crosswalks. In a later section, the project team analyzed Pedestrian Level of Traffic Stress (PLTS) on the Seabrook and Danziger bridges as well as the roadways they carry. The analysis shows poor walking conditions on the bridges themselves with better conditions along the roadways away from the bridges, particularly west of the canal.

## Wheelchair Use

For wheelchair users, the design and operational characteristics of both the Seabrook and Danzinger bridges makes manual wheelchair use infeasible due to a lack of pedestrian crossings or curb ramps, a lack of landings, or a lack of handrails. The grade of the bridges is prohibitive to wheelchair users and neither bridge has a dedicated 48 " width pathway. In short, as built the bridges do not meet current ADA guidelines and have significant obstacles that limit retrofit options.

## Bicycling

There are limited existing bicycle facilities in and around the Study Area, particularly east of the IHNC (see Figure 5). West of the canal, there is a bike lane on US 90 (Gentilly Boulevard/Chef Menteur Highway), which is carried by the Danziger Bridge, but it currently stops about a half-mile short of the bridge at Press Drive. There are also shared use travel lanes marked with "sharrows" along Lakeshore Boulevard near Seabrook Bridge.

The New Orleans Bikeway Blueprint, finalized in 2020, is the result of a citywide planning effort for an "equitable, low-stress, connected, useful and timely bicycling network" which was referred to as Moving New Orleans Bikes (Appendix B). Some of the analyses that ultimately led to the Bikeway Blueprint map are re-analyzed in a later section of this report, including comparative analyses of latent demand and equity. Additionally, the project team re-ran the Moving New Orleans Bikes Level of Traffic Stress (BLTS) model with updated data collected in other parts of this study to assess the bicycle infrastructure needs on the bridges and their approaches.

Figure 6: New Orleans Bikeway Blueprint Map (close-up of Study Area, full map in Appendix C)


Source: City of New Orleans, 2020
The New Orleans Bikeway Blueprint recommends protected bicycle facilities along most major roadways in the study area, including protected bike lanes on Seabrook and Danziger Bridges with a shared-use path on Almonaster Bridge (Figure 6, Appendix C). During the course of this study, discussions with the Port of New Orleans, which owns the Almonaster Bridge, revealed that $90 \%$ complete rehabilitation plans include the allocation of 4 ' wide shoulders as "bike/ped lanes" adjacent to 12 ' vehicle lanes in each direction. The shoulders feature non-slip tread attached to the deck to cover the open metal grating for people walking or bicycling, but there are no protective barriers or other accommodations for vulnerable users indicated in the plans. At one time, a full bridge replacement with a protected bike lane was considered a possibility, but under the rehabilitation plans for the bridge, there is limited space available for a facility dedicated to bicycles only.

## Public Transit

Public transit is integrally related to this project. It is directly related in terms of providing access to bus stops as well as indirectly related by transit ridership representing people who may be more likely to walk or bicycle than those who have access to a personal vehicle.

Currently, one New Orleans Regional Transit Authority (RTA) bus route uses the Seabrook Bridge to reach New Orleans East ( 60 - Hayne) and five use the Danziger Bridge ( 62 - Morrison, 63 - New Orleans East Owl, 64 - Lake Forest Express, 65 - Read-Crowder Express, and 94 - Broad). RTA transit ridership data was
greatly skewed in 2020 due to a variety of factors stemming from the COVID-19 pandemic including shutdowns. Looking at 2019, the routes crossing the IHNC accounted for over $18 \%$ of the RTA's overall system ridership (see Table 2). However, the proportion of ridership crossing the IHNC was over 5\% higher ( $23.7 \%$ ) in the 2020 pandemic year, suggesting that riders on these routes use transit more out of necessity as compared to the rest of the system, especially higher volume routes near the city center that may cater more to tourists.

Table 2: Transit Routes Crossing the IHNC - Annual Ridership by Route, 2017-2020

| Route <br> \# | Route <br> Name | 2017 |  | 2018 |  | 2019 |  | 2020 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \# | \% | \# | \% | \# | \% | \# | \% |
| 60 | Hayne | 136,433 | 0.7\% | 136,899 | 0.7\% | 128,798 | 0.8\% | 55,420 | 0.8\% |
| 62 | Morrison Xpress | 808,828 | 3.9\% | 789,483 | 4.0\% | 683,091 | 4.0\% | 290,398 | 4.0\% |
| 63 | New Orleans East Owl | 30,420 | 0.1\% | 11,408 | 0.1\% | 22,146 | 0.1\% | 9,747 | 0.1\% |
| 64 | Lake <br> Forest <br> Xpress | 474,013 | 2.3\% | 436,332 | 2.2\% | 429,257 | 2.5\% | 165,128 | 2.3\% |
| 65 | Read- <br> Crowder <br> Xpress | 385,169 | 1.9\% | 375,419 | 1.9\% | 346,566 | 2.1\% | 160,878 | 2.2\% |
| 94 | Broad | 1,534,442 | 7.4\% | 1,501,205 | 7.6\% | 1,506,998 | 8.9\% | 1,027,144 | 14.2\% |
| Routes Crossing IHNC Total |  | 3,369,305 | 16.3\% | 3,250,745 | 16.6\% | 3,116,856 | 18.4\% | 1,708,715 | 23.7\% |
| RTA SYSTEM TOTAL |  | 20,627,255 |  | 19,627,786 |  | 16,903,894 |  | 7,213,998 |  |

Source: New Orleans Regional Planning Commission, 2022
As part of the implementation of the New Links transit network redesign, service in New Orleans East will be restructured around a Lake Forest Plaza transfer hub, one of six new regional hubs being put into operation as part of the new proposed network (Figure 7). Since the recommended network no longer includes the 60 Hayne route, the Danziger Bridge will be the only IHNC crossing carrying transit lines to and from New Orleans East. Even though the number of routes that cross the IHNC is decreasing, the number of buses and riders should remain comparable or even increase based on the simple consolidation of routes, increased efficiency, and improved performance of the transit system due to the New Links recommendations.

Figure 7: New Links Recommended Network - New Orleans East


Source: New Orleans Regional Planning Commission, 2021
Finally, throughout the course of this study, discussions with the RTA revealed an ongoing bus rapid transit (BRT) project that is studying the possibility of BRT connecting New Orleans East to downtown and to the West Bank. BRT includes, but is not limited to dedicated transit right-of-way, signal priority, fewer stops, level boarding, and off-board fare collection. The goal is fast, frequent service with the benefits of light rail but with lower capital expenses on the front-end by using existing roadways. Though the project is still in its early stages, all options being explored include a BRT route using Danziger Bridge to cross the IHNC. RTA agreed to plan and design for bike and pedestrian accommodations on the Danziger Bridge within the BRT study.

Existing Conditions Analysis

## Bridge Profiles

Seabrook Bridge (Senator Ted Hickey Bridge)


Source: Google Earth
The Seabrook Vehicular Bridge, also known as the Senator Ted Hickey Bridge, is owned and maintained by the Louisiana Department of Transportation and Development (LADOTD) and carries Leon C. Simon Drive in New Orleans. The bridge connects the northern portion of the Gentilly area to New Orleans East. The University of New Orleans (UNO) and Southern University at New Orleans (SUNO) lie just west of the bridge while the New Orleans Lakefront Airport is just to the east.

The Seabrook Bridge was built in 1975. It does not currently hold National Register eligibility for historic status. It is a movable bascule bridge, commonly called a drawbridge. A bascule bridge has a counterweight that balances a span while it swings up to offer clearance for marine traffic. The bridge averaged 29 openings per month from 2018-2021 with 66 as the highest number of openings in a single month.

The central drawbridge segment of the bridge has an open metal grate deck. While it is not expressly prohibitive to bicycles, the surface, as well as metal expansion joints and sliding plates, may present minor issues that could be remediated for bicycle usage. Drainage grates are located in the narrow shoulders between the lane striping and the curb, but they are small and oriented perpendicular to the flow of traffic so as not to cause major issues for bicycles. However, during a field survey, there was a considerable amount of trash, broken glass, and other debris in the shoulders in each direction.

Seabrook Bridge - Metal Deck Grating on Moveable Section (with close-up)


State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

The Seabrook Bridge carries two lanes in each direction with average daily traffic (ADT) of 9,433 as counted for this study and detailed in a later section. It is divided by a $5^{\prime}$ wide raised median that supports poles for street lighting. Although the bridge itself features only two ramps, a variety of exits, lane merges, and ramps exist just beyond the east end of the bridge. Eastbound, there is one on-ramp west of the canal with a series of lane merges and ramps east of the canal between the end of the bridge and Downman Road. This area presents several unavoidable conflict points between vehicles and non-motorized users. Westbound, there is an exit off the roadway just before the bridge begins east of the canal with an off-ramp to Lakeshore Drive west of the canal. Vehicles exiting here pose a major threat to people continuing straight on foot or bicycle.

The total structure length is $1,942^{\prime}$ with a height of $41^{\prime}$. The bridge has the same curb-to-curb width as the approach roadway at $57.1^{\prime}$ while the full deck width of the bridge is $68.6^{\prime}$. The shoulders are $2^{\prime}$ wide with $1.6^{\prime}$ curbs on each side at $0.5^{\prime}$ high.


The curb is not a sidewalk, but pedestrians are forced to utilize it to gain what little separation one can from traffic. There are no accommodations for wheelchair users to cross. FHWA requires sidewalks to have a minimum width of $5^{\prime}$ as anything less does not meet the minimum requirements for people with disabilities. The curb is neither wide enough to accommodate a wheelchair nor are there ramps to access it.

Some low signage protrudes over the curb on each side obstructing pedestrian movements, and a caution light for the drawbridge opening fully blocks the curb on the south side next to the westbound travel lanes, further obstructing pedestrians. At 3.5', the height of the outer railing from the surface of the curb is inadequate for proper safety and comfortability for people walking.

Although the shoulder and curb are infeasible to serve as a sidewalk, there are signs when approaching the bridge from either direction guiding one to "walk bike across bridge". This forces a person with a bicycle to walk on the narrow curb alongside the bicycle in the shoulder and spilling into the lane of travel. There is no space or barrier between traffic and the curb for people walking or bicycling. The current configuration is uncomfortable and unsafe for vulnerable users.

Danziger Bridge


Source: Google Earth
The Danziger Bridge is owned and maintained by LADOTD and carries US Highway 90 (Chef Menteur Highway) in New Orleans. The bridge connects the Gentilly area of New Orleans to New Orleans East. Dillard University is located on Gentilly Boulevard just a couple miles west of the bridge while Walmart is a major destination for the surrounding neighborhoods closer to the bridge after the roadway becomes Chef Menteur Highway.

The Danziger Bridge was built in 1989 to replace the old Danziger Bridge, originally built in the 1930s. It does not currently hold National Register eligibility for historic status. The bridge's deck structure is concrete cast-in-place. There are expansion joint gaps of up to $2-3$ " wide that do not appear prohibitive to bicycles, but there are large metal grates and circular pipes of $6-9$ " for drainage on the shoulders that may be a concern. While there is a sidewalk present on the Danzinger Bridge, it does not meet the minimum width for wheelchair accessibility and varies in width from $4^{\prime}$ to $2.3^{\prime}$. It is physically impossible for a wheelchair user to use this walkway.

The Danziger Bridge is a movable lift bridge, also called a vertical lift bridge. A lift bridge has a segment that rises directly upward while staying parallel with the deck of the bridge on either side of the lifting segment. The bridge averaged 9 openings per month from 2018-2021 with 29 as the highest number of openings in a single month.

The Danziger Bridge's total structure length is $3,270^{\prime}$ with a height of 100 '. It carries six total lanes, three in each direction, divided by a concrete median barrier. The bridge's ADT per this study's traffic count,
detailed in a later section, was 26,930 . On the eastbound side, there is an additional acceleration lane for heavy trucks entering the roadway from the France Road onramp that runs approximately 835' from the ramp approach on the west side of the canal to the point it merges back into three lanes on the east side of the canal.

The bridge's curb-to-curb roadway width is 88.9', slightly narrower than the approach roadway of 94.2'. The full deck width of the
 bridge is $92.8^{\prime}$. There is a sidewalk on the north side of the bridge, divided from the westbound travel lanes by concrete barriers. No sidewalk is present next to the eastbound travel lanes. The sidewalk is as wide as $4^{\prime}$ but narrows to as little as $2.3^{\prime}$ in places where obstructions, such as the base of streetlights or signage poles, protrude into the pedestrian right-of-way. Even at its widest points, it does not feel safe for pedestrians walking side-byside or passing each other. The sidewalk's outer railing is $3.5^{\prime}$ high.

## I-10 High Rise Bridge



Source: Louisiana Department of Transportation and Development (LADOTD)

The I-10 High Rise Bridge, often simply called the High Rise locally, is owned and maintained by LADOTD and carries Interstate 10 across the IHNC in New Orleans. The I-10/610 split is located just a couple of miles west of the bridge while I-10 travels the length of New Orleans East to the east of the bridge.

The I-10 High Rise Bridge was built in 1966. It does not currently hold National Register eligibility for historic status. The bridge's deck structure is concrete cast-in-place. The High Rise is a fixed stringer/multibeam, or girder, bridge. A stringer bridge features multiple steel beams supporting the deck.

The I-10 High Rise Bridge's total structure length is $6,715^{\prime}$ with a height over $115^{\prime}$. It carries six lanes (three in each direction) divided by a concrete median barrier. Its ADT as reported in 2018 was 181,400. The bridge's curb-to-curb roadway width is $80.1^{\prime}$, slightly narrower than the approach roadway of 86 '. The full deck width of the bridge is $96.1^{\prime}$. The curbs either side are $1.6^{\prime}$ wide with drainage openings in the sidewall of the curbs. It is illegal to cross the High Rise bridge on foot or by bicycle according to Louisiana law as follows:
§263. Special restrictions on use of Louisiana Interstate highways. C. The use of any Louisiana interstate highway by pedestrians, bicycles, or other non-motorized vehicles is prohibited. Acts 1962, No. 310, §1. Amended by Acts 1964, No. 87, §1.

## Almonaster Bridge



Source: https://citybiketrips.com/2018/02/23/new-orleans-east-feb-8-2018/
State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

The Almonaster Bridge is owned and maintained by the Port of New Orleans and carries Almonaster Avenue. The bridge runs nearly underneath the $\mathrm{l}-10 \mathrm{High}$ Rise Bridge. Port-related industrial facilities lie on the bridge's west side while Faubourg Brewing Co., which has become a destination since opening a new facility to the public in January 2020, is just on the east side of the canal.

The Almonaster Bridge was built in 1919 to provide a rail crossing over the IHNC and holds National Register eligibility for its historic status. The bridge currently serves rail only and has not been open to vehicles since damage caused by Hurricane Katrina in 2005; however, there are plans to rehabilitate and reopen the bridge to automotive traffic with a 4' wide shoulder featuring a non-slip tread surface to accommodate people walking and bicycling. The bridge's current deck structure is open grating, which could pose difficulties to bicycles in particular. The Almonaster Bridge is a movable bascule bridge. The bridge averaged 21 openings per day as of 2004 before it was closed to automotive traffic.

The Almonaster Bridge's total structure length is $282^{\prime}$ with a height of about $3^{\prime}$. While rehabilitation design plans have not been finalized, it is understood that the bridge will not expand its width and will maintain its general geometry with two lanes for automotive traffic (one in each direction) and two rail lines running down the center.

## Summary of Bridge Profiles

Detailed Bridge Summary Reports from the Federal Highway Administration's (FHWA) National Bridge Inventory (NBI) for each of the four bridges are included in Appendix D, but a brief summary of the bridge profiles in this study is included in Table 3.

The slope of the bridges was not included in these NBI reports, and the project team was unable to obtain precise slope data from DOTD or the Port for any of these bridges. In lieu of this, Navigation Vertical Clearance from the NBI reports was used to describe the heights of the four bridge structures. While this is an imperfect measure of structure height or slope, it allows for a numerical comparison between the heights of the four bridges. While anyone looking at these bridges from the ground or traveling across them can get a sense of how high they are in comparison to one another, comparing the structure lengths and heights from Table 3 helps illustrate the differences in effort and ease involved for non-motorized users attempting to cross these bridges.

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Table 3: Bridge Profile Summary Table

|  | Seabrook | Danziger | -10 | Almonaster |
| :---: | :---: | :---: | :---: | :---: |
| CONDITION |  |  |  |  |
| Year Built | 1975 | 1989 | 1966 | 1919 |
| National Register Eligibility | Not eligible | Not eligible | Not eligible | Eligible |
| Fixed/Movable | Movable | Movable | Fixed | Movable |
| Average \# of Openings | 29 per month <br> (2018-2021) | 9 per month (2018-2021) | N/A | $\begin{aligned} & \text { 21/day } \\ & \text { (2004) } \end{aligned}$ |
| Main Span Design | Bascule | Lift | Stringer/Multibeam or Girder | Bascule |
| Deck Structure | Concrete Cast-in- <br> Place; Open <br> grating on <br> drawbridge | Concrete Cast-inPlace | Concrete Cast-inPlace | Open Grating |
| Wearing Surface | Monolithic Concrete | None | None | None |
| Walking Accommodations | No sidewalk to cross bridge (maintenance access only) | $4^{\prime}$ wide sidewalk on north side only; 42" high railing | Illegal to cross on foot | Rehab plans for $4^{\prime}$ wide shoulder with non-slip tread deck cover for bike/peds |
| Bicycling <br> Accommodations | Signage: "Walk bike across bridge" | None designated | Illegal to cross on bike | See above |
| Physical <br> Obstructions or Hazards to Walking or Bicycling | Sign faces overhang shoulders and posts block curbs; Open grating and sliding plates on drawbridge section | Sign posts obstruct sidewalk, narrowing width by nearly 2 '; 6 " circular drainage holes and open grating on shoulder; Expansion joints on sidewalk | Illegal to cross on foot or by bicycle | Open metal grating on majority of deck, aside from 4' wide shoulder with nonslip tread deck cover for bike/peds per rehabilitation plans |
| GEOMETRY |  |  |  |  |
| Approach Roadway 57.1 94.2 86.0 18.0 <br> Width (ft.) 1.951 .9 282.2   |  |  |  |  |
| Structure Length (ft.) | 1,941.9 | 3,270.0 | 6,714.9 | 282.2 |
| Structure Height (ft.) | 46 | 100 | 115 | 3 |
| Left Curb/Sidewalk Width (ft.) | - | 2.3 | 1.6 | 4.3 |
| Right Curb/Sidewalk Width (ft.) | - | - | 1.6 | 4.3 |
| Bridge Roadway <br> Width Curb to Curb <br> (ft.) <br> 57.1 <br> 88.9 <br> 80.1 <br> 23.3 |  |  |  |  |
| Deck Width - Out to Out (ft.) | 68.6 | 92.8 | 96.1 | 64.6 |
| Travel Lanes | 4 | 6 | 6 | 2 |

Source: BKI, Field survey 2021-2022 \& U.S. Department of Transportation Federal Highway Administration, National Bridge Inventory, 2017-2019

## Study Area Demand and Need

Analyses performed by Toole Design Group for the City's Moving New Orleans Bikes study (see Appendix B) "to analyze the comfort, connectivity, equity, latent demand, and safety of the existing bicycle network" were reviewed and reanalyzed to deduce any meaningful differences in terms of demand or need within the Study Area. Since three of the four bridges are within $1 / 4$ of a mile of each other and serve the same general area in terms of resident demographics and area destinations, a North and a South Catchment Area are defined instead of defining an area for each bridge separately (Figure 8). The Seabrook Bridge falls within the North Catchment Area while the Danziger, I-10 High Rise, and Almonaster bridges are located in the South Catchment Area. Comparative analyses of the catchment areas were performed on the City's latent demand model and equity index.

Figure 8: Catchment Area Map


Source: BKI and Toole Design Group, 2022

## Latent Demand

The greatest challenge in counting non-motorized users is where walking and bicycling facilities are inadequate or absent, which is largely the case with the IHNC bridge crossings. Regardless, a lack of walking or biking activity may not necessarily mean a lack of demand, and certain variables can be used
as proxies to determine latent demand. Latent demand in this context can be simply defined as where people are more likely to walk or ride, irrespective of infrastructure.

While the Moving New Orleans Bikes Network Analysis (Appendix B) and the resulting Bikeway Blueprint (Figure 6 \& Appendix C) was specifically about bicycling infrastructure, the latent demand analysis can apply to walking as well for this project since the factors that suggest latent bicycling demand are the same for people walking. The latent demand model includes the following factors and weights.

- Intersection density (50\%)
- Population density (25\%)
- Density of households below the poverty line (15\%)
- Employment density (10\%)

For this comparative analysis of the two catchment areas, the scoring ranges were re-classified based only on this project's Study Area rather than the entire city as in the original study. The results revealed only a marginal difference, but the North Catchment Area (serving Seabrook Bridge) scored slightly higher for latent demand than the South Catchment Area (see Appendix E for full technical memorandum).

## Equity Index

Another measure performed in the Moving New Orleans Bikes study was the Bicycle Equity Index (BEI) (see Appendix E for more info). This model is similar to latent demand but with a specific focus on equity. It may be thought of as where investments in transportation are most needed based on "where transportation is a particular concern and where historic and current social inequities exist" rather than just where people are likely to walk or ride. Like the latent demand analysis, the factors that go into the BEI can apply to people walking just the same as people bicycling.

The equity measure may hold particular relevance to this project due to the fact that people making the often long and steep journey over the IHNC on foot or bicycle are likely doing so out of need, with the exception of dedicated and experienced recreational cyclists. The BEI composite score factors the following equity measures.

- population under 18
- population over 65
- zero car households
- minority population
- population in poverty

Like the comparative analysis of the latent demand model, the scoring ranges were re-classified based only on this project's Study Area rather than the city as a whole. Again, the differences are marginal, but the South Catchment Area scores slightly higher than the North Catchment Area in this measure, opposite of latent demand. While neither catchment area stands out as an obviously greater opportunity based on these analyses, it does show any improved bridge crossing is worthwhile in terms of demand. The equity index further shows these areas not only have demand but also exhibit need for improvements.

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## Crash History Analysis

A crash evaluation of each facility and its approaches over the past five years (2016-2020) was conducted to identify patterns and inform safety recommendations. The evaluation examined correctible crashes (defined as head-on, right angle, and left turn), crashes involving fatal or severe injuries, and crashes involving non-motorized users (people walking or riding bicycles).

Table 4: Crash Types by Bridge, 2016-2020

|  | All Crashes |  | Correctible Crashes |  | Fatal or Severe Crashes |  | Crashes Involving <br> Non-Motorized User |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \# | \% | \# | \% | \# | \% | \# | \% |
| Seabrook | 49 | 2.8\% | 8 | 6.6\% | 1 | 2.1\% | 2 | 15.4\% |
| Danziger | 417 | 23.5\% | 86 | 71.1\% | 13 | 27.1\% | 7 | 53.8\% |
| -10 | 1279 | 72.2\% | 27 | 22.3\% | 32 | 66.7\% | 4 | 30.8\% |
| Almonaster | 27 | 1.5\% | 0 | 0.0\% | 2 | 4.2\% | 0 | 0.0\% |
| TOTAL | 1772 | 100.0\% | 121 | 100.0\% | 48 | 100.0\% | 13 | 100.0\% |
|  | The LA DOTD and the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John the Baptist, St. Tammany, and Tangipahoa Parishes (RPC) are not responsible for any errors arising from any use or alterations made to the data. There is no guarantee of warranty concerning the accuracy of the data. Users should be aware that this data may not represent current conditions. Users should not use these data for critical applications without a full awareness of their limitations. Under no circumstances is resale or distribution of the data permitted. <br> Any use of the data must be accompanied with this citation and accompanying seal. |  |  |  |  |  |  |  |

Source: New Orleans Regional Planning Commission, 2022

In analysis of 2016 to 2020 crash data (Table 4) the l-10 High Rise Bridge accounted for the vast majority of all crashes as well as fatal or severe crashes across all four bridges. While that may be unsurprising given the comparative volumes and speeds of traffic between the bridges, the Danziger Bridge accounted for over $70 \%$ of all correctible crashes despite only experiencing around $24 \%$ of all crashes. This could suggest Danziger represents a great opportunity to positively impact safety through design modifications, changes that could also benefit non-motorized users.

The Danziger Bridge accounted for over half (53.8\%) of all crashes involving non-motorized users on these four bridges. The Seabrook Bridge was the only other facility that represented a greater percentage of crashes involving non-motorized users than it did total crashes, accounting for over $15 \%$ of non-motorized crashes despite making up less than $3 \%$ of all crashes. Additionally, the sole fatal or severe crash on Seabrook involved a person riding a bicycle. Together, Seabrook and Danziger accounted for only about $\mathbf{2 6 \%}$ of all crashes but nearly $70 \%$ of crashes involving non-motorized users, exhibiting a higher safety concern for vulnerable users on these two bridges. While that may indicate that these bridges are simply

State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP
the most used by people walking or riding bicycles rather than the bridges being particularly dangerous for vulnerable users, that alone makes them worthy candidates for safety and access improvements for people walking or bicycling.

## Traffic Counts and Speed Study

Traffic volume counts and speed studies were conducted on the Seabrook and Danziger bridges between January 24, 2022 and January 30, 2022 (see Appendix F for full report). The I-10 High Rise Bridge was not included as bicycles are not allowed on interstate highways, which inherently makes this bridge infeasible for the project. Similarly, since there is currently no automotive, walking, or bicycling activity allowed on the Almonaster Bridge, a count and speed study was deemed unnecessary at this time.

## Average Daily Traffic (ADT)

7-day, 24-hour traffic volume counts were conducted for the east and westbound lanes of the bridges as well as entrance and exit ramps. Additionally, the percentage of heavy trucks is noted based on FHWA's vehicle classification categories and includes types 8-13 (see Appendix G).

Table 5: Motorized Traffic Volume on Seabrook and Danziger Bridges

|  | ADT | Truck \% |
| :--- | :--- | :--- |
| Seabrook | $\mathbf{9 , 4 3 3}$ | $\mathbf{0 . 1 \%}$ |
| Lakeshore Dr Entrance | 2,254 |  |
| Lakeshore Dr Exit | 2,507 |  |
| Hayne Blvd Exit | 5,912 |  |
| Danziger | $\mathbf{2 6 , 9 3 0}$ | $\mathbf{1 . 6 \%}$ |
| France Rd Entrance | 6,718 |  |
| France Rd Exit | 4,628 |  |

Source: BKI and ITS Regional, 2022
Seabrook, unsurprisingly, carries less traffic than Danziger, but it does have significantly lower volumes considering its ADT is around one-third of Danziger's while only having two less lanes available (4 on Seabrook compared to 6 on Danziger). Furthermore, Danziger serves as the primary alternate route for the I-10 High Rise bridge in the case of an accident or heavy traffic for any other reason. While even Danziger's percentage of trucks is low (1.6\%), it is still significantly higher than Seabrook's negligible $0.1 \%$, which is important to consider when planning for vulnerable users on pinch points like a bridge.

## Speed Study

7-day, 24-hour radar and video counts were conducted in tandem with traffic volume counts. Both bridges posted speed limits are 35 mph . On Seabrook, an average of $96.8 \%$ of drivers per day were driving over the speed limit. Furthermore, the average speed on the Seabrook Bridge was over 50 mph , well over the posted speed limit. The $85^{\text {th }}$ percentile speed, the speed at which $85 \%$ of free-flowing traffic is traveling at or below, was 60 mph . While over half ( $57.5 \%$ ) of drivers on Danziger were speeding, the average speed on the Danziger was only slightly over the speed limit.

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Table 6: Speed Study on Seabrook and Danziger Bridges

|  | Seabrook | Danziger |
| :--- | :--- | :--- |
| Posted Speed Limit | 35 mph | 35 mph |
| Average Actual Speed | 50.43 mph | 36.58 mph |
| Drivers Over Speed Limit | $96.8 \%$ | $57.5 \%$ |
| 85th Percentile Speed | 60 mph | 48 mph |

Source: BKI and ITS Regional, 2022
The excessively high speeds recorded on Seabrook are a serious cause of concern for non-motorized users on the bridge, but it also presents an opportunity to use safety and access improvements for nonmotorized users to help slow down the traffic. Regardless of any future planning for walking and bicycling infrastructure on Seabrook Bridge, there is an immediate need for further study and action to reduce speeds on the facility.

## Walking and Bicycling Activity

The walking and bicycling counts conducted recorded no users on the Seabrook Bridge; however, it is understood anecdotally and through meetings with the PMC that the bridge is used largely by recreational runners and cyclists.

Table 7: Walking and Bicycling Counts on Seabrook and Danziger Bridges

| $1 / 25 / 2022$ |  | $1 / 26 / 2022$ |  |  | $1 / 29 / 2022$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Tuesday | Wednesday | Saturday |  |  |  |
|  | Seabrook | Danziger | Seabrook | Danziger | Seabrook | Danziger |
|  | 0 | 8 | 0 | 8 | 0 | 18 |
| Walking | 0 | 7 | 0 | 12 | 0 | 10 |
| Bicycling | 0 |  |  |  |  |  |

Source: BKI and ITS Regional, 2022
Due to the timeline of this project, walking and bicycling counts were conducted in tandem with the automotive counts and speed study, which is the recommended course of action. However, these counts took place in the month of January during a week with temperatures ranging from the high 30s to low 60 s, which is not ideal for counting non-motorized users who are exposed to the elements. Thus, a recommendation for further study would be to conduct sample counts during more favorable conditions or install a long-term counter on either or both of these bridges.

However, given the relatively high usage on the Danziger in such unfavorable weather conditions, this suggests several things: Danziger Bridge may be used by more people out of necessity than Seabrook Bridge, Seabrook Bridge is considered by most vulnerable users to be too dangerous to cross, or that given the lack of vulnerable user accommodations and exposure to high speed traffic, Seabrook may only appeal to more experienced and skilled recreational users.

## Walking \& Bicycling Stress Measures

Level of traffic stress (LTS) measures gauge how comfortable it is to walk or ride based on various roadway characteristics. An LTS measure assigns a level of stress to road segments based on the volume and speed of motorized traffic as well as characteristics of the roadway itself, including number of lanes and presence State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP
of on-street parking. While level of stress may be highly subjective to individual users, roads with lower LTS ratings will attract more vulnerable users, even though those with no other option but to walk or a small number of the most confident cyclists may use the roadways with even the highest rated levels of stress.

The City's Moving New Orleans Bikes study includes a level of traffic stress for people on bicycles but not for people walking (see Appendix B). While the factors included in the latent demand and equity measures presented in an earlier section are more an exploration of demographics and not specific to any given mode of transportation, level of traffic stress models are different. A roadway with a low stress pedestrian sidewalk may not necessarily have those same amenities for people on bicycles, and vice versa. Using the City's provided level of stress methodology for bicycling (which will be referred to as BLTS), the following section presents BLTS ratings of both the Seabrook and Danziger Bridges and their approaches before analyzing how or if certain changes may affect the BLTS ratings of the bridges. Since the City's analysis did not assess the bridge corridors for walkability, the project team performed a Pedestrian Level of Traffic Stress (PLTS) analysis using a methodology adapted from the Oregon Department of Transportation's "Analysis Procedures Manual" (Appendix H).

## Bicycling Level of Traffic Stress (BLTS)

The City's BLTS methodology is adapted from published work of the Mineta Transportation Institute (MTI). The BLTS rates streets from 1-4 with LTS 1 and 2 being low-stress while LTS 3 and 4 are considered highstress, based on the following factors.

- Speed (posted or prevailing)
- Travel lanes per direction
- Average daily traffic (ADT)
- On-street parking width
- Centerline presence

After re-running the analysis based on data from this project's traffic counts and speed study, both bridges score at the highest stress level of BLTS 4 (Figure 9). Even without having to rerun the analysis or delve deeply into each of the criteria thresholds, the City's Moving New Orleans Bikes Network Analysis sums up the effective result of these combined metrics when it states: "Streets with speeds above 25 miles per hour and with traffic volumes above 1,500 to 3,000 vehicles per day are considered 'high stress' if they do not have any sort of dedicated bikeway." Since both the Seabrook and Danziger bridges and the streets they carry have posted speeds of 35 mph (with even higher prevailing speeds) and ADT well above the 1,500 to 3,000 range, this analysis concludes that a dedicated bikeway would be the minimum requirement to consider either bridge "low stress."

Furthermore, the study states: "On streets with two or more lanes per direction..., streets are usually only considered 'low stress' if they have protected bike lanes." This shows, according to the BLTS analysis used to create the City's Bikeway Blueprint map, that the addition of protected bike lanes is the only course of
action that would improve either the Seabrook or Danziger bridge to the point of being considered part of the City's low-stress network.

Figure 9: BLTS Scores for Seabrook Bridge and Danziger Bridge


Source: BKI, Toole Design, and ITS Regional, 2022

## Opportunity for BLTS Improvement

Given the above assumptions, for Seabrook Bridge's BLTS to improve at all (from LTS 4 to LTS 3) would require either a drastic speed reduction or the addition of a bike lane. Without a bike lane, a speed reduction to 25 mph would be required, which is 10 mph below the posted speed limit and less than half of the average speed of 51 mph per our speed study. To attain "low-stress" status (BLTS 1 or 2) would, as mentioned, require a bike lane, which would in turn require a lane reduction to gain the required space. With a lane reduction and a minimum 4' wide bike lane in each direction, the Seabrook Bridge could become a low-stress bikeway with an LTS 2 but only if speeds could be held to the posted limit of 35 mph .

With Danziger Bridge's ADT well over 20,000, any improvement in BLTS requires the addition of a bike lane. Without reducing the number of travel lanes, a slight improvement to BLTS 3 could be attained by adding $4^{\prime}$ wide bike lanes in each direction. This may require reconfiguring shoulder and lane widths to create enough space for the bike lanes. To achieve a low-stress rating of BLTS 2 it would require reducing
traffic to two lanes in each direction in addition to providing 4' wide bike lanes. Alternatively, if space allows for a two-way cycle track on one side of the bridge, a reduction to two lanes on that side only could also achieve a BLTS 2. A BLTS 1, while unrealistic, would require reducing lanes to just a single lane of traffic in each direction with $6^{\prime}$ wide bike lanes, and traffic speeds below 25 mph .

The table below summarizes the requirements to achieve improved BLTS ratings. To reiterate, BLTS 3 is still considered "high-stress" but even marginal improvements are worthwhile if they are all that can be achieved. In other words, this column represents the absolute minimum that must be done for any meaningful improvement. The BLTS 2 column represents the minimum improvements to be considered "low-stress" while the BLTS 1 column shows the minimum requirements to achieve the lowest stress rating.

Table 8: Summary of Requirements to Achieve Improved BLTS Ratings

|  | Marginal Improvement (BLTS 3) | "Low-Stress" Rating (BLTS 2) | Best Case Improvement (BLTS 1) |
| :---: | :---: | :---: | :---: |
| Seabrook Bridge | Speed reduction to 25 mph or alternatively, replace one travel lane in each direction with a bike lane in each direction (assuming prevailing speed) | Lane reduction to 1 per direction <br> 4'+ bike in each direction <br> *Traffic held to posted 35 mph speed limit vs prevailing speed of 51 mph <br> Alternatively, a lane reduction to 1 on one side of the bridge with a two-way bike path of sufficient width | Lane reduction to 1 per direction <br> 6'+ bike lanes <br> Traffic speed reduction to 25 mph |
| Danziger Bridge | Addition of a $4^{\prime}$ wide bike lane in each direction | Lane reduction to 2 per direction <br> 4'+ bike in each direction <br> Alternatively, a lane reduction to 2 on one side of the bridge with a two-way bike path of sufficient width | Lane reduction to 1 per direction 6'+ bike lanes <br> Traffic speed reduction to 25 mph |

Source: BKI, Toole Design, and ITS Regional, 2022

## Pedestrian Level of Stress (PLTS)

The methodology used for this study is based on a Pedestrian Level of Stress (PLTS) measure used by the Oregon DOT (see Appendix H) and is very similar to the BLTS used in the City's bicycle network analysis, only tailored to people walking rather than people on bicycles.

For both bridges, there is better sidewalk infrastructure further out into the neighborhoods on the roads leading to the facilities, but these areas are not indicative of walkability across the bridges themselves. These stretches are included in the analysis for a broader comparison of walkability to the two bridges, but the focus is more acutely on the bridges and their immediate approaches as the crossings themselves are the crux of this project.

For Seabrook Bridge, the facility is defined as the roadway between Leroy Johnson Drive and Downman Road while for Danziger, that is between Desire Parkway and Downman Road. For Seabrook, the distance one would travel by foot is around three-fourths of a mile just to traverse the bridge itself. It could be considerably further to any real destination.

The Danziger Bridge is even further to cross. Following the path to use the facility's sidewalk along the looped off-ramp on the west side of the IHNC, the total distance between Desire Parkway and Downman Rd. is over a mile. Since the purpose of this exercise is to determine how and where a conceptual redesign could improve walkability, these segments are the primary focus.

Figure 10: Pedestrian Level of Traffic Stress (PLTS) for Seabrook Bridge and Danziger Bridge


Source: BKI and ITS Regional, 2022
The Seabrook Bridge has very little actual sidewalk infrastructure on the facility itself or its approaches. There is a short stretch on each side of the bridge that is more incidental than truly serving any connectivity across the IHNC. While there may appear to be a short stretch of sidewalk in the very center of the bridge (if viewed by photo or aerial image), it exists primarily for access from the control booth to areas underneath the bridge for maintenance, so it has not been included as a sidewalk here for the purpose of people walking to cross the canal. Since we are starting with a lack of sidewalk, the score for
nearly all segments of the Seabrook and its approaches is a PLTS 4, with no room for improvement beyond constructing a sidewalk or side path.

Unlike the Seabrook, the Danziger Bridge does at least have a dedicated sidewalk facility, but the bridge still scores as a PLTS 4. There is an exception where the sidewalk follows the loop ramp leading up to the main bridge structure. These segments score as a PLTS 3 due to having a wider shoulder as well as being just a single lane of traffic.

## Opportunity for PLTS Improvement

For the Seabrook Bridge to attain a PLTS 1 it would require a new sidewalk of at least 6 feet in width with a vertical buffer and 15 feet or more of total buffering width, assuming the posted speed limit of 35 mph is followed. The buffer would be a solid surface buffer with stripping and physical barrier or flexible delineation posts without furniture elements or landscaping. Due to the confined space on the bridge, such a sidewalk and buffering width would require removing at least one lane from one side of the bridge and using the space to construct a sidewalk or side path. A more realistic option may be removing a lane from each side to make room for two sidewalks. In either case, the average actual speed of 51 mph from this project's speed study still limits the bridge to a PLTS 2, even in the best-case scenario of removing a lane from each side. However, the case can be made that speeds will also significantly reduce with the narrowed roadway and allow a PLTS 1 rating if actual speeds were held to the posted speed limit of 35 mph.

The Danziger Bridge starts with the advantage of an existing sidewalk, even if it is deemed insufficient by today's standards. The Oregon DOT's PLTS methodology, on which this analysis is based, does have a special allowance for total buffering width at inherent pinch points with limited space, such as bridges. Their methodology states: "Sections with a substantial physical barrier/tall railing between the travel lanes and the walkway (like might be found on a bridge) can be lowered to PLTS 3." Following this guidance, a taller and more substantial barrier between the sidewalk and travel lanes on the main bridge structure could allow for a PLTS 3 of the sidewalk facility across the bridge. Achieving a "low-stress" score of PLTS 1 or 2 would require widening both the total buffering width and the sidewalk itself. To extend the width of the existing sidewalk would likely require removing a travel lane or, at the very least, narrowing travel lanes and shoulders. Without removing a travel lane, the best possible score would be a PLTS 2 due to the number of lanes (6) on this facility. To achieve this improvement to PLTS 2, the bridge would need at least a $5^{\prime}$ wide sidewalk with a vertical buffer and total buffering width of at least $15^{\prime}$. With a lane reduction, a total buffering width of $10^{\prime}$ would suffice.

Table 9: Summary of Requirements to Achieve Improved PLTS Ratings

|  | Marginal Improvement <br> (BLTS 3) | "Low-Stress" Rating <br> (BLTS 2) | Best Case Improvement <br> (BLTS 1) |
| :--- | :--- | :--- | :--- |
| Seabrook <br> Bridge | $4^{\prime}$ wide sidewalk | $5^{\prime}$ sidewalk | $6^{\prime}$ wide sidewalk |
|  | Tall/substantial barrier <br> between sidewalk and travel <br> lanes for special PLTS 3 <br> allowance for bridges | Vertical buffer | $15^{\prime}+$ total buffering width <br> (bike lanes + shoulder + <br> buffer) |
| Danziger <br> Bridge | Addition of taller/more <br> substantial sidewalk barrier <br> across main bridge structure <br> for special PLTS 3 allowance <br> for bridges | Vertical buffer | Lane Reduction |

Source: BKI and ITS Regional, 2022

## Summary of Findings

To reiterate, the goal of this Stage 0 Feasibility Study was to identify a feasible crossing with high potential for increasing accessibility to and from New Orleans East and then lay out a conceptual plan for improving its safety for non-motorized users. The facility chosen for this project does not necessarily render the other bridges infeasible but rather puts the best opportunity at this time forward. In fact, the City's Bikeway Blueprint (Figure 6, full map in Appendix C) recommends bikeways on three of these four bridges, so the decision is down to determining which is the most feasible selection for this project at this time. Aside from the l-10 High Rise, the remaining bridges are all viable crossings for people walking or bicycling.

The following is a summary of major findings which determine the bridges' feasibility or distinguish them from each other. A summary table of some of the most distinguishing characteristics is included in Table 10 for quick comparison but understanding of the context of each bridge is key to understanding their feasibility and possibilities for improvement.

## I-10 High Rise Bridge

Each of the bridges have structural advantages and disadvantages. At the most basic level, while the l-10 High Rise Bridge does not present the issue of being a moveable bridge that must open for marine navigation, it represents the longest and highest crossing, thus the most difficult for non-motorized users. Even more critically, it is inherently ruled out due to Louisiana RS 32:263, which prohibits non-motorized users crossing the structure.

## Almonaster Bridge

Almonaster Bridge provides the best option in terms of fundamental ease of use because it offers the shortest crossing distance and lowest height for non-motorized users. The flipside is it also experiences the greatest number of openings (or closings for users crossing over the bridge), but more importantly, the physical constraints of the bridge's narrow width severely limit improvements for non-motorized users.

At one time, building a replacement for the Almonaster Bridge was a consideration, which may have partially led to the City's Bikeway Blueprint recommendation of a shared-use path in this location, but through the course of this project, the Port of New Orleans, which owns the bridge, revealed their rehabilitation plans for the bridge were nearing completion. The $90 \%$ complete rehabilitation plans include the allocation of 4 ' wide shoulders as "bike/ped lanes" in each direction with a non-slip tread surface over the deck's open metal grating on the shoulders. However, there are no protective barriers or other accommodations included. While it may not meet the City's definition of a shared-use path, safety and access will be marginally improved across the Almonaster Bridge once it reopens.

## Danziger Bridge

Of the two remaining facilities, Danziger Bridge may provide the best opportunity in terms of addressing equity, though the comparative analysis of the City's equity index yielded marginal differences between the bridges. Still, despite the somewhat inclement weather and being the longer, higher bridge, the Danziger was the only of the two that recorded any non-motorized use in this project's limited count
study. This could suggest its use is more from a place of need than recreation. It could also be evidence that providing even minimal modifications for non-motorized users, such as Danziger's existing but imperfect separated sidewalk, results in reduced risk for vulnerable users so people use it.

## Seabrook Bridge

The Seabrook Bridge rated slightly higher in terms of potential demand for people walking and bicycling. Furthermore, anecdotal evidence suggests it is a known and recommended route for recreational cyclists. The bridge's unfortunate challenges of excessively high vehicle speeds and a bicyclist fatality in recent history illustrate the need for impactful safety improvements. The non-motorized count was impaired by a need to expedite the contract schedule, which resulted in the count taking place during colder, less optimal weather. As previously noted, the installation of long-term or permanent, automated counters for vulnerable users on both the Seabrook and Danziger Bridges could prove instrumental to future studies and project funding.

Table 10: Comparison of Distinguishing Findings

|  | Seabrook <br> Bridge | Danziger <br> Bridge | l-10 <br> High Rise | Almonaster <br> Bridge |
| :--- | :---: | :---: | :---: | :---: |
| FUNDAMENTAL CONDITIONS |  |  |  |  |
| Structure Length | 1942 ft. | $3,270 \mathrm{ft}$. | $6,715 \mathrm{ft}$. | 282 ft. |
| Structure Height | 46 ft | 100 ft | $115 \mathrm{ft}$. | $3 \mathrm{ft}$. |
| Average Daily Traffic (Year of ADT) | $9,433(2022)$ | $26,930(2022)$ | $181,400(2018)$ | Closed since 2005 |
| Speed Limit (\% Speeding) | $35 \mathrm{mph}(97 \%)$ | $35 \mathrm{mph}(58 \%)$ | $60 \mathrm{mph}(\mathrm{n} / \mathrm{a})$ | Closed since 2005 |
| Legality for Non-Motorized Users | Legal | Legal | Illegal | Legal |
| Existing Crossing Infrastructure | None | Sidewalk | None | Sidewalk |
| Existing Plans for Improvement | None | RTA BRT | None | Port rehabilitation |

Source: BKI, 2022

## Bridge Selection

The Seabrook Bridge was recommended by the PMC and selected by the RPC to move forward with as the chosen alternative for which to prepare a conceptual design and Stage 0 checklists. The fact that Danziger does at least have an existing sidewalk, albeit insufficient, and Seabrook has no infrastructure geared toward people walking or bicycling played a role in its selection, as did the dangerous vehicle speeds and recent bicyclist fatality on the Seabrook Bridge. Furthermore, the Seabrook is much lower than Danziger and fundamentally easier to use in terms of its incline and vulnerable user physical effort needed to cross, not to mention Danziger's status as the alternate route for I-10 should traffic, accidents, or hurricane evacuations cause gridlock on the High Rise Bridge.

The timing of other ongoing projects ultimately tipped the scale in Seabrook's favor. In addition to the Port's rehabilitation plans for Almonaster Bridge, an RTA study involves using Danziger as part of a bus rapid transit (BRT) route that connects New Orleans East to downtown. After follow-up stakeholder meetings with the City of New Orleans, LADOTD, and RTA, the transit agency confirmed their planning process will strive to design facilities for non-motorized users in a BRT plan accessing the Danziger bridge.

## Conceptual Design

While the primary purpose of this Stage 0 study was to settle on the most feasible facility of the existing bridge alternatives to move forward in the project development process, preliminary concept designs were explored to assess the feasibility of such a crossing on Seabrook Bridge and its approaches. Since the general layout of the facility on the bridge itself determines which approaches need to be addressed, the bridge crossing is discussed first, followed by preliminary concepts for addressing the bridge access approaches. The most feasible path and bridge access alternatives as determined by the consultant team, RPC, and the Project Management Committee are then fleshed out in more detail to better illustrate a single, complete conceptual design with an accompanying cost estimate at the end of this section.

Seabrook Bridge, New Orleans


Source: Google Earth

## Preliminary Concepts

Bridge Layout Alternatives
Through close coordination with the RPC and the City of New Orleans Department of Public Works, three feasible concept alternatives for the general layout of the Seabrook Bridge facility were presented to the Project Management Committee for consideration and discussion. The existing layout and structure of the bridge limit the possibilities to some degree, but by reducing the automotive travel lanes by at least one, a safe facility is possible for people walking and bicycling.

Figure 11: Seabrook Bridge - Existing Layout


Source: BKI, 2022

There is finite space available to reconfigure the layout on either side of the bridge for the addition of a protected path for people walking and bicycling. Due to the condition and design of the bridge, any removal or narrowing of the existing curbs, including the edge curb or raised median, to increase available width of the roadway is infeasible because they are integral to the integrity of the bridge structure. With that in mind, the existing bridge can be considered as separate eastbound and westbound units with each side featuring two $12^{\prime}$ travel lanes with $2^{\prime}$ shoulders inside and out. This totals 28 ' of space between the curbs to reconfigure for the provision of a dedicated path for non-motorized users (Figure 12).

Figure 12: Seabrook Bridge - Existing Layout (Eastbound Typical Section - Appendix I)


Source: BKI, 2022

To gain the space required to provide a protected path for non-motorized users, a lane for automotive traffic must be removed. By removing one $12^{\prime}$ travel lane, the remaining space is $18^{\prime}$. A minimum width of $19^{\prime}$ of uninhibited space is required for the passing of a stalled vehicle when only one travel lane is present. However, the bridge's low percentage of truck traffic ( $0.1 \%$ ) allows this design provision to be lowered to $18^{\prime}$. The visual below shows a 12 ' wide lane with a $\mathbf{2}^{\prime}$ shoulder on the inside and a wider, $4^{\prime}$ shoulder on the outside to provide additional buffering width between the lane of traffic and a barrier protecting a newly established 8 ' shared use path for vulnerable users. (Figure 13).

Figure 13: Seabrook Bridge - Potential Layout (Westbound Typical Section - Appendix I)


Source: BKI, 2022
A typical physical barrier measures $2^{\prime}$ wide at the base, leaving only $8^{\prime}$ for the surface width of the multiuse path between the barrier and the outside curb. While a path of at least $10^{\prime}$ in width is desired, $8^{\prime}$ is considered acceptable in constrained areas per the AASHTO Guide.

Given the limitations on available space, all of the following alternatives assume 8 ' wide paths protected by $2^{\prime}$ wide barriers. Many concepts were considered in preliminary discussions, but they can be boiled down to three basic alternative layouts that were explored further with the Project Management Committee to discuss the pros and cons of each.

- Alternative Layout \#1: A two-way, multi-use path on one side of the bridge
- Alternative Layout \#2: Two-way, multi-use paths on each side of the bridge
- Alternative Layout \#3: One-way, multi-use paths on each side of the bridge


## Alternative Layout \#1

The first alternative layout features a two-way, multi-use path on the north, or westbound, side of the bridge. It removes one travel lane in the westbound direction. This presents the simplest and most direct connection to and from Lakeshore Drive and the existing paved, lakefront path, but a major conflict point at the off-ramp exists for users continuing straight on Leon C. Simon instead of exiting to Lakeshore Drive. These users also require the addition of a side path along Leon C. Simon from the end of the bridge to Press Drive as there is currently no walking or bicycling infrastructure.

A similar multi-use path on the south, or

Figure 14: Alternative Layout \#1
 eastbound, side of the bridge was investigated. It was determined this design would be more circuitous and inconvenient for people walking or bicycling from the Lakefront. Furthermore, the eastbound side of the bridge presents several unavoidable conflict points with an on-ramp west of the canal and a series of off-ramps and lane merges east of the canal between the end of the bridge and Downman Source: BKI, 2022 Road.

The Wisner Boulevard Bridge in New Orleans serves as a good, local example for what this Seabrook Bridge facility and configuration could look like. See Wisner Boulevard Bridge before and after on following page.

While the old Wisner Bridge looked much like Seabrook Bridge today, it was afforded the luxury of a total rebuild, allowing for a $12^{\prime}$ dedicated multi-use path that is not be possible on the Seabrook Bridge with a retrofit of existing surfaces. Still, the general layout can serve as a successful, nearby example on which to model a Seabrook Bridge retrofit. Vancouver's Cambie Street Bridge provides an example of a retrofit design, though the layout is for one-way bicycle traffic on each side with an existing sidewalk for people walking (see page 42).

The new Wisner Bridge retains two automotive travel lanes in each direction with the addition of a protected, two-way, multi-use path. However, by removing just one lane for automotive travel on one side of Seabrook Bridge, a very similar design could be achieved. Not only does Seabrook Bridge's relatively low ADT overall $(9,433)$ in addition to its low percentage of truck traffic $(0.1 \%)$ make this a possibility, the excessively high traffic speeds recorded during this study warrant a road diet to slow traffic down from the 50 mph average ( $60 \mathrm{mph} 85^{\text {th }}$ percentile) to at least the posted speed limit of 35 mph , if not lower.

Old Wisner Bridge, New Orleans


Source: The Advocate, September 28, 2017

## New Wisner Bridge, New Orleans



Source: The Advocate, September 28, 2017
State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

Though any reconfiguration on Seabrook doesn't leave as much width as desired for a wider path like on Wisner Bridge, 8 ' may be sufficient for comparatively less path traffic than Wisner Bridge experiences. Other aspects of Wisner's design, such as the railing height, can be adopted to increase safety and comfortability.

The other challenge, of course, is the Seabrook Bridge's moveable section, another design aspect Wisner didn't have to contend with. While this study's conceptual design ultimately suggests steel (instead of concrete) barriers on the drawbridge portion to minimize weight, a full-scale structural analysis will need to be completed in future stages of project development to determine exactly how much weight can feasibly be added, not only on this section but across the bridge's full length.

There is another, minor exception on the moveable section of the bridge. Instead of an outer curb of less than 2' in width, there is a sidewalk of approximately $3^{\prime}$ in width that serves as access to the bridge tender's shelter as well as maintenance access to the gate booms, which lower to alert automotive traffic when the bridge is opening for the passage of marine traffic below.

While it isn't feasible to extend this sidewalk across the entirety of the bridge, it does provide additional width for non-motorized users, particularly people walking, to use across the most vulnerable section of the bridge where measures to limit

Seabrook Bridge - Moveable Section Sidewalk


Source: BKI, 2022 added weight (due to the limited mechanical capacity of the moveable section) may hinder the level of protection possible in terms of barrier type and material after a full-scale structural analysis.

On the majority of the bridge, the outside curb doesn't provide a reasonably wide enough surface to serve as a reliable sidewalk. While someone can physically walk on the $1.6^{\prime}$ of curb space along the outer railing, it should not be considered a sidewalk by which to cross the bridge, nor is its width included as part of path surface width of $8^{\prime}$ in this study. However, in reality, it does provide some additional room to maneuver or pass other people walking or biking in a scenario where a protected path runs along the curb.

## Alternative Layout \#2

The second alternative layout differs from the first by introducing two-way, multi-use paths on each side of the bridge instead of just one by removing one travel lane in each direction.

Although a more thorough exploration of cost estimates is included at the end of this section, generally speaking, this alternative can be assumed to roughly double the cost of the first alternative since it involves essentially duplicating that design on both sides. Of course, the positive gained by this trade-off is more space for path users who can access either side of the bridge. This introduces several,

Figure 15: Alternative Layout \#2


Source: BKI, 2022 unavoidable conflict points with on and offramps on the eastbound side of the bridge, which poses design difficulties and safety concerns. It is expected that the north side of the bridge would see more usage due to the ability to easily and quickly connect to Lakeshore Drive, which already sees a number of people bicycling or walking along its lakefront path.

## Lakeshore Drive Lakefront Path



Source: WGNO.com, September 14, 2018. https://wgno.com/news/local/nola-300-new-orleans-lakefront-through-the-years/.

## Alternative Layout \#3

The third alternative differs from the second in that it features one-way, multi-use paths on each side of the bridge instead of two-way paths. In addition to presenting the same downsides of the second alternative (eastbound conflict points and additional cost), it's likely that non-motorized users, particularly people walking, are going to use whichever side of the bridge from which they approach, negating this concept's directional trade-off, which seeks to not only provide more space dedicated to non-motorized users but also to attempt to limit conflicts between path users who may be walking or bicycling in opposite directions.

Figure 16. Alternative Layout \#3


Source: BKI, 2022

One-way, directional paths such as this are common for bikeways, where riders are typically already moving with the flow of automotive traffic, but in this location, it's likely that vulnerable users will approach this facility not only from Leon C. Simon Drive, which is carried by the bridge, but also from Lakeshore Drive to the north. Providing quick and easy access from this direction is important, particularly for people walking, who are very unlikely to travel too far out of their way to access a path on the eastbound side just so they are moving in the same direction as automotive traffic.

While Wisner Bridge serves as a local best-case scenario example, Cambie Street Bridge in Vancouver offers a look at what a retrofit design can achieve. See Cambie Street Bridge before and after on following page.

Like Wisner Bridge, Cambie Bridge started with an inherent advantage over Seabrook in that it already featured a separate sidewalk while the retrofit provided a protected space for people bicycling with the directional flow of traffic. The bridge also had the advantage of starting with a wider footprint of three lanes in each direction and no moveable section with which to contend. Regardless, this retrofit illustrates the general premise of replacing a travel lane with a protected path for non-motorized users.

Cambie Bridge, Vancouver, Canada (before)


Source: Google Maps

## Cambie Bridge, Vancouver, Canada (after)



Source: Daily Hive, June 2018. https://dailyhive.com/vancouver/cambie-street-bridge-new-bike-lane-june-2018 State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

Recommended Bridge Layout
Since the bridge layout determines the extent of the approach designs, it was recommended by both the consulting team as well as the PMC's members from the City's Department of Public Works that a twoway, multi-use path on the north side of the bridge (next to westbound travel lanes) is the most feasible alternative to further develop as part of this Stage 0 study. The pros and cons of layouts involving both sides were discussed extensively internally between the consultant's planning and engineering teams as well as with the PMC. This does not rule out a design involving both sides of the bridge but rather represents the best recommended course of action at this time. A two-way, multi-use path on the north (westbound) side of the bridge was deemed sufficient for the purpose of the project, reasonably limits conflict points to address safety concerns, and offers a practical path forward in terms of funding and construction.

The concept consists of an $8^{\prime}$ wide multi-use path (see Figure 17 Appendix I for full size typical section). Existing curb space provides some extra room that is not explicitly accounted for in the path's width but nonetheless provides at the very least some elbow room, or handlebar room for people on bikes. On the moveable section only, there is a sidewalk in this space due to a wider structure and narrower railing compared to the rest of the bridge. The concept calls for the outer railing to be replaced with railing of a minimum height of $48^{\prime \prime}$ from the surface of the curb (or sidewalk on the moveable section) though additional height for safety and comfortability of people on foot or bicycle is recommended.

Figure 17: Seabrook Bridge Conceptual Design Plan View


Source: BKI, 2022
On the other side of the path, the concept provides an inside buffer from just a single lane of automotive traffic, comprised of a new, $2^{\prime}$ wide concrete barrier pinned to the bridge deck with additional railing on top for a minimum height of 48 ". Again, additional height is recommended for additional safety and comfortability. For the moveable section of the bridge, a steel barrier, instead of concrete, is applied here in the cost estimates to limit additional weight on the aging bridge. Limiting weight on the moveable section is a priority on a drawbridge with a history of mechanical issues, including a closure to all vehicle traffic to perform emergency mechanical repairs during the course of this study. The bridge was closed from May 11 - June 9, 2022.

On the other side of the barrier, a $4^{\prime}$ wide outer shoulder allows for increased buffering width between the 12' automotive travel lane and the side path, giving the protected path an enhanced sense of safety
and comfortability. As previously mentioned, with only one lane of traffic, a minimum width of $18^{\prime}$ is required to allow for the passing of a stalled vehicle, which is achieved with the final $2^{\prime}$ of inside shoulder. A $5^{\prime}$ wide raised median separates the north side of the bridge from the south side, which retains its original configuration of two $12^{\prime}$ travel lanes with $2^{\prime}$ wide shoulders inside and out.

## Bridge Access Alternatives

Three access route alternatives on each end of the bridge were presented to the PMC for the purpose of discussion and exploring the opportunities and challenges of each. The concepts served primarily to illustrate a menu of options rather than to serve as definite choices from which to select. For the purposes of this study and providing cost estimates, a single, cohesive concept is detailed at the end of this section based on the discussions surrounding all preliminary concepts.

## West Side Access Routes

With a two-way, multi-use path on the north side of the bridge structure, the west side of the IHNC presents the challenge and opportunity to connect to two different roadways.

## West Access Route Alternative \#1

The first west access alternative shows a recommended route to access Lakeshore Drive (Figure 18).
Figure 18: West Access Route Alternative \#1


Source: BKI, 2022.
This alternative illustrates continuing the protected path for non-motorized users, as shown by the blue line, down the Lakeshore Drive off-ramp before using the extra right-of-way in the grass to construct a
new, $10^{\prime}$ concrete side path (see below for an example), as shown by the green line, which ends at a highvisibility path crossing (see below for an example), as shown by the yellow line, to access Lakeshore Drive or the existing, concrete lakefront path that extends along most of the lakefront west of the IHNC in Orleans Parish. Additionally, a route using sharrows and signage for people on bicycles, denoted by the red line, offers a safer path of access if approaching the bridge from the west by traveling along the service road around and under the bridge to access the path facility on the bridge itself.

## Off-Street Side Path Example - Wisner Trail, New Orleans



Source: Rails-to-Trails Conservancy, photo by Jennifer Ruley, www.traillink.com/trail/wisner-trail-/
High Visibility Multi-Use Path Crossing Example - Multi-Use Pathway (MUP), San Rafael, CA


Source: City of San Rafael, July 19, 2019. https://www.cityofsanrafael.org/hawk-signal-for-the-multi-use-pathway/ State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

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## West Access Route Alternative \#2

The second west alternative access illustrates the path continuing straight across the Lakeshore Drive offramp and continuing along Leon C. Simon Drive. The two-way, multi-use path connects to a new, 10' concrete side path to be constructed in the additional right-of-way on the north side of Leon C. Simon Drive. Aside from a slight jog north to navigate around the stanchions of the eastbound Leroy Johnson Drive on-ramp to the bridge, the side path continues parallel to the roadway and ends with a high visibility crossing of westbound Leroy Johnson Drive where it enters Leon C. Simon Drive. While there is no sidewalk or bicycle facility to connect to here as with the first alternative to Lakeshore Drive, a further connection to Press Drive (around one-third of a mile) is explored in more detail in the complete concept at the end of this section.

Figure 19: West Access Route Alternative \#2


Source: BKI, 2022
The most critical concern of this alternative concept, is the safety of the off-ramp crossing. While there are design measures that can be taken in the finer design details, the path is going to be exposed to westbound traffic exiting onto Lakeshore Drive. This off-ramp recorded a daily average of 2,507 vehicles in this study's weeklong traffic count. Traffic speed control will be critical for slowing down the traffic well before the ramp and the conflict point with people walking or bicycling across the ramp. A highvisibility crossing is a minimum requirement but more intense treatments should be researched and considered. The PMC discussed the potential of considering intersection rather than just a highly visible path crossing.

Seabrook Bridge - Off-Ramp Conflict Point


Source: BKI, 2022.
High Visibility Ramp Crossing


Source: OttawaVeloOutaouais, 2017. https://ottawavelooutaouais.com/category/ottawa/page/2/ State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

Though it would require some additional coordination with LADOTD, the City of New Orleans, and possibly the Levee Board, an alternative, outside-the-box approach to solving the off-ramp issue here could be simply closing the ramp to vehicular traffic. This entire area of looping on and off-ramps feels overbuilt for the volume of traffic. Vehicles could continue westbound to Franklin Avenue and turn north to access Lakeshore Drive. (Figure 20).

Figure 20: Auto Access to Lakeshore Drive without Seabrook Bridge Exit Ramp


Source: Google Maps
The above route adds less than a mile and an additional minute or two driving to access Shelter \#3 on the lakefront as compared to using the Lakeshore Drive off-ramp.

Even for vehicles looking to access the Seabrook Boat Launch under the bridge, the time and distance added without the off-ramp is marginal (Figure 21). Continuing straight to Press Drive and turning around back towards the bridge on Leon C. Simon Drive to exit at the Seabrook underpass only adds about a mile and approximately three minutes as opposed to using the Lakeshore the exit ramp.

Figure 21: Auto Access to Seabrook Boat Launch without Seabrook Bridge Exit Ramp


Source: Google Maps
It may also be possible to add a left turn from Leon C. Simon Drive westbound to the side road along and under the bridge (Figure 22). This presents the challenge of a left-turn across traffic here, but it could be worth further exploring these types of alternatives in future stages that may make fairly minor changes to vehicular traffic instead of trying to conform a path for vulnerable users to the current, overbuilt landscape for cars.

Figure 22: Alternative Route for Vehicles without Lakeshore Drive Off-Ramp


Source: BKI, 2022

## West Access Route Alternative \#3

Assuming a major rethink such as closing the off-ramp is off the table at this time until a more acute look at the alternatives in the following stage of this project, the final alternative for access on the west side of the bridge illustrates a combination of the first two. This allows users to continue straight along Leon C. Simon Drive towards Press Drive as well as easily access Lakeshore Drive along the off-ramp. This alternative retains the sharrow and signage guided route along the service road under the bridge to access the protected bridge facility as an additional access route on the west end, but there is space available for a future connection to Press Drive via an extended two-way path on the north side of Leon C. Simon Drive, which is shown later.

Figure 23: West Access Route Alternative \#3


Source: BKI, 2022

East Side Access Routes
A two-way, multi-use path on the north side of the bridge structure greatly simplifies access east of the IHNC and limits potentially dangerous conflict points.

## East Access Route Alternative \#1

The first alternative access route for the east side of the bridge features a single, off-street path for a simple approach that limits conflicts (Figure 24). The protected, multi-use path continues down the bridge before veering left onto a new, $10^{\prime}$ wide concrete side path that connects users to Downman Road.

Figure 24: East Access Route Alternative \#1


Source: BKI, 2022

The side path uses the extra right-of-way between the floodwall and the roadway, but it's worth noting that a feasible path exists for most of this stretch already along the base of the floodwall. While it is not technically there to serve as a walking and bicycling path, similar features are used as such elsewhere in the region and this could officially be incorporated into a design concept to save the additional cost and stormwater run-off created by more concrete. If that is deemed a feasible option during future stages of development and cleared by the Levee Board, Lakefront Airport, and any other relevant stakeholders, landscaping in the green space between this existing path and the street could provide additional buffer as well as shade for the path, not to mention aid stormwater management.

# New Orleans East Industrial Canal Crossing 

 Stage 0 Feasibility StudySeabrook Bridge - East Approach Right-of-Way


Source: BKI, 2022.
The primary challenge of any east access route alternative is crossing the off-ramp to a road leading to a side entrance to the airport. This small access road was not part of this study's traffic count, but it is not believed to be used frequently. Still, a sufficient crossing at an angle that allows better visibility for path users is warranted. Additionally, future coordination with the airport as to the usage of this road in terms of both number and type of vehicles is recommended in case it is known to be used often by heavy trucks that may affect the path and crossing's design.

Seabrook Bridge - East Side Approach Off-Ramp


Source: BKI, 2022
State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

East Access Route Alternative \#2
While this first alternative provides the simplest, most straightforward path on the east side, other concepts to consider include separating the walking and bicycling traffic once off the bridge facility. One illustration of this in the second alternative (Figure 25) includes a new sidewalk (as opposed to the multiuse side path) that continues parallel to the roadway with a protected, on-street, two-way cycle track in the roadway for people on bicycles.

Figure 25: East Access Route Alternative \#2


Source: BKI, 2022

The cycle track essentially functions as an extension of the protected multi-use path on the bridge. Since the bridge itself is already narrowed to one automotive travel lane, extending that road diet to Downman Road is feasible. However, this concept may create a conflict point between path users where the sidewalk and cycle track come into the multi-use facility at the foot of the bridge. Again, the primary concern in any east side alternative is the exit to the side road, which will leave the cycle track exposed for some section and require a high visibility crossing at the very least.

Protected two-way Cycle Track Approach to Manhattan Bridge


Source: NYC DOT, 2016

## East Access Route Alternative \#3

Like with the west side access, the final alternative (Figure 26) presented on the east side illustrates a combination of the first two. In this case, the concept uses the off-street side path as aligned in the first alternative while maintaining the on-street cycle track. This offers a wider sidewalk with a safer crossing of the side street for people walking and less comfortable or experience bicycle riders while the cycle track provides a more streamlined path to the bridge for people on bicycles that may otherwise just ride in the street anyway in favor of taking the multi-use path. The exit ramp still introduces a conflict point with the cycle track, and while having the bike route deviate here to cross at a safer angle like the side path makes sense, it essentially recreates alternative one.

Figure 26: East Access Route Alternative \#3


Source: BKI, 2022
Though it is beyond the scope of this study, any final project design in the future will need to consider connections beyond Downman Road. Continuing any combination of the east access route alternatives straight along Stars and Stripes Boulevard appears feasible, but there aren't many destinations without ultimately crossing over the railroad to access Hayne Boulevard. Accessing Hayne Boulevard via Downman Road appears a more likely connection, but it will be a challenge (Figure 27). Aside from crossing four lanes of Downman Road from the end of the proposed side path, there is no right-of-way for a sidewalk to pass through the floodwall, so any path for people walking or bicycling will have to use the existing roadway or otherwise go over the floodwall.

Figure 27: East Access Future Connection - Downman Rd between Stars and Stripes Blvd \& Hayne Blvd.


Source: BKI, 2022
East Access Future Connection - Downman Rd at Railroad Bridge and Floodwall Gate


Source: BKI, 2022
State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

## Recommended Concept

The recommended conceptual design was developed by the Project Management Committee representatives from the City of New Orleans Department of Public Works. The design was based on the preliminary conceptual design alternatives and features a combination of those elements. The bridge facility is based on Alternative Layout \#1, featuring a two-way, multi-use path on the north, or westbound, side of the bridge. The west approach is based on West Access Route Alternative \#3, which is a combination of the first two, with access routes to Lakeshore Drive as well as to continue straight on Leon C. Simon. The east approach is based on East Access Route Alternative \#1 with a single, shared-use side path.

This recommended concept design aided discussion among the PMC and assisted in the development of a detailed cost estimate based on the following path layout and design. Though beyond the scope of this project, the recommended concept offers potential future connections beyond the bridge's approaches. There is a side path continuing to Press Drive to the west (Figures $28 \& 29$ ) and a connection from Downman Road to Hayne Boulevard to the east (Figure 34). For the purposes of the cost estimates in this study, the side path connection to Press Drive is included, but the connection to Hayne Boulevard and redesign of its intersection with Downman Road into a roundabout is not included.

The conceptual designs for potential connections begin at Press Drive, which is the nearest point along Leon C. Simon Drive at which people walking or bicycling can connect to the city's larger sidewalk and bicycle network (see white line representing a 10' path in aerials below).

Figure 28: Potential Connection (1 of 7) - Press Drive


Source: Department of Public Works, City of New Orleans, 2022

Right-of-way on the north side of the roadway extends from Press Drive to the Seabrook Bridge, allowing for a streamlined connection from the end of the bridge via a 10' concrete side path for twoway, multi-use, non-motorized traffic. This right-of-way for a future connection to Press Drive is another reason in favor of a two-way, multi-use facility on the north side of the bridge because a path on the south side would have to navigate around the steep railroad embankment near Press Drive. That may require a mid-block crossing to either the north side of the road or possibly to the large median that becomes available right before the Press Drive intersection.

Leon C. Simon Drive at Press Drive - Railroad Embankment on South Side of Roadway


[^0]While the north side of Leon C. Simon Drive presents a much better opportunity for continuing a side path to Press Drive, there are a few driveway challenges with which to contend. These driveways lead to facilities for the U.S. Army Reserves, Federal Bureau of Investigation, and SUNO.

Leon C. Simon Drive - Driveway Along North Side of Roadway


Source: Google Maps, 2022

This future extension of the Seabrook Bridge side path crosses the Leroy Johnson Drive on-ramp to Leon C. Simon Drive with a high-visibility crosswalk. A motion-activated, lighted crossing beacon is included here in the cost estimates in addition to traffic calming measures to narrow the on-ramp and slow traffic coming around the on-ramp towards Leon C. Simon Drive (Figure 29).

Figure 29: Potential Connection (2 of 7) - Press Drive to Leroy Johnson Drive


Source: Department of Public Works, City of New Orleans, 2022

The west approach access route begins at Leroy Johnson Drive with the side path continuing straight to the Lakeshore Drive exit ramp crossing but also making another connection to the north to a proposed side path that leads to the lakefront (Figure 30). The additional side path is not part of this project, but the ample, open right-of-way makes it a logical choice for a future project.

Figure 30: Potential Connection (3 of 7) - West Approach Access


Source: Department of Public Works, City of New Orleans, 2022

Continuing to the bridge facility, another high-visibility crossing with a motion-activated beacon sees users safely across the off-ramp. The location and angle of the crossing as well as additional measures to slow down exit traffic are crucial here at this most vulnerable section of the entire concept.

Seabrook Bridge - Lakeshore Drive Off-Ramp


Source: Google Maps, 2022

The protected facility continues down the off-ramp to access Lakeshore Drive via a new, 10' concrete side path that gets users to a third high-visibility, motion-activated beacon crossing to the existing, concrete lakefront path. People on bicycles may choose to continue in the roadway along Lakeshore Drive's sharrow-marked path.

Location of Proposed Lakeshore Drive Crossing


Source: Google Maps, 2022

As detailed previously, an 8 ' wide, two-way, multi-use path continues across the bridge, protected by a $2^{\prime}$ wide concrete barrier (Figure 30).

Figure 31: Potential Connection (4 of 7) - West Approach to Center of Bridge


Source: Department of Public Works, City of New Orleans, 2022

Discovery Bridge Multi-Use Path - Bridgeton, Missouri


Source: Great Rivers Greenway, July 2020
To keep added weight at a minimum across the moveable section of the bridge, the concrete barrier is discontinued in favor of steel. Railing added to the top of the barriers should achieve a minimum total height of $48^{\prime \prime}$, but additional height to increase safety and comfortability for path users should be considered in future design efforts. The bridge's outer railing is replaced with railing to match this height from the surface of the curb. Furthermore, an alternative surface may be laid over the path across the moveable section of the bridge to limit any potential safety hazards or comfortability for people walking or bicycling over the metal deck grating.

Bicycle-Friendly Plating on Open Metal Grate Bridge Decks


Sources: Left - Kinzie Street Bridge, Chicago. https://rooseveltislander.blogspot.com/2020/09/roosevelt-is/and-bridge-bike-lane-metal.html
Right - Clybourn Street Bridge, Milwaukee, https://overthebarsinmilwaukee.wordpress.com/2011/06/16/clybourn-bridge-now-bicycle-friendly/
State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

The protected path facility continues down the bridge unimpeded until an exit ramp to the airport's side entrance (Figure 32).

Figure 32: Potential Connection (5 of 7) - Bridge Center to East Approach


Source: Department of Public Works, City of New Orleans, 2022
Seabrook Bridge - East of IHNC Near Lakefront Airport


Source: Google Maps, 2022

Though this side road isn't expected to be heavily used, a fourth high-visibility crossing with motionactivated crossing beacons sees users safely across at safe angle away from the main roadway (Figure 33).

Figure 33: Potential Connection (6 of 7) - East Approach Access


Source: Department of Public Works, City of New Orleans, 2022
A new 10 ' wide concrete side path continues in the grassy right-of-way along the edge of the floodwall (or using the existing concrete surface at the base of the floodwall) to reach Downman Road.

Seabrook Bridge East Approach Right-of-Way and Floodwall


Source: Google Maps
State Project \# H.972422.1, RPC Task A-1.22IHNC; FY-22 UPWP

While the scope of this study ends at Downman Road, future connections across Stars and Stripes Boulevard and ultimately through the floodwall to Hayne Boulevard are needed. This concept envisions the path crossing Stars and Stripes Boulevard on the east side of Downman Road, linking to another side path that takes a short stretch of Downman to pass through the flood wall, where there is no room for a side path or widening of the passage. The Downman at Hayne intersection is reimagined as a roundabout to facilitate traffic flow in a safe manner, including crosswalks across Hayne Boulevard on the east side of the roundabout.

Figure 34: Potential Connection (7 of 7) - Future Connection to Hayne Blvd. via Downman Rd.


Source: Department of Public Works, City of New Orleans, 2022
For the purposes of the cost estimate in this study, the crosswalks on Downman Road across Stars and Stripes Boulevard are included, but the treatment of the roundabout at the intersection of Downman and Hayne Boulevard is not.

## Cost Estimate

The cost estimate is based on the Recommended Concept detailed in the previous section. The only major element not included is the potential future connection from Downman Road to Hayne Boulevard laid out in Figure 34. However, the potential future connection to Press Drive (Figures 28 \& 29) is included since it simply involves an extension of the concrete side path from the Lakeshore Drive off-ramp to Press Drive ( $2,020^{\prime}$ in length), where the nearest sidewalks are located.

The total project cost is estimated at $\$ 2,393,913.73$ (see Preliminary Scope and Budget Checklist in Appendix K). This includes construction costs of $\$ 2,078,913.73$, including $30 \%$ contingency (Appendix J). Construction estimates are based on unit costs for comparable projects.

The barriers that run the length of the protected path ( $3,231^{\prime}$ ) account for $\$ 365,300$, or around $23 \%$ of the construction subtotal $(\$ 1,599,164.41)$. This includes both the concrete barrier for the majority of the path as well as the steel barrier on the moveable section of the bridge (170'). The bike/ped safety railing attached to the top of the barriers as well as replacing the existing outer railing on the bridge itself $\left(2,080^{\prime}\right)$ account for $\$ 678,510$, or around $43 \%$ of the construction subtotal. Other notable items include the Thin Steel Surface Plate to cover the open metal grating on the lift section of the path at \$43,650 and the five Flashing Crosswalk Warning Light Systems at $\$ 3,500$ each for a total of $\$ 17,500$. A brief summary of costs is included below in Table 11.

Table 11: Summary of Cost Estimates

|  |  |
| :--- | ---: |
| Construction Subtotal | $\$ 1,599,164.41$ |
| $30 \%$ Contingency | $\$ 479,749.32$ |
| Total Construction Cost | $\$ 2,078,913.73$ |
| Engineering Design | $\$ 200,000$ |
| Additional Traffic Analyses | $\$ 100,000$ |
| Environmental Processing | $\$ 15,000$ |
| Total Project Cost | $\mathbf{\$ 2 , 3 9 3 , 9 1 3 . 7 3}$ |

Source: BKI, 2022

## Stage 0 Checklists

In accordance with the LADOTD Stage 0 - Manual of Standard Practice, a Stage 0 Environmental Checklist and a Preliminary Scope and Budget Checklist were prepared for the recommended walking and bicycling crossing of the Inner Harbor Navigational Canal (See Appendix K).

## Appendix

A - Project Management Committee Meeting Materials<br>B - Moving New Orleans Bikes Network Analysis<br>C - New Orleans Bikeway Blueprint<br>D - National Bridge Inventory Summary Reports<br>E - Latent Demand Technical Memorandum<br>F - Traffic Counts and Speed Study<br>G - FHWA Vehicle Category Classification<br>H - Oregon DOT Manual: Ch. 14.5 - Pedestrian Level of Traffic Stress<br>I - Concept Design: Plan Layout and Typical Section<br>J - Concept Design: Cost Estimate<br>K - Stage 0 Checklists

## New Orleans East <br> Industrial Canal Crossing

Safety and Access Planning

## Stage 0 Feasibility Study

June 2022


## Appendix A

## Project Management Committee Meeting Materials

# New Orleans East 

 Industrial Canal CrossingSafety and Access Planning

## Stage 0 Feasibility Study

June 2022


New Orleans East Industrial Canal Crossing Safety and Access Planning
Stage Zero Feasibility Study
RPC Task A-1.22IHNC: FY-22 UPWP State Project No. H. 972422.1

Project Kick Off Meeting Notes

Tuesday, December 21, 2021
10:30am
New Orleans Regional Transportation Management Center
10 Veterans Boulevard, New Orleans, LA 70124

## Attendance List

See Attached Sign-in Sheet

## Meeting Overview

The purpose of the meeting was to review the scope of services and clarify any necessary details regarding the project schedule, PMC membership and roles, and the technical approach to the study.

## Action Items

- Tweaks to schedule
o BKI to move up latent bicycle demand profile
- Data request
o BKI will create a data request list and send it to the RPC Data Manager and Project Manager
- Schedule first PMC meeting
o BKI to coordinate with RPC on first PMC meeting date and additional invites


## Concerns/comments/questions

- RPC: Provided an Area of Interest Map to meet Title VI guidelines in considering impacted communities compared to the defined project limits, scope defined block groups and pedestrian ( $1 / 4$ mile)/bike ( 2 mile) boundaries (attached). Discussed use in
project planning and data collection. Extensive demographic AOI block group data also provided (attached).
- RPC: Relying on the City to do leg work for more detailed public outreach as needed.
- BKI: Three PMC meetings on schedule and one TBD as needed.
- ITS: What is the best placement cameras/counters for speed study (Task 3)? Covered in upcoming data collection training? ITS uses LitroVision. ITS will send a link to the RPC Project Manager.
- DPW: Recommended using video for all modal data collection because it would capture wrong way bike riding and other unusual vulnerable user movements.
- DPW: Wondered if RPC conducted a pedestrian stress evaluation in the New Links transit study. They did not so no other data is available for pedestrians.
- DPW: Discussion of Almonaster Bridge project occurred about possible lane reconfigurations. RPC noted it is no longer a new build and the lane configuration is likely to remain the same but needs to be investigated with Port NOLA.
- Mayor's Office of Transportation: Will assist with coordination to develop Project Management Committee contacts in the Office of Community Engagement using designees associated with incoming Council offices of District D (Eugene Green) and District E (Oliver Thomas).
- DPW: What about identifying an optimal location for a new bridge crossing that is dedicated to bicycle and pedestrian users only? Discussion occurred on the project scope of services, which calls out the four existing bridges as the focus of this study. The consultants noted that the latent demand modeling component could possibly be used to identify a location for a new bridge crossing, but further exploration of any new bridge crossing would not be part of this study.


## Upcoming

- January 5, 2022 - Data collection training

BK]
NO East Industrial Canal Crossing Safety \& Access Planning
Sign-In Sheet
Project Kick-off Meeting, December 21, 2021
NO East Industrial Canal Crossing Safety \& Access Planning: Introductions, Project Scope, Schedule
(BK NO.21.033)
PLEASE PRINT


New Orleans East Industrial Canal Crossing Safety and Access Planning
Stage Zero Feasibility Study
RPC Task A-1.22IHNC: FY-22 UPWP State Project No. H. 972422.1

Project Kick Off Meeting Agenda
Tuesday, December 21, 2021
10:30am
New Orleans Regional Transportation Management Center 10 Veterans Boulevard, New Orleans, LA 70124

## WORKING AGENDA

I. Introductions
II. Project Scope
III. Project Schedule
IV. Project Management Committee (PMC) membership and role
V. Data needs/technical approach
VI. Invoicing/contract issues
VII. Other Items
VIII. Adjourn

# SCOPE OF SERVICES <br> New Orleans East Industrial Canal Crossing <br> Safety and Access Planning <br> Stage 0 Feasibility Study <br> RPC Task A-1.22IHNC; FY-22 UPWP 

## Preliminary Purpose and Need

This project will identify, from existing bridges, a potential walking and bicycling crossing of the Inner Harbor Navigational Canal (INHC) between the Florida Avenue Bridge and Lake Pontchartrain and present a conceptual plan for improving the structure and its approaches to allow for accessible and safe nonmotorized use of the facility. There is currently no such crossing available to walkers and bicyclers, who are therefore are unable to access services on either side of the canal, or to connect to the city-wide bicycle network.

## Study Location

The Inner Harbor Navigational Canal, locally known as the Industrial Canal, is a man-made waterway connecting Lake Pontchartrain, the Gulf Intracoastal Waterway, and the Mississippi River. The study area will focus on the upper segment of the canal, specifically north of the Florida Avenue Bridge and south of the Lake Pontchartrain outlet. Within this study area, to the west of the canal, are the City Planning Commission's Planning District 6 (Gentilly) and 7 (Marigny, Bywater, St. Claude, St. Rich, Desire) census tracts 17.01, 170.2, 133.02, and 137.02). To the east is Planning District 9 (New Orleans East) (census tracts (census tracts 17.20, 17.24, and 17.51).

## Background

The Industrial Canal completely separates New Orleans East from the remainder of New Orleans. There are four non-rail crossings in the study area, three of which are owned by the Louisiana Department of Transportation and Development (LADOTD) and the last owned by the Port of New Orleans. Listed from north to south they are:

- Senator Ted Hickey Bridge (Seabrook Vehicular Bridge/Lakeshore Dr./LA 1264) - LADOTD
- Danziger Bridge (US Hwy 90./Chef Menteur Hwy.) - LADOTD
- I-10 Highrise Bridge - LADOTD
- Almonaster Avenue Bridge - Port of New Orleans

Due to traffic conditions, roadway design/functional class, or operational status, none of these are currently conducive to safe non-motorized travel, and I-10 is inaccessible to such users. Those on bicycle, wheelchair, or foot are therefore faced with an impenetrable, or at the least an extremely dangerous barrier when seeking opportunities on the opposite side of the canal. This is particularly problematic given the demographics of this area, which include a high number of low-income households and households without a car.

To increase accessibility to services for residents of New Orleans East and eastern Gentilly/Desire, to increase connectivity and equitable coverage of the city's rapidly expanding walking and bicycle network, and to improve safety for non-motorized users, this study seeks to identify a feasible location for nonmotorized users to safely cross the Canal and to conceptually design that crossing. Given the minimum navigable width and height requirements of the Canal, it is likely that a new facility exclusive to nonmotorized travel is not a near term solution, so it is expected that any improvements would be on an existing facility. The study will therefore assess each existing roadway bridge to determine which could most feasibly facilitate non-motorized crossing of the canal and serve the most people walking or biking, then conceptually identify design improvements that would be needed to ensure safe passage for non-motorized travelers.

## TASK 1: PROJECT TIMELINE AND KICK-OFF MEETING

The Consultant will prepare a draft project schedule in Gantt format, including major milestones for the tasks and subtasks below, which must be approved by the RPC project manager. After approval, any deviations from the schedule must be authorized by the project manager.

The schedule will be presented to RPC staff at a kick-off meeting, which will take place no later than two weeks after the notice to proceed is issued. The prime and all subconsultants must attend the kickoff meeting.

## Task 1 Deliverable(s): Project Schedule, Kickoff Meeting Agenda and Minutes

## TASK 2: PROJECT MANAGEMENT COMMITTEE

The Consultant will assist the City of New Orleans in establishing and supporting a Project Management Committee (PMC) to guide the technical work effort and to review the Consultant's work products. The PMC will, at the least, include representatives from the City of New Orleans Office of Transportation, City of New Orleans Districts D and E, City of New Orleans Office of Community Engagement, DOTD District 02, RPC, the Port of New Orleans, the Regional Transit Authority, Bike Easy, identified community groups in the study area, and other stakeholders as deemed appropriate.

The PMC will meet four times during the study effort. In addition, the Consultant will conduct meetings with elected officials and other local leaders and organizations as necessary to discuss the project's purpose and need and project-related opportunities and concerns.

## Task 2 Deliverable(s): PMC Invite List, Meeting Agenda, Minutes

## TASK 3: FACILITY PROFILES

A comprehensive investigation effort will be made at the location to allow an accurate assessment of each the four potential crossing facilities:

1. Seabrook: west service road (Leroy Johnson Dr/Leon C. Simon Dr) to Downman Rd
2. Danziger: Desire Pkwy to Downman Rd
3. $\mathrm{I}-10$
4. Almonaster: France Rd to Jourdan Rd

These narratives will include but may not be limited to the following, pending PMC discussion:
Condition - age, historic Status, structure, surface, fixed or movable, if movable, average number of daily bridge openings

Crash History - A crash history of the facility and the approaches to the facility (as defined in Task 3 ) will be determined for the past 5 years, including:

- Number and type of "correctible crashes". (defined as head-on, right-angle, and left-turn collisions). RPC will provide crash data to the consultant for this task.
- All fatal and severe Injury crashes, regardless of mode or type
- Crashes involving non-motorized users

Speed Study - Vehicle travel speeds will be collected at the facility to perform a speed study following the methods defined by DOTD's EDSM VI.1.1.1 and the DOTD Traffic Engineering Manual.

Geometry - lane configuration, lane width, shoulder width, sidewalk width, span length, grade of each bridge and their approaches, including on-ramps, off-ramps, and/or staircases from the bridge structures.

Land Use and Access - An assessment of the surrounding land uses, demographics, and transportation infrastructure adjacent to the facility (within a 2-mile radius of each approach). The assessment should include:

- demographics of residents near the facility (potential origins)
- commercial activities and services near the facility (potential destinations)
- walking and bicycle infrastructure, including substandard infrastructure (ex. sidewalks less the 5' wide, non-ADA compliant curb ramps, etc.), or lack or infrastructure (sidewalk gaps, absence of pedestrian signals, etc.) (non-motorized connectivity to the facility)
- transit facilities (multimodal considerations for non-motorized users)

Motorized Traffic - 7-day, 24-hour traffic volume counts will be conducted for the facility. These counts will contain hourly subtotals and include vehicle classification amounts. Counts must be completed during a 7 -day period that does not include a holiday or special event not typically seen at the site. Per DOTD traffic data collection policy, consultant will review the 24 hour counts and recommend a peak AM, Mid-day, and PM peak period to RPC PM. The RPC project manager will review and recommend approval or otherwise comment on changes required.

Public Transit - A profile of transit use on the facility will be conducted, including ridership profiles on each bus line that uses the bridge and on/off activity at bus stops within $1 / 4$ mile of the bridge (data will be provided by RPC).

Walking and Bicycling Activity - Automated bicycle and pedestrian counts shall be collected using a DOTD-evaluated methodology described in LTRC 16-4SA ("Pedestrian and Bicyclists Count -

Developing a Statewide Multimodal Count Program," specifically Appendix D "Pedestrian and Bicycle Count Data: A Guide for Louisiana" - https://www.ltrc.lsu.edu/pdf/2019/Appendix\ D.pdf) Prior to initiating Task 3, the consultant shall prepare a memo describing the count methodology and validation process to be employed. This methodology must be approved by the before commencing counts.

Latent Bicycling Demand - The consultant will employ a methodology for each facility that will show a quantitative measure of the potential demand for bicycling and walking if that facility had adequate safety measures (i.e., protected lanes, lower speed, etc.), and will allow a relative comparison of latent demand among all facilities. Prior to initiating Task 3 , the consultant shall prepare a memo describing the methodology to be employed in estimating bicycling latent demand, consistent with best practices described in FHWA's "Guidebook on Methods to Estimate Non-Motorized Travel" (https://safety.fhwa.dot.gov/ped bike/docs/guidebook1.pdf) or comparable guidance. This methodology must be approved by the Project Manager before deployment.

Walking and Bicycling Stress Measure - The consultant will employ a methodology for each facility that will show a qualitative measure of the existing walking and bicycling conditions on each facility, and will allow a relative comparison of non-motorized stress among all facilities, as well as an estimated improvement in quality of facilities with conceptual improvements (task 5). Prior to initiating Task 3, the consultant shall prepare a memo describing the methodology to be employed in estimating bicycle and walking stress/quality on the bridges, consistent with best practices, such as NACTO's "Urban Streets Design Guide" and San Francisco's "Pedestrian Environmental Quality Index" (PEQI). This methodology must be approved by the Project Manager before deployment.

## Task 3 Deliverable(s): Detailed Facility Profile Report

## TASK 4: CROSSING ALTERNATIVES ASSESSMENT

The consultant, in coordination with the PMC, will develop high level evaluation criteria to determine the most suitable facility for potential walking and bicycle improvements.

## Task 4 Deliverable(s): Alternatives Assessment Matrix \& Report

## TASK 5: CONCEPTUAL PLAN LAYOUT

The Consultant will prepare a conceptual layout for the crossing that addressed the conditions described in Task 5 and incorporates input from the PMC. The layout will show the proposed conceptual design overlaid on an aerial photograph and a simplified street grid. The consultant will show the conceptual design in cross section view. The layout shall follow to the extent applicable the LADOTD Roadway Design Procedure and Details Manual, AASHTO Guide for the Development of Bicycle Facilities and the NACTO Urban Street Design Guide

The concept drawings will describe a roadway design for the facility that will permit safe passage by nonmotorized users. The design will reduce conflicts between such non-motorized users and motorized travel, with consideration given to existing speeds, vehicle class use, vehicle capacity, potential conflict points, connectivity to existing walking and bicycle infrastructure, access to nearby origins and destinations, and access to public transit stops. For each of these alternatives, the consultant will, to the extent possible at
this stage of project development, establish preliminary cost estimates associated with engineering design, environmental actions, right-of-way acquisition, utility relocation, and contingencies.

Task 5 Deliverable(s): Conceptual Layout Report for each Facility deemed feasible by the PMC, including overlay on satellite photography, cross section, and artistic visualization

TASK 6: DEVELOPMENT OF STAGE 0

A draft report with all documentation described above will be submitted to the PMC. The report will include the conceptual layout of alternatives and descriptions of the proposed feasible alternatives.

Pending comments from PMC, Consultant shall finalize report and prepare the Stage 0 Feasibility Study, documenting the information and analysis described above.

The MPO will engage with the local public agency (LPA) following the completion of the Stage 0 report to determine a recommended alternative, should the LPA decide to advance the project. The consultant will prepare MPO Stage 0 checklists (ref. LA DOTD Program Development and Project Delivery System Manual, Chapter 4: Stage 0 Standard Operating Procedure, MPO Checklist for Stage 0-Preliminary Scope and Budget Worksheet, and MPO Stage 0 Environmental Checklist) for the recommended alternative.

## Task 6 Deliverable(s): LADOTD Stage 0 Documentation

## TASK 8: FINAL DELIVERABLES

Six (5) printed copies of each report, and 3 electronic format (pdf including all maps and visualizations) will be submitted by the consultant to the RPC for distribution. All data graphic work will be submitted to the RPC in native software file format ( e.g. *.shp for GIS, etc.).

An Adobe .pdf version and a Microsoft .docx version of the final report will also be provided and include all accessory documentation created during the course of the study, specifically including the FHWA CAPX files generated in *.xlsx format.

## TIMELINE: 10 Months

BUDGET: \$90,000


[^1]

## $5-4-209$

## AOI Block Group Summary Stats

Sum of BG_TotalHH 42,158
Sum of BG_TotalLimited Eng HH 405
Sum of BG_TotalPo 108,013
Sum of BG_Minorit 92,759
Sum of HisLat 3,825
Sum of BG_PovPop1 31,533
Sum of BG_Total_1 108,013
Sum of FamwCh_Alo 5,737
Sum of Pop25UP_NoHS Diploma 12,866
Average of PerCapital \$21,680.80
Sum of BG_Pop_65Over 16,243
Sum of BG_LimitEnSpanish 346
Sum of HU_10plus 5,494
Sum of VachU2 9,613
Average of OccHUAvgHH 3
Sum of HU_MobileH 268
Sum of VacHU 9,613
Average of BG_MedHHInc \$31,752.96

# New Orleans East Industrial Canal Crossing Safety and Access Planning Stage Zero Feasibility Study <br> RPC Task A-1.22IHNC: FY-22 UPWP <br> State Project No. H. 972422.1 

Project Management Committee (PMC)
Meeting \#1 Notes
Tuesday, January 25, 2022
9:30am
New Orleans Regional Transportation Management Center
10 Veterans Boulevard, New Orleans, LA 70124

## Attendance List

See Attached Sign-in Sheet

## Meeting Overview

The purpose of the meeting was to brief the PMC on the project and the PMC's role concerning technical guidance and public outreach. BKI provided an overview of the project purpose, scope and schedule, noting that it is to be completed within 6 months. They walked participants through the information developed for the 4 bridge facility profiles and gave more details about the technical approach that will follow as outstanding data requests are filled.

- BKI (to Port): Is it possible to see where the conceptual development plans of the Almonaster Bridge rehabilitation currently stand, as well as any data on traffic (road or rail) or openings on the facility? Port: We can provide concept plans and any data we may have on Almonaster.
- RPC: Possible historic preservation funding available for Almonaster, given its age.
- Mayor's Office of Transportation: In data request to RTA, did you ask based on current data or future changes due to New Links? BKI: We asked for specifics on current data but have looked at the effects of the New Links recommended network and will account for those changes in that analysis.
- DPW: We performed a Latent Demand Index for Orleans Parish in creating the City's bikeways network and can provide as a resource
- BKI: Would a one-pager to explain the basics of the project be useful now at this stage or not until more analysis has been done? Roadwork NOLA and District E Community Engage Liaison: Yes, a brief fact sheet on the project now would be useful.
- BKI (to DPW): Any particularly relevant lessons to be learned from the Broad Street bridge? DPW: Some growing pains in terms of ramps and bollard placement, but overall, we were
able to slow down traffic (i.e. make it safer for bikes) by tweaking the geometry of the car movements. This may be more of a challenge on the bridges in this study due to higher speeds. However, we can see what has been done in other cities on similar bridges.
- Roadwork NOLA: Would it be possible to have a representative from the Complete Streets Coalition added to the PMC or either stand in for Bike Easy's role on the PMC? There's a lot of overlap between the organizations and Bike Easy may be short-staffed at the moment. BKI: PMC not set in stone, will follow up with RPC about including a representative in the future
- Port: Primary issue with Almonaster and biking or walking is the road will likely be heavily trafficked by trucks accessing Port facilities, as well as the area having high train volume due to large railyard on east side of Canal. Lots of trucks, lots of trains.


## Upcoming

- January-March - Facility Profiles research
- March/April - PMC Meeting \#2 to review Facility Profiles and Draft Matrix


## Action Items

- Data request
o Outstanding data requests to the RPC, City of New Orleans, and Regional Transit Authority to be fulfilled in the coming weeks to keep project on schedule
o Port NOLA to provide plans and any count data concerning traffic or openings on the Almonaster Ave. bridge
o DPW to provide the City's the latent demand model that went into creating the proposed bikeways network
- Outreach Plan
o BKI to provide PMC with a one-page fact sheet for the project
o BKI to work with RPC on a webpage to display basic project info and a contact email address
o BKI to discuss Bike Easy/Complete Streets Coalition involvement on PMC.



## INDUSTRIAL CANAL CROSSING STUDY (RPC TASK A-I.22IHNC: FY-22 UPWP)

PMC MEETING \#I
REGIONAL PLANNING COMMISSION - JANUARY 25, 2022 - 9:30 A.M.

## PROJECT OVERVIEW - PURPOSE \& NEED

- Identify potential bike-ped crossing of the Industrial Canal from existing bridges
- Seabrook Vehicular Bridge/Senator Ted Hickey Bridge (Leon C. Simon Dr)
- Danziger Bridge (Chef Menteur Hwy)
- High Rise Bridge (Interstate IO)
- Almonaster Bridge (Almonaster Ave)
- Present a conceptual plan for improving bike-ped safety and accessibility of the structure and its approaches


## PROJECT OVERVIEW - STUDY LOCATION



## PROJECT SCHEDULE

- January-March - Facility Profiles
- April - Crossing Alternatives Assessment \& Conceptual Plan Layout
- April-May - Stage 0 draft
- June - Final Deliverables


## PROJECT MANAGEMENT COMMITTEE (PMC) ROLE

## PMC Role and Responsibilities

- Guide technical approach and review work
- Lead public outreach and serve as a liaison to elected officials
- Up to 4 PMC meetings
- Meeting I (today!) - Kick-off \& Input
- Meeting 2 (March/April) - Facility Profiles, Draft Matrix
- Meeting 3 (April/May) - Selected Alternative Design
- Meeting 4 (as needed)


## Representatives from

- Regional Planning Commission
- City of New Orleans
- Office of Transportation
- Department of Public Works
- Roadwork NOLA - Mobility \& Safety Outreach
- Neighborhood Engagement Team - Districts D \& E
- DOTD District 02
- Port of New Orleans
- Regional Transit Authority
- Bike Easy


## OUTREACH PLAN - ROLES \& RESPONSIBILITIES

## Project Management Committee

Leads public outreach

## Project Research Team

Conducts technical study

Provides updates to PMC
May host meetings or deliver presentations

Can attend meetings or provide explanatory materials

## PROGRESS UPDATE - FACILITY PROFILES



Seabrook Bridge/Sen.Ted Hickey Bridge (Leon C. Simon Dr.)

- Owned by: LADOTD
- Built In: 1975
- Openings: 29/month avg. (2018-202I)
- Vehicular Lanes: 4 lanes (2 in each direction)
- Average Daily Traffic (ADT): I,IIO (2016)


## PROGRESS UPDATE - FACILITY PROFILES



## Seabrook Bridge/Sen.Ted Hickey Bridge (Leon C. Simon Dr.)

- No sidewalk
- Except at peak to reach drawbridge operator booth from stairs underneath (east side of canal only)
- Very narrow curb (approx. 19")
- Low signage protrudes over curb
- Drawbridge light fully blocks curb on westbound side
- Very narrow shoulder (approx. 20")
- No barrier
- Covered in trash, broken glass, and other debris
- "Walk Bike Across Bridge" signage


## PROGRESS UPDATE - FACILITY PROFILES



Danziger Bridge
Chef Menteur Hwy (US 90)

- Owned by: LADOTD
- Built in: 1989
- Openings: 9/month avg. (2018-202I)
- Vehicular Lanes: 6 lanes (3 in each direction; 4 eastbound for portion)
- ADT: 33,300 (2016)


## PROGRESS UPDATE - FACILITY PROFILES



## Danziger Bridge <br> Chef Menteur Hwy (US 90)

- 4’ wide sidewalk (westbound side only)
- Narrows to as little as 2' in places
- Outer railing 3.5' high
- Shoulders have metal grates and circular pipes with 6-9" openings for drainage


## PROGRESS UPDATE - FACILITY PROFILES



High Rise Bridge (I-IO)

- Owned by: LADOTD
- Built in: 1966
- Openings: 0 (non-movable bridge)
- Vehicular Lanes: 6 lanes (3 in each direction)
- ADT: I8I,400 (2018)
- Bicyclists not permitted on interstates in Louisiana


## PROGRESS UPDATE - FACILITY PROFILES



Almonaster Bridge (Almonaster Ave)

- Owned by: Port of New Orleans
- Built in:1919 (National Register eligible)
- Openings: unknown
- Vehicular Lanes: 2 lanes (I each direction; with 2 rail lines down center)
- ADT: Vehicular lanes closed to public since Katrina


## TECHNICALAPPROACH - WHAT WILL WE MEASURE?

## What is the demand?

## Existing

 Demand
## Potential Demand

## What are the conditions?

> Walking \& Bicycling Stress
> Measure

- Existing Demand = Walking \& Bicycling Counts
- Where people walk and ride in existing conditions
- Potential Demand = Latent Demand Modeling
- Where people may walk and ride if conditions were adequately safe
- Walking \& Bicycling Stress Measure
- Assessment of conditions


## TECHNICALAPPROACH - HOWWILL WE MEASURE IT?



- Walking \& Bicycling Counts
- Video (with manual verification) for 2, 48-hour periods on the Seabrook and Danziger bridges
- Latent Demand Modeling
- Combine several factors into a "heat map" displaying potential demand in the surrounding area
- Walking \& Bicycling Stress Measure
- Combine several factors into "level of stress" ratings for the bridges and surrounding area leading to bridges


## TECHNICAL APPROACH - WHAT WILL THE MEASURES LOOK LIKE?

Example Bicycling Demand Index


Example Level of Stress Index


## NEXT STEPS

- January-March - Facility Profiles
- Condition \& Geometry (in progress)
- Public Transit (data request in to RTA)
- Land Use and Access (data request in to City of New Orleans)
- Latent Bicycling Demand (data request in to RPC, City of New Orleans)
- Crash History (data request in to RPC)
- Motorized Traffic Counts/Speed Study \& Walking/Bicycling Activity Counts (in progress)
- Walking and Bicycling Stress Measure (data request in to RPC, City of New Orleans)


## PROJECT CONTACTS

| Karen Parsons | Ellen Soll | Colin Ash |
| :--- | :--- | :--- |
| NORPC | BKI | BKI |
| $504-483-85$ II | $504-483-628$ I | $504-483-6276$ |
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New Orleans East Industrial Canal Crossing Safety and Access Planning Stage Zero Feasibility Study RPC Task A-1.22IHNC: FY-22 UPWP<br>State Project No. H. 972422.1<br>Project Management Committee (PMC)<br>Meeting \#2 Notes<br>Wednesday, April 13, 2022<br>10:30am<br>New Orleans Regional Transportation Management Center<br>10 Veterans Boulevard, New Orleans, LA 70124

## Attendance List

See Attached Sign-in Sheet

## Meeting Overview

The purpose of the meeting was to brief the PMC on the findings of the project thus far and set a timeline for moving forward with a chosen facility for the development of a conceptual plan for improvement. BKI provided a recap of the project purpose and presented the results of a threetiered analysis, including Suitability, Constructability, and Opportunity for Improvement. We walked participants through how the bridges rated in each tier of the analysis before a discussion with the committee on the pros and cons of each bridge. BKI then presented on Conceptual Design Considerations and Bridge Design Assumptions to set the stage for the next step of the project, asking for any additional input on bridge preferences or technical limitations by May 1 when the conceptual design will begin.

## Questions/Discussion

- City of New Orleans (CNO): Can you describe how the catchment areas are defined in the latent demand analysis?
o BKI: We used the distance of "bikeability" ( 1.67 miles) defined in the City's Moving New Orleans Bike Network Analysis, rounded up to 2 miles, and then built catchment areas based on census block size/shape and natural barriers like I-10 or other canals.
- CNO: Advisory signs to walk bike across Seabrook may still be standing from previous bridge condition that had open grating that was more hazardous to people on bikes.
- RPC: Due to the timing of this project and the quick turnaround required, it was unfortunate the bicycle and pedestrian counts had to take place during colder
weather in January; however, we feel it does speak to the need of the facility on Danziger that there were users despite the conditions.
- BKI: Minor typo on slide 13 . It should be 1 ft . shoulders on Seabrook and 4 ft . shoulders on Danziger. We will fix before sending out.
- Port NOLA: I was briefed this morning on rehabilitation plans for the Almonaster Bridge, which are at $80 \%$. Some bicycle and pedestrian concessions are going to be made, but there's limited space on the bridge and would involve signage for bikes to cross in shared traffic lanes.
- CNO: So you actually scored the loop off-ramp separately than the rest of the bridge?
o BKI: Yes, that was scored as a separate road segment since it is only a single lane with wider shoulders, resulting in a PLTS 3 instead of 4 like the rest of the bridge.
- RPC: Did transit factor into any of the analyses? RTA is doing a study for a BRT route to use the Danziger Bridge.
o BKI: Transit usage generally will factor into the final report as part of the context of the areas around the bridges as well as transit dependent indicators factoring into the Latent Demand Analysis and Equity Index, but we are unaware of RTA's BRT planning efforts. They have been invited to the PMC meetings and we had correspondence with them earlier regarding ridership data, but BRT has not come up.
o RPC: We will talk to RTA after this to make sure everyone is on the same page and determine how this may affect the PMC's decision on bridge preference.
- BKI: BKI conducted a few quick anonymous polls to facilitate a further discussion of the results of the analyses.
o 1 . Which bridge is the strongest candidate?
- 8 for Danziger, 2 for Seabrook
o 2. Please rank the following priorities
- $1^{\text {st }}$ - serving the most potential users
- $2^{\text {nd }}-$ serving the most current users
- $3^{\text {rd }}$ - serving the community with the greatest need
- $4^{\text {th }}$ - reducing future non-motorized crashes
- $5^{\text {th }}$ - selecting the bridge with the smallest slope/length
o 3. What else do you think should be considered? (open-ended)
- Transit (3), recreation (2), DOTD (2), long term maintenance, equity, community input, visibility, wayfinding, ease of access, cost, employment, placemaking, connecting communities
- RPC: We'll need DOTD to weigh in on any changes to the design assumptions by May 1.
- CNO: The city is responsible for any community engagement on this project, so how should we move forward with gaining public input for this Stage 0 study?
o Bike Easy: Send to all council members and libraries.
o RPC: ENONAC (East New Orleans Neighborhood Advisory Commission) may have a meeting soon.
o BKI: We can provide a digital copy of our presentation and any other materials that may facilitate efforts for public input, but any feedback will be needed by May 1 before we must begin conceptual design.
- RPC: Anecdotally, people on bikes do use Almonaster despite its closed status. It would be good to reference in final report.


## Upcoming

- April 26 - ENONAC public meeting
- May 1 - Deadline for input from PMC on bridge preferences or technical limitations
- May 31 - Draft report and Checklist due
- June 30 - Final Report and Deliverables


## Action Items

- LADOTD
o Provide RPC \& BKI input on bridge design assumptions (slide 27) and any other factor that may drastically affect the final decision on which bridge to move forward to a conceptual design as part of this Stage 0 Feasibility Study.
- City of New Orleans
o Contact councilmembers' offices to brief on study
o Conduct some level of community engagement and report back to RPC \& BKI before May 1
- Port NOLA
o Provide RPC \& BKI Almonaster Bridge rehabilitation plans
o Provide RPC \& BKI data on openings per day of Almonaster Bridge
- BKI
o Provide PDF copy of presentation to all participants (requested by CNO)
o Provide PowerPoint version of presentation to RPC
o Coordinate with DOTD regarding assumptions and limitations

|  | 31 |  |
| :---: | :---: | :---: |
| NO East Industrial Canal Crossing Safety \& Access Planning |  |  |
| Sign-In Sheet |  |  |
| Project Management Committee Meeting \#2, April 13, 2022 |  |  |
| NO East Industrial Canal Crossing Safety \& Access Planning |  |  |
| BKI NO.21.033 (RPC Task A-1.22IHNC: FY-22 UPWP) |  |  |
| PLEASE PRINT |  |  |
| Name | Representing | Email |
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| Allene laspra | Bike easy |  |
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## INDUSTRIAL CANAL CROSSING STUDY (RPC TASK A-1.221HNC:FY-22 UPWP)

PMC MEETING \#2
REGIONAL PLANNING COMMISSION - APRIL 13, 2022 - 10:30A.M.

## MEETING AGENDA

- Project Overview Recap
- Tier OneAnalysis (Suitability)
- Tier Two Analysis (Constructability)
- Tier ThreeAnalysis (Opportunity for Improvement)
- Conceptual Design Considerations
- Next Steps


## STUDY LOCATION



## PROJECT DEVELOPMENT PROCESS

The purpose of Stage 0 is to reach a decision regarding the project's feasibility and whether the project should continue further through the project delivery process.

## ANALYSISAPPROACH

"The study will therefore assess each existing roadway bridge to determine which could most feasibly facilitate nonmotorized crossing of the canal and serve the most people walking or biking, then conceptually identify design improvements that would be needed to ensure safe passage for non-motorized travelers.


## TIER I:INTRODUCTION / CONTEXT: LAND USE

## W hat the study area looks like

- Findings:
- Bridges located in heavily industrial areas, not bike/ped friendly
- Danziger (2) links residential and commercial areas on either side of the canal, bypassing industrial land better than others
- Commercial areas most heavily concentrated along US 90 / Chef Menteur Hwy (Danziger Bridge)
- Large institutional areas west of the canal, particularly near Seabrook



## TIER I:LATENT DEMAND

Where people are more likely to walk or ride, irrespective of infrastructure

- Factors:
- Intersection Density (50\%)
- Population Density ( $25 \%$ )
- Density of Households Below the Poverty Line (15\%)
- Employment Density (10\%)
- Finding
- North Catchment Area scores marginally higher per census block.
- South Catchment Area has higher densities for population, households in poverty, and employment



## TIER I:EQUITY INDEX

## Where investments are most needed

- Factors:
- Population under $18(20 \%)$
- Population over 65 (20\%)
- Zero car households (20\%)
- Minority population (20\%)
- Population in poverty ( $20 \%$ )
- Finding.
- South Catchment A rea scores marginally higher per census block group.



## TIER I: SAFETY / CRASH HISTORY

## Which bridges are priorities for bike/ped safety improvements

- Finding
- Danziger has the highest proportion (53.8\%) of crashes involving non-motorized users
- Seabrook has the 3rd highest proportion (15.4\%) of crashes involving non-motorized users
- Danziger and Seabrook together account for only about 26\%of total crashes but nearly 70\%of crashes involving non-motorized users


## Crash History 2016-2020

|  | Total <br> Crashes | Involving <br> Non-Motorized <br> Users |  |
| :--- | ---: | :---: | :---: |
|  | $\#$ | $\%$ | \# |

## TIER I:EASE OF USE - HORIZONTALANDVERTICALATTRIBUTES

## What we cannot change for people walking or bicycling

- Findings:
- Almonaster is the shortest and lowest bridge and therefore, an attractive grade for people biking and walking, however, low height impedes navigation
- I-10 is closed to bicycles and pedestrians
- Seabrook and Danziger offer manageable routes for bicycles and pedestrians with minimal openings

|  | Length <br> (ft.) | Height <br> (ft.)* | Openings per <br> Month <br> (2018-2021) |
| :--- | ---: | ---: | ---: |
| Seabrook | 1,942 | 46 | 29 |
| Danziger | 3,270 | 100 | 9 |
| I-10 | 6,715 | 115.1 | 0 |
| Almonaster | 282 | 3 | 21/day |

*Height=N avigational Clearance
21 openings/day according to 2004 EIS

## TIER I:LEGALITY

## Is it legal for non-motorized users?

- Findings:
- Legal, with limitations, on Seabrook
- Legal on Danziger
- Legal onAlmonaster, when open
- Illegal to walk on I-10 (though you can be outside of a vehicle in an emergency situation); bikes illegal on I-10

| Seabrook | Yes | Advisory to walk <br> bike across <br> bridge |
| :--- | :---: | :---: |
| Danziger | Yes | Yes |
| -10 | Not to cross | No |
| Almonaster | Yes but <br> currently closed | Yes but <br> currently closed |

## TIER I: BRIDGE SUITABILITY ANALYSIS REPORT CARD

| BRIDGE | GRADE | Demand | Equity | Safety | Ease <br> of Use | Legal <br> (Pass/Fail) | Current <br> Use* |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Seabrook | B+ | A | B | B | B | P | D |
| Danziger | A | B | A | A | C | P | A |
| I-10 | F | B | A | C | D | F | F |
| Almonaster | C | B | A | D | A | P | F |

Percentage grades were assigned based on a simple ranking of the bridges ( $1^{\text {st }}=100 \% 2^{\text {nd }} 90 \% 3^{\text {rd }}=80 \% 4^{\text {th }}=70 \%$ For Pass/Fail, $\mathrm{P}=100 \% \mathrm{~F}=0 \%$, which was converted to an overall letter grade for each bridge based on a standard GPA calculation.
*For Current Use, despite not registering any users in our limited count period, Seabrook was still awarded a D since we know there is some degree of use based on prior knowledge and discussions with members of the PMC.

## TIER II: PRACTICABILITY

## What improvements are practicable in the available space? <br> - Is a Road Diet Possible? <br> - Lane Reduction <br> - Shoulder Reduction

|  | Traval <br> lanes | Sidewalk | Shoulders | Movable | Road Diet <br> Geometrical <br> Possible? |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Seabrook | Four 12' <br> lanes | N/A | $1^{\prime}$ inside <br> and outside | Movable | Yes |
| Danziger | Six 12' <br> lanes | Width <br> varies | 4 ' inside $_{\text {and outside }}$ | Movable | Yes |
| I-10 | Six 12' <br> lanes | N/A | N/A | Fixed | N/A |
| Almonaster | Two 11' <br> lanes | Two 4.3' | Two 11' <br> lanes | Movable | No |

Assumption that bridge widening on movable bridge spans is infeasible due to excessive weight addition and cost.

## TIER II: PRACTICABILITY REPORT CARD

| BRIDGE | GRADE | Practicability |
| :--- | :---: | :---: |
| Seabrook | P | P |
| Danziger | P | P |
| l-10 | N/A | N/A |
| Almonaster | F | F |

## TIER III:INTRODUCTION/CONTEXT - TRAFFIC COUNTSAND SPEED STUDY

## What are the motorized traffic characteristics on the bridges

- Findings:
- Danziger has more traffic (and more lanes)
- Seabrook has higher average speeds and more drivers speeding
*Ramps - ADT of on/off ramps to be included in final report; however, the nature of these conflict points warrants a greater degree of scrutiny despite lower ADT due to the particular geometrical challenges they present for non-motorized users

|  | Seabrook | Danziger |
| :--- | :---: | :---: |
| Average DailyTrafic (ADT) | 9,433 | 26,930 |
| Posted Speed Limit | 35 mph | 35 mph |
| AverageActual Speed | 50 mph | 37 mph |
| Drivers Over Speed Limit | $97 \%$ | $58 \%$ |
| $\mathbf{8 5}$ h Percentile Speed | 60 mph | 48 mph |

## TIER III: BICYCLING LEVEL OFTRAFFIC STRESS (BLTS)

## What is the assessment of needed bicycle infrastructure improvements

- Factors:
- Speed of traffic
- Number of travel lanes
- Average DailyTraffic
- Width of bike lanes and parking lanes
- Finding
- Both Seabrook and Danziger rate as BLTS 4
- To achieve "Low-Stress" rating of BLTS 1 or 2, a road diet is required on either bridge

*O V/off ramps are scored like any other road segment; however, a greater degree of scrutiny will be given to these inherent conflict points during the conceptual design phase


## TIER III: PEDESTRIAN LEVEL OFTRAFFIC STRESS (PLTS)

## What is the assessment of needed walking infrastructure improvements

- Factors:
- Sidewalk presence, width, and surface
- Buffer type and width
- Speed of traffic
- Number of travel lanes
- Finding
- Both Seabrook and Danziger rate as PLTS 4 across main portion of bridge
- To achieve "Low-Stress" rating of PLTS 1 or 2, a road diet is required on either bridge

*O n/off ramps are scored like any other road segment; however, a greater degree of scrutiny will be given to these inherent conflict points during the conceptual design phase


## TIER III: OPPORTUNITY REPORT CARD

| BRIDGE | GRADE | Bicycle LTS | Pedestrian LTS |
| :--- | :---: | :---: | :---: |
| Seabrook | A | A | A |
| Danzigar | A | A | A |
| I-10 | N/A | N/A | N/A |
| Almonaster | N/A | N/A | N/A |

## TIERSI, II,AND III RESULTS

| BRIDGE | Suitability <br> Grade | Practicability <br> Grade | Opportunity <br> Grade |
| :--- | :---: | :---: | :---: |
| Seabrook | B | P | A |
| Danziger | A | P | A |
| I-10 | F | N/A | N/A |
| Almonaster | C | F | N/A |

MENTIMETER POLL \#1
Which Bridge is the Strongest Candidate?

MENTIMETER POLL \#2
What do you think is the most
important factor?
DISCUSSION (10 MINUTES)

## CONCEPTUAL DESIGN CONSIDERATIONS

"The study will therefore assess each existing roadway bridge to determine which could most feasibly facilitate nonmotorized crossing of the canal and serve the most people walking or biking, then conceptually identify design improvements that would be needed to ensure safe passage for non-motorized travelers.


## BICYCLE / PEDESTRIAN FACILITIES: OPTION 1: MULTI-USE PATH

- Multi-use path
- Accommodates bicycles and pedestrians
- MinimumWidth: 10' (AASHTO/DOTD)
- Best practice to put on both sides, if on one side, need crossing at each end
- Local example: W isner Bridge (12' combined bike/ped)


Wisner Bridge, New Orleans (before)


Wisner Bridge, New Orleans (after)
Photo Source: TheAdvocate, September 28, 2017
8' minimum acceptable in constrained areas (AASHTO, Guide for the Development of Bicycle Facilities, $4^{\text {th }}$ Edition, 2012

## BICYCLE / PEDESTRIAN FACILITIES: <br> OPTION 2: SIDEWALK AND PROTECTED BIKE LANES

- Sidewalk and Protected Bicycle Lanes
- Pedestrians (sidewalk): MinimumWidth: $5^{\prime}$ (DOTD)
- Bicycles (protected bicyclelane): MinimumWidth: 5' (DOTD). Buffer Area/Type: Concrete Barrier: + - $\mathbf{2}^{\prime}$


Cambie Street Bridge,Vancouver (after)
Photo Source: Daily Hive

## RETROFIT OPTIONS

Danziger Bridge (Existing)


Option 1: Reduce by a travel lane in westbound direction
Option 2: Reduce shoulder width to 1'

## Danziger Bridge

Photo Source: CNN

## RETROFIT OPTIONS

Seabrook Bridge (Existing)


Option 1: Reduce by a travel lane in each direction

Seabrook Bridge (Existing)
Photo Source: WWLTV

## RETROFIT OPTIONS



Brooklyn Bridge, NYC

## RETROFIT OPTIONS



Pulaski Bridge, NewYork City


Grand Blvd. Bridge, Kansas City

## BRIDGE DESIGN ASSUMPTIONS

- Sufficient width is necessary to improve BLTS and PLTS to a low stress (1 or 2) network
- A Road Diet will be necessary (Reduce \# of lanes, width of lanes, or width of shoulders)
- Must meet standard for stalled vehicle passing (14' Seabrook)
- Must meet minimum shoulder widths (1' min in and out)
- Must meet minimum lane widths (11')
- Must minimize weight added to movable sections (steel not concrete)
- Must not require widening of movable section
- Conflicts between bicyclists and truck acceleration lane to be avoided
- May require widening of approaches and ramps
- Additional treatments may be necessary to make surfaces, drainage grates, and expansion joints more bicycle friendly
- Additional bents may be required to move signage out of pedestrian way
- Out of the way travel should be minimized whenever possible
- If a one-side facility is designed, must get bikes and peds across to other side


## NEXT STEPS

## May 1 <br> - Input on Bridge Preferences

May 1

- Input about technical limitations

May 1 - May 20 - Conceptual Design
May 31

- Draft Report and Checklist

June 30

- Final Report and Deliverables


## PROJECT CONTACTS

| Karen Parsons | Ellen Soll | Colin Ash |
| :--- | :--- | :--- |
| NORPC | BKI | BKI |
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New Orleans East Industrial Canal Crossing Safety and Access Planning Stage Zero Feasibility Study RPC Task A-1.22IHNC: FY-22 UPWP

State Project No. H. 972422.1

Project Management Committee (PMC)
PMC Meeting \#3 Minutes
Thursday, June 2, 2022
2:00 pm
New Orleans Regional Transportation Management Center 10 Veterans Boulevard, New Orleans, LA 70124

## Attendance List

David Lee Simmons - City of New Orleans, Roadwork NOLA
Louis Haywood - City of New Orleans, Department of Public Works
Jennifer Ruley - City of New Orleans, Department of Public Works
Diego Gutierrez - ITS Regional
Jeff Roesel - New Orleans Regional Planning Commission
Karen Parsons - New Orleans Regional Planning Commission
Sam Buckley - New Orleans Regional Planning Commission
Garrick Rose - Burk Kleinpeter, Inc.
Colin Ash - Burk Kleinpeter, Inc.
Bailee Hurm - Burk Kleinpeter, Inc.
Marin Tockman - New Orleans Regional Planning Commission
DOTD and RTA were invited but did not attend

## Sign-in Sheet Attached

## Meeting Overview

The primary purpose of the meeting was to discuss conceptual design alternatives for a nonmotorized crossing facility on Seabrook Bridge. BKI first provided a recap of the project to date, summarizing how the team reviewed four crossings of the Inner Harbor Navigational Canal and the following bridge selection process. It was noted that RTA is currently undertaking a Bus Rapid Transit study and pledged to include a vulnerable user design assessment, which tipped the scales toward selecting the Seabrook Bridge for a more in-depth evaluation. BKI led a group discussion on the pros and cons of three layouts for the movable bridge as well as multiple routing options on the east and west sides to safely connect to the existing bicycle and pedestrian network. There was agreement that accommodating people walking and bicycling worked best by converting the outside travel lane on the northern, or lake, side of the Seabrook Bridge into a protected lane over the approaches and movable bridge. BKI was tasked with conceptualizing a crossing over Seabrook Bridge and its
approaches between Leroy Johnson Drive and Downman Road; however, discussions elevated the need for more thorough thinking about how the bridge path connected beyond these limits to Press Drive on the west and to Hayne Boulevard (via Downman Rd.) on the east side of the canal.

The group considered all options rather than select any one alternative. BKI had prepared preliminary cost estimates for their initial design for this meeting, which will be updated based on the feedback gained in PMC meeting \#3. The initial cost estimate informed discussions about weight considerations for the movable bridge, structural limitations associated with the original bridge design, and the need to cost out additional path mileage, lighting, and signals. The City of New Orleans Department of Public Works provided more ideas and visualizations of route alternatives and additional path connections that had not been explored previously. A thorough discussion took place on important details of designing for pedestrians and bicycles across descending and ascending ramps, bridge approach routes, and elevations. The final report will document all alternatives considered, costs, and outline their strengths and weaknesses.

## Questions/Discussion

- RPC: Can 2-foot curb be removed to create more space for the non-motorized crossing?
o BKI: We explored this early on with our structural engineers who determined it was not feasible due to bridge design. On a new bridge built today, this would likely be possible but not how this bridge was built at the time (1975).
- City/DPW: This bridge crossing on its own, even including approaching doesn't make the best case for a project without connecting to existing walking and bicycling facilities or nearby destinations.
o RPC: Study's primary purpose was to look at which bridge is appropriate for us to move forward with at this time and conceptualize the crossing possibilities. Future connections will be considered and noted in the report to the extent possible and is meant to be further explored in the next stage of this project. This is a Stage 0 study to explore options for crossing and what is feasible with more detailed engineering in later study.
- RPC: If project moves forward, it is a federal aid project and would have State Project H.\#\#\#\# as DOTD project since they are the bridge owner.
- City/DPW: Anything on lakeside of the levee is in Levee Board's jurisdiction.
- BKI: DOTD ownership/project scope is Leroy Johnson Drive to Downman


## - Conceptual Design Group Discussion

## Bridge

- Check on bike/ped rail height requirements (what is Wisner railing height?)
- Document decision to make them however much higher than $42^{\prime \prime}$ minimum requirement over safety and comfortability concerns
- Note where they begin and end
- Barrier material and weight limitations for movable bridge section (missing DOTD feedback) can DOTD give definite guidance at this stage?)
- Note where a new barrier would begin and end
- Check on using aluminum barrier (and/or railing) on movable section
- Check on using steel barrier on movable section instead of flex post delineators
- A post-meeting comment by RPC requested checking on the potential to use concrete barriers over the movable bridge due to a significant concern for a higher level of safety in this section of bridge, similar to the approaches, due to exposure and comfortability for vulnerable users, modifying the item directly below
o Check on using concrete barrier on bike/ped path excluding movable section
- Bridge surface material, holes or crack width is important to consider for people walking and biking over the bridge; please note these aspects in final report
- Include most recent bridge rating report
- Emphasize improvements for both modes - bike and pedestrians
- Connections on either end of the study boundaries to be studied in detail in future evaluation.
- Include slope of bridge on each side for ADA purposes; slopes may be different


## o Design/Cost Estimate tweaks

## Alternate Approach Paths (see Proof of Concept slides from DPW)

- The City of New Orleans DPW stressed ramp crossings should be designed first as a pedestrian sidewalk (allow set back distance from ramp entrance to increase visibility of person crossing)
- Potential changes to intersection/path crossings on Leon C. Simon end of project
- Add path crossing at Lakeshore off ramp; think of this as pedestrian crosswalk, not just bike crossing
- Cost concrete side path between Lakeshore Dr. off-ramp and Leroy Johnson Dr. on-ramp along Leon C Simon for through movements. (This design was also presented as an alternate by BKI.)
- Estimate additional alternate: cost of $Y$ shaped connecting paths to link side path between Lakeshore Dr. off-ramp and Leroy Johnson Dr. onramp to Lakeshore Drive at the southernmost curve to provide two paths for movements either east and west with direct access to the bridge. (City Proof of Concept also envisioned extending the path along the levee which will not be included as part of any alternate.)
- Estimate the cost of extending the side path from Leroy Johnson Dr. to Press Dr. (This design was also presented as an alternate by BKI.)

Additional comments

- Add detail to cost estimate / plans showing lengths, start/stop locations for barrier, railings, etc.
- Show plan and profile of both a typical section for bridge approach and a profile of the bridge deck
- Other Cost Estimate Items to add:
- Lighting for full length- lump sum
- Base for flex posts
- Curb-like plastic on moveable deck
- Surface on bike/ped path on movable deck to cover grating or other holes
- Rapid Flashing Beacons rather than HAWK signals (automatically activated by path users) - 5 locations (2 east bank, 2 west bank and 1 at lakeshore crossing)
- Signage and stripping
- Elevated apron on descending ramp [traffic calming]


## Upcoming

- June 9 - Deadline for PMC input on design \& cost estimates
- June 10-23 - Report revisions by BKI and reviews by RPC
- June 24 - BKI to submit final report to RPC
- June 30 - Deadline to finalize report and all deliverables


## Action Items

- City/DPW
o Provide annotated Proof of Concept designs
o Provide Wisner typical section for railing height
- BKI
o Check most recent bridge rating and reconsider concrete barriers on nonmoveable section, steel barriers on moveable section
o Check 54" railing heights on typical section
o Tweak cost estimates based on details and additions included in Proof of Concept design and PMC discussion
- RPC
o Check with DOTD on
- Accessing Seabrook Bridge for photos while it is closed
- Definite guidance for adding weight to bridge to make a decision on barrier materials on both non-moveable (concrete vs steel) and moveable sections (concrete, steel, or flex posts)


## BKI

## NO East Industrial Canal Crossing Safety \& Access Planning

Sign-In Sheet
Project Management Committee Meeting \#3, June 2, 2022
NO East Industrial Canal Crossing Safety \& Access Planning
BKI NO.21.033 (RPC Task A-1.22IHNC: FY-22 UPWP)
PLEASE PRINT

| Name | Representing | Email |
| :---: | :---: | :---: |
| Diego Gutiorre2 | ITS Region.a) | Cquitosror @ itsrogional som |
| Oculiod Lien Simmens | Roul dolit Noin/conts | Javid. rimmanxe nolatan |
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## INDUSTRIAL CANAL CROSSING STUDY (RPC TASK A-1.221HNC:FY-22 UPWP)

PMC MEETING \#3
REGIO NAL PLANNING COMMISSION - JUNE 2, 2022 - 2:00 P.M.

## MEETING AGENDA

- Project Overview Recap
- Bridge Selection Summary
- Conceptual Design Discussion
- Next Steps


## PROJECT OVERVIEW - PURPOSEAND LOCATION



## PROJECT OVERVIEW - SCHEDULE



## June

- PMC Meeting \#3: Concept Desion (June 2)
- Stage 0 Checklist
- Final Deliverables


## BRIDGE SELECTION -PMC MEETING \#2 FOLLOW-UPS

## BRT Discussion April 19

- RPC, City of New Orleans (Office ofTransportation and DPW ), RTA (Planning), and BKI
- RTA's bus rapid transit (BRT) plans include Danziger Bridge in all proposed alternative routes


## Council Briefing April 26

- RPC, City of New Orleans (Office ofTransportation and DPW), and BKI briefed Council Districts D and E
- Concerns about Danziger as the alternate route for I-10 during heavy traffic, accidents, and evacuations


## Selection Coordination April 29

- RPC, City of New Orleans (Office ofTransportation and DPW), RTA (Infrastructure and Planning), LADOTD, and BKI
- Coordinated on final bridge selection, includingassurances from RTA and guidance from LADOTD on selection and design


## BRIDGE SELECTION - FEASIBILITY

- I-10 High Rise Bridge - INFEASIBLE
- Illegal to cross on foot or by bike
- Almonaster Bridge - FEASIBLE
- Desig/narrow width limits dedicated bike-ped potential
- Port's rehab project design nearing completion, accommodates non-motorized users to extent possible
- City plan recommends shared use path
- Danziger Bridge - FEASIBLE
- Longest and highest structure to cross of feasible facilities
- RTA's Bus Rapid Transit (BRT) study underway, plans to include accommodations for people walking and biking
- City plan recommends protected bike lane
- Seabrook Bridge - MOST FEASIBLE
- Follow-up meetings with RPC, the City, RTA, Council Districts $D \& E$, and LADOTD tipped the scale in favor of Seabrook
- City plan recommends protected bike lane

Seabrook, Danziger, and Almonaster included in City's bike plan


Source: New Orleans Bikeway Blueprint, 2020, prepared by Toole Design

## BRIDGE SELECTION - WHY SEABROOK?

## - Seabrook Bridge - MOST FEASIBLE

- Only feasible bridge with no existingsidewalk
- Only feasible bridge with no ongoing studies or plans for walking or bicycling improvements
- Lowest traffic volume recorded of bridges open to cars
- $2^{\text {nd }}$ shortest distance and $2^{\text {nd }}$ lowest height to cross
- Known route for recreational cyclists
- Opportunity to address high traffic speeds
- Opportunity to address crash history (fatal crash involving someone riding a bicycle)
- Opportunity to serve latent demand in the area


Seabrook Bridge facing west
Source: Google Earth

## CONCEPTUAL DESIGN - PRELIMINARY DESIGN DISCUSSION

Existing Layout


- Two 12 ' lanes each direction
- 2' shoulders
- 2' outer curbs

Discussions with RPC, DPW \& City's Office ofTransportation

- City/DPW interested in 2-way, multi-use path on north side (westbound traffic)
- 18 ' minimum required width for passing of a stalled vehicle (low truck \%allows drop from 19' to 18')
- 10 ' remaining but barrier is 2' wide, leaving8' wide path
- Note: 8' minimumacceptable in constrained areas (AASHTO, Guide for the Development of Bicycle Facilities, $4^{\text {th }}$ Edition, 2012)
- Explored alternative buffers: 1' wide curb buffer with flex post delineators would allow for 9 ' wide path but concerns about safety and comfortability remained
- Note: City's bike lane street cleaner equipment is 6' wide
- Discussed adding higher railingto steel barrier for increased safety and comfortability for people walking and biking


## CONCEPTUAL DESIGN - BRIDGE LAYOUT ALTERNATIVES



2-Way, Multi-Use on Westbound Side Pros: Limits conflict points, sufficient for expected usage, easy connection to Lakeshore Dr/lakefront path Cons: Space available limits path to $8^{\prime}$ wide (unless granted additional allowance to further narrow automotive right-of-way)

Alternative Layout \#2


2-way, Multi-Use on Both Sides Pros: More space for path users on bridge
Cons: Eastbound side introduces several possible conflict points at on/off ramps and lane merges

Alternative Layout \#3


1-way, Multi-Use on Both Sides Pros: More space for path users Cons: Eastbound side introduces several possible conflict points at on/off ramps and lane merges; Users are likely to use whichever side they approach the bridge from

## CONCEPTUAL DESIGN - RECOMMENDED BRIDGE LAYOUT

One Side, Multi-Use


- One, 12 ' vehicle lane westbound
- 4' wide outside shoulder
- 2' wide steel barrier+bike/ped railing
- $8^{\prime}$ wide multi-use path
- 2' wide curb
- Outer railing replaced with minimum 42" bike/ped railing

Similar to Pulaski Bridge, New York


Pulaski Bridge facility is bikes only

## CONCEPTUAL DESIGN - BRIDGE FACILITY EXAMPLES



W isner Bridge, New Orleans (after) Photo Source: TheAdvocate, September 28, 2017


## 2-way, Multi-Use on One Side

Similar to Seabrook Bridge before, butW isner Bridge was afforded the luxury of a new construction, thus wider side path.

## CONCEPTUAL DESIGN - BRIDGE FACILITY EXAMPLES

Cambie Street Bridge, before


Cambie Street Bridge,Vancouver (after)
Photo Source: Daily Hive


## 1-way, Multi-Use on Both Sides

Cambie St. Bridge had advantage of existing sidewalk, but retrofit for bike path is similar to what could be done on Seabrook.

## CONCEPTUAL DESIGN - BRIDGE FACILITY EXAMPLES

Brooklyn Bridge, NYC


## 2-way, Bike-only Path on One Side

Brooklyn Bridge has 8' path with retrofit barrier but is for bikes only.
Seabrook could have a similar multi-use path with 4 ' of shoulder buffer between barrier and a single $12^{\prime}$ vehicle lane.

## CONCEPTUAL DESIGN - BRIDGE FACILITYTYPICAL SECTION



## SEABROOK BRIDGE TYPICAL SECTION SCALE: N.T.S.

- 8' minimumacceptable in constrained areas (AASHTO, Guide for the Development of Bicycle Facilities, $4^{\text {th }}$ Edition, 2012)
- Flex post delineators spaced 25 ' apart replace steel barrier on lift section to limit added weight.
- See Seabrook's recent mechanical difficulties.


## CONCEPTUAL DESIGN - PRELIMINARY COST ESTIMATE

|  | Cost <br> Estimate | Percent of <br> Construction <br> Cost |
| :--- | ---: | ---: |
| Ped/Bike Railing | $\$ 1,071,630.00$ | $48 \%$ |
| Steel Barrier | $\$ 792,050.00$ | $35 \%$ |
| All other costs | $\$ 381,873.98$ | $17 \%$ |
| Construction | $\mathbf{\$ 2 , 2 4 5 , 5 5 3 . 9 8}$ | $\mathbf{1 0 0 \%}$ |
| 30\%Contingency | $\$ 673,666.19$ |  |
| TOTAL COST | $\$ 2,919,220.17$ |  |

- Estimate for one side, multi-use bridge path
- $83 \%$ of total construction cost comprised of
- Steel barrier - to separate protected bridge path
- Bike/ped safety railing - on top of steel barrier as well as to replace existing outside railing on bridge
- Can assume any two-sided conceptual design version would roughly double cost
- Preliminary cost estimates based onAccess Alternatives \#1 of east and west side bridge access concepts (following slides), but these should serve as a menu of options


## CONCEPTUAL DESIGN - WEST ACCESSROUTEALTERNATIVE \#1



Lakeshore Drive Access

- Protected Multi-Use Path
- Off-street Side Path
- Multi-Use Path Crossing
- Sharrow/Signage Guided Bikeway


## CONCEPTUAL DESIGN - FACILITY EXAMPLES



- Protected Multi-Use Path
- 8' wide
- 2' wide steel barrier
- Additional bike/ped safety railing for 54" minimum height, including barrier height

Wisner Bridge, New Orleans

## CONCEPTUAL DESIGN - FACILITY EXAMPLES



Off-street Side Path

- $10^{\prime}$ wide side path
- Multi-use
- Could include striping (WisnerTrail) or leave unmarked (Lafitte Greenway)

WisnerTrail, New Orleans

## CONCEPTUAL DESIGN - FACILITY EXAMPLES



- Multi-Use Path Crossine
- High visibility crosswalk
- Walking/biking crossing signage
- Bike route signage
- Could include High Intensity Activated Crosswalk (HAWK) beacon

Multi-Use Pathway (MUP), San Rafael, CA

## CONCEPTUAL DESIGN - FACILITY EXAMPLES



- Sharrow/Signage Guided Bikeway
- Primarily to guide users along low-use service road under bridge and around to access protected facility on bridge
- High visibility sharrow options available


## CONCEPTUAL DESGG - WEST ACCESS ROUTEALTERNATIVE \#2



Leon C. Simon Access

- Protected Multi-Use Path
- HighVisibility Ramp Crossing
- Off-street Side Path
- Multi-Use Path Crossing


## CONCEPTUALDESIGN - FACILITY EXAMPLES



HighVisibility Ramp Crossing

- High visibility paint scheme
- Signage and other measures to slow drivers as they approach crossing
- Posted speed limit = 35 mph
- Average speed $\mathbf{= 5 0} \mathbf{~ m p h}$
- $85^{\text {th }}$ percentile speed $=\mathbf{6 0} \mathbf{~ m p h}$


## CONCEPTUAL DESGG - CLOSING A RAMPTO CARS?



Lakeshore Drive Exit RampTraffic

- 2,507 ADT

Seabrook BridgeTotal Traffic

- 9,433ADT

Adding a left turn across Leon C. Simon Drive for cars to loop around and under bridge adds about a halfmile compared to taking ramp

## CONCEPTUAL DESGG - WEST ACCESS ROUTEALTERNATIVE \#3



CombinesAlternatives 1 \& 2

- Protected Multi-Use Path
- HighVisibility Ramp Crossing

Off-street Side Path
Multi-Use Path Crossing
Sharrow/Signage Guided Bikeway

## CONCEPTUAL DESIGN - WEST ACCESSFUTURE CONNECTIONS



Opportunity to extend off-street side path in available right-of-way on north side of Leon C. Simon Drive from Leroy Johnson Drive to Press Drive to connect to the City's larger sidewalk and bicycle networks.

## CONCEPTUAL DESIGN - EAST ACCESSROUTEALTERNATIVE \#1



Limits conflicts with a single, off-street path

- Protected Multi-Use Path
- Off-street Side Path
- Multi-Use Path Crossing


## CONCEPTUALDESGN - EAST ACCESSROUTEALTERNATIVE \#2



An option to separate uses once off the bridge

- Protected Multi-Use Path
- Sidevalir
- Crosswalk
- Protected On-Street 2-way CycleTrack
- HighVisibility Ramp Crossing


## CONCEPTUAL DESIGN - FACILITY EXAMPLES



- Protected On-Street 2-way CycleTrack
- Buffer with vertical delineation
- High visibility green paint treatment


## CONCEPTUAL DESIGN - EAST ACCESS ROUTEALTERNATIVE \#3



Combines Alternatives 1 \& 2

- Protected Multi-Use Path
- Off-street Side Path
- Multi-Use Path Crossing
- Protected On-Street 2-way CycleTrack
- HighVisibility Ramp Crossing


## CONCEPTUAL DESIGN - EAST ACCESSFUTURECONNECTIONS



Opportunity and challenge to connect to nearby neighborhoods via Downman Road across Stars and Stripes Boulevard, under two bridges, and past floodwall to Hayne Boulevard.

## PROOF OF CONCEPT



## PROOF OF CONCEPT



## PROOF OF CONCEPT



## PROOF OF CONCEPT



## PROOF OF CONCEPT



## PROOF OF CONCEPT



## PROOF OF CONCEPT



## CONCEPTUAL DESIGN - PRELIMINARY COST ESTIMATE

|  | Cost <br> Estimate | Percent of <br> Construction <br> Cost |
| :--- | ---: | ---: |
| Ped/Bike Railing | $\$ 1,071,630.00$ | $48 \%$ |
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- Estimate for one side, multi-use bridge path
- $83 \%$ of total construction cost comprised of
- Steel barrier - to separate protected bridge path
- Bike/ped safety railing - on top of steel barrier as well as to replace existing outside railing on bridge
- Can assume any two-sided conceptual design version would roughly double cost, plus introduce additional major conflict points
- Any combinations of east and west side bridge access concepts won't drastically change preliminary cost estimate


## NEXT STEPS

## June 9 -Deadline for design input

June 10-23 • Report and design revisions
June 24 - Submit final report to RPC
June 30

- Finalize all deliverables


## PROJECT CONTACTS

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## Appendix B

## Moving New Orleans Bikes Network Analysis

# New Orleans East Industrial Canal Crossing <br> Safety and Access Planning 

Stage 0 Feasibility Study

June 2022


## MOVING NEW ORLEANS BIKES NETWORK ANALYSIS

## Contents

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Bicycle Equity Index (BEI) ..... 12
Latent Demand Analysis ..... 19
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Bicycle Network Analysis (BNA) Methodology ..... 35
Bicycle Equity Index (BEI) Methodology ..... 38
Demand Analysis Methodology ..... 40

## INTRODUCTION

Toole Design requested, received, and reviewed available data from the City, PeopleForBikes, state/regional agencies, and open sources. Toole Design then used this information to analyze the comfort, connectivity, equity, latent demand, and safety of the existing bicycle network. Table 1 below shows, in order, how the existing bicycle and transportation network was analyzed. These steps of analysis were developed discretely, and yet when analyzed together, help inform a more complete picture of bicycling in New Orleans.

Table 1: Steps of Analysis for the Moving New Orleans Network Analysis

| Analysis Step | Corresponding Guiding Principle(s) |
| :---: | :---: |
| 1. Level of Traffic Stress (LTS) analysis | Low Stress |
| 2. Bicycle Network Analysis (BNA) | Connected, Useful |
| 3. Bicycle Equity Index | Equitable |
| 4. Demand Analysis | Useful, Timely |
| 5. Crash Analysis | Low Stress, Equitable |

## EXISTING NETWORK

Before any analysis was undertaken, existing bicycle facilities were mapped using the most recent data from the City. Figure 1 shows the current network.
The overall bicycle facility network is clustered in the central portions of the city, in and around the French Quarter, Central City, Mid-City, Bayou St. John, as well as the neighborhoods southwest of Central City and on the east side of City Park. There are few bike facilities east of the Inner Harbor Navigation Channel, in the Lower $9^{\text {th }}$ Ward, or in the eastern sections of Algiers.

New Orleans lacks a dense network of shared use paths that provide separation between bicyclists and drivers. The Lafitte Greenway Trail, the Mississippi River Trail, and trails in and around City Park provide low-stress and high-quality routes for nearby residents but are not comprehensive citywide. A network of bike lanes fans out from the central portion of the city but this network does not serve neighborhoods to the northeast or southwest. Bicycle routes are plentiful in the French Quarter and Central City, but these routes do not include infrastructure treatments that improve safety for bicyclists. Often, these routes are comprised merely of signage.

Figure 1: Existing Bike Facilities


## Existing Bicycle Facilities <br> City of New Orleans

## LEVEL OF TRAFFIC STRESS (LTS)

LTS analysis identifies the stress of street networks based on built-environment, speed, and volume characteristics. The methodology used by the planning team is adapted from criteria published by the Mineta Transportation Institute (MTI). ${ }^{1}$ The LTS analysis scores streets on a scale from 1 to 4 , with LTS 1 and 2 low-stress and LTS 3 and 4 high-stress.
The stress that individuals feel when bicycling is inherently subjective. Some people are more comfortable riding with more and/or faster-moving motor traffic, and with less separation. However, as shown in Figure 2, people generally identify with four main groups based on differing levels of bicycling comfort:

- Not Interested or Able
- Interested but Concerned
- Somewhat Confident
- Highly Confident

While a small portion of the New Orleans population is likely comfortable bicycling in heavy and fast-moving traffic, members of the Interested but Concerned Group comprise the vast majority of those who can or want to bicycle. This group requires separated facilities, low traffic speeds and volumes, or a combination of both in order to consider bicycling. Therefore, measuring the LTS of the existing transportation network can help determine the quality of the bike network from the perspective of most residents.

Figure 2: LTS and Types of Bicyclists


## METHODOLOGY

LTS scores were calculated for the entire street network-including streets with designated bicycle infrastructure and streets that lack bicycle treatmentsand the city's greenway system. The LTS analysis determines comfort level based on facility type. Bike routes were not considered in the LTS analysis because the presence of signs does not influence traffic stress. For streets, the following inputs determine LTS outputs:

[^2]- Speed (posted or prevailing)
- Travel lanes per direction
- Average daily traffic (ADT)
- On-street parking presence and width
- Centerline presence

In short, streets with speeds above 25 miles per hour and with traffic volumes above 1,500 to 3,000 vehicles per day are considered "high stress" if they do not have any sort of dedicated bikeway (e.g., bike lanes or protected bike lanes). Furthermore, on streets with two or more lanes per direction (or on streets with only one lane per direction when speeds exceed 30 miles per hour), streets are usually only considered "low stress" if they have protected bike lanes.

For more details on the methodology, assumptions, and manner of calculation, see page 31 of the appendix.

## FINDINGS

The LTS map (Figure 3) visualizes LTS scores on all streets in the city (whether or not those streets have bicycle facilities). Larger streets with more and faster-moving traffic generally have higher LTS scores, while neighborhood streets are usually characterized by LTS 1 or LTS 2 scores (indicating lower stress levels). The French Quarter and the Central Business District (CBD) neighborhoods have the densest concentration of LTS 3 streets, although these high-stress streets can be found all over the city on the major arterial and collector street network radiating out from city's central areas.

To aid in visualization, Figure 4 shows LTS scores reduced into only two groups: the "high-stress network" and the "low-stress network." This map shows the same general pattern as Figure 3.

## Arterial Street Barriers

New Orleans' high-speed and high-traffic arterial streets create barriers and prevent the numerous low-stress streets found in neighborhoods from forming a connected network. While many, if not most, residents have access to low-stress facilities adjacent to their homes, many cannot access destinations using low-stress routes because of the barriers that the larger streets present.

## High-Stress Bike Infrastructure



67\% of streets in New Orleans are low-stress. However, the 33\% that are high-stress are predominately arterial and collector streets that pose barriers for bicycling.

Figure 5 shows LTS scores along the existing on-street bicycle network² (only showing off-street bike facilities, streets that have bike lanes, or protected bike lanes). While the off-street bike facilities are comfortable for all bicyclists, many bike lanes have LTS scores of 3 or even 4 . These higher scores are likely the result of high speeds, volumes, a lack of separation between drivers and bicyclists, or a combination of factors.

[^3]Figure 3: LTS Scores, Four Levels

$0 \quad 0.51 \mathrm{mi}$
$\bigcirc 1$
(

Bicycle Level of Traffic Stress
City of New Orleans

Figure 4: LTS Scores, Two Levels


Bicycle Level of Traffic Stress: High Stress and Low Stress Network City of New Orleans

Figure 5: LTS Scores of the Existing Bicycle Network, Four Levels

$0 \quad 0.51 \mathrm{mi}$
$\square 1$
*Does not include the following facilities which only have signage: shared lanes, neighborhood bikeways, bicycle boulevards, and bus/bike

Bicycle Level of Traffic Stress: Bicycle Network with Infrastructure* City of New Orleans

## BICYCLE NETWORK ANALYSIS (BNA)

The Bicycle Network Analysis (BNA) is a measurement that analyzes how connected areas are to other areas and destinations within biking distance (defined as a 10-minute ride, or 1.67 miles). The BNA score compares the number of destinations that can be reached on the LTS-defined low stress network with the number of destinations that can be reached on the total network within that same threshold distance.

Many residents live adjacent to low-stress streets where bicycling is comfortable and safe. However, as the LTS analysis shows, larger streets often act as barriers to accessing the wider low-stress network, as well as destinations citywide. The BNA analysis quantifies the level of low-stress connectivity between people and destinations, comparing it to a theoretical maximum connectivity score that could be reached if high-stress segments were enhanced. If adjacent areas have even short segments that are high-stress, the areas are rated in the analysis as "not connected." This measurement therefore helps analysts to visualize bicycling barriers in a realistic manner.

## METHODOLOGY

The BNA calculated connectivity at the census block level. The BNA assumes a census block connects to any street that either follows its perimeter or serves its interior. Two census blocks are only "connected" if an unbroken low-stress street connects them; even a short high-stress segment can negate a potential connection. If a low-stress route deviates more than 25 percent more than the shortest potential direct route, then a low-stress route is not considered available.

Based on connectivity between census bocks, the BNA calculates the total number of destinations accessible on the low-stress network, comparing this with the total number of destinations that are within biking distance, regardless of whether they are accessible via the low-stress network. For census blocks where a destination type is not reachable by either high- or low-stress routes, that destination type is not included in the calculations. Therefore, areas of a city with a denser concentration of destinations are not scored more highly than those with more dispersed destinations.

## FINDINGS

Figure 6 shows the completed BNA output, with red indicating low connectivity scores and blue indicating high connectivity scores. Generally, areas with high BNA scores include neighborhoods upriver of the Central Business District (specifically on the riverside of Interstate 10); pockets of Midcity, Treme, $7^{\text {th }}$ Ward, St. Claude, Bywater, and Lower 9th Ward; and Algiers Point. All these areas benefit from a tight grid network, a high concentration of low-stress routes and few bisecting major roads. Areas with lower connectivity include downtown, the French Quarter, New Orleans East, and downriver Algiers.

## Barriers

BNA scores are impacted by barriers such as highways, major arterials, interchanges, and rivers and canals. Specific barriers identified in this analysis include Interstate 10 and 610, channels, canals, the Mississippi River, and portions of Elysian Fields Avenue. The suburban street patterns of New Orleans East and lower coast Algiers also create barriers and areas of low connectivity.

Figure 6: BNA Connectivity Score
December 18, 2019

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$\stackrel{N}{\mathrm{M}} \mathrm{N}$

Bicycle Network Analysis: Updated Existing Network Connectivity Score City of New Orleans

## BICYCLE EQUITY INDEX (BEI)

The third element of the network analysis is identifying concentrations of historically-marginalized populations in order to shape equitable decision-making. Equity can be defined in many ways and therefore can be determined using a wide variety of inputs and sources. The Equity of Access to Bicycle Infrastructure: GIS Methods for Investigating the Equity of Access to Bike Infrastructure report, published by the League of American Bicyclists, includes a methodology named the Bicycle Equity Index (BEI). The BEI helps show areas of the city where: 1) transportation is a particular concern and, 2) historic and current social inequities exist. While not perfect, this measurement allows planners and policymakers to view where investments are most needed.

## Equity and Health

High rates of chronic illnesses (including respiratory illnesses, heart disease, hypertension, and others) coincide with equity indicators such as ethnicity, income, and zero car households. Therefore, in addition to objectives pertaining to mobility justice and transportation equity, investments in bicycle infrastructure can also be used to address health disparities.

## METHODOLOGY

The BEI report is based on five metrics, including three transit dependent indicators (population under 18, population over 65, and zero car households) and two environmental justice indicators (minority population and population in poverty). Those areas reporting high scores in the transit dependent category are more likely to require transit, which can often be replaced by bike trips. Those areas with high environmental justice indicators also contain populations less likely to own vehicles (and more likely to suffer from low levels of mobility and job access).
The original tool was developed by the League of American Bicyclists and it aims to identify areas with above- and below-average levels of equity throughout communities. However, modifications were made to the methodology, including using absolute numbers instead of z-scores (see page 38 for an explanation) to determine equity needs citywide and calculating density of these populations to create a composite equity score. These changes allowed the planning team to visualize those areas where bicycle facility investment could benefit the greatest number of transit dependent and historicallyunderserved people.

Additional information on the original and modified methodologies are described on page 38.

## FINDINGS

Figure 7 shows the composite modified BEI scores for census block groups in New Orleans, with darker shades indicating areas of higher modified BEI scores and lighter shades indicating areas of low modified BEI score. Figures 8-12 shows the composite score of these combined inputs.
Areas with the highest density of modified BEI scores include Central City, the Holly Grove and Dixon neighborhoods, and Bayou Saint John / Seventh Ward. Areas with the lowest density of modified BEI scores include the Central Business District and adjacent French Quarter, neighborhoods near Audubon Park, and areas on the west and north sides of City Park (such as Lakeview, Navarre, Lake Vista, and Fillmore).

## MOVING NEW ORLEANS BIKE \| NETWORK ANALYSIS

Figure 7: BEI Composite Score

## 10/16/2019


$0 \quad 0.5 \quad 1 \mathrm{mi}$
$\square 1$
(N)

Bicycle Equity Index (BEI) City of New Orleans

Figure 8: BEI Input: Population Density Under 18


Figure 9: BEI Input: Population Density Over 65


Bicycle Equity Index (BEI): Population Over 65 City of New Orleans

Figure 10: BEI Input: Density of People in Households with Zero Vehicles

$0 \quad 0.5 \quad 1 \mathrm{mi}$
$\stackrel{1}{ } \mathrm{l}$
(N)
*Unit of measurement is reported as households. To transform the data to estimated population, the number of zero car households was multipled by (total

Bicycle Equity Index (BEI): Zero Car Households
City of New Orleans population/total housheolds) for the census block

Figure 11: BEI Input: Density of Minority Population


Figure 12: BEI Input: Density of Population Below Poverty Line


Bicycle Equity Index (BEI): Population Below Poverty Line City of New Orleans

## LATENT DEMAND ANALYSIS

Demand analysis is an important metric because it identifies areas of higher potential demand for biking, irrespective of current infrastructure. This analysis helps to inform priorities for infrastructure by identifying areas where the infrastructure may have a high return on investment as measured by increase in biking trips. Conversely, projects in areas with low latent demand may be lower priorities for large infrastructure investments because such investments would be unlikely to increase the number of biking trips.

## METHODOLOGY

Latent demand analysis uses development and demographic factors to identify areas with high potential demand for biking. However, this measurement is not necessarily predictive of actual bicycling activity (e.g. an area may be characterized by development and demographic factors that support bicycling but suffer from roads with high LTS scores and/or low BNA metrics)

Demand factors, as well as their relative weighting, are based on research and experience in similar jurisdictions. Calculated at the census block geography, analysts considered four factors, described below. Each factor was mapped and examined individually. These factors were then weighted and combined into a composite map (Figure 13) based on the variables and weighting shown in Table 2. Individual variable maps are shown in Figures $14-17$.

Table 2: Weighting of Variables for Demand Analysis

| Variable | Description | Weight |
| :--- | :--- | :--- | :--- |
| Intersection Density | Research into travel mode choice has shown that intersection density is highly correlated with increased <br> bicycling. ${ }^{3,4}$ Areas with a high number of intersections tend to have better connectivity and are indicators of land <br> use diversity and density. Therefore, these are locations in which utilitarian trips are more likely to occur. | $50 \%$ |
| Population Density | Population density is another major determinant for both recreational and utilitarian trips. In short, the more people <br> in an area, the more people will be walking or biking. | 25\% |

[^4]
## MOVING NEW ORLEANS BIKE | NETWORK ANALYSIS

Note that key destinations for bicyclists were considered in the BNA, rather than in this assessment of potential demand. Additional information on the methodology and data sources can be found in the appendix on page 40.

## FINDINGS

Latent demand score is highest on the East Bank, south of Interstate 610. Scores are lower in Lakeview, New Orleans East, and Lower Coast Algiers.
When looking at individual factors, intersection density is highest in the area bounded by Interstate 10 and State Highway 90 (although neighborhoods between Interstate 10 and South Claiborne Avenue also report high scores). Population density, on the other hand, is evenly distributed south of Interstate 610 (with low scores in the Central Business District, the French Quarter, and immediately surrounding areas). The highest density of households below the poverty line ${ }^{6}$ is in Center City. There are also higher densities of these households in Hollygrove, Treme, the Seventh Ward, and New Orleans East. Employment density is very clustered in the French Quarter and the Central Business District.

[^5]Figure 13: Demand Analysis Composite Map

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( N
*Composite demand score sums the individual factors weighted as follows: Intersection Density: 50\% Population Density: 25\% Density of Households Below Poverty Line: 15\% Employment Density: 10\%

Potential Demand: Composite Score City of New Orleans

## MOVING NEW ORLEANS BIKE \| NETWORK ANALYSIS

Figure 14: Intersection Density


[^6](N)

Potential Demand: Intersection Density City of New Orleans

Figure 15: Population Density


[^7](N)

Potential Demand: Population Density
City of New Orleans

Figure 16: Density of Households Below the Poverty Line


Potential Demand: Density of Households Below the Poverty Line City of New Orleans

Figure 17: Employment Density


Potential Demand: Employment Density City of New Orleans

## CRASH ANALYSIS

Crash analysis involves determining the location, road type, collision type, and other factors of crashes. The planning team focused on bicycle crashes causing injuries and fatalities, as well as those crashes where the bicyclist was not at fault. This allowed analysts to determine focus areas for safety improvements and identify the factors and infrastructure changes that may prevent crashes or lessen their severity.

## METHODOLOGY

Crash data was received from the Louisiana's Department of Transportation and Development (LaDOTD). This data spanned 6 years (2012-2017). Crash data included the following factors, among others: crash number, location, date and time, surface condition, direction of travel, manner of collision, movements prior to collision, and total fatalities and injuries.

Once data was received and organized, crashes involving bicyclists were mapped. Special attention was paid to fatal bicycle-related crashes and those crashes where the bicyclists was not at fault.

## FINDINGS

## General and Injury/Fatal Crash Locations

Bicycle-related crashes are clustered in the central portion of the city (Figure 18). Because exposure data (e.g., number of bicycle trips occurring on specific streets) is not available, these results do not imply that these areas are inherently more dangerous for bicycling. These areas are believed to have higher amounts of bicycle use compared to areas north of I-610, New Orleans East, and Algiers. This belief is supported by the latent demand analysis (see page 19). It can be inferred that the high number of bicyclists in the central portions of the city explains much or even all of the higher crash numbers in those locations.

While non-injury and injury-causing bicycle-related crashes are clustered in the central section of New Orleans, fatal crashes are more dispersed. This discrepancy is likely because the outlying sections of the city are characterized by wider streets and higher motor vehicle speeds. Crashes at higher speeds are more likely to result in fatalities, especially for bicyclists.

## LTS and Crash Pattern

Figure 19 shows crashes overlaid on LTS scores and Table 3 shows the breakdown in more detail. More than $60 \%$ of the crashes occur on the high-stress network (which comprises less


## MOVING NEW ORLEANS BIKE | NETWORK ANALYSIS

than a third of the overall road network mileage). More than $70 \%$ of fatal crashes occur on the high-stress network, which is consistent with the general pattern of more severe crashes occurring on higher speed streets in outlying areas.

## Table 3: Crashes by Severity and LTS

| Stress Level | Total Crashes |  | Number Injured |  | Number Killed | \% of Network |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| High Stress | 1,088 | $60.2 \%$ | 879 | $58.4 \%$ | 12 | $70.6 \%$ | $33 \%$ |
| Low Stress | 719 | $39.8 \%$ | 625 | $41.6 \%$ | 5 | $29.4 \%$ | $67 \%$ |
| Total | 1,807 |  | 1,504 |  | 17 |  |  |

Red cells indicate disproportionately high number of crashes compared to percent of street network.

## Functional Classification and Crash Pattern

Nearly half of all crashes occur on Principal and Minor Arterial streets, which only comprise 18 percent of New Orleans' street network. Furthermore, more severe and fatal crashes tend to occur on arterials and collectors, which again have higher speed limits than local streets. Table 4 shows the breakdown of crash severity by functional classification.


## MOVING NEW ORLEANS BIKE | NETWORK ANALYSIS

Table 4: Crashes by Functional Classification

| Functional Class | Total Crashes |  | Number Injured |  | Number Killed |  | \% of Network |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Path | 22 | 1.2 \% | 15 | 1.0\% | 0 | 0.0\% | 2\% |
| Local | 556 | 30.8\% | 486 | 32.3\% | 3 | 17.6\% | 62\% |
| Minor Collector | 63 | 3.5\% | 42 | 2.8\% | 0 | 0.0\% | 2\% |
| Major Collector | 274 | 15.2\% | 213 | 14.2\% | 1 | 5.9\% | 10\% |
| Minor Arterial | 526 | 29.1\% | 431 | 28.7\% | 8 | 47.1\% | 13\% |
| Principal Arterial | 363 | 20.1\% | 314 | 20.9\% | 5 | 29.4\% | 5\% |
| Freeway + Interstate | 3 | 0.2\% | 3 | 0.2\% | 0 | 0.0\% | 7\% |
| Total | 1807 |  | 1504 |  | 17 |  |  |

Red cells indicate disproportionately high number of crashes compared to percent of street network.

Figure 18: Bicycle Crash Clusters

$0 \quad 0.51 \mathrm{mi}$
*For the heatmap, each crash is weighted by the number of people injured in the crash.
Special Osclaimer concerning Crash data:



Bicycle-Related Crashes 2012-2017 City of New Orleans

Figure 19: All Bicycle Crashes and Fatal Bicycle Crashes by LTS Score (2 Levels)


Bicycle-Related Crashes 2012-2017 City of New Orleans

## APPENDICES

## LEVEL OF TRAFFIC STRESS (LTS) METHODOLOGY

LTS analysis identifies the stressfulness of street networks based on a number of street characteristics. The methodology is adapted from criteria published by Dr. Peter Furth, Ph.D and the Mineta Transportation Institute (MTI). ${ }^{7}$ The LTS analysis scores streets on a scale from 1 to 4 , with LTS 1 and 2 generally considered low-stress and LTS 3 and 4 considered high-stress.

Inputs and methodology for these two infrastructure types are described below.

## BICYCLE FACILITIES

The LTS analysis determines comfort level on bikeways based on facility type. Existing facility types, as well as assumptions guiding the stress scores for bicycle facilities in New Orleans are listed below:

- Trail (assumed to be low-stress)
- Protected bike lane (assumed to be low-stress)
- Bike lane (whether these are low-stress depends on other street characteristics such as lane and street geometry, volume, traffic speeds, and parking)

For bicycle facilities identified along two-way undivided roadways, it was assumed that the facility exists on both sides. Bike routes were not considered in the LTS analysis because the presence of signs does not influence traffic stress.

## STREET NETWORK CHARACTERISTICS

For streets, the following street segment characteristics factor into the LTS scores:

- Speed (posted or prevailing)
- Travel lanes per direction
- Average daily traffic (ADT)
- On-street parking presence and width
- Centerline presence

The City of New Orleans provided its available street network data to Toole Design. However, this GIS data lacks some of the information on the characteristics necessary to complete the LTS analysis (e.g., directionality and traffic volume).

[^8]
## MOVING NEW ORLEANS BIKE | NETWORK ANALYSIS

Therefore, Toole Design based the LTS analysis on OpenStreetMap (OSM) data, which was used in the original BNA created by PeopleforBikes. Toole Design performed the LTS analysis using OSM data, supplemented with Louisiana Department of Transportation (DOT) Functional Classification data and available data from the City. Where data was missing from OSM or from the other sources, assumptions were made, mostly based on street type.
These assumptions are shown in Table 5.
Table 5 Street Characteristic Assumptions

| LaDOTD Street Classification | Speed* | Travel Lanes per Direction | OnStreet Parking | Parking lane width** | Buffered bike lane width (where present) | Bike lane width (where present) | Roadway width | ADT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Principal Arterial | 35 | 2 or more | Y | 8 ft | 9 ft | 5 ft | N/A | 15,000 |
| Minor Arterial (divided) | 35 | 1 | Y | 7 ft | 8 ft | 5 ft | N/A | 6,000 |
| Minor Arterial (undivided) | 25 | 1 if 2-way (2 or more if 1-way) | Y | 7 ft | 8 ft | 5 ft | N/A | 6,000 |
| Major Collector (divided) | 35 | 1 | Y | 9 ft | 8 ft | 6 ft | N/A | 4,000 |
| Major Collector (undivided) | 25 | 1 | Y | 9 ft | 8 ft | 6 ft | N/A | 2,000 |
| Minor Collector (divided) | 35 | 1 | Y | 9 ft | 12 ft | 6 ft | N/A | 2,000 |
| Minor Collector (undivided) | 25 | 1 | Y | 9 ft | 12 ft | 6 ft | N/A | 2,000 |
| Local | 25 | N/A | Y | N/A | N/A | N/A | 27 ft | 500 |

*Assumed, unless designated a Thru Street or Prima Facie. In order to complete the analyses in a timely fashion, for Thru Streets and Prima Facie, speeds available in tabular form will be applied to the entirety of the roadway length, rather than for the segments identified in the 'To' and 'From' columns. The City's centerline.shp file does not provide street names to identify segments' 'To' and 'From' endpoints. Additionally, if there are multiple speed limits in the Thru Street or Prima Facie for different segments of the Thru Street or Prima Facie but on the same road (i.e., multiple instances of the same road name, but different To and From streets in the Thru Street or Prima Facie streets), then the lowest speed limit will be applied to the entire street.
**Assumed for parking lanes adjacent to bike lanes. Parking lanes on streets without bike lanes are often wider or narrower, but that fact is irrelevant for the LTS calculation.

## STREET NETWORK DATA SOURCES AND ASSUMPTIONS

## Street Classification

When assumptions about street characteristics must be made, street classification is used. However, the City of New Orleans' street classification system lacks the level of granularity to make developing assumptions feasible within the timeline of this analysis (surface streets are typically classified as Major Arterial or Local). LaDOTD Functional Classification data, on the other hand, provides a more granular classification of streets in New Orleans. The functional classifications were therefore conflated from the LaDOTD data to the OSM centerline dataset. This allowed our assumptions to more closely reflect actual conditions. We hold this opinion based on spot-checking the LaDOTD data against aerial imagery and field observations. Subsequent review of the outputs supports this position.

## Speed

The City's GIS does not include speed data, but the City has provided tabular information on which streets have speed limits other than the default assumptions listed in Table 5. Where available, this tabular data was used.

## Travel Lanes

Number of travel lanes per direction is not available in the City's GIS data and was therefore pulled from OSM data. For streets that do not have this data, the assumptions in Table 5 were be used to fill in gaps.

## On-Street Parking

On-street parking was assumed present on all streets that are not designated as limited-access, ramps, circles, etc. Parking assumptions were included because the scoring criteria scores streets with bike lanes with adjacent parking as higher stress than bike lanes on streets without parking.

## Centerline

Centerline data is included as a factor for assessing mixed traffic conditions for streets. Tertiary streets and above were assumed to have centerlines.

## Average Daily Traffic

Average daily traffic (ADT) data is available in New Orleans but limited. Because the thresholds for low-stress/high-stress are relatively low, ADT was assumed in the analysis. As ADT increases, and other variables are held constant, the LTS score also increases. ADT assumptions greatly impact the LTS on shared lane conditions, so it is important to clearly define these assumptions.

## SCORE CALCULATION

Data from OSM, the State, and the City were combined with assumptions when necessary. Each input received scores based on the inputs described above. The outputs were then merged into a composite score and visualized. Table 6 displays the thresholds for LTS scores.

Table 6. Level of Traffic Stress Thresholds

| Mixed traffic criteria |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of lanes |  | Prevailing Speed |  |  |  |  |  |  |
|  | Effective ADT* | $\leq 20 \mathrm{mph}$ | 25 mph | 30 mph | 35 mph | 40 mph | 45 mph | 50+mph |
| Unlaned 2-way street (no centerline) | 0-750 | LTS 1 | LTS 1 | LTS 2 | LTS 2 | LTS 3 | LTS 3 | LTS 3 |
|  | 751-1500 | LTS 1 | LTS 1 | LTS 2 | LTS 3 | LTS 3 | LTS 4 | LTS 4 |
|  | 1501-3000 | LTS 2 | LTS 2 | LTS 3 | LTS 3 | LTS 4 | LTS 4 | LTS 4 |
|  | 3000+ | LTS 3 | LTS 3 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
| 1 thru lane per direction (1-way, 1-Iane street or 2-way street with centerline) | 0-750 | LTS 1 | LTS 1 | LTS 2 | LTS 2 | LTS 3 | LTS 3 | LTS 3 |
|  | 751-1500 | LTS 2 | LTS 2 | LTS 2 | LTS 3 | LTS 3 | LTS 4 | LTS 4 |
|  | 1501-3000 | LTS 2 | LTS 3 | LTS 3 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
|  | 3001-6000 | LTS 3 | LTS 3 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
|  | 6001-10000 | LTS 3 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
|  | 10001+ | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
| 2 thru lanes per direction | 0-6000 | LTS 3 | LTS 3 | LTS 3 | LTS 3 | LTS 4 | LTS 4 | LTS 4 |
|  | 6001-12000 | LTS 3 | LTS 3 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
|  | 12001+ | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
| $3+$ thru lanes per direction | any ADT | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 | LTS 4 |
| * Effective ADT = ADT for two-way roads; Effective ADT = 1.67*ADT for one-way roads |  |  |  |  |  |  |  |  |

> Bike lanes and shoulders not adjacent to a parking lane


Bike lanes alongside a parking lane
Bike lane reach $=$
Bike + Pkg lane


## MOVING NEW ORLEANS BIKE | NETWORK ANALYSIS

## BICYCLE NETWORK ANALYSIS (BNA) METHODOLOGY

The Bicycle Network Analysis (BNA) evaluates how connected areas are via a low-stress bicycle network (made up of existing low-stress bike lanes, trails, protected bike lanes, and low-traffic neighborhood streets). The analysis evaluates how well connected each census block is to other census blocks on an unbroken low-stress connection. The BNA uses the results of the Level of Traffic Stress (LTS) analysis to create the low stress bicycle network (ranked as LTS 1 and LTS 2) and the high stress bicycle network (ranked as LTS 3 and LTS 4). The BNA score also summarizes the number and types of destinations available in each census block, which includes people, opportunities (jobs and education), core services, recreation, retail, and transit.
The BNA was performed for New Orleans in the past by PeopleForBikes. However, the analysis was based on OSM data, which has gaps both in terms of street characteristics (which affects the LTS analysis) and in the accuracy of destinations (e.g., no dentists are shows in New Orleans). In this analysis, Toole Design recalculated the BNA using destination data provided by the City of New Orleans from its business licensure database to fill the gaps in the OSM data (see page 36). Because origins and destinations do not neatly follow municipal and parish borders, Toole Design conducted the new analysis with OSM data from Jefferson and Saint Bernard Parishes (to the west and southeast of New Orleans respectively).

Table 7. BNA Destination Data Sources and Weighting

| Scoring category | Weight | Measure | Subcategory weight | Source |
| :---: | :---: | :---: | :---: | :---: |
| People | 15 | Population | N/A | 2010 Census |
| Opportunity | 20 | Employment | 35 | US Census Bureau Longitudinal EmployerHousehold Dynamics database |
|  |  | K-12 education | 35 | CNO Schools dataset |
|  |  | Technical / vocational school | 10 | OSM Colleges dataset |
|  |  | Higher education | 20 | OSM Universities dataset |
| Core Services | 20 | Doctors/ Dentist (privately owned) | 15 | Business Licensure data |
|  |  | Hospitals | 25 | CNO Hospitals dataset |
|  |  | Pharmacies | 10 | CNO Drug Stores dataset |
|  |  | Supermarkets | 25 | CNO Grocery Stores dataset |
|  |  | Health clinics and Social services (shelters, mental health, public health, jobs readiness) | 15 | Business Licensure data CNO Public Health Clinic dataset |
| Recreation | 15 | Parks | 40 | CNO Parks dataset |
|  |  | Recreational trails | 35 | "Trails" features from CNO Bike Lanes dataset |
|  |  | Libraries and Community centers | 25 | CNO Public Libraries dataset OSM Community Centers dataset |
| Retail and Entertainment | 15 | Retail shopping, convenience store, specialty markets | N/A | Business Licensure data |
| Transit | 15 | Stations / transit centers | N/A | CNO RTA Transit Stops dataset |

## ASSIGNING POINTS

Points were assigned on a scale of 0-100 for each destination type based on the number of destinations available on the low-stress network and the ratio of low-stress destinations to all destinations within biking distance. The scoring places higher value on the first three low-stress destinations by assigning points on a stepped scale. After the first few low-stress destinations, points are prorated up to 100 based on the ratio of low-stress to high-stress routes.

## BUSINESS LICENSURE DATA

Table 8, 9, and 10 show the business types we will be using as part of the Doctors/Dentist Offices, Health Clinics/Social Service and Retail Shopping/Convenience Store/Specialty Markets destination measures.

## Table 8. Doctors/ Dentists Offices Business Types

0177 - OFF OF PHYSICIAN, MNTL HLTH SPECIALST 0178 - OFFICES OF DENTISTS
0180 - OFFICES OF CHIROPRACTORS
0181 - OFFICES OF OPTOMETRISTS
0182 - OFFICES OF MENTAL HEALTH PRACTIT, OTH
0183 - PHYS/OCCUP/SPEECH THERAP/AUDIOLOGISTS
0184 - OFFICES OF PODIATRISTS
0185 - OFFICES OF HEALTH PRACT, ALL OTH MISC
0186 - FAMILY PLANNING CENTERS
0188 - KIDNEY DIALYSIS CENTERS
0190 - OUTPATIENT CARE CENTERS, ALL OTH
3361 - OFFICE OF PHYSICIAN (EX MENTAL HEALTH)

Table 9. Health Clinics and Social Services Business Types
0187 - OUTPATIENT MENTL HLTH/SUBS ABUSE CTRS
1401 - SOCIAL ADVOCACY ORGANIZATIONS, OTHER
2039 - CHILD \& YOUTH SVCS
2040 - SVCS FOR ELDERLY \& DISABLED PERSONS
2041 - INDIVIDUAL \& FAMILY SERVICES, OTH
2042 - COMMUNITY FOOD SVCS
2043 - TEMPORARY SHELTERS
2044 - COMMUNITY HOUSING SVCS, OTH
2045 - EMERGENCY \& OTH RELIEF SVCS
2046 - VOCATIONAL REHABILITATION SVCS
3206 - VOLUNTARY HEALTH ORG

## Table 10. Retail Shopping/Convenience Store/Specialty Market Business Types

```
0151 - FLEA MARKET
0801 - PAWNSHOPS
1101 - CONVENIENCE STORES
1102 - FRUIT & VEGETABLE MARKETS
1103 - MEAT MARKETS
1104 - FISH & SEAFOOD MARKETS
1108 - BAKED GOODS STORES
1109 - CONFECTIONERY & NUT STORES
1110 - BEER, WINE & LIQUOR STORES
1111 - SPECIALTY FOOD STORES, ALL OTHER
1112-CLOTHING ACCESSORIES STORES
1113 - MEN'S CLOTHING STORES
1114 - WOMEN'S CLOTHING STORES
1115 - SHOE STORES
1116 - CHILDREN'S & INFANTS' CLOTHING STORES
1117 - FAMILY CLOTHING STORES
1118-DEPARTMENT STORES
1119 - GENERAL MERCHANDISE STORES, ALL OTH
1121 - COSMETICS/BEAUTY SUPP/PERFUME STORES
1122 - JEWELRY STORES
1123 - SPORTING GOODS STORES
1125 - HARDWARE STORES
1127 - SEWING/NEEDLEWORK/PIECE GOODS STORES
1128-CLOTHING STORES, OTHER
1129 - AUTO PARTS & ACCESSORIES STORES
1131 - GASOLINE STATIONS W/CONVENIENCE STORES
1134 - FURNITURE STORES
1135 - HOUSEHOLD APPLIANCE STORES
1136 - OFFICE SUPPLIES & STATIONERY STORES
1137 - COMPUTER & SOFTWARE STORES
1138-CAMERA & PHOTOGRAPHIC SUPPLIES STORES
1139 - PAINT & WALLPAPER STORES
1143- OPTICAL GOODS STORES
```


## BICYCLE EQUITY INDEX (BEI) METHODOLOGY

The League of American Bicyclists commissioned and published Equity of Access to Bicycle Infrastructure: GIS Methods for Investigating the Equity of Access to Bike Infrastructure. This report includes a methodology for estimating the equity of access to existing bikeway networks by calculating the relative disadvantage between census block groups. Data gathering, manipulation, and analysis is described below but more specific guidance on compiling and visualizing the Bicycle Equity Index can be found online here.
Equity can be defined in many different ways and therefore can be determined using a wide variety of inputs and sources. However, the League of American Bicyclists' BEI recommends those listed in Table 11. All of these sources can be easily found and downloaded on American Fact Finder using the table names shown.
Table 11. Bicycle Equity Index (BEI) Factors and Data Sources

|  | Input | Table Names |
| :--- | :--- | :--- |
| $\mathbf{1}$ | Percentage of total population under the age of 18 | ACS: B01001 Sex by Age* |
| $\mathbf{2}$ | Percentage of total population aged 65 or greater | ACS: B01001 Sex by Age |
| $\mathbf{3}$ | Percentage of households with zero vehicles | ACS: B25045 Tenure by Vehicles Available by Age of Householder |
| $\mathbf{4}$ | Percent of total population that is minority | ACS: B03002 Hispanic or Latino by Race** |
| $\mathbf{5}$ | Percent of total population living under the poverty line | ACS: C17002 Ratio of Income to Poverty Level in Past 12 Months |

* For this analysis, the latest data was used from the US Census Bureau (the 2012-2016 5-year average).
**Despite its potentially-misleading title, this table includes information on all race identities recorded by the census.


## ORIGINAL METHODOLOGY

The BEI is calculated at the US Census block group level. The original BEl methodology included standardizing the five metrics by determining their zscores. This method allowed relative comparisons between census tracts based on citywide averages and standard deviations for the different measurements. The process entails:

- Determining the value for each of the five metrics in 5 to each census block group.
- Calculating study area-wide averages and standard deviations for the metrics in Table 5.
- Determining z-scores ${ }^{8}$ using the equation below for each block group.
$Z=$ (measurement - measurement average) / measurement standard deviation.
- Summing z-scores to arrive at a composite Bicycle Equity Index (BEI) for each block group.

[^9]
## MOVING NEW ORLEANS BIKE | NETWORK ANALYSIS

## CHANGES TO THE METHODOLOGY

While the original BEI methodology published by the League of American Bicyclists recommends calculating z-scores ${ }^{9}$ for each block group, City of New Orleans and Toole Design staff agreed to calculate the density of each of the five population factors identified in Table 11 for each block group instead. This allows the results to illustrate the amount of impact related to concentrations of historically-underrepresented populations.

In addition, the original BEI methodology equally weights the five metrics in Table 11Error! Reference source not found.. The reality, however, may be that some factors are more relevant in New Orleans than others. As a racially-diverse city, the z-scores show relatively little variation for percent minority across the city. On the other hand, there is significant geographic variability in two factors: percent of households with zero vehicles and percent of total population living under the poverty line.

Therefore, the composite map for this analysis was created by summing the densities for each of the five factors. This avoids ignoring any marginalized population while also not giving excessive weight to the smaller populations. It also will indicate where the greatest number of marginalized people can benefit from additional investment.

[^10]
## DEMAND ANALYSIS METHODOLOGY

Latent Demand Analysis is used to determine potential bicycle demand. The analysis is based on a number of assumptions and professional judgement The goal of the analysis is to use these factors to identify patterns and areas that could have high potential for bicycle demand. The analysis is not, however, meant to be predictive of bicycle activity. Key destinations for bicyclists are considered in the BNA, rather than in this assessment of potential demand.

## DEMAND FACTORS

The demand factors included are based on research and experience in similar jurisdictions, as noted in the explanation of factors below. Calculated at the census block geography, the demand considers five factors. These factors can be weighted and combined into a composite map to give an overall demand score. Each factor will be mapped and examined individually before considering whether and how to combine them. The final weigthing will be presented to the City.

- For factors that are normally distributed, the score is determined by: $\frac{\text { value }_{x}}{\text { value }_{\text {max }}}$
- For factors that are skewed, the score is determined by: $\frac{\text { value }_{x}}{\text { value }_{85 \text { th percentile }}}$

Composite demand scores are created by multiplying each factor by a weight. Typically, inrersection density is the highest-weighted factor, followed by population density.

## Intersection Density

Research into travel mode choice has shown that intersection density is highly correlated with increased bicycling. ${ }^{10,11}$ Areas with a high number of intersections (with three or more legs) tend to have better connectivity and are indicators of land use diversity and density. Therefore, these are locations in which utilitarian trips are more likely to occur. Intersection density is determined by counting the number of intersections within 0.25 miles of each block that have more than two legs.

## Population Density

Population density is another major determinant for both recreational and utilitarian trips. In short, the more people in an area, the more people will be walking or biking. Population density is calculated as total population divided by the area of the census block group. Population data is provided by the 2016 American Community Survey 5-year estimates.

[^11]
## Employment Density

Employment density is another factor used to determine where there is demand for bicycling. Employment density is calculated as the total number of jobs divided by the area of the census block. Employment data was provided by the 2014 Origin-Destination Employment Statistics (LODES) dataset from the Longitudinal Employer-Household Dynamics (LEHD).

## Percent of Households Below Poverty Line

Research indicates that people living in households below the poverty line are more likely to depend on transit, walking, or biking to get around. ${ }^{12}$ This data is only available for census block groups, which are larger geographic areas composed of multiple census blocks. This metric was determined by dividing the number of households below the poverty line by the total number of households in a census block group. Data was provided by the 2016 American Community Survey 5 -year estimates.

## COMPOSITE DEMAND SCORE

A composite demand score for each census block can be developed by weighting and combining each of the factors described above. Table 12 provides a description of factor calculations, data source, and weightings recommended by Toole Design.

Table 12. Demand Analysis Factors and Composite Score Weighting

| Factor | Calculation | Data Source | Weight |
| :--- | :--- | :--- | :--- |
| Intersection <br> Density | \# intersections with > 2 legs | OSM street network | 50 percent |
| Population Density | Total population/census <br> block area | 2016 ACS 5-year estimates | 25 percent |
| Employment <br> Density | Total employment/census <br> block area | 2014 Origin-Destination Employment <br> Statistics (LODES), from the Longitudinal <br> Employer-Household Dynamics (LEHD) | 10 percent |
| Percent of <br> Households Below <br> Poverty Line | Households below poverty <br> line/total households in <br> census block group | 2016 ACS 5-year estimates |  |

[^12]
## Appendix C

New Orleans Bikeway Blueprint

# New Orleans East 

 Industrial Canal CrossingSafety and Access Planning

## Stage 0 Feasibility Study

June 2022


## New Orleans

## Bikeway

## Blueprint

September 10, 2020 N | 0 | 0.5 | 1 | 1.5 | 2 mi |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  | 1 |  |



Recommended Bikeways (by type)

- Protected Bike Lane
- Shared Use Path
- Bike Boulevard
- Bike Lane or Buffered Bike Lane
- Shared Lane Markings and

Lower Speed Limit

- Other
. . - Future Study Needed
:ロa! French Quarter 15mph Slow Zone

Existing Bikeways

- Protected Bike Lane
- Shared Use Path
- Bicycle Lane
- Bicycle Route


## About the Project

The City of New Orleans embarked on the Moving New Orleans Bikes project in early 2019 to create the City's first bike network plan, develop a bicycle facility desig
guide and establish a prioritization framework. This project was conducted as a partnership between the Mayor's Office of Transportation and the Department takeholders. This document details the Bikeway Blueprint, while the other components of the project (the design guide and the prioritization framework) are vailable on the Moving New Orleans website,


## Appendix D

National Bridge Inventory Summary Reports

# New Orleans East Industrial Canal Crossing <br> Safety and Access Planning 

Stage 0 Feasibility Study

June 2022


## Identification and Location

Highway Agency District (2): 02 - District 02
County Name (3): 071 - Orleans Parish
Place Name (4): 55000 - New Orleans city
Features Intersected (6A): INTER COASTAL WATERWAY
Facility Carried By Structure (7): LA 1264
Location (9): 0.5 MI.W.OF DOWMAN R
Mile Point, miles (11): 0.263
Latitude, decimal (16): 30.03263
Longitude, decimal (17): -90.0314
Maintenance Responsibility (21): 1 - State Highway Agency
Owner (22): 1- State Highway Agency
Year Built (27): 1975
Historical Significance Code (37): 5- Not National Register eligible
Neighboring State Code (98A):
Neighboring State Percent Responsibility (98B):
Border Bridge Structure Number (99):
Parallel Structure Designation Code (101): N - No parallel structure Year Reconstructed (106): 0

## Structure Type and Materials

Main Span Material (43A): 3 - Steel
Main Span Design (43B): 16 - Movable - Bascule
Approach Spans Material (44A): 1 - Concrete
Approach Spans Design (44B): 20 - Mixed Types
Number of Spans in Main Unit (45): 1
Number of Approach Spans (46): 36
Deck Structure Type Code (107): 1 - Concrete Cast-in-Place
Wearing Surface Type Code (108A): 1 - Monolithic Concrete
Membrane Type Code (108B): 0 - None
Deck Protection Code (108C): 0 - None

## Dimensions and Clearances

Inventory Route - Minimum Vertical Clearance, ft. (10): "9999"
Approach Roadway Width, ft. (32): 57.1
Bridge Median Code (33): 3 - Closed Median Non-Mountable Bbarriers
Skew Angle, degrees (34): 0
Structure Flared (35): 0-No flare
Navigation Control Code (38): 1 - Permit Required
Navigation Vertical Clearance, ft. (39): 45.9
Navigation Horizontal Clearance, ft. (40): 95.1
Inventory Route Total Horizontal Clearance, ft. (47): 27.9
Length of Maximum Span, ft. (48): 100.1
Structure Length, ft. (49): 1941.9
Left Curb/Sidewalk Width, ft. (50A): 1.6
Right Curb/Sidewalk Width, ft. (50B): 1.6
Bridge Roadway Width Curb to Curb, ft. (51): 57.1
Deck Width - Out to Out, ft. (52): 68.6
Minimum Vertical Clearance Over Bridge Roadway, ft. (53): "9999"
Minimum Vertical Underclearance, ft. (54B): "000"
Minimum Lateral Underclearance on Right, ft. (55B): 0
Minimum Lateral Underclearance on Left, ft. (56): "000"
Pier Abutment Protection Code (111): 2- In place; functioning
Minimum Vertical Clearance - Lift Bridge, ft. (116):
Deck Area, sq. ft.: 133157.1

[^13]
## Condition Rating and Evaluation

Bridge Railings (36A): 0-Does not meet currently acceptable standa
Transitions (36B): N - N/A
Approach Guardrail (36C): N - N/A
Bridge Guardrail Ends (36D): N - N/A
Deck Condition Rating (58): 7 - Good Condition
Superstructure Condition Rating (59): 5 - Fair Condition
Substructure Condition Rating (60): 5 - Fair Condition
Channel and Channel Protection Condition Rating (61): 7 - Channel re ...
Culverts Condition Rating (62): N - Not a culvert
Structural Evaluation Appraisal (67): 4 - Minimum Tolerable
Deck Geometry Appraisal (68): 5 - Better Than Minimum Adequacy
Underclearance Appraisal Vertical and Horizontal (69): N - N/A
Waterway Adequacy Appraisal (71): 7 - Better Than Present Minimum Cr
Approach Alignment Appraisal (72): 6 - Equal to Present Minimum Crit ...
Scour Critical Bridges Code (113); 8 - Foundations stable; Scour abo ...

## Load Rating and Posting

Design Load Descriptor (31): 5-MS 18/HS 20
Structure Operational Status Code (41): P-Posted for load
Operating Rating Method Code (63): 8 - Load and Resistance Factor Ra ...
Operating Rating, US tons (64): 25
Inventory Rating Method Code (65): 8 - Load and Resistance Factor Ra...
Inventory Rating, US tons (66): 19.3
Bridge Posting Code (70): 2-20.0-29.9 percent below
Traffic and Roadway Data
Record Type (5A); 1 - On Structure
Route Signing Prefix Code (5B): 3-State Highway
Designated Level of Service Code (5C): 1 - Mainline
Route Number (5D): 01264
Directional Suffix Code (5E): 0-Not Applicable
Base Highway Network (12): 0 - Not on Base Network
Bypass or Detour Length, miles (19): 1.9
Toll Status (20): 3 - On Free Road
Functional Class Of Inventory Route (26): 16 - Urban Minor Arterial
Lanes On the Structure (28A): 4
Lanes Under the Structure (28B): 0
Average Daily Traffic (29): 1,110
Year of Average Daily Traffic (30): 2016
Type of Service on Bridge Code (42A): 1 - Highway
Type Of Service Under Bridge Code (42B): 5 - Waterway
STRAHNET Highway Designation (100): 0 - Not STRAHNET
Direction of Traffic Code (102): 2 - 2 -way traffic
Inventory Route NHS Code (104): 0 - Not on NHS
Federal Lands Highways Code (105): 0 - N/A
Average Daily Truck Traffic (Percent ADT) (109): 11
Designated National Truck Network Code (110): 0 - Not on National Tr ..
Future Average Daily Traffic (114): 1,921
Year of Future Average Daily Traffic (115): 2036

## Identification and Location

Highway Agency District (2): 02 - District 02
County Name (3): 071 - Orleans Parish
Place Name (4): 55000 - New Orleans city
Features intersected (6A): IND CL/FRANCE RD/N.O. RR
Facility Carried By Structure (7): US0090
Location (9): 0.50 M NORTH OF I-10
Mile Point, miles (11): 1.05
Latitude, decimal (16): 30.00685
Longitude, decimal (17): -90.0322
Maintenance Responsibility (21): 1 - State Highway Agency
Owner (22): 1- State Highway Agency
Year Built (27): 1989
Historical Significance Code (37): 5-Not National Register eligible
Neighboring State Code (98A):
Neighboring State Percent Responsibility (98B):
Border Bridge Structure Number (99):
Parallel Structure Designation Code (101): N - No parallel structure Year Reconstructed (106): 0

## Structure Type and Materials

Main Span Material (43A): 3 - Steel
Main Span Design (43B): 15 - Movable - Lift
Approach Spans Material (44A): 5 - Prestressed Concrete
Approach Spans Design (44B): 20 - Mixed Types
Number of Spans in Main Unit (45): 1
Number of Approach Spans (46): 58
Deck Structure Type Code (107): 1 - Concrete Cast-in-Place
Wearing Surface Type Code (108A): 0 - None
Membrane Type Code (108B): 0 - None
Deck Protection Code (108C): 0 - None

## Dimensions and Clearances

Inventory Route - Minimum Vertical Clearance, ft. (10): 18.8
Approach Roadway Width, ft. (32): 94.2
Bridge Median Code (33): 3 - Closed Median Non-Mountable Bbarriers
Skew Angle, degrees (34): 0
Structure Flared (35): 1 - Flared
Navigation Control Code (38): 1 - Permit Required
Navigation Vertical Clearance, ft. (39): 100
Navigation Horizontal Clearance, ft. (40): 313
Inventory Route Total Horizontal Clearance, ft. (47): 44
Length of Maximum Span, ft. (48): 330.1
Structure Length, f. (49): 3270
Left Curb/Sidewalk Width, ft. (50A): 2.3
Right Curb/Sidewalk Width, ft. (50B): 0
Bridge Roadway Width Curb to Curb, ft. (51): 88.9
Deck Width - Out to Out, ft. (52): 92.8
Minimum Vertical Clearance Over Bridge Roadway, ft. (53): 18.8
Minimum Vertical Underclearance, ft. (54B): 16.8
Minimum Lateral Underclearance on Right, ft. (55B): 4.9
Minimum Lateral Underclearance on Left, ft. (56): 4.9
Pier Abutment Protection Code (111): 2- In place; functioning
Minimum Vertical Clearance - Lift Bridge, ft. (116): 49.8
Deck Area, sq. ft.: 303613.1

[^14]
## Condition Rating and Evaluation

Bridge Railings (36A): 1 - Meets currently acceptable standards Transitions (36B): 1 - Meets currently acceptable standards Approach Guardrail (36C): 1 - Meets currently acceptable standards Bridge Guardrail Ends (36D): 1 - Meets currently acceptable standard ... Deck Condition Rating (58): 5 - Fair Condition
Superstructure Condition Rating (59): 6 - Satisfactory Condition Substructure Condition Rating (60): 7-Good Condition
Channel and Channel Protection Condition Rating (61): 8 - Channel pr ... Culverts Condition Rating (62): N - Not a culvert
Structural Evaluation Appraisal (67): 6 - Equal to Present Minimum C ... Deck Geometry Appraisal (68): 7-Better Than Present Minimum Criter . Underclearance Appraisal Vertical and Horizontal (69): 4 - Minimum T...
Waterway Adequacy Appraisal (71): 8 - Equal to Present Desirable Cri ...
Approach Alignment Appraisal (72): 8 - Equal to Present Desirable Cr...
Scour Critical Bridges Code (113): 7 - Countermeasures installed for ...

## Load Rating and Posting

Design Load Descriptor (31): 5-MS 18 / HS 20
Structure Operational Status Code (41): A - Open
Operating Rating Method Code (63): 1 - Load Factor(LF)
Operating Rating, US tons (64): 57
Inventory Rating Method Code (65): 1 - Load Factor(LF)
Inventory Rating, US tons (66): 34
Bridge Posting Code (70): 5 - Equal to or above legal loads

## Traffic and Roadway Data

Record Type (5A); 1 - On Structure
Route Signing Prefix Code (5B): 2 - U.S. numbered highway
Designated Level of Service Code (5C): 1 - Mainline
Route Number (5D): 00090
Directional Suffix Code (5E): 0-Not Applicable
Base Highway Network (12): 1 - On Base Network
Bypass or Detour Length, miles (19): 1.9
Toll Status (20): 3 - On Free Road
Functional Class Of Inventory Route (26): 14 - Urban Other Principal ..
Lanes On the Structure (28A): 6
Lanes Under the Structure (28B): 10
Average Daily Traffic (29): 33,300
Year of Average Daily Traffic (30): 2016
Type of Service on Bridge Code (42A): 1 - Highway
Type Of Service Under Bridge Code (42B); 8 - Highway-waterway-railro ... STRAHNET Highway Designation (100): 0 - Not STRAHNET
Direction of Traffic Code (102): 2-2 - way traffic
Inventory Route NHS Code (104): 1 - On NHS
Federal Lands Highways Code (105): 0 - N/A
Average Daily Truck Traffic (Percent ADT) (109): 10
Designated National Truck Network Code (110): 1 - On National Truck ..
Future Average Daily Traffic (114): 44,710
Year of Future Average Daily Traffic (115): 2036

## Identification and Location

Highway Agency District (2): 02 - District 02
County Name (3): 071 - Orleans Parish
Place Name (4): 55000 - New Orleans city
Features Intersected (6A): INNER HARBOR /CITY STS
Facility Carried By Structure (7): 10010
Location (9): 2.5 MI EAST OF LA 39
Mile Point, miles (11): 8.517
Latitude, decimal (16): 30.00226
Longitude, decimal (17): -90.0373
Maintenance Responsibility (21): 1 - State Highway Agency
Owner (22): 1 - State Highway Agency
Year Built (27): 1966
Historical Significance Code (37): 5 - Not National Register eligible
Neighboring State Code (98A):
Neighboring State Percent Responsibility (98B):
Border Bridge Structure Number (99):
Parallel Structure Designation Code (101): N - No parallel structure Year Reconstructed (106): 0

## Structure Type and Materials

Main Span Material (43A): 4 - Steel Continuous
Main Span Design (43B): 2 - Stringer/Multi-beam or Girder
Approach Spans Material (44A): 5 - Prestressed Concrete
Approach Spans Design (44B): 20 - Mixed Types
Number of Spans in Main Unit (45): 23
Number of Approach Spans (46): 56
Deck Structure Type Code (107): 1 - Concrete Cast-in-Place
Wearing Surface Type Code (108A): 0 - None
Membrane Type Code (108B): 0-None
Deck Protection Code (108C): 0-None

## Dimensions and Clearances

Inventory Route - Minimum Vertical Clearance, ft. (10): "9999"
Approach Roadway Width, ft. (32): 86
Bridge Median Code (33): 3 - Closed Median Non-Mountable Bbarriers
Skew Angle, degrees (34): 0
Structure Flared (35): 1 - Flared
Navigation Control Code (38): 1 - Permit Required
Navigation Vertical Clearance, ft. (39): 115.1
Navigation Horizontal Clearance, ft. (40): 299.9
Inventory Route Total Horizontal Clearance, ft. (47): 40
Length of Maximum Span, ft. (48): 299.9
Structure Length, ft. (49): 6714.9
Left Curb/Sidewalk Width, ft. (50A): 1.6
Right Curb/Sidewalk Width, ft. (50B): 1.6
Bridge Roadway Width Curb to Curb, ft. (51): 80.1
Deck Width - Out to Out, ft. (52): 96.1
Minimum Vertical Clearance Over Bridge Roadway, ft. (53): "9999"
Minimum Vertical Underclearance, ft. (54B): 14.9
Minimum Lateral Underclearance on Right, ft. (55B); 3
Minimum Lateral Underclearance on Left, ft. (56): 7.8
Pier Abutment Protection Code (111):
Minimum Vertical Clearance - Lift Bridge, ft. (116):
Deck Area, sq. ft.: 645492.9

[^15]
## Condition Rating and Evaluation

Bridge Railings (36A): 1 - Meets currently acceptable standards
Transitions (36B): 1 - Meets currently acceptable standards
Approach Guardrail (36C): 1 - Meets currently acceptable standards
Bridge Guardrail Ends (36D): 1 - Meets currently acceptable standard ... Deck Condition Rating (58): 5 - Fair Condition
Superstructure Condition Rating (59): 5 - Fair Condition
Substructure Condition Rating (60): 5 - Fair Condition
Channel and Channel Protection Condition Rating (61): 8 - Channel pr ...
Culverts Condition Rating (62): N - Not a culvert
Structural Evaluation Appraisal (67): 5 - Better Than Minimum Adequa ...
Deck Geometry Appraisal (68): 4 - Minimum Tolerable
Underclearance Appraisal Vertical and Horizontal (69): 2 - Intolerab ...
Waterway Adequacy Appraisal (71): 8 - Equal to Present Desirable Cri .,
Approach Alignment Appraisal (72): 8 - Equal to Present Desirable $\mathrm{Cr} . .$.
Scour Critical Bridges Code (113); 5 - Foundations Stable

## Load Rating and Posting

Design Load Descriptor (31): 5-MS $18 /$ HS 20
Structure Operational Status Code (41): A - Open
Operating Rating Method Code (63): 1 - Load Factor(LF)
Operating Rating, US tons (64): 60
Inventory Rating Method Code (65): 1 - Load Factor(LF)
Inventory Rating, US tons (66): 36
Bridge Posting Code (70): 5 - Equal to or above legal loads

## Traffic and Roadway Data

Record Type (5A); 1-On Structure
Route Signing Prefix Code (5B): 1 - Interstate Highway
Designated Level of Service Code (5C): 1 - Mainline
Route Number (5D): 00010
Directional Suffix Code (5E): 0-Not Applicable
Base Highway Network (12): 1 - On Base Network
Bypass or Detour Length, miles (19): "0"
Toll Status (20): 3 - On Free Road
Functional Class Of Inventory Route (26): 11 - Urban Principal Arter ...
Lanes On the Structure (28A): 6
Lanes Under the Structure (28B): 12
Average Daily Traffic (29): 181,400
Year of Average Daily Traffic (30): 2018
Type of Service on Bridge Code (42A): 1 - Highway
Type Of Service Under Bridge Code (42B); 6 - Highway-waterway
STRAHNET Highway Designation (100): 1 - Interstate STRAHNET
Direction of Traffic Code (102): 2 - 2 -way traffic
Inventory Route NHS Code (104): 1 - On NHS
Federal Lands Highways Code (105): 0 - N/A
Average Daily Truck Traffic (Percent ADT) (109): 25
Designated National Truck Network Code (110): 1- On National Truck ..
Future Average Daily Traffic (114): 183,430
Year of Future Average Daily Traffic (115): 2036

## Identification and Location

Highway Agency District (2): 02 - District 02
County Name (3): 071 - Orleans Parish
Place Name (4): 55000 - New Orleans city
Features intersected (6A): INNER HARBOR NAVIGATION
Facility Carried By Structure (7): Almonaster Ave
Location (9): 0.1 MI.E. OF FRANCE
Mile Point, miles (11): 0
Latitude, decimal (16): 30.0046
Longitude, decimal (17): -90.02603
Maintenance Responsibility (21): 25 - Other Local Agencies
Owner (22): 25 - Other Local Agencies
Year Built (27): 1919
Historical Significance Code (37): 2-National Register eligible
Neighboring State Code (98A):
Neighboring State Percent Responsibility (98B):
Border Bridge Structure Number (99):
Parallel Structure Designation Code (101): N - No parallel structure Year Reconstructed (106): 0

## Structure Type and Materials

Main Span Material (43A): 3 - Steel
Main Span Design (43B): 16 - Movable - Bascule
Approach Spans Material (44A): 0 - Other Material Main or N/A (No Ot ...
Approach Spans Design (44B): 0
Number of Spans in Main Unit (45): 22
Number of Approach Spans (46): 0
Deck Structure Type Code (107): 3 - Open Grating
Wearing Surface Type Code (108A): 0 - None
Membrane Type Code (108B): 0 - None
Deck Protection Code (108C): 0 - None

## Dimensions and Clearances

Inventory Route - Minimum Vertical Clearance, ft. (10): "9999"
Approach Roadway Width, ft. (32): 18
Bridge Median Code (33): 3 - Closed Median Non-Mountable Bbarriers
Skew Angle, degrees (34): 0
Structure Flared (35): 0-No flare
Navigation Control Code (38): 1 - Permit Required
Navigation Vertical Clearance, ff. (39): 2.9
Navigation Horizontal Clearance, ft. (40): 94.2
Inventory Route Total Horizontal Clearance, ft. (47): 11.2
Length of Maximum Span, ft. (48): 147
Structure Length, ft. (49): 282.2
Left Curb/Sidewalk Width, ft. (50A): 4.3
Right Curb/Sidewalk Width, ft. (50B): 4.3
Bridge Roadway Width Curb to Curb, ft. (51): 23.3
Deck Width - Out to Out, ft. (52): 64.6
Minimum Vertical Clearance Over Bridge Roadway, ft. (53): "9999"
Minimum Vertical Underclearance, ft. (54B): "000"
Minimum Lateral Underclearance on Right, ft. (55B): 0
Minimum Lateral Underclearance on Left, ft. (56): "000"
Pier Abutment Protection Code (111): 2 - In place; functioning
Minimum Vertical Clearance - Lift Bridge, ft. (116):
Deck Area, sq. ft.: 18236.2
Inspection
Inspection Date (90): January 2017
Designated Inspection Frequency (91): 24
Fracture Critical Details (92A): N Not needed
Underwater Inspection (92B): N Not needed
Other Special Inspection (92C): Y06
Fracture Critical Detail Date (93A):
Underwater Inspection Date (93B):
Other Special Inspection Date (93C): July 2017

## Inspection

Inspection Date (90): January 2017
Designated Inspection Frequency (91): 24
Fracture Critical Details (92A): N Not needed
Other Special Inspection (92C): Y06
Fracture Critical Detail Date (93A):
Other Special Inspection Date (93C): July 2017

## Condition Rating and Evaluation

Bridge Railings (36A): 0-Does not meet currently acceptable standa Transitions (36B): 0-Does not meet currently acceptable standards Approach Guardrail (36C): 0 - Does not meet currently acceptable sta ... Bridge Guardrail Ends (36D): 0 - Does not meet currently acceptable ... Deck Condition Rating (58): 0 - Failed Condition Superstructure Condition Rating (59): 0-Failed Condition Substructure Condition Rating (60): 0 - Failed Condition Channel and Channel Protection Condition Rating (61): 0 - Bridge clo ... Culverts Condition Rating (62): N - Not a culvert
Structural Evaluation Appraisal (67): 0-Bridge Closed
Deck Geometry Appraisal (68): 5 - Better Than Minimum Adequacy Underclearance Appraisal Vertical and Horizontal (69): N - N/A
Waterway Adequacy Appraisal (71): 8-Equal to Present Desirable Cri ..
Approach Alignment Appraisal (72): 8 - Equal to Present Desirable Cr ...
Scour Critical Bridges Code (113): U - Not Evaluated; Unknown Founda ...

## Load Rating and Posting

Design Load Descriptor (31): 3 - MS 13.5/ HS 15
Structure Operational Status Code (41): K - Bridge closed
Operating Rating Method Code (63): 2-Allowable Stress(AS)
Operating Rating, US tons (64): 0
Inventory Rating Method Code (65): 2 - Allowable Stress(AS)
Inventory Rating, US tons (66): 0
Bridge Posting Code (70): 0 - greater than 39.9 percent below

## Traffic and Roadway Data

Record Type (5A): 1 - On Structure
Route Signing Prefix Code (5B): 4 - County Highway
Designated Level of Service Code (5C): 1 - Mainline
Route Number (5D): 00000
Directional Suffix Code (5E): 0-Not Applicable
Base Highway Network (12): 0 - Not on Base Network
Bypass or Detour Length, miles (19): 1.9
Toll Status (20): 3 - On Free Road
Functional Class Of Inventory Route (26): 19 - Urban Local
Lanes On the Structure (28A): 2
Lanes Under the Structure (28B): 0
Average Daily Traffic (29): 0
Year of Average Daily Traffic (30): 2016
Type of Service on Bridge Code (42A): 5 - Highway-pedestrian
Type Of Service Under Bridge Code (42B): 5 - Waterway
STRAHNET Highway Designation (100): 0 - Not STRAHNET
Direction of Traffic Code (102): 2-2-way traffic
Inventory Route NHS Code (104): 0 - Not on NHS
Federal Lands Highways Code (105): 0-N/A
Average Daily Truck Traffic (Percent ADT) (109):
Designated National Truck Network Code (110): 0 - Not on National Tr ..
Future Average Daily Traffic (114): 0
Year of Future Average Daily Traffic (115): 2036

## Appendix E

## Latent Demand Technical Memorandum

New Orleans East Industrial Canal Crossing
Safety and Access Planning

## Stage 0 Feasibility Study

June 2022


4176 Canal Street New Orleans, LA 70119

# TECHNICAL MEMORANDUM 

To: Karen Parsons, New Orleans Regional Planning Commission<br>From: Burk-Kleinpeter, Inc.<br>Subject: New Orleans East Industrial Canal Crossing Safety and Access Planning<br>Stage Zero Feasibility Study<br>RPC Task A-1.22IHNC: FY-22 UPWP<br>State Project No. H. 972422.1<br>Latent Demand Assessment<br>Date: $\quad$ March 31, 2022 (Revised)

The purpose of this memorandum is to summarize the methodology for assessing latent bicycling demand for the New Orleans East Industrial Canal Crossing Safety and Access Study (RPC Task A-1.22IHNC: FY-22 UPWP, State Project No. H.972422.1).

This methodology corresponds to the following elements of Task 3: Facility Profiles in the project scope of services:

- Latent Bicycling Demand -The consultant will employ a methodology for each facility that will show a quantitative measure of the potential demand for bicycling and walking if that facility had adequate safety measures (i.e., protected lanes, lower speed, etc.), and will allow a relative comparison of latent demand among all facilities. Prior to initiating Task 3, the consultant shall prepare a memo describing the methodology to be employed in estimating bicycling latent demand, consistent with best practices described in FHWA's "Guidebook on Methods to Estimate Non-Motorized Travel" (https://safety.thwa.dot.gov/ped bike/docs/guidebookl.pdf) or comparable guidance. This methodology must be approved by the Project Manager before deployment.

Latent demand modeling is a way to measure untapped potential that's not realized because of a wide variety of factors. As discussed in the RPC's training course "Collecting and Using Automated Pedestrian and Bicycle Counts For Planning and Feasibility Analysis," the greatest challenge in counting is where bike/ped facilities are inadequate or absent, which is largely the case with the Industrial Canal bridge crossings. Permanent, automated counters are not feasible in these locations, partly because people may not be where you expect them to be (i.e., on the shoulder or sidewalk). However, a lack of walking or biking activity may not necessarily mean a lack of demand, and we can use other variables as proxies to determine latent demand. Latent demand is simply "where people want to ride," assuming adequate safety measures are in place.

## New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

Following several meetings with Regional Planning Commission (RPC) and the City of New Orleans (CNO), it was determined that very similar analyses have been recently performed by Toole Design Group for the Moving New Orleans Bikes Network Analyses. While these analyses differ slightly from the tasks as defined in the Scope of Services, they ultimately seek to answer the same question: Where do people want (or need) to walk or ride?

As directed by the RPC and CNO, rather than repeating the analyses, the team will utilize and refine the existing analysis to the extent possible, only re-creating analyses where gaps exist in data that would impact the overall assessment of the facilities. This memorandum summarizes each of the analyses performed for the Moving New Orleans Bikes Network Analysis and their application to this study of the IHNC crossings. For additional details on the Moving New Orleans Bikes Network Analysis, see Appendix A: Moving New Orleans Bikes Network Analysis.

Table 1. Summary of Moving New Orleans Bikes Networks Analyses

| Analysis | Inputs | Provided to BKI |
| :--- | :--- | :--- |
| $\begin{array}{l}\text { Latent } \\ \text { Demand } \\ \text { Analysis }\end{array}$ | Intersection Density | Population Density |
|  | Density of Households Below the Poverty Line | Shapefile at block level, |
|  | Employment Density | memo describing |
| methodology |  |  |$\}$

Source: BKI, 2022 and Toole Design Group, Moving New Orleans Bikes Analysis (2020)

## Latent Demand Analysis

## What does it measure?

As previously noted, a latent demand analysis attempts to paint a picture of where people want to ride. This latent demand analysis looks mainly at the broadest indicators of demand, including intersection density, population density, employment density, and density of households below the poverty line. The Latent Demand Analysis is an indicator of areas where several conditions exist that would make the area ripe for bicycling (if the infrastructure was adequately safe and comfortable). These are areas where one would expect to see an increase in non-motorized travel trips after improvements were made.

## New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

## Applicability:

With the underlying GIS data provided, it is possible to develop a quantitative comparison of latent demand between the two catchment areas.

## Analysis:

Looking at the city overall, the latent demand of the areas near the Industrial Canal and into New Orleans East is lower compared to most of the city (Figure 1).

Figure 1. Moving New Orleans Bike Network Analysis: Demand Analysis Composite Map, 2019


Source: City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

There are still notable pockets of demand scattered in the areas surrounding the bridges, so catchment areas were created to focus our comparative analysis. Since three of the four bridges serve the same general area, we decided to designate a North and South Catchment Area (Figure 2).

## New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

The Danziger (2), I-10 (3), and Almonaster (4) bridges are all within $1 / 4$ of a mile of each other, so their catchment areas area effectively the same in terms of people walking and bicycling. In that sense, the South Catchment Area can be considered the catchment area for all three bridges. Furthermore, through the course of this study, it has become clear for a variety of reasons that the Seabrook (1) and Danziger (2) bridges are the most viable options at this time and thus warrant more scrutiny and study than the others. The I-10 High Rise bridge (3) is inherently ruled out since bicycles are not allowed travel on the Interstate, and the project team has been provided no evidence to suggest that the Almonaster Bridge (4) will be open to the public any time in the near future. While it is currently in the early stages of a rehabilitation project, it has been closed to the public for years and offers little extra space to add adequate bicycle and pedestrian facilities along with its two active rail lines and soon to be restored automotive travel lanes (one lane in either direction).

The size of the catchment areas was based roughly on the "biking distance" (10-minute ride, or 1.67 mile distance) as defined in Toole's Bicycle Network Analysis (BNA). The distance was rounded up to a 2-mile distance from the center of each the Seabrook and Danziger Bridges along the roadways they carry. From there, areas were defined subjectively based on natural borders, major streets, and the census blocks of which the underlying data are comprised.

Figure 2. IHNC Crossing Study: Comparative Analysis Catchment Areas


Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

## New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

The scoring ranges have been classified into roughly equal parts based only on the two catchment areas rather than the city as a whole because, as previously mentioned, the entire area around the Industrial Canal scores fairly low when compared to the city overall (Figure 3).

Fiigure 3. Latent Demand Composite Scores in IHNC Catchment Areas, 2022


Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

Table 2. BEI Scores in IHNC Catchment Areas, 2022

|  | Latent Demand <br> Total Score | Latent <br> Demand <br> Average Score <br> Per Census <br> Block | Total Population <br> for Census Block <br> Groups within <br> Catchment Area | Latent Demand <br> /Population $^{1}$ |
| :--- | ---: | ---: | ---: | ---: |
| North Catchment <br> Area | $18,779.92$ | 24.91 | 18,233 | 1.03 |
| South Catchment <br> Area | $23,113.83$ | 23.37 | 21,839 | 1.05 |

Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

## Conclusion:

The pockets of demand are fairly evenly spread between both the North and South Catchment Areas as well as the east and west sides of the Industrial Canal. The census blocks in the South Catchment Area around the Danziger Bridge (2) have a marginally lower average Latent Demand score than in the North Catchment Area around the Seabrook Bridge (1), but the area around the Danziger Bridge has a higher score per person based on the total population of each catchment area.

## Bicycle Equity Index (BEI)

## What does it measure?

Toole's BEI is essentially another way to consider latent demand with a focus specifically on equity. It may be thought of as where people "need" to ride rather than just where they "want" to ride. Put another way, it can show us where investment and improvements are needed the most, not just where they may be wanted.

The BEI composite score uses three metrics commonly used to determine "transit dependent" populations, which is used here as a proxy for trips that could also be completed by bike. Those transit dependent factors are population under 18, population over 65, and zero car households. Additionally, two broader equity measures are used: minority population and population in poverty. For more information on Toole Design methodology for BEI Composite scoring, see Appendix A.

## Applicability:

While not explicitly stated in the scope of services, this is relevant considering that, other than the most dedicated long-distance cyclists, people making the daunting trip over the IHNC are likely doing so out of need. Since BKI was provided the underlying GIS data here, it is possible to develop a quantitative comparison between the two catchment areas.

[^16]
## New Orleans East Industrial Canal Crossing Safety and Access Planning

 Latent Demand Assessment
## Analysis:

The scoring ranges have been classified based only on the two catchment areas rather than the city as a whole because similar to the Latent Demand Analysis above, the entire area around the Industrial Canal scores low when compared to the city overall.

Figure 4. Moving New Orleans Bike Network Analysis: Bicycle Equity Index (BEI) Composite Score, 2019


Source: City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

Table 3. BEI Scores in IHNC Catchment Areas, 2022

|  | BEI Total Score | BEI Average <br> Score Per <br> Census Tract | Total Population | BEI/Population |
| :--- | ---: | ---: | ---: | ---: |
| North Catchment <br> Area | $234,231.82$ | $9,008.92$ | 21,876 | 10.71 |
| South Catchment <br> Area | $308,399.46$ | $9,345.41$ | 24,596 | 12.54 |

Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

Figure 5. BEI in IHNC Catchment Areas, 2022


Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

Conclusion: The areas of higher need largely follow the pattens of the Latent Demand Analysis. The pockets are fairly evenly spread between both the north and south catchment areas as well as east and west sides of the Industrial Canal. The block groups in the South Catchment Area around the Danziger Bridge (2) have a marginally higher average BEI score than in the North Catchment Area around the Seabrook Bridge (1), as well as a higher score per person based on the total population of each catchment area. Both averages fall within the Moderate Need range.

## New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

## Bicycle Network Analysis (BNA)

## What does it measure?

The BNA combines elements of a latent demand analysis (i.e., destinations) with level of stress (proposed low stress network) to provide an estimation of how "connected" areas are based on destinations within a 10-minute bike ride (defined as 1.67 miles in the Moving New Orleans Bikes report). Areas are scored based on the difference between the number of destinations that can be reached on Toole's Level of Traffic Stress (LTS) low stress network with the number of destinations on the total network. For more information on Toole Design methodology for BNA scoring see Appendix A.

## Applicability:

Applicability to the IHNC study is instructive but limited. We are unable to isolate the proposed improvements on the bridge structures from other improvements in the vicinity, such as the addition of bike lanes. However, operating under the assumption that the other planned improvements as laid out in the Bikeway Blueprint will occur, we can make a comparison between the existing conditions and a future with the proposed improvements to the Seabrook and Danziger Bridges in place. The proposed improvement (according to the New Orleans Bikeway Blueprint Map in Appendix B) is a protected bicycle lane on each of those facilities. When looking at the difference between the existing level of bicycle connectivity and the future level of bicycle connectivity (with the proposed improvements in place), we can use the underlying GIS data to compare the change in connectivity for the two catchment areas.

## Analysis:

Looking at the total connectivity scores for each catchment area, our analysis shows the South Catchment Area scores higher for the existing network by about 15\%.

## New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

Figure 6. Bicycle Network Analysis (BNA) (Existing Condition) in IHNC Catchment Areas, 2022


Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

When comparing the difference between the existing and proposed bridge improvement scenarios, the South Catchment Area BNA score improves around 57\% while the North Catchment Area BNA score improves $70 \%$. While the South Catchment Area around the Danziger Bridge still holds a higher overall connectivity score in the proposed full build scenario, it is only marginally higher than the North Catchment Area after improvements (6\%) than before (15\%). This may suggest that the North Catchment Area has more room for improvement or offers a slightly more valuable opportunity in terms of improvement costs versus effected change. Conversely, the South Catchment Area could be considered the better choice purely in terms of the higher level of connectivity it provides.

New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

Table 4. BNA Scores in IHNC Catchment Areas, 2022

|  | Existing Network <br> Score | Proposed (Full <br> Build) Network <br> Score | \# Change | \% Change |
| :--- | ---: | ---: | ---: | ---: |
| North Catchment <br> Area | 39994.6 | 67797.23 | 27802.63 | $70 \%$ |
| South Catchment <br> Area | 45810.7 | 72097.49 | 26286.79 | $57 \%$ |

Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

Figure 7. BNA (with Proposed Improvements) in IHNC Catchment Areas, 2022


Source: BKI, 2022, prepared with data provided by the City of New Orleans and Toole Design Group, Moving New Orleans Bikes Analysis (2019)

## New Orleans East Industrial Canal Crossing Safety and Access Planning Latent Demand Assessment

## Conclusions

The three analyses performed by Toole Design Group for the Moving New Orleans Bike Network Analysis tell three related but distinct stories of demand, equity, and connectivity. As applied to the IHNC study, the analyses yield us to believe that improving any bridge crossing will:

- Make the area more bikeable in an effort to meet latent demand
- Benefit people who need transportation options
- Improve non-motorized connectivity in the area around the bridge

While there isn't a great difference between the two catchment areas in terms of the latent demand analysis, it still shows an improved bridge crossing is worthwhile. The BEI further pinpoints areas that not only have demand but also need these improvements the most by illuminating factors specifically geared towards equity. Again, there is not a huge difference when comparing the North and South Catchment Areas against one another, but it's worth noting that the Danziger area has a higher total BEI score, a higher average BEI score per census tract, and a higher average BEI score in terms of overall population. Lastly, the BNA illustrates connectivity around the bridges. While the Danziger area has an overall higher potential impact on connectivity, the Seabrook area has more room for improvement and thus may offer greater value in terms of increasing connectivity. As is similar with all three models, there is no clear winner but rather guidance for decisionmakers depending on what the priorities may be.

Table 5. Summary of Latent Demand Comparative Analysis, 2022

|  | North Catchment Area <br> (Seabrook Bridge) | South Catchment Area <br> (Danziger Bridge) |
| :--- | :--- | :--- |
| Latent Demand | Roughly the same, slightly lower per <br> person | Roughly the same, slightly higher per <br> person |
| BEI | Lower BEI score in this area, so <br> improvement would impact fewer <br> people in need than Danziger | Higher BEI score in this area, so the <br> improvement would impact more <br> people in need than Seabrook |
| BNA | Is less connected now, will improve <br> a lot in the future | Is more connected now, will improve <br> moderately in the future |

The conclusions drawn from these models will be taken into account with the other aspects of this alternatives assessment to yield a clearer recommended path forward.

## Appendix F

## Traffic Counts and Speed Study

# New Orleans East 

 Industrial Canal CrossingSafety and Access Planning

## Stage 0 Feasibility Study

June 2022


# New Orleans East <br> Industrial Canall Crossing Stage Zero Feasilbility Study RPC Task A-1.22IHNC: FY-22 UPWP State Project No. H.972422.1 

## Vehiculari, Bicycles and Pedestrian Counts Data Collection

Orleans Parish, Louisiana
February 2022
Prepared for:


New Orleans Regional Planning Commission
Prepared by:

4744 Kawanee Avenue, Metairie, LA 70006 (504.888.9399)

## I. Purpose

This project will identify, from existing bridges, a potential walking and bicycling crossing of the Inner Harbor Navigational Canal (INHC) between the Florida Avenue Bridge and Lake Pontchartrain and present a conceptual plan for improving the structure and its approaches to allow for accessible and safe non- motorized use of the facility. There is currently no such crossing available to walkers and bicyclers, who are therefore are unable to access services on either side of the canal, or to connect to the city-wide bicycle network.

## II. Study Area

The Inner Harbor Navigational Canal, locally known as the Industrial Canal, is a man-made waterway connecting Lake Pontchartrain, the Gulf Intracoastal Waterway, and the Mississippi River. The study area focusses on two bridge crossings, which are:

1. Senator Ted Hickey Bridge (Seabrook Vehicular Bridge/Lakeshore Dr./LA 1264) - LADOTD
2. Danziger Bridge (US Hwy 90./Chef Menteur Hwy.) - LADOTD

7-day. 24-hour traffic volume counts were conducted for the east and westbound lanes on the Seabrook Bridge and on the Danziger Bridge. Additional, 48-hour weekday and a Saturday pedestrians and bicycles counts were conducted for these two bridges.

Also, 7-day. 24-hour traffic volume counts were conducted at the following locations:
3. Seabrook Bridge, Lakeshore Entrance-Ramp
4. Seabrook Bridge, Lakeshore Exit Ramp
5. Seabrook Bridge, Hayne Blvd. Exit Ramp
6. Danziger Bridge, France Rd. Entrance-Ramp
7. Danziger Bridge, France Rd. Exit-Ramp

Exhibit A depicts an area map, which illustrates the ADT, Bicycles and Pedestrians count locations.

## Exhibit A - Study Area Map



## III. Existing Traffic Conditions

ITS Regional conducted 7-day/24-hour radar and video counts at the Seabrook and Danziger Bridges. The data collection occurred between Sunday, January 23 to Monday, January 31, 2022.
During these days the weather conditions were as follows:

|  | 1/24 | 1/25 | 1/26 | 1/27 | 1/28 | 1/29 | 1/30 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| Weather Conditions: | Cloudy/Rain | Rain | Ptly Cloudy | Sunny | Ptly Clo | dy Sunny | Sunny |
| Average Temperature | : 38-56F | 49-54F | 47-54F | 41-59F | 45-50F | 43-51F | 39-61F |

## Location 1: Seabrook Bridge

The count at Location 1, The data collection occurred between Sunday, January 23 to Monday, January 31, 2022. The data collected shows the following:

## VOLUMES WEEKLY COUNTS

|  | Time | $\mathbf{5}$ Day | $\mathbf{7 ~ D a y}$ |
| :--- | :---: | :--- | :--- |
| Average Daily |  | 10,708 | 9,433 |
| AM Peak | $7: 00 \mathrm{AM}$ | 1,215 | 908 |
| PM Peak | $5: 00 \mathrm{PM}$ | 1,415 | 1,161 |

## SPEED

Speed Limit 35
$85^{\mathrm{TH}}$ Percentile Speed 60
Average Speed 50.43

|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Count Over Limit | 12,366 | 10,571 | 11,422 | 11,576 | 11,604 | 7,212 |
| \% Over Limit | 94.4 | 97.3 | 97.2 | 96.7 | 96.8 | 97.5 | 98.0 |
| Average Speeder | 49.2 | 50.4 | 50.8 | 51.2 | 50.9 | 52.4 | 53.6 |

## CLASS COUNTS

## Classes 1-2

Classes 2-3-4
Classes 2-3-4-5-6-7

| Number | \% |
| :--- | :--- |
| 24,804 | 31.9 |
| 47,420 | 61 |
| 3,864 | 5 |
| 1,358 | 1.7 |
| 157 | 0.2 |
| 80 | 0.1 |

## BICYCLES AND PEDESTRIANS

|  | Tuesday | Wednesday | Saturday |
| :--- | :---: | :---: | :---: |
| Bicycles | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 |

Chart 1 presents the ADTs for the east and westbound lanes


Chart 2 and Chart 2a presents the average speed for the eastbound and westbound lanes



## Location 2: Danziger Bridge

The count at Location 2, The data collection occurred between Sunday, January 23 to Monday, January 31, 2022. The data collected shows the following:

## VOLUMES WEEKLY COUNTS

Average Daily
AM Peak
PM Peak

| Time | $\mathbf{5}$ Day | $\mathbf{7}$ Day |
| :--- | :---: | :---: |
| 7:00 AM | 28,926 | 26,930 |
| 4:00 PM | 2,744 | 2,136 |
|  | 2,550 | 2,294 |

## SPEED

Speed Limit 35
$85^{\mathrm{TH}}$ Percentile Speed 48
Average Speed 36.58

|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Count Over Limit | 17,063 | 15,565 | 17,002 | 18,012 | 18,681 | 16,166 | 26,826 |
| \% Over Limit | 49.5 | 54.3 | 53.6 | 54.4 | 55.1 | 64.8 | 70.8 |
| Average Speeder | 44.1 | 44.1 | 44.8 | 44.8 | 44.8 | 45.4 | 45.7 |

## CLASS COUNTS

Classes 1-2

| Number | \% |
| :--- | :---: |
| 88,296 | 39.3 |
| 98,232 | 43.7 |
| 19,409 | 8.6 |
| 11,199 | 5 |
| 3,847 | 1.7 |
| 3,702 | 1.6 |

## BICYCLES AND PEDESTRIANS

Bicycles

Pedestrians

| Tuesday | Wednesday | Saturday |
| :---: | :---: | :---: |
| 7 | 12 | 10 |
| 8 | 8 | 18 |

Chart 3 presents the ADTs for the east and westbound lanes


Chart 4 and Chart 4a presents the average speed for the eastbound and westbound lanes


Chart 5 and Chart 5a presents the average bicycles and pedestrians for the eastbound and westbound lanes



## Location 3: Seabrook Bridge - Lakeshore Dr. Entrance Ramp

The count at Location 3, The data collection occurred between Sunday, January 23 to Monday, January 31, 2022. The data collected shows the following:

Chart 6 presents the ADTs for Location 3.


## Location 4: Seabrook Bridge - Lakeshore Dr. Exit Ramp

The count at Location 3, The data collection occurred between Sunday, January 23 to Monday, January 31, 2022. The data collected shows the following:

Chart 7 presents the ADTs for Location 4.


## Location 5: Seabrook Bridge - Hayne Bvld. Exit Ramp

The count at Location 5, The data collection occurred between Sunday, January 23 to Monday, January 31, 2022. The data collected shows the following:

Chart 8 presents the ADTs for Location 5


## Location 6: Danziger Bridge - France Rd. Entrance Ramp

The count at Location 6, The data collection occurred between Sunday, January 23 to Monday, January 31, 2022. The data collected shows the following:

Chart 9 presents the ADTs for Location 6


## Location 7: Danziger Bridge - France Rd. Exit Ramp

The count at Location 7, The data collection occurred between Sunday, January 23 to Monday, January 31, 2022. The data collected shows the following:

Chart 10 presents the ADTs for Location 7


## Appendix RAW 7-Day/24-Hour <br> Radar and Tube Counts

## LOCATION 1

## SEABROOK BRIDGE

Radar Counts

## Project Note

Location/Name:
Report Generated:
Traffic Report From
85th Percentile Speed
85th Percentile Vehicles
Total Vehicles
AADT:
Seabrook Bridge

## Volumes -

 weekly countsAverage Daily
AM Peak
PM Peak

## Speed

Speed Limit:
85th Percentile Speed:
Average Speed:
Count over limit
\% over limit
Avg Speeder
Class Counts

|  | Number | $\%$ |
| :--- | :--- | :--- |
| Classes 1-2 | 24801 | 31.9 |
| Classes 2-3-4 | 47420 | 61 |
| Classes 2-3-4-5-6-7 | 3864 | 5 |
| Classes 2 w/trailer 3-4-5-6-7 | 1358 | 1.7 |
| Classes 7-8-6-5 w/trailer 4 school bus | 157 | 0.2 |
| Classes 13-12-11-10-9-8 | 80 | 0.1 |

# Weekly LaneCount 

| Seabrook Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | 91 | * | 91 |
| 9-10 | * | * | * | * | * | * | 126 | * | 126 |
| 10-11 | * | * | * | * | * | * | 177 | * | 177 |
| 11-12 | * | * | * | * | * | * | 222 | * | 222 |
| 12-13 | * | * | * | * | * | * | 267 | * | 267 |
| 13-14 | * | * | * | * | * | * | 311 | * | 311 |
| 14-15 | * | * | * | * | * | * | 327 | * | 327 |
| 15-16 | * | * | * | * | * | * | 314 | * | 314 |
| 16-17 | * | * | * | * | * | * | 319 | * | 319 |
| 17-18 | * | * | * | * | * | * | 300 | * | 300 |
| 18-19 | * | * | * | * | * | * | 280 | * | 280 |
| 19-20 | * | * | * | * | * | * | 169 | * | 169 |
| 20-21 | * | * | * | * | * | * | 146 | * | 146 |
| 21-22 | * | * | * | * | * | * | 192 | * | 192 |
| 22-23 | * | * | * | * | * | * | 143 | * | 143 |
| 23-24 | * | * | * | * | * | * | 92 | * | 92 |
| Totals | 0 | 0 | 0 | 0 | 0 | 0 | 3476 |  |  |
| \% of Total | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% | 100\% |  |  |


| Seabrook Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 70 | 40 | 62 | 70 | 57 | 90 | 101 | 59.8 | 95.5 |
| 1-2 | 48 | 28 | 43 | 38 | 31 | 75 | 90 | 37.6 | 82.5 |
| 2-3 | 28 | 25 | 16 | 16 | 30 | 50 | 50 | 23 | 50 |
| 3-4 | 11 | 14 | 26 | 25 | 27 | 35 | 29 | 20.6 | 32 |
| 4-5 | 26 | 24 | 30 | 24 | 32 | 23 | 25 | 27.2 | 24 |
| 5-6 | 90 | 80 | 94 | 73 | 62 | 41 | 31 | 79.8 | 36 |
| 6-7 | 410 | 311 | 394 | 364 | 338 | 77 | 54 | 363.4 | 65.5 |
| 7-8 | 1520 | 1231 | 1381 | 1356 | 1268 | 169 | 114 | 1351.2 | 141.5 |
| 8-9 | 1110 | 1022 | 911 | 892 | 812 | 309 | 187 | 949.4 | 248 |
| 9-10 | 397 | 454 | 509 | 490 | 500 | 394 | 269 | 470 | 331.5 |
| 10-11 | 389 | 387 | 443 | 384 | 423 | 409 | 326 | 405.2 | 367.5 |
| 11-12 | 413 | 390 | 493 | 459 | 442 | 468 | 438 | 439.4 | 453 |
| 12-13 | 463 | 441 | 452 | 531 | 528 | 598 | 521 | 483 | 559.5 |
| 13-14 | 489 | 505 | 545 | 575 | 560 | 525 | 567 | 534.8 | 546 |
| 14-15 | 716 | 654 | 710 | 721 | 756 | 616 | 571 | 711.4 | 593.5 |
| 15-16 | 1216 | 1025 | 993 | 1139 | 1086 | 610 | 627 | 1091.8 | 618.5 |
| 16-17 | 1630 | 1230 | 1357 | 1334 | 1448 | 667 | 615 | 1399.8 | 641 |
| 17-18 | 1479 | 1255 | 1361 | 1544 | 1437 | 575 | 569 | 1415.2 | 572 |
| 18-19 | 781 | 658 | 785 | 999 | 743 | 461 | 427 | 793.2 | 444 |
| 19-20 | 356 | 378 | 426 | 502 | 481 | 381 | 298 | 428.6 | 339.5 |
| 20-21 | 268 | 270 | 261 | 362 | 326 | 271 | 293 | 297.4 | 282 |
| 21-22 | 175 | 204 | 221 | 218 | 240 | 229 | 241 | 211.6 | 235 |
| 22-23 | 118 | 157 | 154 | 166 | 209 | 189 | 163 | 160.8 | 176 |
| 23-24 | 75 | 81 | 87 | 99 | 153 | 136 | 108 | 99 | 122 |
| Totals | 12278 | 10864 | 11754 | 12381 | 11989 | 7398 | 6714 |  |  |
| \% of Total | 16.73\% | 14.81\% | 16.02\% | 16.87\% | 16.34\% | 10.08\% | 9.15\% |  |  |


| Seabrook Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 56 | * | * | * | * | * | * | 56 | * |
| 1-2 | 44 | * | * | * | * | * | * | 44 | * |
| 2-3 | 24 | * | * | * | * | * | * | 24 | * |
| 3-4 | 28 | * | * | * | * | * | * | 28 | * |
| 4-5 | 25 | * | * | * | * | * | * | 25 | * |
| 5-6 | 100 | * | * | * | * | * | * | 100 | * |
| 6-7 | 381 | * | * | * | * | * | * | 381 | * |
| 7-8 | 168 | * | * | * | * | * | * | 168 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |
| Totals | 826 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| \% of Total | 100\% | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% |  |  |

Page 3

Monthly LaneCount
Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM
Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 126 | 40 | 62 | 70 | 57 | 90 | 101 | 71 | 95.5 |
| 1-2 | 92 | 28 | 43 | 38 | 31 | 75 | 90 | 46.4 | 82.5 |
| 2-3 | 52 | 25 | 16 | 16 | 30 | 50 | 50 | 27.8 | 50 |
| 3-4 | 39 | 14 | 26 | 25 | 27 | 35 | 29 | 26.2 | 32 |
| 4-5 | 51 | 24 | 30 | 24 | 32 | 23 | 25 | 32.2 | 24 |
| 5-6 | 190 | 80 | 94 | 73 | 62 | 41 | 31 | 99.8 | 36 |
| 6-7 | 791 | 311 | 394 | 364 | 338 | 77 | 54 | 439.6 | 65.5 |
| 7-8 | 1688 | 1231 | 1381 | 1356 | 1268 | 169 | 114 | 1384.8 | 141.5 |
| 8-9 | 1110 | 1022 | 911 | 892 | 812 | 309 | 278 | 949.4 | 293.5 |
| 9-10 | 397 | 454 | 509 | 490 | 500 | 394 | 395 | 470 | 394.5 |
| 10-11 | 389 | 387 | 443 | 384 | 423 | 409 | 503 | 405.2 | 456 |
| 11-12 | 413 | 390 | 493 | 459 | 442 | 468 | 660 | 439.4 | 564 |
| 12-13 | 463 | 441 | 452 | 531 | 528 | 598 | 788 | 483 | 693 |
| 13-14 | 489 | 505 | 545 | 575 | 560 | 525 | 878 | 534.8 | 701.5 |
| 14-15 | 716 | 654 | 710 | 721 | 756 | 616 | 898 | 711.4 | 757 |
| 15-16 | 1216 | 1025 | 993 | 1139 | 1086 | 610 | 941 | 1091.8 | 775.5 |
| 16-17 | 1630 | 1230 | 1357 | 1334 | 1448 | 667 | 934 | 1399.8 | 800.5 |
| 17-18 | 1479 | 1255 | 1361 | 1544 | 1437 | 575 | 869 | 1415.2 | 722 |
| 18-19 | 781 | 658 | 785 | 999 | 743 | 461 | 707 | 793.2 | 584 |
| 19-20 | 356 | 378 | 426 | 502 | 481 | 381 | 467 | 428.6 | 424 |
| 20-21 | 268 | 270 | 261 | 362 | 326 | 271 | 439 | 297.4 | 355 |
| 21-22 | 175 | 204 | 221 | 218 | 240 | 229 | 433 | 211.6 | 331 |
| 22-23 | 118 | 157 | 154 | 166 | 209 | 189 | 306 | 160.8 | 247.5 |
| 23-24 | 75 | 81 | 87 | 99 | 153 | 136 | 200 | 99 | 168 |
| Totals | 13104 | 10864 | 11754 | 12381 | 11989 | 7398 | 10190 |  |  |
| \% of Total | 16.87\% | 13.99\% | 15.13\% | 15.94\% | 15.43\% | 9.52\% | 13.12\% |  |  |

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Weekly AverageSpeed Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | 53.03 | * | 53.03 |
| 9-10 | * | * | * | * | * | * | 54.52 | * | 54.52 |
| 10-11 | * | * | * | * | * | * | 52.93 | * | 52.93 |
| 11-12 | * | * | * | * | * | * | 54.47 | * | 54.47 |
| 12-13 | * | * | * | * | * | * | 54.85 | * | 54.85 |
| 13-14 | * | * | * | * | * | * | 55.28 | * | 55.28 |
| 14-15 | * | * | * | * | * | * | 54.2 | * | 54.2 |
| 15-16 | * | * | * | * | * | * | 54.6 | * | 54.6 |
| 16-17 | * | * | * | * | * | * | 54.12 | * | 54.12 |
| 17-18 | * | * | * | * | * | * | 53.88 | * | 53.88 |
| 18-19 | * | * | * | * | * | * | 52.37 | * | 52.37 |
| 19-20 | * | * | * | * | * | * | 55.2 | * | 55.2 |
| 20-21 | * | * | * | * | * | * | 54.89 | * | 54.89 |
| 21-22 | * | * | * | * | * | * | 52.35 | * | 52.35 |
| 22-23 | * | * | * | * | * | * | 50.68 | * | 50.68 |
| 23-24 | * | * | * | * | * | * | 49.88 | * | 49.88 |

Weekly AverageSpeed Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 52.84 | 49.15 | 53.06 | 50.4 | 51.25 | 52.3 | 53.15 | 51.34 | 52.72 |
| 1-2 | 51.35 | 49.25 | 50.81 | 52.5 | 49.23 | 51.12 | 52.92 | 50.63 | 52.02 |
| 2-3 | 49.39 | 49.56 | 48.88 | 46.19 | 47.57 | 51.28 | 53.8 | 48.32 | 52.54 |
| 3-4 | 44.91 | 41.71 | 48.31 | 48.32 | 51.63 | 49.74 | 48.48 | 46.98 | 49.11 |
| 4-5 | 49.23 | 46.46 | 54.77 | 51.83 | 48.31 | 51.43 | 52.88 | 50.12 | 52.16 |
| 5-6 | 48.28 | 46.19 | 49.68 | 49.3 | 50.56 | 48.41 | 47.97 | 48.8 | 48.19 |
| 6-7 | 49.68 | 46.51 | 50.26 | 50.41 | 49.71 | 50.42 | 49.81 | 49.31 | 50.12 |
| 7-8 | 50.86 | 48.55 | 51.46 | 51.16 | 51.37 | 52.18 | 51.11 | 50.68 | 51.64 |
| 8-9 | 51.61 | 49.49 | 51.2 | 51.84 | 51.78 | 50.51 | 52.24 | 51.18 | 51.37 |
| 9-10 | 50.74 | 49.33 | 51.52 | 50.06 | 49.87 | 50.31 | 51.9 | 50.3 | 51.1 |
| 10-11 | 47.88 | 49.37 | 49.98 | 49.59 | 49.97 | 51.23 | 53.41 | 49.36 | 52.32 |
| 11-12 | 50.73 | 49.09 | 50.09 | 48.09 | 49.78 | 51.9 | 53.18 | 49.55 | 52.54 |
| 12-13 | 51.63 | 49.88 | 51.72 | 50.92 | 51.98 | 53.18 | 53.44 | 51.23 | 53.31 |
| 13-14 | 51.53 | 49.34 | 52.04 | 52.09 | 51.66 | 52.42 | 52.38 | 51.33 | 52.4 |
| 14-15 | 50.29 | 50.06 | 51.36 | 51.12 | 51.92 | 52.42 | 53.43 | 50.95 | 52.92 |
| 15-16 | 48.11 | 51.21 | 50.56 | 51.32 | 50.96 | 51.59 | 53.57 | 50.43 | 52.58 |
| 16-17 | 44.11 | 51.01 | 48.98 | 51.01 | 49.4 | 52.53 | 52.95 | 48.9 | 52.74 |
| 17-18 | 42.61 | 50.08 | 48.18 | 48.87 | 48.44 | 51.69 | 52.6 | 47.63 | 52.15 |
| 18-19 | 44.01 | 50.09 | 48.41 | 48.24 | 46.95 | 50.39 | 52.36 | 47.54 | 51.38 |
| 19-20 | 46.83 | 50.83 | 49.2 | 50.01 | 49.92 | 51.16 | 51.62 | 49.36 | 51.39 |
| 20-21 | 48.7 | 50.69 | 50.97 | 52.17 | 51.56 | 52.33 | 53.04 | 50.82 | 52.68 |
| 21-22 | 47.28 | 50.86 | 50.98 | 52.15 | 52.99 | 53.13 | 52.93 | 50.85 | 53.03 |
| 22-23 | 48.55 | 52.71 | 51.1 | 52.67 | 51.89 | 52.13 | 52.23 | 51.39 | 52.18 |
| 23-24 | 48.65 | 51.58 | 52.21 | 53.61 | 50.35 | 53.06 | 53.08 | 51.28 | 53.07 |

Weekly AverageSpeed Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 51.64 | * | * | * | * | * | * | 51.64 | * |
| 1-2 | 54.27 | * | * | * | * | * | * | 54.27 | * |
| 2-3 | 49.71 | * | * | * | * | * | * | 49.71 | * |
| 3-4 | 52.54 | * | * | * | * | * | * | 52.54 | * |
| 4-5 | 49.56 | * | * | * | * | * | * | 49.56 | * |
| 5-6 | 51.3 | * | * | * | * | * | * | 51.3 | * |
| 6-7 | 51.31 | * | * | * | * | * | * | 51.31 | * |
| 7-8 | 52.3 | * | * | * | * | * | * | 52.3 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |

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| Seabrook Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 52.31 | 49.15 | 53.06 | 50.4 | 51.25 | 52.3 | 53.15 | 51.23 | 52.72 |
| 1-2 | 52.75 | 49.25 | 50.81 | 52.5 | 49.23 | 51.12 | 52.92 | 50.91 | 52.02 |
| 2-3 | 49.54 | 49.56 | 48.88 | 46.19 | 47.57 | 51.28 | 53.8 | 48.35 | 52.54 |
| 3-4 | 50.38 | 41.71 | 48.31 | 48.32 | 51.63 | 49.74 | 48.48 | 48.07 | 49.11 |
| 4-5 | 49.39 | 46.46 | 54.77 | 51.83 | 48.31 | 51.43 | 52.88 | 50.15 | 52.16 |
| 5-6 | 49.87 | 46.19 | 49.68 | 49.3 | 50.56 | 48.41 | 47.97 | 49.12 | 48.19 |
| 6-7 | 50.46 | 46.51 | 50.26 | 50.41 | 49.71 | 50.42 | 49.81 | 49.47 | 50.12 |
| 7-8 | 51 | 48.55 | 51.46 | 51.16 | 51.37 | 52.18 | 51.11 | 50.71 | 51.64 |
| 8-9 | 51.61 | 49.49 | 51.2 | 51.84 | 51.78 | 50.51 | 52.5 | 51.18 | 51.5 |
| 9-10 | 50.74 | 49.33 | 51.52 | 50.06 | 49.87 | 50.31 | 52.74 | 50.3 | 51.52 |
| 10-11 | 47.88 | 49.37 | 49.98 | 49.59 | 49.97 | 51.23 | 53.24 | 49.36 | 52.24 |
| 11-12 | 50.73 | 49.09 | 50.09 | 48.09 | 49.78 | 51.9 | 53.61 | 49.55 | 52.75 |
| 12-13 | 51.63 | 49.88 | 51.72 | 50.92 | 51.98 | 53.18 | 53.92 | 51.23 | 53.55 |
| 13-14 | 51.53 | 49.34 | 52.04 | 52.09 | 51.66 | 52.42 | 53.41 | 51.33 | 52.91 |
| 14-15 | 50.29 | 50.06 | 51.36 | 51.12 | 51.92 | 52.42 | 53.71 | 50.95 | 53.06 |
| 15-16 | 48.11 | 51.21 | 50.56 | 51.32 | 50.96 | 51.59 | 53.92 | 50.43 | 52.75 |
| 16-17 | 44.11 | 51.01 | 48.98 | 51.01 | 49.4 | 52.53 | 53.35 | 48.9 | 52.94 |
| 17-18 | 42.61 | 50.08 | 48.18 | 48.87 | 48.44 | 51.69 | 53.04 | 47.63 | 52.37 |
| 18-19 | 44.01 | 50.09 | 48.41 | 48.24 | 46.95 | 50.39 | 52.36 | 47.54 | 51.38 |
| 19-20 | 46.83 | 50.83 | 49.2 | 50.01 | 49.92 | 51.16 | 52.91 | 49.36 | 52.04 |
| 20-21 | 48.7 | 50.69 | 50.97 | 52.17 | 51.56 | 52.33 | 53.65 | 50.82 | 52.99 |
| 21-22 | 47.28 | 50.86 | 50.98 | 52.15 | 52.99 | 53.13 | 52.67 | 50.85 | 52.9 |
| 22-23 | 48.55 | 52.71 | 51.1 | 52.67 | 51.89 | 52.13 | 51.51 | 51.39 | 51.82 |
| 23-24 | 48.65 | 51.58 | 52.21 | 53.61 | 50.35 | 53.06 | 51.61 | 51.28 | 52.33 |
|  |  |  |  |  |  |  |  |  | Page 1 |

Weekly EigthyFivePercentSpeed Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | 61 | * | 61 |
| 9-10 | * | * | * | * | * | * | 64 | * | 64 |
| 10-11 | * | * | * | * | * | * | 61 | * | 61 |
| 11-12 | * | * | * | * | * | * | 62 | * | 62 |
| 12-13 | * | * | * | * | * | * | 63 | * | 63 |
| 13-14 | * | * | * | * | * | * | 67 | * | 67 |
| 14-15 | * | * | * | * | * | * | 64 | * | 64 |
| 15-16 | * | * | * | * | * | * | 63 | * | 63 |
| 16-17 | * | * | * | * | * | * | 62 | * | 62 |
| 17-18 | * | * | * | * | * | * | 62 | * | 62 |
| 18-19 | * | * | * | * | * | * | 61 | * | 61 |
| 19-20 | * | * | * | * | * | * | 66 | * | 66 |
| 20-21 | * | * | * | * | * | * | 65 | * | 65 |
| 21-22 | * | * | * | * | * | * | 61 | * | 61 |
| 22-23 | * | * | * | * | * | * | 60 | * | 60 |
| 23-24 | * | * | * | * | * | * | 60 | * | 60 |


| Seabrook Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 62 | 61 | 66 | 61 | 61 | 64 | 63 | 62.2 | 63.5 |
| 1-2 | 64 | 55 | 63 | 61 | 59 | 61 | 63 | 60.4 | 62 |
| 2-3 | 59 | 59 | 58 | 57 | 56 | 61 | 63 | 57.8 | 62 |
| 3-4 | 56 | 48 | 61 | 60 | 61 | 61 | 60 | 57.2 | 60.5 |
| 4-5 | 60 | 59 | 74 | 63 | 56 | 61 | 60 | 62.4 | 60.5 |
| 5-6 | 58 | 56 | 60 | 56 | 60 | 55 | 58 | 58 | 56.5 |
| 6-7 | 59 | 54 | 59 | 59 | 58 | 59 | 60 | 57.8 | 59.5 |
| 7-8 | 58 | 54 | 59 | 59 | 59 | 60 | 62 | 57.8 | 61 |
| 8-9 | 59 | 56 | 60 | 60 | 60 | 59 | 60 | 59 | 59.5 |
| 9-10 | 60 | 55 | 60 | 59 | 59 | 60 | 61 | 58.6 | 60.5 |
| 10-11 | 56 | 59 | 59 | 59 | 59 | 59 | 62 | 58.4 | 60.5 |
| 11-12 | 60 | 55 | 60 | 59 | 59 | 60 | 61 | 58.6 | 60.5 |
| 12-13 | 60 | 59 | 60 | 60 | 60 | 61 | 61 | 59.8 | 61 |
| 13-14 | 61 | 58 | 61 | 61 | 61 | 61 | 60 | 60.4 | 60.5 |
| 14-15 | 58 | 57 | 60 | 60 | 60 | 61 | 61 | 59 | 61 |
| 15-16 | 55 | 59 | 60 | 61 | 60 | 60 | 61 | 59 | 60.5 |
| 16-17 | 51 | 60 | 56 | 60 | 57 | 61 | 61 | 56.8 | 61 |
| 17-18 | 50 | 56 | 55 | 56 | 56 | 60 | 61 | 54.6 | 60.5 |
| 18-19 | 51 | 58 | 56 | 55 | 56 | 59 | 61 | 55.2 | 60 |
| 19-20 | 54 | 60 | 58 | 58 | 60 | 60 | 60 | 58 | 60 |
| 20-21 | 55 | 60 | 60 | 61 | 60 | 61 | 62 | 59.2 | 61.5 |
| 21-22 | 55 | 60 | 60 | 61 | 62 | 61 | 61 | 59.6 | 61 |
| 22-23 | 56 | 62 | 59 | 65 | 62 | 61 | 61 | 60.8 | 61 |
| 23-24 | 56 | 62 | 61 | 63 | 59 | 64 | 61 | 60.2 | 62.5 |

Weekly EigthyFivePercentSpeed
Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 62 | * | * | * | * | * | * | 62 | * |
| 1-2 | 67 | * | * | * | * | * | * | 67 | * |
| 2-3 | 61 | * | * | * | * | * | * | 61 | * |
| 3-4 | 60 | * | * | * | * | * | * | 60 | * |
| 4-5 | 59 | * | * | * | * | * | * | 59 | * |
| 5-6 | 61 | * | * | * | * | * | * | 61 | * |
| 6-7 | 59 | * | * | * | * | * | * | 59 | * |
| 7-8 | 59 | * | * | * | * | * | * | 59 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |

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| Seabrook Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 62 | 61 | 66 | 61 | 61 | 64 | 63 | 62.2 | 63.5 |
| 1-2 | 66 | 55 | 63 | 61 | 59 | 61 | 63 | 60.8 | 62 |
| 2-3 | 61 | 59 | 58 | 57 | 56 | 61 | 63 | 58.2 | 62 |
| 3-4 | 60 | 48 | 61 | 60 | 61 | 61 | 60 | 58 | 60.5 |
| 4-5 | 60 | 59 | 74 | 63 | 56 | 61 | 60 | 62.4 | 60.5 |
| 5-6 | 60 | 56 | 60 | 56 | 60 | 55 | 58 | 58.4 | 56.5 |
| 6-7 | 59 | 54 | 59 | 59 | 58 | 59 | 60 | 57.8 | 59.5 |
| 7-8 | 59 | 54 | 59 | 59 | 59 | 60 | 62 | 58 | 61 |
| 8-9 | 59 | 56 | 60 | 60 | 60 | 59 | 61 | 59 | 60 |
| 9-10 | 60 | 55 | 60 | 59 | 59 | 60 | 61 | 58.6 | 60.5 |
| 10-11 | 56 | 59 | 59 | 59 | 59 | 59 | 62 | 58.4 | 60.5 |
| 11-12 | 60 | 55 | 60 | 59 | 59 | 60 | 62 | 58.6 | 61 |
| 12-13 | 60 | 59 | 60 | 60 | 60 | 61 | 62 | 59.8 | 61.5 |
| 13-14 | 61 | 58 | 61 | 61 | 61 | 61 | 61 | 60.4 | 61 |
| 14-15 | 58 | 57 | 60 | 60 | 60 | 61 | 62 | 59 | 61.5 |
| 15-16 | 55 | 59 | 60 | 61 | 60 | 60 | 62 | 59 | 61 |
| 16-17 | 51 | 60 | 56 | 60 | 57 | 61 | 62 | 56.8 | 61.5 |
| 17-18 | 50 | 56 | 55 | 56 | 56 | 60 | 61 | 54.6 | 60.5 |
| 18-19 | 51 | 58 | 56 | 55 | 56 | 59 | 61 | 55.2 | 60 |
| 19-20 | 54 | 60 | 58 | 58 | 60 | 60 | 61 | 58 | 60.5 |
| 20-21 | 55 | 60 | 60 | 61 | 60 | 61 | 62 | 59.2 | 61.5 |
| 21-22 | 55 | 60 | 60 | 61 | 62 | 61 | 61 | 59.6 | 61 |
| 22-23 | 56 | 62 | 59 | 65 | 62 | 61 | 61 | 60.8 | 61 |
| 23-24 | 56 | 62 | 61 | 63 | 59 | 64 | 61 | 60.2 | 62.5 |
|  |  |  |  |  |  |  |  |  | Page 1 |

Weekly SpeederCount
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | 90 | * | 90 |
| 9-10 | * | * | * | * | * | * | 125 | * | 125 |
| 10-11 | * | * | * | * | * | * | 174 | * | 174 |
| 11-12 | * | * | * | * | * | * | 220 | * | 220 |
| 12-13 | * | * | * | * | * | * | 263 | * | 263 |
| 13-14 | * | * | * | * | * | * | 307 | * | 307 |
| 14-15 | * | * | * | * | * | * | 322 | * | 322 |
| 15-16 | * | * | * | * | * | * | 309 | * | 309 |
| 16-17 | * | * | * | * | * | * | 314 | * | 314 |
| 17-18 | * | * | * | * | * | * | 296 | * | 296 |
| 18-19 | * | * | * | * | * | * | 272 | * | 272 |
| 19-20 | * | * | * | * | * | * | 169 | * | 169 |
| 20-21 | * | * | * | * | * | * | 145 | * | 145 |
| 21-22 | * | * | * | * | * | * | 182 | * | 182 |
| 22-23 | * | * | * | * | * | * | 139 | * | 139 |
| 23-24 | * | * | * | * | * | * | 84 | * | 84 |
| Totals | 0 | 0 | 0 | 0 | 0 | 0 | 3411 |  |  |
| \% of Total | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% | 100\% |  |  |

Weekly SpeederCount Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 67 | 36 | 62 | 68 | 53 | 89 | 99 | 57.2 | 94 |
| 1-2 | 45 | 28 | 40 | 37 | 30 | 72 | 87 | 36 | 79.5 |
| 2-3 | 25 | 25 | 15 | 14 | 29 | 49 | 49 | 21.6 | 49 |
| 3-4 | 10 | 11 | 22 | 23 | 25 | 31 | 25 | 18.2 | 28 |
| 4-5 | 25 | 22 | 29 | 22 | 30 | 21 | 24 | 25.6 | 22.5 |
| 5-6 | 81 | 74 | 89 | 69 | 58 | 39 | 28 | 74.2 | 33.5 |
| 6-7 | 383 | 288 | 375 | 349 | 323 | 76 | 52 | 343.6 | 64 |
| 7-8 | 1498 | 1201 | 1354 | 1336 | 1258 | 163 | 103 | 1329.4 | 133 |
| 8-9 | 1088 | 1001 | 888 | 869 | 797 | 302 | 178 | 928.6 | 240 |
| 9-10 | 382 | 439 | 499 | 474 | 476 | 380 | 261 | 454 | 320.5 |
| 10-11 | 358 | 375 | 431 | 361 | 409 | 401 | 318 | 386.8 | 359.5 |
| 11-12 | 404 | 384 | 472 | 412 | 430 | 455 | 429 | 420.4 | 442 |
| 12-13 | 448 | 422 | 443 | 512 | 517 | 585 | 514 | 468.4 | 549.5 |
| 13-14 | 475 | 484 | 531 | 560 | 535 | 519 | 557 | 517 | 538 |
| 14-15 | 697 | 635 | 700 | 699 | 746 | 600 | 563 | 695.4 | 581.5 |
| 15-16 | 1178 | 1008 | 970 | 1106 | 1060 | 599 | 615 | 1064.4 | 607 |
| 16-17 | 1454 | 1213 | 1325 | 1295 | 1416 | 655 | 607 | 1340.6 | 631 |
| 17-18 | 1284 | 1237 | 1312 | 1495 | 1374 | 560 | 560 | 1340.4 | 560 |
| 18-19 | 718 | 641 | 763 | 960 | 683 | 444 | 425 | 753 | 434.5 |
| 19-20 | 339 | 364 | 400 | 491 | 457 | 364 | 294 | 410.2 | 329 |
| 20-21 | 260 | 259 | 256 | 357 | 318 | 268 | 288 | 290 | 278 |
| 21-22 | 166 | 193 | 213 | 209 | 234 | 227 | 239 | 203 | 233 |
| 22-23 | 114 | 153 | 148 | 160 | 198 | 183 | 160 | 154.6 | 171.5 |
| 23-24 | 73 | 78 | 85 | 98 | 148 | 130 | 102 | 96.4 | 116 |
| Totals | 11572 | 10571 | 11422 | 11976 | 11604 | 7212 | 6577 |  |  |
| \% of Total | 16.31\% | 14.9\% | 16.1\% | 16.88\% | 16.36\% | 10.17\% | 9.27\% |  |  |

Weekly SpeederCount Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 50 | * | * | * | * | * | * | 50 | * |
| 1-2 | 40 | * | * | * | * | * | * | 40 | * |
| 2-3 | 22 | * | * | * | * | * | * | 22 | * |
| 3-4 | 26 | * | * | * | * | * | * | 26 | * |
| 4-5 | 23 | * | * | * | * | * | * | 23 | * |
| 5-6 | 96 | * | * | * | * | * | * | 96 | * |
| 6-7 | 373 | * | * | * | * | * | * | 373 | * |
| 7-8 | 164 | * | * | * | * | * | * | 164 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |
| Totals | 794 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| \% of Total | 100\% | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% |  |  |

Page 3

Monthly SpeederCount
Seabrook Bridge
from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM
Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 117 | 36 | 62 | 68 | 53 | 89 | 99 | 67.2 | 94 |
| 1-2 | 85 | 28 | 40 | 37 | 30 | 72 | 87 | 44 | 79.5 |
| 2-3 | 47 | 25 | 15 | 14 | 29 | 49 | 49 | 26 | 49 |
| 3-4 | 36 | 11 | 22 | 23 | 25 | 31 | 25 | 23.4 | 28 |
| 4-5 | 48 | 22 | 29 | 22 | 30 | 21 | 24 | 30.2 | 22.5 |
| 5-6 | 177 | 74 | 89 | 69 | 58 | 39 | 28 | 93.4 | 33.5 |
| 6-7 | 756 | 288 | 375 | 349 | 323 | 76 | 52 | 418.2 | 64 |
| 7-8 | 1662 | 1201 | 1354 | 1336 | 1258 | 163 | 103 | 1362.2 | 133 |
| 8-9 | 1088 | 1001 | 888 | 869 | 797 | 302 | 268 | 928.6 | 285 |
| 9-10 | 382 | 439 | 499 | 474 | 476 | 380 | 386 | 454 | 383 |
| 10-11 | 358 | 375 | 431 | 361 | 409 | 401 | 492 | 386.8 | 446.5 |
| 11-12 | 404 | 384 | 472 | 412 | 430 | 455 | 649 | 420.4 | 552 |
| 12-13 | 448 | 422 | 443 | 512 | 517 | 585 | 777 | 468.4 | 681 |
| 13-14 | 475 | 484 | 531 | 560 | 535 | 519 | 864 | 517 | 691.5 |
| 14-15 | 697 | 635 | 700 | 699 | 746 | 600 | 885 | 695.4 | 742.5 |
| 15-16 | 1178 | 1008 | 970 | 1106 | 1060 | 599 | 924 | 1064.4 | 761.5 |
| 16-17 | 1454 | 1213 | 1325 | 1295 | 1416 | 655 | 921 | 1340.6 | 788 |
| 17-18 | 1284 | 1237 | 1312 | 1495 | 1374 | 560 | 856 | 1340.4 | 708 |
| 18-19 | 718 | 641 | 763 | 960 | 683 | 444 | 697 | 753 | 570.5 |
| 19-20 | 339 | 364 | 400 | 491 | 457 | 364 | 463 | 410.2 | 413.5 |
| 20-21 | 260 | 259 | 256 | 357 | 318 | 268 | 433 | 290 | 350.5 |
| 21-22 | 166 | 193 | 213 | 209 | 234 | 227 | 421 | 203 | 324 |
| 22-23 | 114 | 153 | 148 | 160 | 198 | 183 | 299 | 154.6 | 241 |
| 23-24 | 73 | 78 | 85 | 98 | 148 | 130 | 186 | 96.4 | 158 |
| Totals | 12366 | 10571 | 11422 | 11976 | 11604 | 7212 | 9988 |  |  |
| \% of Total | 16.46\% | 14.07\% | 15.2\% | 15.94\% | 15.44\% | 9.6\% | 13.29\% |  |  |

Page 1

| Seabrook Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | 53.24 | * | 53.24 |
| 9-10 | * | * | * | * | * | * | 54.7 | * | 54.7 |
| 10-11 | * | * | * | * | * | * | 53.25 | * | 53.25 |
| 11-12 | * | * | * | * | * | * | 54.67 | * | 54.67 |
| 12-13 | * | * | * | * | * | * | 55.18 | * | 55.18 |
| 13-14 | * | * | * | * | * | * | 55.56 | * | 55.56 |
| 14-15 | * | * | * | * | * | * | 54.61 | * | 54.61 |
| 15-16 | * | * | * | * | * | * | 54.93 | * | 54.93 |
| 16-17 | * | * | * | * | * | * | 54.47 | * | 54.47 |
| 17-18 | * | * | * | * | * | * | 54.15 | * | 54.15 |
| 18-19 | * | * | * | * | * | * | 52.98 | * | 52.98 |
| 19-20 | * | * | * | * | * | * | 55.2 | * | 55.2 |
| 20-21 | * | * | * | * | * | * | 55.05 | * | 55.05 |
| 21-22 | * | * | * | * | * | * | 53.39 | * | 53.39 |
| 22-23 | * | * | * | * | * | * | 51.23 | * | 51.23 |
| 23-24 | * | * | * | * | * | * | 51.64 | * | 51.64 |

from Sun-Jan-23-2022-08-00-AM to Mon-Jan-31-2022-07-59-AM Lane 1 Lane 2 Lane 3 Lane 4

| Seabrook Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 53.66 | 50.89 | 53.06 | 51.28 | 52.53 | 52.6 | 53.55 | 52.28 | 53.07 |
| 1-2 | 52.89 | 49.25 | 52.32 | 53.03 | 49.87 | 52.07 | 53.64 | 51.47 | 52.86 |
| 2-3 | 51.92 | 49.56 | 50.27 | 48.14 | 48 | 51.63 | 54.24 | 49.58 | 52.94 |
| 3-4 | 46.9 | 45.18 | 52.05 | 49.61 | 53.04 | 52.16 | 51.16 | 49.36 | 51.66 |
| 4-5 | 49.96 | 47.91 | 55.45 | 53.68 | 49.33 | 53.1 | 53.83 | 51.27 | 53.46 |
| 5-6 | 50.31 | 47.58 | 50.72 | 50.22 | 51.78 | 49.23 | 50.25 | 50.12 | 49.74 |
| 6-7 | 50.99 | 47.74 | 51.21 | 51.23 | 50.54 | 50.68 | 50.48 | 50.34 | 50.58 |
| 7-8 | 51.14 | 48.97 | 51.86 | 51.46 | 51.52 | 53.04 | 53.23 | 50.99 | 53.13 |
| 8-9 | 52.01 | 49.85 | 51.71 | 52.43 | 52.17 | 51 | 53.26 | 51.63 | 52.13 |
| 9-10 | 51.52 | 50 | 51.91 | 50.71 | 50.88 | 51 | 52.51 | 51 | 51.75 |
| 10-11 | 49.4 | 49.95 | 50.47 | 51.01 | 50.61 | 51.65 | 53.94 | 50.29 | 52.79 |
| 11-12 | 51.14 | 49.35 | 50.89 | 50.49 | 50.24 | 52.48 | 53.68 | 50.42 | 53.08 |
| 12-13 | 52.27 | 50.68 | 52.08 | 51.81 | 52.41 | 53.69 | 53.7 | 51.85 | 53.69 |
| 13-14 | 52.11 | 50.08 | 52.58 | 52.63 | 52.58 | 52.66 | 52.75 | 52 | 52.71 |
| 14-15 | 50.8 | 50.58 | 51.67 | 51.76 | 52.19 | 52.94 | 53.73 | 51.4 | 53.34 |
| 15-16 | 48.65 | 51.53 | 51.01 | 51.98 | 51.42 | 51.92 | 54 | 50.92 | 52.96 |
| 16-17 | 45.64 | 51.27 | 49.41 | 51.64 | 49.79 | 52.93 | 53.23 | 49.55 | 53.08 |
| 17-18 | 44.26 | 50.32 | 48.91 | 49.41 | 49.18 | 52.24 | 52.93 | 48.42 | 52.59 |
| 18-19 | 45.01 | 50.56 | 48.88 | 49 | 48.92 | 51.14 | 52.45 | 48.47 | 51.79 |
| 19-20 | 47.55 | 51.61 | 50.5 | 50.41 | 50.82 | 52.07 | 51.87 | 50.18 | 51.97 |
| 20-21 | 49.18 | 51.48 | 51.38 | 52.44 | 52.06 | 52.58 | 53.41 | 51.31 | 52.99 |
| 21-22 | 48.09 | 52.03 | 51.85 | 53 | 53.53 | 53.34 | 53.1 | 51.7 | 53.22 |
| 22-23 | 49.11 | 53.21 | 51.85 | 53.41 | 52.98 | 52.86 | 52.57 | 52.11 | 52.71 |
| 23-24 | 49.33 | 52.45 | 52.64 | 53.81 | 51 | 54.02 | 54.44 | 51.84 | 54.23 |


| Seabrook Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 54.24 | * | * | * | * | * | * | 54.24 | * |
| 1-2 | 56.55 | * | * | * | * | * | * | 56.55 | * |
| 2-3 | 51.05 | * | * | * | * | * | * | 51.05 | * |
| 3-4 | 54.04 | * | * | * | * | * | * | 54.04 | * |
| 4-5 | 50.83 | * | * | * | * | * | * | 50.83 | * |
| 5-6 | 52.16 | * | * | * | * | * | * | 52.16 | * |
| 6-7 | 51.76 | * | * | * | * | * | * | 51.76 | * |
| 7-8 | 52.79 | * | * | * | * | * | * | 52.79 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |

Monthly AverageSpeederSpeed
Seabrook Bridge

| Seabrook Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
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|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 53.91 | 50.89 | 53.06 | 51.28 | 52.53 | 52.6 | 53.55 | 52.33 | 53.07 |
| 1-2 | 54.61 | 49.25 | 52.32 | 53.03 | 49.87 | 52.07 | 53.64 | 51.82 | 52.86 |
| 2-3 | 51.51 | 49.56 | 50.27 | 48.14 | 48 | 51.63 | 54.24 | 49.5 | 52.94 |
| 3-4 | 52.06 | 45.18 | 52.05 | 49.61 | 53.04 | 52.16 | 51.16 | 50.39 | 51.66 |
| 4-5 | 50.38 | 47.91 | 55.45 | 53.68 | 49.33 | 53.1 | 53.83 | 51.35 | 53.46 |
| 5-6 | 51.31 | 47.58 | 50.72 | 50.22 | 51.78 | 49.23 | 50.25 | 50.32 | 49.74 |
| 6-7 | 51.37 | 47.74 | 51.21 | 51.23 | 50.54 | 50.68 | 50.48 | 50.42 | 50.58 |
| 7-8 | 51.31 | 48.97 | 51.86 | 51.46 | 51.52 | 53.04 | 53.23 | 51.02 | 53.13 |
| 8-9 | 52.01 | 49.85 | 51.71 | 52.43 | 52.17 | 51 | 53.26 | 51.63 | 52.13 |
| 9-10 | 51.52 | 50 | 51.91 | 50.71 | 50.88 | 51 | 53.22 | 51 | 52.11 |
| 10-11 | 49.4 | 49.95 | 50.47 | 51.01 | 50.61 | 51.65 | 53.7 | 50.29 | 52.67 |
| 11-12 | 51.14 | 49.35 | 50.89 | 50.49 | 50.24 | 52.48 | 54.02 | 50.42 | 53.25 |
| 12-13 | 52.27 | 50.68 | 52.08 | 51.81 | 52.41 | 53.69 | 54.2 | 51.85 | 53.95 |
| 13-14 | 52.11 | 50.08 | 52.58 | 52.63 | 52.58 | 52.66 | 53.75 | 52 | 53.2 |
| 14-15 | 50.8 | 50.58 | 51.67 | 51.76 | 52.19 | 52.94 | 54.05 | 51.4 | 53.49 |
| 15-16 | 48.65 | 51.53 | 51.01 | 51.98 | 51.42 | 51.92 | 54.31 | 50.92 | 53.12 |
| 16-17 | 45.64 | 51.27 | 49.41 | 51.64 | 49.79 | 52.93 | 53.65 | 49.55 | 53.29 |
| 17-18 | 44.26 | 50.32 | 48.91 | 49.41 | 49.18 | 52.24 | 53.36 | 48.42 | 52.8 |
| 18-19 | 45.01 | 50.56 | 48.88 | 49 | 48.92 | 51.14 | 52.66 | 48.47 | 51.9 |
| 19-20 | 47.55 | 51.61 | 50.5 | 50.41 | 50.82 | 52.07 | 53.09 | 50.18 | 52.58 |
| 20-21 | 49.18 | 51.48 | 51.38 | 52.44 | 52.06 | 52.58 | 53.96 | 51.31 | 53.27 |
| 21-22 | 48.09 | 52.03 | 51.85 | 53 | 53.53 | 53.34 | 53.23 | 51.7 | 53.28 |
| 22-23 | 49.11 | 53.21 | 51.85 | 53.41 | 52.98 | 52.86 | 51.95 | 52.11 | 52.4 |
| 23-24 | 49.33 | 52.45 | 52.64 | 53.81 | 51 | 54.02 | 53.18 | 51.84 | 53.6 |




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| ${ }_{8}$ | 54.0 | 40.50 | 59.0 | ${ }^{76}$ | 91.\%\% | ${ }^{46}$ |
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Vehicles/Hour


Vehicles


## LOCATION 2

## DANZIGER BRIDGE (US90)

Radar \& Video Counts
Vehicular, Bicycles \& Pedestrians

## For Project: Project Note

 Location/Name:Report Generated:
Traffic Report From
85th Percentile Speed
85th Percentile Vehicles
Total Vehicles
AADT:
Downman Bridge

## Volumes -

 weekly countsAverage Daily
AM Peak
PM Peak

## Speed

Speed Limit:
85th Percentile Speed:
Average Speed:
Count over limit
\% over limit
Avg Speeder
Class Counts

|  | Number | $\%$ |
| :--- | :--- | :--- |
| Classes 1-2 | 88296 | 39.3 |
| Classes 2-3-4 | 98232 | 43.7 |
| Classes 2-3-4-5-6-7 | 19409 | 8.6 |
| Classes 2 w/trailer 3-4-5-6-7 | 11199 | 5 |
| Classes 7-8-6-5 w/trailer 4 school bus | 3847 | 1.7 |
| Classes 13-12-11-10-9-8 | 3702 | 1.6 |

Weekly LaneCount
Downman Bridge

| Downman Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | 629 | * | 629 |
| 10-11 | * | * | * | * | * | * | 1079 | * | 1079 |
| 11-12 | * | * | * | * | * | * | 1264 | * | 1264 |
| 12-13 | * | * | * | * | * | * | 1230 | * | 1230 |
| 13-14 | * | * | * | * | * | * | 1363 | * | 1363 |
| 14-15 | * | * | * | * | * | * | 1469 | * | 1469 |
| 15-16 | * | * | * | * | * | * | 1436 | * | 1436 |
| 16-17 | * | * | * | * | * | * | 1366 | * | 1366 |
| 17-18 | * | * | * | * | * | * | 1681 | * | 1681 |
| 18-19 | * | * | * | * | * | * | 1340 | * | 1340 |
| 19-20 | * | * | * | * | * | * | 1124 | * | 1124 |
| 20-21 | * | * | * | * | * | * | 758 | * | 758 |
| 21-22 | * | * | * | * | * | * | 748 | * | 748 |
| 22-23 | * | * | * | * | * | * | 581 | * | 581 |
| 23-24 | * | * | * | * | * | * | 402 | * | 402 |
| Totals | 0 | 0 | 0 | 0 | 0 | 0 | 16470 |  |  |
| \% of Total | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% | 100\% |  |  |


| Downman Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 237 | 204 | 206 | 245 | 269 | 393 | 446 | 232.2 | 419.5 |
| 1-2 | 157 | 135 | 132 | 149 | 166 | 266 | 293 | 147.8 | 279.5 |
| 2-3 | 135 | 120 | 127 | 135 | 160 | 209 | 247 | 135.4 | 228 |
| 3-4 | 99 | 113 | 102 | 121 | 154 | 186 | 168 | 117.8 | 177 |
| 4-5 | 184 | 185 | 180 | 204 | 198 | 195 | 179 | 190.2 | 187 |
| 5-6 | 396 | 449 | 461 | 451 | 433 | 276 | 169 | 438 | 222.5 |
| 6-7 | 1590 | 1232 | 1319 | 1392 | 1270 | 382 | 256 | 1360.6 | 319 |
| 7-8 | 3632 | 2648 | 2950 | 2937 | 2755 | 673 | 556 | 2984.4 | 614.5 |
| 8-9 | 2664 | 2449 | 2161 | 2164 | 2072 | 996 | 718 | 2302 | 857 |
| 9-10 | 1598 | 1433 | 1523 | 1592 | 1657 | 1252 | 982 | 1560.6 | 1117 |
| 10-11 | 1491 | 1299 | 1444 | 1344 | 1639 | 1420 | 1144 | 1443.4 | 1282 |
| 11-12 | 1566 | 1445 | 1680 | 1695 | 1721 | 1651 | 1396 | 1621.4 | 1523.5 |
| 12-13 | 1733 | 1626 | 1897 | 1742 | 1970 | 1865 | 1538 | 1793.6 | 1701.5 |
| 13-14 | 1672 | 1703 | 1892 | 1727 | 1904 | 1785 | 1594 | 1779.6 | 1689.5 |
| 14-15 | 1697 | 1762 | 2052 | 2609 | 2125 | 1945 | 1526 | 2049 | 1735.5 |
| 15-16 | 1873 | 2174 | 2274 | 2377 | 2524 | 1799 | 1627 | 2244.4 | 1713 |
| 16-17 | 2110 | 2324 | 2746 | 2687 | 2882 | 1720 | 1542 | 2549.8 | 1631 |
| 17-18 | 2272 | 2314 | 2717 | 2639 | 2619 | 1900 | 1519 | 2512.2 | 1709.5 |
| 18-19 | 1916 | 1616 | 2003 | 2356 | 2338 | 1513 | 1424 | 2045.8 | 1468.5 |
| 19-20 | 1091 | 1101 | 1219 | 1739 | 1553 | 1277 | 1091 | 1340.6 | 1184 |
| 20-21 | 780 | 811 | 905 | 1028 | 1252 | 1042 | 924 | 955.2 | 983 |
| 21-22 | 617 | 669 | 699 | 766 | 901 | 899 | 890 | 730.4 | 894.5 |
| 22-23 | 572 | 520 | 579 | 612 | 811 | 704 | 749 | 618.8 | 726.5 |
| 23-24 | 377 | 348 | 425 | 423 | 536 | 583 | 454 | 421.8 | 518.5 |
| Totals | 30459 | 28680 | 31693 | 33134 | 33909 | 24931 | 21432 |  |  |
| \% of Total | 14.91\% | 14.04\% | 15.52\% | 16.22\% | 16.6\% | 12.21\% | 10.49\% |  |  |


| Downman Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 265 | * | * | * | * | * | * | 265 | * |
| 1-2 | 192 | * | * | * | * | * | * | 192 | * |
| 2-3 | 136 | * | * | * | * | * | * | 136 | * |
| 3-4 | 134 | * | * | * | * | * | * | 134 | * |
| 4-5 | 200 | * | * | * | * | * | * | 200 | * |
| 5-6 | 424 | * | * | * | * | * | * | 424 | * |
| 6-7 | 1393 | * | * | * | * | * | * | 1393 | * |
| 7-8 | 1233 | * | * | * | * | * | * | 1233 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |
| Totals | 3977 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| \% of Total | 100\% | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% |  |  |

Monthly LaneCount
Downman Bridge

| Downman Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 502 | 204 | 206 | 245 | 269 | 393 | 446 | 285.2 | 419.5 |
| 1-2 | 349 | 135 | 132 | 149 | 166 | 266 | 293 | 186.2 | 279.5 |
| 2-3 | 271 | 120 | 127 | 135 | 160 | 209 | 247 | 162.6 | 228 |
| 3-4 | 233 | 113 | 102 | 121 | 154 | 186 | 168 | 144.6 | 177 |
| 4-5 | 384 | 185 | 180 | 204 | 198 | 195 | 179 | 230.2 | 187 |
| 5-6 | 820 | 449 | 461 | 451 | 433 | 276 | 169 | 522.8 | 222.5 |
| 6-7 | 2983 | 1232 | 1319 | 1392 | 1270 | 382 | 256 | 1639.2 | 319 |
| 7-8 | 4865 | 2648 | 2950 | 2937 | 2755 | 673 | 556 | 3231 | 614.5 |
| 8-9 | 2664 | 2449 | 2161 | 2164 | 2072 | 996 | 718 | 2302 | 857 |
| 9-10 | 1598 | 1433 | 1523 | 1592 | 1657 | 1252 | 1611 | 1560.6 | 1431.5 |
| 10-11 | 1491 | 1299 | 1444 | 1344 | 1639 | 1420 | 2223 | 1443.4 | 1821.5 |
| 11-12 | 1566 | 1445 | 1680 | 1695 | 1721 | 1651 | 2660 | 1621.4 | 2155.5 |
| 12-13 | 1733 | 1626 | 1897 | 1742 | 1970 | 1865 | 2768 | 1793.6 | 2316.5 |
| 13-14 | 1672 | 1703 | 1892 | 1727 | 1904 | 1785 | 2957 | 1779.6 | 2371 |
| 14-15 | 1697 | 1762 | 2052 | 2609 | 2125 | 1945 | 2995 | 2049 | 2470 |
| 15-16 | 1873 | 2174 | 2274 | 2377 | 2524 | 1799 | 3063 | 2244.4 | 2431 |
| 16-17 | 2110 | 2324 | 2746 | 2687 | 2882 | 1720 | 2908 | 2549.8 | 2314 |
| 17-18 | 2272 | 2314 | 2717 | 2639 | 2619 | 1900 | 3200 | 2512.2 | 2550 |
| 18-19 | 1916 | 1616 | 2003 | 2356 | 2338 | 1513 | 2764 | 2045.8 | 2138.5 |
| 19-20 | 1091 | 1101 | 1219 | 1739 | 1553 | 1277 | 2215 | 1340.6 | 1746 |
| 20-21 | 780 | 811 | 905 | 1028 | 1252 | 1042 | 1682 | 955.2 | 1362 |
| 21-22 | 617 | 669 | 699 | 766 | 901 | 899 | 1638 | 730.4 | 1268.5 |
| 22-23 | 572 | 520 | 579 | 612 | 811 | 704 | 1330 | 618.8 | 1017 |
| 23-24 | 377 | 348 | 425 | 423 | 536 | 583 | 856 | 421.8 | 719.5 |
| Totals | 34436 | 28680 | 31693 | 33134 | 33909 | 24931 | 37902 |  |  |
| \% of Total | 15.33\% | 12.76\% | 14.11\% | 14.75\% | 15.09\% | 11.1\% | 16.87\% |  |  |

Page 1

| Downman Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | 41.58 | * | 41.58 |
| 10-11 | * | * | * | * | * | * | 42.12 | * | 42.12 |
| 11-12 | * | * | * | * | * | * | 41.31 | * | 41.31 |
| 12-13 | * | * | * | * | * | * | 40.13 | * | 40.13 |
| 13-14 | * | * | * | * | * | * | 39.85 | * | 39.85 |
| 14-15 | * | * | * | * | * | * | 41.33 | * | 41.33 |
| 15-16 | * | * | * | * | * | * | 40.78 | * | 40.78 |
| 16-17 | * | * | * | * | * | * | 40.3 | * | 40.3 |
| 17-18 | * | * | * | * | * | * | 37.13 | * | 37.13 |
| 18-19 | * | * | * | * | * | * | 40.15 | * | 40.15 |
| 19-20 | * | * | * | * | * | * | 41.02 | * | 41.02 |
| 20-21 | * | * | * | * | * | * | 42.05 | * | 42.05 |
| 21-22 | * | * | * | * | * | * | 41.93 | * | 41.93 |
| 22-23 | * | * | * | * | * | * | 42.3 | * | 42.3 |
| 23-24 | * | * | * | * | * | * | 42.32 | * | 42.32 |


| Downman Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 42 | 40.86 | 42.67 | 42.05 | 42.28 | 41.98 | 42.67 | 41.97 | 42.33 |
| 1-2 | 41.59 | 38.96 | 41.47 | 43.17 | 40.91 | 42.8 | 43.08 | 41.22 | 42.94 |
| 2-3 | 40.79 | 40.5 | 39.57 | 41.85 | 42.68 | 43.3 | 42.91 | 41.08 | 43.11 |
| 3-4 | 42.03 | 40.4 | 42.12 | 42.65 | 39.79 | 42.9 | 44.85 | 41.4 | 43.87 |
| 4-5 | 37.88 | 38.12 | 41.12 | 39.71 | 40.41 | 40.93 | 42.35 | 39.45 | 41.64 |
| 5-6 | 40.46 | 37.3 | 40.03 | 40.2 | 40.11 | 40.56 | 41.31 | 39.62 | 40.93 |
| 6-7 | 40.47 | 37.7 | 39.64 | 39.13 | 39.66 | 40.83 | 42.44 | 39.32 | 41.63 |
| 7-8 | 37.35 | 36.12 | 38.44 | 37.9 | 38.46 | 41.25 | 41.16 | 37.65 | 41.2 |
| 8-9 | 36.97 | 35.23 | 38.58 | 37.62 | 37.25 | 40.72 | 41.12 | 37.13 | 40.92 |
| 9-10 | 37.68 | 36.78 | 36.44 | 37.15 | 38.14 | 40.85 | 41.9 | 37.24 | 41.38 |
| 10-11 | 38.14 | 36.12 | 37.53 | 36.11 | 37.39 | 39.57 | 40.92 | 37.06 | 40.25 |
| 11-12 | 36.5 | 36.34 | 36.29 | 37.71 | 36.74 | 40.24 | 41.29 | 36.72 | 40.77 |
| 12-13 | 32.31 | 35.91 | 35.58 | 37.21 | 36.42 | 38.86 | 40.72 | 35.48 | 39.79 |
| 13-14 | 33.34 | 35.77 | 35.53 | 37.48 | 37.05 | 38.14 | 39.17 | 35.83 | 38.66 |
| 14-15 | 24.5 | 35.41 | 35.51 | 36.83 | 35.19 | 38.23 | 41 | 33.48 | 39.62 |
| 15-16 | 20.44 | 32.52 | 29.88 | 31.78 | 32.2 | 33.8 | 41.43 | 29.36 | 37.62 |
| 16-17 | 19.29 | 30.19 | 26.93 | 28.81 | 30.27 | 31.87 | 39.29 | 27.1 | 35.58 |
| 17-18 | 24.85 | 33.48 | 28.33 | 25.66 | 28.86 | 37.5 | 39.69 | 28.24 | 38.6 |
| 18-19 | 30.33 | 37.36 | 33.64 | 31.33 | 32.7 | 38.81 | 39.9 | 33.07 | 39.35 |
| 19-20 | 33.03 | 40.2 | 40.29 | 39.02 | 38.29 | 41.19 | 40.7 | 38.17 | 40.95 |
| 20-21 | 38.18 | 41.35 | 40.59 | 41.26 | 39.63 | 41.54 | 42.12 | 40.2 | 41.83 |
| 21-22 | 39.02 | 41.56 | 41.73 | 41.84 | 40.89 | 41.76 | 42.14 | 41.01 | 41.95 |
| 22-23 | 38.41 | 42.36 | 41.67 | 41.55 | 41.82 | 41.67 | 41.89 | 41.16 | 41.78 |
| 23-24 | 39.35 | 42.69 | 42.07 | 42.07 | 42.93 | 41.53 | 41.99 | 41.82 | 41.76 |


| Downman Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 42.18 | * | * | * | * | * | * | 42.18 | * |
| 1-2 | 42.09 | * | * | * | * | * | * | 42.09 | * |
| 2-3 | 42.69 | * | * | * | * | * | * | 42.69 | * |
| 3-4 | 42.81 | * | * | * | * | * | * | 42.81 | * |
| 4-5 | 40.6 | * | * | * | * | * | * | 40.6 | * |
| 5-6 | 41.18 | * | * | * | * | * | * | 41.18 | * |
| 6-7 | 40.11 | * | * | * | * | * | * | 40.11 | * |
| 7-8 | 39.01 | * | * | * | * | * | * | 39.01 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |

Page 3

Monthly AverageSpeed
Downman Bridge
from Sun-Jan-23-2022-09-00-AM to Mon-Jan-31-2022-07-59-AM
Lane 1 Lane 2 Lane 3 Lane 4 Lane 5 Lane 6 Lane 7

| Downman Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 42.1 | 40.86 | 42.67 | 42.05 | 42.28 | 41.98 | 42.67 | 41.99 | 42.33 |
| 1-2 | 41.86 | 38.96 | 41.47 | 43.17 | 40.91 | 42.8 | 43.08 | 41.28 | 42.94 |
| 2-3 | 41.74 | 40.5 | 39.57 | 41.85 | 42.68 | 43.3 | 42.91 | 41.27 | 43.11 |
| 3-4 | 42.48 | 40.4 | 42.12 | 42.65 | 39.79 | 42.9 | 44.85 | 41.49 | 43.87 |
| 4-5 | 39.3 | 38.12 | 41.12 | 39.71 | 40.41 | 40.93 | 42.35 | 39.73 | 41.64 |
| 5-6 | 40.83 | 37.3 | 40.03 | 40.2 | 40.11 | 40.56 | 41.31 | 39.69 | 40.93 |
| 6-7 | 40.3 | 37.7 | 39.64 | 39.13 | 39.66 | 40.83 | 42.44 | 39.29 | 41.63 |
| 7-8 | 37.77 | 36.12 | 38.44 | 37.9 | 38.46 | 41.25 | 41.16 | 37.74 | 41.2 |
| 8-9 | 36.97 | 35.23 | 38.58 | 37.62 | 37.25 | 40.72 | 41.12 | 37.13 | 40.92 |
| 9-10 | 37.68 | 36.78 | 36.44 | 37.15 | 38.14 | 40.85 | 41.78 | 37.24 | 41.31 |
| 10-11 | 38.14 | 36.12 | 37.53 | 36.11 | 37.39 | 39.57 | 41.51 | 37.06 | 40.54 |
| 11-12 | 36.5 | 36.34 | 36.29 | 37.71 | 36.74 | 40.24 | 41.3 | 36.72 | 40.77 |
| 12-13 | 32.31 | 35.91 | 35.58 | 37.21 | 36.42 | 38.86 | 40.46 | 35.48 | 39.66 |
| 13-14 | 33.34 | 35.77 | 35.53 | 37.48 | 37.05 | 38.14 | 39.48 | 35.83 | 38.81 |
| 14-15 | 24.5 | 35.41 | 35.51 | 36.83 | 35.19 | 38.23 | 41.16 | 33.48 | 39.7 |
| 15-16 | 20.44 | 32.52 | 29.88 | 31.78 | 32.2 | 33.8 | 41.12 | 29.36 | 37.46 |
| 16-17 | 19.29 | 30.19 | 26.93 | 28.81 | 30.27 | 31.87 | 39.76 | 27.1 | 35.82 |
| 17-18 | 24.85 | 33.48 | 28.33 | 25.66 | 28.86 | 37.5 | 38.35 | 28.24 | 37.93 |
| 18-19 | 30.33 | 37.36 | 33.64 | 31.33 | 32.7 | 38.81 | 40.02 | 33.07 | 39.42 |
| 19-20 | 33.03 | 40.2 | 40.29 | 39.02 | 38.29 | 41.19 | 40.86 | 38.17 | 41.03 |
| 20-21 | 38.18 | 41.35 | 40.59 | 41.26 | 39.63 | 41.54 | 42.09 | 40.2 | 41.81 |
| 21-22 | 39.02 | 41.56 | 41.73 | 41.84 | 40.89 | 41.76 | 42.04 | 41.01 | 41.9 |
| 22-23 | 38.41 | 42.36 | 41.67 | 41.55 | 41.82 | 41.67 | 42.07 | 41.16 | 41.87 |
| 23-24 | 39.35 | 42.69 | 42.07 | 42.07 | 42.93 | 41.53 | 42.15 | 41.82 | 41.84 |
|  |  |  |  |  |  |  |  |  | Page 1 |


| Downman Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | 51 | * | 51 |
| 10-11 | * | * | * | * | * | * | 51 | * | 51 |
| 11-12 | * | * | * | * | * | * | 52 | * | 52 |
| 12-13 | * | * | * | * | * | * | 50 | * | 50 |
| 13-14 | * | * | * | * | * | * | 51 | * | 51 |
| 14-15 | * | * | * | * | * | * | 51 | * | 51 |
| 15-16 | * | * | * | * | * | * | 51 | * | 51 |
| 16-17 | * | * | * | * | * | * | 51 | * | 51 |
| 17-18 | * | * | * | * | * | * | 49 | * | 49 |
| 18-19 | * | * | * | * | * | * | 49 | * | 49 |
| 19-20 | * | * | * | * | * | * | 52 | * | 52 |
| 20-21 | * | * | * | * | * | * | 52 | * | 52 |
| 21-22 | * | * | * | * | * | * | 52 | * | 52 |
| 22-23 | * | * | * | * | * | * | 52 | * | 52 |
| 23-24 | * | * | * | * | * | * | 53 | * | 53 |


| Downman Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 52 | 49 | 53 | 52 | 52 | 51 | 52 | 51.6 | 51.5 |
| 1-2 | 52 | 49 | 51 | 52 | 52 | 52 | 52 | 51.2 | 52 |
| 2-3 | 52 | 51 | 48 | 51 | 52 | 52 | 52 | 50.8 | 52 |
| 3-4 | 51 | 48 | 50 | 52 | 50 | 53 | 54 | 50.2 | 53.5 |
| 4-5 | 50 | 48 | 51 | 50 | 51 | 50 | 54 | 50 | 52 |
| 5-6 | 52 | 47 | 50 | 51 | 51 | 50 | 49 | 50.2 | 49.5 |
| 6-7 | 49 | 47 | 50 | 49 | 49 | 51 | 54 | 48.8 | 52.5 |
| 7-8 | 45 | 44 | 47 | 47 | 47 | 52 | 51 | 46 | 51.5 |
| 8-9 | 46 | 44 | 49 | 48 | 46 | 50 | 52 | 46.6 | 51 |
| 9-10 | 49 | 46 | 47 | 47 | 49 | 50 | 52 | 47.6 | 51 |
| 10-11 | 49 | 46 | 48 | 48 | 48 | 50 | 50 | 47.8 | 50 |
| 11-12 | 47 | 47 | 48 | 48 | 47 | 51 | 51 | 47.4 | 51 |
| 12-13 | 44 | 46 | 47 | 47 | 47 | 50 | 51 | 46.2 | 50.5 |
| 13-14 | 44 | 45 | 47 | 49 | 49 | 49 | 50 | 46.8 | 49.5 |
| 14-15 | 40 | 46 | 46 | 47 | 46 | 50 | 51 | 45 | 50.5 |
| 15-16 | 35 | 45 | 44 | 46 | 46 | 47 | 51 | 43.2 | 49 |
| 16-17 | 34 | 44 | 42 | 43 | 44 | 44 | 51 | 41.4 | 47.5 |
| 17-18 | 39 | 46 | 43 | 41 | 43 | 48 | 50 | 42.4 | 49 |
| 18-19 | 41 | 48 | 45 | 45 | 46 | 50 | 50 | 45 | 50 |
| 19-20 | 43 | 49 | 50 | 49 | 49 | 51 | 51 | 48 | 51 |
| 20-21 | 48 | 51 | 50 | 51 | 51 | 51 | 51 | 50.2 | 51 |
| 21-22 | 50 | 51 | 52 | 52 | 50 | 50 | 51 | 51 | 50.5 |
| 22-23 | 47 | 51 | 52 | 51 | 53 | 51 | 52 | 50.8 | 51.5 |
| 23-24 | 49 | 53 | 51 | 52 | 53 | 51 | 51 | 51.6 | 51 |


| Downman Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 54 | * | * | * | * | * | * | 54 | * |
| 1-2 | 53 | * | * | * | * | * | * | 53 | * |
| 2-3 | 52 | * | * | * | * | * | * | 52 | * |
| 3-4 | 52 | * | * | * | * | * | * | 52 | * |
| 4-5 | 50 | * | * | * | * | * | * | 50 | * |
| 5-6 | 51 | * | * | * | * | * | * | 51 | * |
| 6-7 | 49 | * | * | * | * | * | * | 49 | * |
| 7-8 | 49 | * | * | * | * | * | * | 49 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |

Page 3

Monthly EigthyFivePercentSpeed
Downman Bridge
from Sun-Jan-23-2022-09-00-AM to Mon-Jan-31-2022-07-59-AM
Lane 1 Lane 2 Lane 3 Lane 4 Lane 5 Lane 6 Lane 7

| Downman Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 54 | 49 | 53 | 52 | 52 | 51 | 52 | 52 | 51.5 |
| 1-2 | 52 | 49 | 51 | 52 | 52 | 52 | 52 | 51.2 | 52 |
| 2-3 | 52 | 51 | 48 | 51 | 52 | 52 | 52 | 50.8 | 52 |
| 3-4 | 52 | 48 | 50 | 52 | 50 | 53 | 54 | 50.4 | 53.5 |
| 4-5 | 50 | 48 | 51 | 50 | 51 | 50 | 54 | 50 | 52 |
| 5-6 | 51 | 47 | 50 | 51 | 51 | 50 | 49 | 50 | 49.5 |
| 6-7 | 49 | 47 | 50 | 49 | 49 | 51 | 54 | 48.8 | 52.5 |
| 7-8 | 46 | 44 | 47 | 47 | 47 | 52 | 51 | 46.2 | 51.5 |
| 8-9 | 46 | 44 | 49 | 48 | 46 | 50 | 52 | 46.6 | 51 |
| 9-10 | 49 | 46 | 47 | 47 | 49 | 50 | 51 | 47.6 | 50.5 |
| 10-11 | 49 | 46 | 48 | 48 | 48 | 50 | 51 | 47.8 | 50.5 |
| 11-12 | 47 | 47 | 48 | 48 | 47 | 51 | 52 | 47.4 | 51.5 |
| 12-13 | 44 | 46 | 47 | 47 | 47 | 50 | 50 | 46.2 | 50 |
| 13-14 | 44 | 45 | 47 | 49 | 49 | 49 | 50 | 46.8 | 49.5 |
| 14-15 | 40 | 46 | 46 | 47 | 46 | 50 | 51 | 45 | 50.5 |
| 15-16 | 35 | 45 | 44 | 46 | 46 | 47 | 51 | 43.2 | 49 |
| 16-17 | 34 | 44 | 42 | 43 | 44 | 44 | 51 | 41.4 | 47.5 |
| 17-18 | 39 | 46 | 43 | 41 | 43 | 48 | 49 | 42.4 | 48.5 |
| 18-19 | 41 | 48 | 45 | 45 | 46 | 50 | 49 | 45 | 49.5 |
| 19-20 | 43 | 49 | 50 | 49 | 49 | 51 | 51 | 48 | 51 |
| 20-21 | 48 | 51 | 50 | 51 | 51 | 51 | 51 | 50.2 | 51 |
| 21-22 | 50 | 51 | 52 | 52 | 50 | 50 | 51 | 51 | 50.5 |
| 22-23 | 47 | 51 | 52 | 51 | 53 | 51 | 52 | 50.8 | 51.5 |
| 23-24 | 49 | 53 | 51 | 52 | 53 | 51 | 52 | 51.6 | 51.5 |
|  |  |  |  |  |  |  |  |  | Page 1 |


| Downman Bridge | 1/17/2022 | to | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | 479 | * | 479 |
| 10-11 | * | * | * | * | * | * | 801 | * | 801 |
| 11-12 | * | * | * | * | * | * | 900 | * | 900 |
| 12-13 | * | * | * | * | * | * | 879 | * | 879 |
| 13-14 | * | * | * | * | * | * | 907 | * | 907 |
| 14-15 | * | * | * | * | * | * | 1073 | * | 1073 |
| 15-16 | * | * | * | * | * | * | 1001 | * | 1001 |
| 16-17 | * | * | * | * | * | * | 920 | * | 920 |
| 17-18 | * | * | * | * | * | * | 988 | * | 988 |
| 18-19 | * | * | * | * | * | * | 938 | * | 938 |
| 19-20 | * | * | * | * | * | * | 783 | * | 783 |
| 20-21 | * | * | * | * | * | * | 592 | * | 592 |
| 21-22 | * | * | * | * | * | * | 554 | * | 554 |
| 22-23 | * | * | * | * | * | * | 444 | * | 444 |
| 23-24 | * | * | * | * | * | * | 303 | * | 303 |
| Totals | 0 | 0 | 0 | 0 | 0 | 0 | 11562 |  |  |
| \% of Total | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% | 100\% |  |  |


| Downman Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 176 | 149 | 161 | 180 | 198 | 299 | 347 | 172.8 | 323 |
| 1-2 | 115 | 86 | 100 | 121 | 115 | 203 | 216 | 107.4 | 209.5 |
| 2-3 | 97 | 88 | 89 | 103 | 117 | 171 | 192 | 98.8 | 181.5 |
| 3-4 | 79 | 80 | 78 | 94 | 103 | 138 | 141 | 86.8 | 139.5 |
| 4-5 | 106 | 117 | 127 | 135 | 141 | 139 | 127 | 125.2 | 133 |
| 5-6 | 279 | 262 | 314 | 306 | 286 | 194 | 128 | 289.4 | 161 |
| 6-7 | 1209 | 724 | 906 | 915 | 871 | 264 | 180 | 925 | 222 |
| 7-8 | 2333 | 1445 | 1971 | 1859 | 1782 | 490 | 406 | 1878 | 448 |
| 8-9 | 1620 | 1309 | 1397 | 1325 | 1229 | 710 | 527 | 1376 | 618.5 |
| 9-10 | 940 | 832 | 835 | 921 | 1046 | 896 | 745 | 914.8 | 820.5 |
| 10-11 | 901 | 713 | 835 | 731 | 954 | 930 | 832 | 826.8 | 881 |
| 11-12 | 882 | 779 | 889 | 1021 | 982 | 1143 | 1001 | 910.6 | 1072 |
| 12-13 | 746 | 874 | 1024 | 1019 | 1130 | 1182 | 1089 | 958.6 | 1135.5 |
| 13-14 | 756 | 912 | 1007 | 1000 | 1097 | 1132 | 1040 | 954.4 | 1086 |
| 14-15 | 442 | 915 | 1097 | 1530 | 1080 | 1215 | 1102 | 1012.8 | 1158.5 |
| 15-16 | 272 | 922 | 830 | 1006 | 1088 | 916 | 1222 | 823.6 | 1069 |
| 16-17 | 291 | 866 | 776 | 884 | 1092 | 741 | 973 | 781.8 | 857 |
| 17-18 | 518 | 1074 | 854 | 659 | 871 | 1142 | 1003 | 795.2 | 1072.5 |
| 18-19 | 636 | 943 | 975 | 990 | 1021 | 960 | 970 | 913 | 965 |
| 19-20 | 410 | 749 | 843 | 1146 | 988 | 912 | 757 | 827.2 | 834.5 |
| 20-21 | 461 | 585 | 635 | 745 | 824 | 783 | 697 | 650 | 740 |
| 21-22 | 394 | 479 | 518 | 565 | 654 | 662 | 680 | 522 | 671 |
| 22-23 | 353 | 402 | 415 | 441 | 601 | 509 | 542 | 442.4 | 525.5 |
| 23-24 | 243 | 260 | 326 | 316 | 411 | 435 | 347 | 311.2 | 391 |
| Totals | 14259 | 15565 | 17002 | 18012 | 18681 | 16166 | 15264 |  |  |
| \% of Total | 12.4\% | 13.54\% | 14.79\% | 15.67\% | 16.25\% | 14.06\% | 13.28\% |  |  |


| Downman Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 188 | * | * | * | * | * | * | 188 | * |
| 1-2 | 148 | * | * | * | * | * | * | 148 | * |
| 2-3 | 104 | * | * | * | * | * | * | 104 | * |
| 3-4 | 104 | * | * | * | * | * | * | 104 | * |
| 4-5 | 149 | * | * | * | * | * | * | 149 | * |
| 5-6 | 305 | * | * | * | * | * | * | 305 | * |
| 6-7 | 1006 | * | * | * | * | * | * | 1006 | * |
| 7-8 | 800 | * | * | * | * | * | * | 800 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |
| Totals | 2804 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| \% of Total | 100\% | 0\% | 0\% | 0\% | 0\% | 0\% | 0\% |  |  |


| Downman Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 364 | 149 | 161 | 180 | 198 | 299 | 347 | 210.4 | 323 |
| 1-2 | 263 | 86 | 100 | 121 | 115 | 203 | 216 | 137 | 209.5 |
| 2-3 | 201 | 88 | 89 | 103 | 117 | 171 | 192 | 119.6 | 181.5 |
| 3-4 | 183 | 80 | 78 | 94 | 103 | 138 | 141 | 107.6 | 139.5 |
| 4-5 | 255 | 117 | 127 | 135 | 141 | 139 | 127 | 155 | 133 |
| 5-6 | 584 | 262 | 314 | 306 | 286 | 194 | 128 | 350.4 | 161 |
| 6-7 | 2215 | 724 | 906 | 915 | 871 | 264 | 180 | 1126.2 | 222 |
| 7-8 | 3133 | 1445 | 1971 | 1859 | 1782 | 490 | 406 | 2038 | 448 |
| 8-9 | 1620 | 1309 | 1397 | 1325 | 1229 | 710 | 527 | 1376 | 618.5 |
| 9-10 | 940 | 832 | 835 | 921 | 1046 | 896 | 1224 | 914.8 | 1060 |
| 10-11 | 901 | 713 | 835 | 731 | 954 | 930 | 1633 | 826.8 | 1281.5 |
| 11-12 | 882 | 779 | 889 | 1021 | 982 | 1143 | 1901 | 910.6 | 1522 |
| 12-13 | 746 | 874 | 1024 | 1019 | 1130 | 1182 | 1968 | 958.6 | 1575 |
| 13-14 | 756 | 912 | 1007 | 1000 | 1097 | 1132 | 1947 | 954.4 | 1539.5 |
| 14-15 | 442 | 915 | 1097 | 1530 | 1080 | 1215 | 2175 | 1012.8 | 1695 |
| 15-16 | 272 | 922 | 830 | 1006 | 1088 | 916 | 2223 | 823.6 | 1569.5 |
| 16-17 | 291 | 866 | 776 | 884 | 1092 | 741 | 1893 | 781.8 | 1317 |
| 17-18 | 518 | 1074 | 854 | 659 | 871 | 1142 | 1991 | 795.2 | 1566.5 |
| 18-19 | 636 | 943 | 975 | 990 | 1021 | 960 | 1908 | 913 | 1434 |
| 19-20 | 410 | 749 | 843 | 1146 | 988 | 912 | 1540 | 827.2 | 1226 |
| 20-21 | 461 | 585 | 635 | 745 | 824 | 783 | 1289 | 650 | 1036 |
| 21-22 | 394 | 479 | 518 | 565 | 654 | 662 | 1234 | 522 | 948 |
| 22-23 | 353 | 402 | 415 | 441 | 601 | 509 | 986 | 442.4 | 747.5 |
| 23-24 | 243 | 260 | 326 | 316 | 411 | 435 | 650 | 311.2 | 542.5 |
| Totals | 17063 | 15565 | 17002 | 18012 | 18681 | 16166 | 26826 |  |  |
| \% of Total | 13.19\% | 12.04\% | 13.15\% | 13.93\% | 14.45\% | 12.5\% | 20.74\% |  |  |

Weekly AverageSpeederSpeed
Downman Bridge
from Sun-Jan-23-2022-09-00-AM to Mon-Jan-31-2022-07-59-AM
Lane 1 Lane 2 Lane 3 Lane 4 Lane 5 Lane 6 Lane 7

| Downman Bridge | 1/17/2022 |  | 1/23/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/17/2022 | 1/18/2022 | 1/19/2022 | 1/20/2022 | 1/21/2022 | 1/22/2022 | 1/23/2022 | Day Avg | Avg |
| 0-1 | * | * | * | * | * | * | * | * | * |
| 1-2 | * | * | * | * | * | * | * | * | * |
| 2-3 | * | * | * | * | * | * | * | * | * |
| 3-4 | * | * | * | * | * | * | * | * | * |
| 4-5 | * | * | * | * | * | * | * | * | * |
| 5-6 | * | * | * | * | * | * | * | * | * |
| 6-7 | * | * | * | * | * | * | * | * | * |
| 7-8 | * | * | * | * | * | * | * | * | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | 45.12 | * | 45.12 |
| 10-11 | * | * | * | * | * | * | 46.3 | * | 46.3 |
| 11-12 | * | * | * | * | * | * | 46.21 | * | 46.21 |
| 12-13 | * | * | * | * | * | * | 44.82 | * | 44.82 |
| 13-14 | * | * | * | * | * | * | 46.15 | * | 46.15 |
| 14-15 | * | * | * | * | * | * | 45.74 | * | 45.74 |
| 15-16 | * | * | * | * | * | * | 45.95 | * | 45.95 |
| 16-17 | * | * | * | * | * | * | 45.77 | * | 45.77 |
| 17-18 | * | * | * | * | * | * | 44.93 | * | 44.93 |
| 18-19 | * | * | * | * | * | * | 44.85 | * | 44.85 |
| 19-20 | * | * | * | * | * | * | 46.02 | * | 46.02 |
| 20-21 | * | * | * | * | * | * | 45.38 | * | 45.38 |
| 21-22 | * | * | * | * | * | * | 46.06 | * | 46.06 |
| 22-23 | * | * | * | * | * | * | 46.03 | * | 46.03 |
| 23-24 | * | * | * | * | * | * | 46.43 | * | 46.43 |


| Downman Bridge | 1/24/2022 | to | 1/30/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/24/2022 | 1/25/2022 | 1/26/2022 | 1/27/2022 | 1/28/2022 | 1/29/2022 | 1/30/2022 | Day Avg | Avg |
| 0-1 | 46.24 | 44.96 | 46.25 | 46.58 | 46.54 | 45.84 | 46.14 | 46.11 | 45.99 |
| 1-2 | 45.85 | 44.23 | 45.63 | 46.09 | 45.7 | 46.62 | 47.38 | 45.5 | 47 |
| 2-3 | 45.4 | 45.49 | 44.04 | 45.34 | 47.21 | 45.94 | 46.21 | 45.5 | 46.07 |
| 3-4 | 45.23 | 44.5 | 45.56 | 46.46 | 44.68 | 47.06 | 47.57 | 45.29 | 47.32 |
| 4-5 | 45.62 | 44.21 | 46.65 | 45.73 | 45.35 | 45.53 | 47.31 | 45.51 | 46.42 |
| 5-6 | 45.73 | 43.59 | 45.46 | 45.93 | 45.79 | 45.63 | 45.1 | 45.3 | 45.37 |
| 6-7 | 44.35 | 43.9 | 44.86 | 44.81 | 44.75 | 46.1 | 47.59 | 44.53 | 46.85 |
| 7-8 | 42.4 | 42.17 | 43.36 | 43.78 | 44.04 | 45.62 | 45.37 | 43.15 | 45.49 |
| 8-9 | 43.43 | 42.64 | 44.81 | 44.35 | 43.62 | 45.55 | 46.12 | 43.77 | 45.84 |
| 9-10 | 45.13 | 43.86 | 44.4 | 44.65 | 44.89 | 45.34 | 45.64 | 44.58 | 45.49 |
| 10-11 | 45.27 | 44.31 | 44.99 | 45.24 | 44.78 | 45.66 | 45.29 | 44.92 | 45.48 |
| 11-12 | 44.36 | 44.13 | 45.17 | 44.76 | 44.22 | 45.42 | 46.17 | 44.53 | 45.79 |
| 12-13 | 43.9 | 44.01 | 44.13 | 44.47 | 44.24 | 45.72 | 45.77 | 44.15 | 45.75 |
| 13-14 | 43.65 | 43.32 | 44.59 | 45.36 | 45.27 | 44.94 | 45.23 | 44.44 | 45.09 |
| 14-15 | 44.14 | 43.89 | 44.39 | 44.13 | 44.58 | 45.63 | 45.89 | 44.23 | 45.76 |
| 15-16 | 42.78 | 44.78 | 45.12 | 45.43 | 44.92 | 45 | 45.41 | 44.61 | 45.21 |
| 16-17 | 44.49 | 44.5 | 46.01 | 45.32 | 44.95 | 43.93 | 46.23 | 45.05 | 45.08 |
| 17-18 | 43.5 | 44.94 | 45.51 | 44.68 | 44.7 | 44.53 | 45.67 | 44.66 | 45.1 |
| 18-19 | 42.48 | 44.5 | 44.55 | 44.54 | 45.06 | 44.87 | 44.63 | 44.23 | 44.75 |
| 19-20 | 43.35 | 45 | 45.31 | 44.67 | 44.9 | 45.84 | 45.54 | 44.65 | 45.69 |
| 20-21 | 44.62 | 45.8 | 45.2 | 45.69 | 45.51 | 45.3 | 45.8 | 45.36 | 45.55 |
| 21-22 | 44.55 | 46.12 | 46.11 | 45.9 | 45.14 | 45.67 | 45.89 | 45.56 | 45.78 |
| 22-23 | 43.8 | 46.01 | 46.31 | 45.75 | 45.89 | 45.96 | 46.31 | 45.55 | 46.13 |
| 23-24 | 44.98 | 46.79 | 45.44 | 46.34 | 46.86 | 45.64 | 45.61 | 46.08 | 45.62 |


| Downman Bridge | 1/31/2022 | to | 2/6/2022 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour | 1/31/2022 | 2/1/2022 | 2/2/2022 | 2/3/2022 | 2/4/2022 | 2/5/2022 | 2/6/2022 | Day Avg | Avg |
| 0-1 | 47.3 | * | * | * | * | * | * | 47.3 | * |
| 1-2 | 45.66 | * | * | * | * | * | * | 45.66 | * |
| 2-3 | 46.66 | * | * | * | * | * | * | 46.66 | * |
| 3-4 | 46.45 | * | * | * | * | * | * | 46.45 | * |
| 4-5 | 44.74 | * | * | * | * | * | * | 44.74 | * |
| 5-6 | 45.75 | * | * | * | * | * | * | 45.75 | * |
| 6-7 | 44.58 | * | * | * | * | * | * | 44.58 | * |
| 7-8 | 44.7 | * | * | * | * | * | * | 44.7 | * |
| 8-9 | * | * | * | * | * | * | * | * | * |
| 9-10 | * | * | * | * | * | * | * | * | * |
| 10-11 | * | * | * | * | * | * | * | * | * |
| 11-12 | * | * | * | * | * | * | * | * | * |
| 12-13 | * | * | * | * | * | * | * | * | * |
| 13-14 | * | * | * | * | * | * | * | * | * |
| 14-15 | * | * | * | * | * | * | * | * | * |
| 15-16 | * | * | * | * | * | * | * | * | * |
| 16-17 | * | * | * | * | * | * | * | * | * |
| 17-18 | * | * | * | * | * | * | * | * | * |
| 18-19 | * | * | * | * | * | * | * | * | * |
| 19-20 | * | * | * | * | * | * | * | * | * |
| 20-21 | * | * | * | * | * | * | * | * | * |
| 21-22 | * | * | * | * | * | * | * | * | * |
| 22-23 | * | * | * | * | * | * | * | * | * |
| 23-24 | * | * | * | * | * | * | * | * | * |

Page 3

| Downman Bridge | Jan 2022 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Week | Weekend |
| Hour |  |  |  |  |  |  |  | Day Avg | Avg |
| 0-1 | 46.79 | 44.96 | 46.25 | 46.58 | 46.54 | 45.84 | 46.14 | 46.22 | 45.99 |
| 1-2 | 45.75 | 44.23 | 45.63 | 46.09 | 45.7 | 46.62 | 47.38 | 45.48 | 47 |
| 2-3 | 46.05 | 45.49 | 44.04 | 45.34 | 47.21 | 45.94 | 46.21 | 45.63 | 46.07 |
| 3-4 | 45.92 | 44.5 | 45.56 | 46.46 | 44.68 | 47.06 | 47.57 | 45.42 | 47.32 |
| 4-5 | 45.11 | 44.21 | 46.65 | 45.73 | 45.35 | 45.53 | 47.31 | 45.41 | 46.42 |
| 5-6 | 45.74 | 43.59 | 45.46 | 45.93 | 45.79 | 45.63 | 45.1 | 45.3 | 45.37 |
| 6-7 | 44.45 | 43.9 | 44.86 | 44.81 | 44.75 | 46.1 | 47.59 | 44.55 | 46.85 |
| 7-8 | 42.99 | 42.17 | 43.36 | 43.78 | 44.04 | 45.62 | 45.37 | 43.27 | 45.49 |
| 8-9 | 43.43 | 42.64 | 44.81 | 44.35 | 43.62 | 45.55 | 46.12 | 43.77 | 45.84 |
| 9-10 | 45.13 | 43.86 | 44.4 | 44.65 | 44.89 | 45.34 | 45.44 | 44.58 | 45.39 |
| 10-11 | 45.27 | 44.31 | 44.99 | 45.24 | 44.78 | 45.66 | 45.79 | 44.92 | 45.72 |
| 11-12 | 44.36 | 44.13 | 45.17 | 44.76 | 44.22 | 45.42 | 46.19 | 44.53 | 45.8 |
| 12-13 | 43.9 | 44.01 | 44.13 | 44.47 | 44.24 | 45.72 | 45.35 | 44.15 | 45.53 |
| 13-14 | 43.65 | 43.32 | 44.59 | 45.36 | 45.27 | 44.94 | 45.66 | 44.44 | 45.3 |
| 14-15 | 44.14 | 43.89 | 44.39 | 44.13 | 44.58 | 45.63 | 45.81 | 44.23 | 45.72 |
| 15-16 | 42.78 | 44.78 | 45.12 | 45.43 | 44.92 | 45 | 45.65 | 44.61 | 45.33 |
| 16-17 | 44.49 | 44.5 | 46.01 | 45.32 | 44.95 | 43.93 | 46 | 45.05 | 44.97 |
| 17-18 | 43.5 | 44.94 | 45.51 | 44.68 | 44.7 | 44.53 | 45.31 | 44.66 | 44.92 |
| 18-19 | 42.48 | 44.5 | 44.55 | 44.54 | 45.06 | 44.87 | 44.74 | 44.23 | 44.81 |
| 19-20 | 43.35 | 45 | 45.31 | 44.67 | 44.9 | 45.84 | 45.78 | 44.65 | 45.81 |
| 20-21 | 44.62 | 45.8 | 45.2 | 45.69 | 45.51 | 45.3 | 45.61 | 45.36 | 45.46 |
| 21-22 | 44.55 | 46.12 | 46.11 | 45.9 | 45.14 | 45.67 | 45.97 | 45.56 | 45.82 |
| 22-23 | 43.8 | 46.01 | 46.31 | 45.75 | 45.89 | 45.96 | 46.18 | 45.55 | 46.07 |
| 23-24 | 44.98 | 46.79 | 45.44 | 46.34 | 46.86 | 45.64 | 45.99 | 46.08 | 45.82 |
|  |  |  |  |  |  |  |  |  | Page 1 |



```
\(\because\) Clasese 7.8 .6
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\begin{tabular}{|c|c|}
\hline & \(\square\) \\
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\end{tabular}


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\footnotetext{

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\(\square\)









\begin{tabular}{|c|c|}
\hline Date &  \\
\hline \({ }_{13121202}\) & a0,0:0 \\
\hline cin & Onione \\
\hline \({ }_{1 / 1212022}^{12022}\) & coseme \\
\hline 13121202 & 0ataso \\
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\hline 13121202 & 1.10000 \\
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\hline 18121202 & 140000 \\
\hline 1131202 &  \\
\hline  &  \\
\hline 11312022 & 18.0000 \\
\hline \({ }^{131212022}\) & (19.0.00 \\
\hline 12022 & 210 \\
\hline 1202 & 22.0000 \\
\hline 2022 & \\
\hline
\end{tabular}






\footnotetext{

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\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Toal Coms & 8sporspecd & 10 mphrace & \% \%in pace & * Spectere(-3) & \%specedes & Classs 12 & Classe 2 \\
\hline \({ }^{29}\) & \(\underbrace{}_{\substack{51.0 \\ 580}}\) &  & 46. & 5 & 22,7\% & 17 & 71 \\
\hline \(\bigcirc{ }^{0}\) & 57.0 & 39649 & 46.0 & 42 & \(84.0 \%\) & 2 & 40 \\
\hline \({ }_{0}{ }^{5}\) & \({ }_{9}^{59.0}\) & \({ }_{\substack{345 \\ 35045}}^{\text {a }}\) & \({ }_{5}^{50.9} 6\) & \({ }_{25}^{46}\) & 80, & \({ }_{2}^{11}\) & \({ }^{24}\) \\
\hline - 49 & 520 & \({ }^{381048}\) & 469 & \({ }^{39}\) & 79.6\% & 5 & \({ }_{32}\) \\
\hline \({ }_{104}^{61}\) & (is & ¢ & \(\underset{\substack{36.1 \\ 385}}{\substack{\text { a }}}\) & 39
7
7 &  & \({ }_{20}^{11}\) & 35
61 \\
\hline \({ }^{156}\) & 52.0 & 351045 & 4.0 & \({ }^{109}\) & 69.9\% & \({ }^{13}\) & 102 \\
\hline \(\underset{\substack{202 \\ 236}}{ }\) & ¢ & \(\underset{\substack{344044 \\ 35045}}{\substack{\text { che }}}\) & 4.4.
369
369 & (133 & \({ }_{6}^{658.8 \%}\) & \begin{tabular}{|c}
35 \\
35
\end{tabular} & - 137 \\
\hline \({ }_{308}^{268}\) & \({ }_{54,0}^{50,}\) & \({ }_{350} 5\) & \({ }_{33,4}\) & \({ }_{206}^{125}\) & 669\% & \({ }_{3}\) & \({ }_{19}^{199}\) \\
\hline \(\substack{386 \\ 317}_{\substack{38 \\ \hline}}\) & \(\underset{\substack{\text { s.l. } \\ \text { si.0 }}}{ }\) &  &  & (185 &  & \({ }^{8} 8\) & (234 \\
\hline \({ }^{373}\) & 51.0 & 36646 & \({ }_{338}\) & 216 & 579\%6 & 102 & 22 \\
\hline ( & 460
420 & \({ }_{\substack{231033 \\ 21031}}^{\substack{\text { a }}}\) & \(\underset{\substack{33,5 \\ 43,9}}{ }\) & \({ }_{79}^{116}\) &  & \({ }_{6}^{69}\) &  \\
\hline \({ }^{380}\) & 47.0 & 29.1039 & 40.5 & 190 & 50,9\% & 81 & 257 \\
\hline \(\underbrace{\text { a }}_{\substack{315 \\ 306}}\) & (is & \(\underset{\substack{280088 \\ 37047}}{\substack{204 \\ \hline}}\) & 422
39.5
3 & (156 & \({ }_{7}^{49.59 \%}\) & 67
37 & 210
234
23 \\
\hline \({ }^{223}\) & 51.0 & \({ }^{346044}\) & \({ }_{5}^{54,3}\) & \({ }^{161}\) & \({ }^{122 \%}\) & \({ }_{36}^{36}\) & \({ }_{162}^{162}\) \\
\hline cor \(\begin{gathered}204 \\ 111\end{gathered}\) & cis &  & \({ }_{4}^{45.5}\) & \({ }^{188}\) & \({ }_{\text {cher }}^{6,50 \%}\) & \({ }_{42}^{28}\) & \({ }_{115}\) \\
\hline \({ }^{125}\) & \({ }_{520}^{520}\) & \({ }_{3}^{346044}\) & \({ }_{480}^{480}\) & 21 &  & \({ }^{18}\) & \({ }_{93}^{93}\) \\
\hline
\end{tabular}
```



\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Toal Coms \& 8sporspecd \& 10 mphrace \& \%oin pace \& \#Speceles(-35) \& \% Spececter \& Classe 1-2 \& clasm <br>
\hline ( ${ }_{0}^{05}$ \& ${ }_{\substack{54.0 \\ 540}}^{50}$ \&  \& 50.5
40.6 \& ${ }_{43}^{74}$ \&  \& ${ }_{10}^{16}$ \& 70
48 <br>
\hline \& 49.0 \& 3204040 \& ${ }_{44}^{4}$ \& 41 \& 6.19 \& 18 \& ${ }_{38}$ <br>
\hline ${ }_{\substack{41 \\ 38}}$ \&  \&  \& 46.3
45.5 \& $\stackrel{34}{17}$ \&  \& ${ }_{10}^{10}$ \& - <br>
\hline ${ }_{28}$ \& 51.0 \& ${ }_{38}^{204048}$ \& ${ }_{64}^{63}$ \& 24 \& 85\%\% \& \& 20 <br>
\hline ${ }_{83}^{59}$ \& cis \& ${ }_{\substack{20}}^{261036}$ \& ${ }_{\substack{35.6 \\ 480}}$ \& -388888 \& ${ }^{64.40^{2}}$ \& 15 \& <br>
\hline 116 \& 560 \& ${ }_{351045}$ \& ${ }_{35}$ \& ${ }_{15}$ \& ${ }_{647 \%}$ \& 22 \& ${ }_{76}$ <br>
\hline ${ }^{185}$ \& 55, \& 34104 \& ${ }^{45} 9$ \& 129 \& 69\%\% \& ${ }^{25}$ \& 128 <br>
\hline 200 \& $\underset{\substack{5.0 \\ 880}}{5}$ \&  \& -376 \& -128 \& ${ }_{\text {c }}^{63.45 \%}$ \& ${ }_{28}^{28}$ \& - <br>
\hline ${ }_{312}^{26}$ \& ${ }_{53,0}$ \& 371047 \& ${ }_{353}$ \& 202 \& ${ }_{6427}^{68 \%}$ \& ${ }_{55}$ \& ${ }_{212}$ <br>
\hline ${ }^{300}$ \& ${ }_{5}^{53.0}$ \& 29.039 \& ${ }^{360}$ \& ${ }^{183}$ \& ${ }^{6.1 .9 \%}$ \& 6 \& ${ }^{200}$ <br>
\hline $\underset{\substack{289 \\ 287}}{ }$ \&  \&  \& 3,4
376
37 \& ${ }_{1}^{1985}$ \&  \& ${ }_{51}^{41}$ \& (106 <br>
\hline ${ }_{28}^{28}$ \& 550 \& 301040 \& ${ }_{34}^{346}$ \& 179 \& ${ }_{63,3 \%}^{685}$ \& ${ }_{58}$ \& 17 <br>
\hline $\underset{\substack{283 \\ 325}}{ }$ \& ( \& $\underset{\substack{29039 \\ 306040}}{\substack{\text { a }}}$ \& ${ }_{\substack{371 \\ 378}}$ \& (159 \& ${ }_{5}^{562 \%} 6$ \& ${ }_{\substack{35 \\ 76}}$ \& 190

209 <br>
\hline 239 \& 520 \& 28.1038 \& 43.1 \& ${ }^{145}$ \& 60.7\% \& ${ }_{88}$ \& 163 <br>
\hline $\underset{\substack{187 \\ 209}}{290}$ \& ( \& 边 \& -3,98 \& ${ }^{137}$ \& (13.30 \& ${ }^{31}$ \& - 134 <br>
\hline ${ }_{189}^{29}$ \& ${ }_{540}$ \& 29039 \& 40.2 \& 125 \& 6.15 \& 32 \& ${ }_{188}$ <br>
\hline 4280 \& ${ }_{530}$ \& \& 371 \& \& \& \& <br>
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\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Toun Coms & 8poctsed & 10 Mmprace & \% inpae & *s & edes & Chases 1 -2 & Classe 2 \\
\hline \({ }_{10}^{41}\) &  &  & \({ }_{6}^{43,9}\) & \(\xrightarrow{31}\) & \(\underset{\substack{75,0 \% \\ 7890}}{\substack{\text { cosem }}}\) & ? & , \\
\hline \({ }^{21}\) & \({ }_{450}\) & 380640 & \({ }_{6}^{619}\) & 12 & 57.15 & 2 & 13 \\
\hline \({ }_{13}\) & cisis &  & (is, & \(\stackrel{5}{7}\) &  & \({ }_{5}^{2}\) & \({ }_{7}^{6}\) \\
\hline 25 & 57.0 & 34604 & 48.0 & 18 & 72, \% & 2 & 16 \\
\hline \({ }_{\substack{61 \\ 182}}\) & \(\substack{530 \\ 510}_{510}\) &  & - 41.6 & \({ }^{42}\) &  & \({ }_{3} 9\) & \({ }_{12}\) \\
\hline & 5.10 & 280038 & 4.9 & 116 & \({ }_{5710 \%}\) & 32 & 128 \\
\hline \({ }^{176}\) & 52. & 28.1038 & \({ }_{35}\) & 102 & 58.0\% & \({ }^{29}\) & 10 \\
\hline \({ }^{208}\) & 520 & 311041 & 41.8 & \({ }^{121}\) & 582\% & \({ }_{4}\) & \\
\hline \({ }_{220}^{227}\) & - 480 & 边 31041 & 4.4 & \({ }_{127}^{127}\) &  & \(\stackrel{44}{4}\) & - \\
\hline 263 & 50.0 & 271037 & 4.8 & 139 & \(529 \%\) & 48 & 169 \\
\hline (300 & 480
4.0
4.0 & \({ }_{\substack{270.037 \\ 20030}}\) &  & - \({ }^{138}\) &  & \({ }_{97}^{65}\) & \({ }^{188}\) \\
\hline \({ }_{541}\) & \({ }^{39.0}\) & 21031 & \({ }^{34} 4\) & \({ }^{127}\) & 23,5\% & \({ }^{146}\) & 297 \\
\hline \({ }^{509}\) & \({ }^{35.0}\) & 17627 & 420 & \({ }^{13}\) & \({ }^{143.5 \%}\) & 1168 & \({ }^{268}\) \\
\hline \(\underset{\substack{396 \\ 175}}{ }\) & \({ }_{4}^{40.0}\) & ¢ & 4.4.
400 & \({ }_{88}^{88}\) & \({ }_{\text {2 }}^{222 \% \%}\) & \({ }_{43}^{87}\) & - 11 \\
\hline \({ }^{181}\) & 54.0 & 301640 & \({ }^{37.6}\) & 122 & 67.4\% & \({ }^{31}\) & \({ }^{132}\) \\
\hline \({ }^{123}\) & \({ }^{53.0}\) & \({ }^{351045}\) & 48.0 & \({ }_{8}^{98}\) & \({ }^{75.6 \%}\) & \({ }_{15}^{15}\) & \% \\
\hline \({ }^{119}\) & 5s, & \({ }_{3} \mathbf{3 5 6 0 4 5}\) & \({ }_{994}^{49}\) & \({ }_{62}\) & - & \({ }_{8}\) & 8 \\
\hline \({ }_{4547}\) & 48.0 & 28.1088 & \({ }_{352}\) & 1979 & \({ }_{43,50}\) & \({ }_{88} 8\) & \\
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\end{tabular}




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\(1 / 31 / 2022\)} \\
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| 37.0 | 18028 |
| ${ }^{320}$ | 61016 |
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| S30. | ${ }^{1212022}$ |
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| 4.0 | 2880.38 |
| 43.0 | ${ }^{301040}$ |
| 440 | 331020 |
| 38.0 | ${ }_{240}$ |







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|  |  | ${ }^{45} 1515020$ | 201025 | ${ }_{5}^{251080}$ | ${ }_{3}^{30,085}$ | ${ }_{3510}$ | ${ }_{4}^{40} 4045$ |  | ${ }^{5010} 5$ | ${ }^{51506060}$ | ${ }^{6010665}$ |  | ${ }^{701075}$ |  | ${ }^{8010485}$ |  | ${ }_{0}^{200095}$ | ${ }_{9}^{9560 \times 100}$ |  |  |  | ${ }_{\text {\％}}^{\substack{\text { \％in peec } \\ 60 \\ 60}}$ | ${ }^{\text {\＃}}$ Spectece（ $(3)$ | \％${ }^{\text {\％Specedes }}$ | ${ }_{\substack{\text { Class } 1.2 \\ 3}}^{\substack{\text { a }}}$ | ${ }_{\substack{\text { chases } 2.3 .4 \\ 20}}^{16}$ |  |  |  | ${ }^{\text {Clases } 313.21 .1 .10 .0 .9 .8 ~}$ | ciple |
| $\xrightarrow{112820202}$ | comen | － | － | 1 | 4 | 1 | 1 | 2 | 1 | $\bigcirc$ | ${ }_{0}$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | ！ | ！ | ！ | $\bigcirc$ | － 10 | ¢ |  | ${ }_{6}^{60,0}$ | ${ }_{5}^{10}$ |  | \％ | ${ }_{8}^{16}$ | $\stackrel{1}{1}$ | $\stackrel{1}{1}$ | ： | ！ |  |
| （1282022 | （osinao | $\bigcirc$ | $\stackrel{5}{5}$ | ${ }_{3}^{4}$ | 6 | ${ }_{6}$ | 0 | ${ }_{2}^{4}$ | $\stackrel{1}{2}$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | ！ | ！ | ！ | ！ | ${ }_{21}^{21}$ |  |  | ${ }_{4129}^{619}$ | ${ }_{8}^{11}$ | （incto | 5 | 11 | $\frac{1}{2}$ | 4 | ${ }_{2}$ |  | ${ }_{\substack{16816 \\ 16497}}^{168}$ |
| ${ }^{12232022}$ | Os．ano | $\bigcirc$ | $\stackrel{6}{6}$ | 12 | 吕 | ， | ${ }^{4}$ | ！ | 1 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | ： | $\bigcirc$ |  | ： | － | ${ }_{82}^{4}$ | 330 <br> 440 <br> 4 |  | $\underset{\substack{6,4 \\ 463}}{6 .}$ | ${ }_{10}^{10}$ |  | ${ }_{6}^{6}$ | ${ }_{20}^{26}$ | ${ }_{4}^{4}$ | \％ | ${ }_{3}$ |  | cos |
| 11220202 | Orano | ${ }_{15}{ }^{\text {is }}$ | ${ }_{13}$ | － 26 | ${ }_{35}^{12}$ | ${ }_{25}^{23}$ | （10 | 3 | ， | 1 | － | 。 | ！ | ${ }^{\circ}$ | － |  | 。 | 。 | ${ }_{48}$ | 330 | ${ }_{\text {27，}}^{\substack{27037}}$ | ${ }_{459}$ | ${ }_{4}$ | \％ $27 \times 7$ | 31 | ${ }_{82}$ | 17 | ＇12 | 5 |  | ${ }_{2}^{12354}$ |
| 1282802 | ospono | ${ }^{22}$ | 28 | ${ }^{39}$ | ${ }_{38}$ | ${ }^{36}$ | ， | 2 | 2 | 0 | 。 | 1 | 1 |  | 。 |  |  |  | ${ }^{193}$ | ${ }^{38,0}$ | 21.31 | 466 | 47 | ${ }^{24.46}$ | ${ }_{6}$ | 9 | ${ }^{15}$ | ${ }^{18}$ | 8 |  | ${ }^{12945}$ |
| $\xrightarrow{112820202}$ |  | （18 ${ }_{16}^{618}$ | 23 25 | 40 <br> 32 | ${ }_{40}^{43}$ | ${ }_{40}^{32}$ | ${ }_{8}^{14}$ | ${ }_{4}^{4}$ | $\frac{3}{2}$ | $\bigcirc$ | ： | $\bigcirc$ | i | \％ | ： | ： |  | － | ${ }_{\substack{185 \\ 186}}^{18}$ | （iso | ${ }_{2}^{27,037}$ | ${ }_{468}^{46,6}$ | ${ }_{\substack{50 \\ 47}}$ | ${ }_{\text {2 }}^{2 \times 3.0 \%}$ | ${ }_{34}^{48}$ | ${ }_{101}$ | ${ }_{21}^{25}$ | ${ }_{21}^{20}$ | 6 |  |  |
| （1282022 | 1120：000 | ${ }^{24} 21$ | ${ }^{27}$ | ${ }_{5}^{44}$ | 5 | ${ }^{31}$ | 1 | ${ }_{6}$ | ${ }_{4}$ | 1 | 1 | $\therefore$ | $\bigcirc$ | 。 | $\bigcirc$ |  | $\bigcirc$ | $\bigcirc$ | ${ }_{2}^{22}$ | ${ }^{3730}$ | ${ }_{2}^{236038}$ | ${ }^{455}$ | ${ }^{49}$ | 22.10 | ${ }_{64}^{64}$ | 9 | ${ }_{3}^{33}$ | ${ }_{27}^{13}$ | 6 |  | $\underbrace{150}_{\substack{15066 \\ 18087}}$ |
| 11220202 | 130000 | 28 | ${ }_{35}$ | ${ }_{36}$ | ${ }_{39}$ | ${ }_{27}$ | ${ }_{14}$ | 2 | 3 | 2 | 。 |  | 。 |  | 。 |  |  |  | ${ }_{225}^{20}$ | ${ }^{370}$ |  | ${ }_{382} 88$ |  | ${ }_{\text {18，}}^{148 \%}$ |  | ${ }_{102}^{109}$ | ${ }_{24}^{29}$ | 27 |  |  | ${ }_{\substack{15287 \\ 1285}}^{19}$ |
| 1228202 | 140000 | 6831 | 40 | 49 | ${ }^{3}$ | ${ }^{5}$ | ， | 4 | 4 | 3 | 。 |  |  |  |  |  |  |  | 257 | ${ }^{34,0}$ | 2003 | 22 | ${ }^{30}$ | $11.9 \%$ |  | ${ }^{79}$ | 21 |  |  |  | ${ }_{13266}$ |
| cis2022 |  |  | ${ }_{4}^{29}$ | 39 29 | $\stackrel{31}{17}$ | ${ }_{8}^{14}$ | ${ }_{4}^{11}$ | 1 | ${ }_{3}$ | $!$ | $\stackrel{1}{1}$ | $\bigcirc$ | $\stackrel{0}{2}$ | － |  |  | \％ | ： | ${ }_{\substack{302 \\ 345}}$ | 3200 | $\underset{\substack{61016 \\ 6010}}{\substack{16}}$ | 503 623 | ${ }_{21}^{24}$ | ${ }_{6}^{16.9 \%}$ | ${ }_{158}^{119}$ | ${ }_{48}^{88}$ | ${ }_{35}^{22}$ | ${ }_{3}^{31}$ | ${ }_{21}^{14}$ | ${ }_{85}^{33}$ | ${ }_{\substack{10 \\ \text { gress }}}^{\text {gid }}$ |
| 1282802 | Inateo | －1889 | ${ }^{25}$ | ${ }^{25}$ | 1 | $\bigcirc$ | $\stackrel{2}{2}$ | 2 | $\stackrel{3}{3}$ | $\bigcirc$ | － | $i$ | $\stackrel{0}{2}$ | ${ }_{1}$ | ！ | $\bigcirc$ | $\bigcirc$ | ： | coiz | ${ }_{420}^{24.0}$ | 6016 | ${ }^{203}$ | ？ | $24 \%$ | ${ }^{153}$ | ${ }_{28}^{28}$ | ${ }_{34}$ | ${ }^{34}$ | ， | ${ }^{32}$ |  |
|  | 1， | ${ }_{24}^{124}$ | 20 <br> 10 | ${ }_{34}$ | ${ }_{25}^{16}$ | ${ }_{30}$ | 16 | ${ }_{6}$ | 2 | 3 | ， | ， | 。 | ， | ： |  | ： | ： | ${ }_{\substack{200 \\ 160}}$ | ${ }_{420}^{230}$ | ${ }^{\text {27，}} 17037$ | ${ }^{328}$ | ${ }_{54}^{27}$ | ${ }^{\text {anc }}$ | ${ }_{37}^{18}$ | ${ }_{88}^{88}$ | 14 | ${ }_{12}^{26}$ | 5 | ${ }_{10}^{20}$ |  |
| （1282022 |  | $\cdots$ | ${ }_{5}^{24}$ | ${ }_{20}^{41}$ | ${ }^{42}$ | －${ }_{32}^{43}$ | 21 | ${ }_{11}$ | ！ | $\frac{1}{2}$ | ！ | ！ | ： | ！ | ！ |  | $\bigcirc$ | ： | ${ }_{125}^{195}$ | $\underset{\substack{380 \\ 480}}{ }$ |  | ${ }_{\substack{513 \\ 520}}$ | ${ }_{68}$ |  | ${ }_{\substack{31 \\ 18}}$ | ${ }_{88}^{115}$ | ， | $\stackrel{ }{7}$ |  |  | $\substack{17800 \\ 28156}$ |
| 12828202 | cinco | $2:$ | 4 | ${ }^{24}$ | ${ }^{25}$ | ${ }^{29}$ | ${ }^{13}$ | 8 | $\stackrel{2}{2}$ | $\bigcirc$ | $\bigcirc$ |  |  |  |  |  |  |  | $\bigcirc 109$ | 420 | ${ }^{2810388}$ | ${ }^{560}$ | ${ }_{48}$ | 4．0\％ | 12 | 82 | 4 | ， | 2 | $\bigcirc$ |  |
|  | 隹 | ${ }_{880} 399$ | 41 | ${ }_{613}$ | ${ }_{576}^{14}$ | ${ }_{476}$ | ${ }_{21}^{16}$ | ${ }_{98}$ | ${ }_{46}$ | ${ }_{23}$ | $\stackrel{1}{2}$ | 4 | 6 |  | $s$ |  |  | 。 | $\bigcirc 376$ | 380 | ${ }_{256} 51035$ | ${ }_{34}$ | ${ }_{781}$ | ${ }^{20,7 \%}$ | ${ }_{1}^{10}$ | ${ }_{1521}$ | 32 | ${ }_{34}{ }^{4}$ | 123 | ${ }_{202}$ |  |



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\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Tounc coms \& 8spers sped \& 10 mphrace \& \%inpace \& \#spectese( \(=35\) \& \% Spocedes \& Classs 12 \& Class 2 \\
\hline \({ }_{45}^{63}\) \&  \&  \& ci.9 \& \({ }^{37}\) \&  \& \({ }_{32}^{45}\) \& \({ }_{9}^{17}\) \\
\hline \({ }_{34}\) \& s0, \& 38048 \& 67.6 \& \({ }_{30}\) \& 882\% \& \({ }^{24}\) \& \\
\hline cis \& (s, \& \({ }_{3}^{351045}\) \& \({ }_{5}^{51.4}\) \& \({ }_{35}^{32}\) \& \({ }^{91.49 \%}\) \& \({ }_{26}^{21}\) \& 11 \\
\hline so \& (is \& -36046 \& \({ }_{5}^{520}\) \& cis \& (70.0\% \& \({ }_{93}^{26}\) \& 188 \\
\hline \({ }^{381}\) \& 49.0 \& 36046 \& 50.1 \& \({ }^{269}\) \& 70.68 \& \({ }^{204}\) \& \({ }^{128}\) \\
\hline \(\substack{814 \\ 48 \\ 48}^{\text {c, }}\) \& \({ }_{4}^{470} 4\) \&  \& \(\underset{\substack{4.4 \\ 585}}{5}\) \& 568
413 \&  \& \({ }^{460}\) \& \({ }_{\substack{248 \\ 187}}\) \\
\hline \(\underbrace{3818}_{318}\) \& \({ }_{4}^{48.0}\) \& - \& \(\underset{\substack{35 \\ 595}}{59}\) \& \({ }^{29}\) \& \({ }^{3524 \%}\) \& \({ }_{1}^{275}\) \& 188
107 \\
\hline \({ }^{29}\) \& s0. \& 336046 \& 51.5 \& 219 \& 732\% \& \({ }^{155}\) \& 102 \\
\hline \(\underbrace{31}_{341}\) \& - \& - 350046 \& \({ }_{613}^{2913}\) \& \({ }_{278}^{298}\) \& \({ }_{\text {ckis }}^{\substack{88.5 \%}}\) \& \begin{tabular}{|c}
180 \\
192 \\
\hline
\end{tabular} \& \({ }_{115}^{115}\) \\
\hline \({ }^{349}\) \& 52.0 \& 377047 \& 51.0 \& \({ }^{284}\) \& \({ }^{81.45 \%}\) \& \({ }^{194}\) \& \({ }^{104}\) \\
\hline \({ }_{4}^{605}\) \& \(\underbrace{4.00}_{5.0}\) \&  \& \({ }_{\substack{6,5 \\ 495}}^{6.5}\) \& - 4200 \&  \& 330

226 \& <br>
\hline ${ }^{386}$ \& 51.0 \& 34604 \& 49.5 \& ${ }^{289}$ \& $74.9 \%$ \& 215 \& 118 <br>

\hline $\underbrace{\substack{\text { and }}}_{\substack{300 \\ 383}}$ \& (is.0. \&  \& ${ }_{\substack{4.9 \\ 574}}^{59}$ \& | 233 |
| :--- |
| 201 |
|  |
| 10 | \&  \& 192

228 \& ${ }_{118}^{18}$ <br>
\hline ${ }^{39}$ \& 50.0 \& 377047 \& ${ }^{590}$ \& ${ }^{320}$ \& 8.1.4\% \& 242 \& 19 <br>
\hline (200 \& $\underset{51.0}{49.0}$ \& - \& ${ }_{\substack{6,9 \\ 58,8}}$ \& - \&  \& ${ }_{92}^{144}$ \& ${ }_{56}^{60}$ <br>
\hline ${ }_{91}^{131}$ \& ${ }_{5}^{51.0}$ \& ${ }_{\text {37 }}^{37047}$ \& ${ }_{5}^{227}$ \& -107 \& ${ }_{8}^{812.7 \%}$ \& ${ }^{9}$ \& ${ }_{38}^{38}$ <br>
\hline ${ }_{6887}^{92}$ \& $\underset{\substack{530 \\ 490}}{5}$ \&  \&  \& ¢ \& ${ }_{7}^{92.46 \%}$ \& ${ }_{\substack{48 \\ 382}}$ \& $\substack{38 \\ 2150}_{38}$ <br>
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\end{tabular}

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\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline -100 Toul Comus & 85putsped & 10 mpprace & \%,inpace & \#spectese(-35) & \%s Speceles & Classs 12 & Classe \\
\hline 10 & 480 & \({ }^{321092}\) & -6.30 & \({ }_{17}^{16}\) & ¢ & \({ }_{8}^{14}\) & \\
\hline \({ }_{26}^{19}\) & \({ }_{4}^{47.0}\) & - & \(\underset{\substack{73,7 \\ 73.1}}{19}\) & \({ }_{13}^{17}\) &  & \({ }_{9}^{8}\) & \({ }_{7}^{8}\) \\
\hline 19 & 49.0 & \({ }^{360046}\) & \({ }^{632}\) & 17 & \({ }^{89,5 \%}\) & 5 & \({ }^{10}\) \\
\hline \({ }^{26}\) & 4.0 & 271037 & 423 & 12 & \(462 \%\) & 11 & \\
\hline ¢ & \({ }_{\substack{460 \\ 480}}^{4.0}\) & (35045 & (50.0 & \(\underset{\substack{54 \\ 181}}{18}\) &  & \({ }_{9}^{26}\) & co \\
\hline & 4.0 & 330640 & \({ }_{48} 8\) & \({ }^{39}\) & 49.16 & 273 & \({ }^{195}\) \\
\hline \({ }^{416}\) & 4.0 & 336404 & 50.0 & 233 & 56,0\% & 170 & \({ }^{154}\) \\
\hline - 221 & \({ }_{4}^{450} 4\) & - & \({ }_{\substack{352 \\ 51.1}}^{50}\) & 1127
127 &  & \({ }_{6}\) & \({ }_{84}^{19}\) \\
\hline 291 & 4.0 & 311041 & \({ }_{53} 3\) & \({ }^{163}\) & 56,0\% & 9 & \({ }^{124}\) \\
\hline \(\underset{283}{29}\) & 44.0
460 & - & \({ }_{523}^{523}\) & (188 &  & \({ }^{103}\) & - 110 \\
\hline \({ }_{488}\) & 45.0 & 335043 & \({ }^{525}\) & \({ }^{293}\) & 60.0\% & \({ }^{183}\) & \({ }^{177}\) \\
\hline \({ }_{370}^{35}\) & \({ }_{470}^{4.0}\) & \({ }_{350}^{3504}\) & \({ }_{495}^{49}\) & \({ }_{27}\) & \({ }_{6}^{51,4 \%}\) & \({ }_{203}^{128}\) & \({ }_{96}^{100}\) \\
\hline \(\underset{\substack{285 \\ 24 \\ \hline 24 \\ \hline}}{ }\) & \(\stackrel{4.0}{450}\) & (346044 & ( \({ }_{5}^{547}\) & \(\underset{\substack{189 \\ 164}}{ }\) &  & \({ }_{1}^{125}\) & \({ }_{88}^{84}\) \\
\hline 234 & 46.0 & 34604 & \({ }_{6} 6.7\) & 174 & 74.48 & \({ }^{5}\) & 112 \\
\hline (132 & 46. & \({ }^{336045}\) & \({ }^{583}\) & \({ }_{4}^{93}\) & \({ }^{70.5 \% \%}\) & \({ }^{54}\) & \({ }_{41}^{60}\) \\
\hline \({ }_{80}^{180}\) & \({ }_{450}\) & \({ }_{35045}\) & - \({ }_{6,8}^{56}\) & \({ }_{61}\) & \({ }_{7} 7.58 \%\) & \({ }_{38}\) & 32 \\
\hline \({ }_{5}^{47}\) & \(\underset{4}{47.0}\) & - \begin{tabular}{c}
3710047 \\
34604 \\
\hline
\end{tabular} & \(\underset{\substack{59.6 \\ 514}}{ }\) & \(\underset{\substack{38 \\ 319}}{ }\) &  & \({ }_{2153}^{22}\) & \({ }_{183}^{20}\) \\
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\hline 11312022 & 10.0.000 \\
\hline 13121202 & 11:0000 \\
\hline \({ }^{131212022}\) & (120:000 \\
\hline \({ }^{131212022}\) & \\
\hline 13121202 & 15.5000 \\
\hline \({ }^{13121202}\) & 1 160:000 \\
\hline \(11^{12022}\) & 17.70:00 \\
\hline 13121202 & 18.0.0.00 \\
\hline \(\underbrace{1 / 1 / 2022}_{1}\) & 20.0000 \\
\hline \(131 / 2027\) & \% \\
\hline & 2200:000 \\
\hline & 23:00:0 \\
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\end{tabular}





Vehicles


File Name: Danzinger Bridge
Start Date: Tuesday 1/25/2022
Start Time: 12:00:00 AM

\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{5}{|c|}{\begin{tabular}{l}
File Name: Danzinger Bridge \\
Start Date: Wednesday 1/26/2022 \\
Start Time: 12:00:00 AM
\end{tabular}} & \multirow{3}{*}{Combined} \\
\hline & \multicolumn{2}{|l|}{DANZINGER BRIDGE Westbound} & \multicolumn{2}{|l|}{\begin{tabular}{l}
DANZINGER BRIDGE \\
Eastbound
\end{tabular}} & \\
\hline Start Time & Bicycles & Peds & Bicycles & Peds & \\
\hline \multicolumn{6}{|l|}{} \\
\hline \multicolumn{6}{|l|}{12:15 AM} \\
\hline \multicolumn{6}{|l|}{12:30 AM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{12:45 AM}} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{\[
\begin{aligned}
& \text { 01:00 AM } \\
& 01: 15 \mathrm{AM}
\end{aligned}
\]}} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{01:30 AM}} \\
\hline & & & & & \\
\hline 02:00 AM & & & & & \\
\hline \multicolumn{6}{|l|}{02:15 AM} \\
\hline \multicolumn{6}{|l|}{02:30 AM} \\
\hline 02:45 AM & & & & & \\
\hline \multicolumn{6}{|l|}{03:00 AM} \\
\hline \multicolumn{6}{|l|}{03:15 AM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{03:45 AM}} \\
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\hline \multicolumn{6}{|l|}{04:00 AM} \\
\hline \multicolumn{6}{|l|}{04:30 AM} \\
\hline \multicolumn{6}{|l|}{04:45 AM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{05:00 AM
\(05: 15 \mathrm{AM}\)}} \\
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\hline \multicolumn{6}{|l|}{\(05: 30 \mathrm{AM}\)
05.45 AM} \\
\hline \multicolumn{6}{|l|}{05:45 AM
\(06: 00 \mathrm{AM}\)} \\
\hline \multicolumn{6}{|l|}{06:15 AM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{06:30 AM
\(06: 45\) AM}} \\
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\hline \multicolumn{6}{|l|}{07:00 AM} \\
\hline \multicolumn{6}{|l|}{07:15 AM
07:30 AM} \\
\hline \multicolumn{6}{|l|}{07:45 AM} \\
\hline \multicolumn{6}{|l|}{08:00 AM} \\
\hline \multicolumn{6}{|l|}{08:15 AM} \\
\hline \multicolumn{6}{|l|}{08:30 AM
\(08: 45 \mathrm{AM}\)} \\
\hline \multicolumn{6}{|l|}{09:00 AM} \\
\hline \multicolumn{6}{|l|}{09:15 AM} \\
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& \text { 09:30 AM } \\
& \text { 09:45 AM }
\end{aligned}
\]}} \\
\hline & \multicolumn{4}{|c|}{\multirow[t]{2}{*}{10:00 AM}} & \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{\(\begin{array}{ll}\text { 10:15 AM } \\ \text { 10:30 AM } & 1\end{array}\)}} \\
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\hline \multicolumn{6}{|l|}{10:45 AM} \\
\hline \multicolumn{6}{|l|}{11:00 AM
11:15 AM} \\
\hline \multicolumn{6}{|l|}{11:30 AM} \\
\hline \multicolumn{6}{|l|}{11:45 AM} \\
\hline \multicolumn{6}{|l|}{\multirow[b]{2}{*}{12:15 PM}} \\
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\hline \multicolumn{6}{|l|}{cole} \\
\hline \multicolumn{6}{|l|}{01:00 PM} \\
\hline \multicolumn{6}{|l|}{01:15 PM
01:30 PM
a} \\
\hline 01:30 PM & & & & & \\
\hline \multicolumn{6}{|l|}{01:45 PM} \\
\hline \multicolumn{6}{|l|}{02:00 PM} \\
\hline \multicolumn{6}{|l|}{02:30 PM} \\
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& \text { 02:45 PM } \\
& \text { 03:00 PM }
\end{aligned}
\]}} \\
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\hline \multicolumn{6}{|l|}{03:15 PM} \\
\hline \multicolumn{6}{|l|}{03:30 PM 03} \\
\hline \multicolumn{6}{|l|}{04:00 PM} \\
\hline \multicolumn{4}{|l|}{\multirow[t]{2}{*}{04:30 PM}} & & \\
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\hline 05:00 PM & & 1 & & & \\
\hline \multicolumn{6}{|l|}{05:15 PM} \\
\hline \multicolumn{6}{|l|}{\begin{tabular}{llll} 
05:30 PM \\
\(05: 45 \mathrm{PM}\) & 1 & 1 \\
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\end{tabular}} \\
\hline \multicolumn{6}{|l|}{06:00 PM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{06:15 PM}} \\
\hline \multicolumn{4}{|l|}{06:45 PM} & & \\
\hline \multicolumn{6}{|l|}{07:00 PM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{07:30 PM}} \\
\hline & & & & & \\
\hline \multicolumn{6}{|l|}{08:00 PM} \\
\hline \multicolumn{6}{|l|}{08:15 PM} \\
\hline \multicolumn{6}{|l|}{08:30 PM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{09:00 PM}} \\
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\hline \multicolumn{6}{|l|}{99:30 PM} \\
\hline \multicolumn{6}{|l|}{09:45 PM
10:00 PM} \\
\hline \multicolumn{6}{|l|}{10:15 PM} \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{\[
\begin{aligned}
& \text { 10:30 PM } \\
& \text { 10:45 PM }
\end{aligned}
\]}} \\
\hline 1:00 PM & & & & & \\
\hline \multicolumn{6}{|l|}{\multirow[t]{2}{*}{1:15 PM}} \\
\hline \multicolumn{6}{|l|}{\multirow[b]{2}{*}{1:45 PM}} \\
\hline & & & & & \\
\hline
\end{tabular}


\title{
LOCATION 3 \\ SEABROOK BRIDGE \\ \\ LAKESHORE DR. ENTRANCE RAMP \\ \\ LAKESHORE DR. ENTRANCE RAMP Tube Counts
}

\section*{ITS Regional, LLC.}

4744 Kawanee Avenue
Metairie, LA 70006
Site: Lakeshore Dr On Ramp 1/23/2022

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & - & - & 12:00 PM & 20 & 83 \\
\hline 12:15 AM & - & & 12:15 PM & 20 & \\
\hline 12:30 AM & - & & 12:30 PM & 26 & \\
\hline 12:45 AM & - & & 12:45 PM & 17 & \\
\hline 1:00 AM & - & - & 1:00 PM & 12 & 100 \\
\hline 1:15 AM & - & & 1:15 PM & 30 & \\
\hline 1:30 AM & - & & 1:30 PM & 28 & \\
\hline 1:45 AM & - & & 1:45 PM & 30 & \\
\hline 2:00 AM & - & - & 2:00 PM & 32 & 128 \\
\hline 2:15 AM & - & & 2:15 PM & 27 & \\
\hline 2:30 AM & - & & 2:30 PM & 36 & \\
\hline 2:45 AM & - & & 2:45 PM & 33 & \\
\hline 3:00 AM & - & - & 3:00 PM & 36 & 135 \\
\hline 3:15 AM & - & & 3:15 PM & 19 & \\
\hline 3:30 AM & - & & 3:30 PM & 39 & \\
\hline 3:45 AM & - & & 3:45 PM & 41 & \\
\hline 4:00 AM & - & - & 4:00 PM & 26 & 122 \\
\hline 4:15 AM & - & & 4:15 PM & 32 & \\
\hline 4:30 AM & - & & 4:30 PM & 35 & \\
\hline 4:45 AM & - & & 4:45 PM & 29 & \\
\hline 5:00 AM & - & - & 5:00 PM & 32 & 125 \\
\hline 5:15 AM & - & & 5:15 PM & 30 & \\
\hline 5:30 AM & - & & 5:30 PM & 36 & \\
\hline 5:45 AM & - & & 5:45 PM & 27 & \\
\hline 6:00 AM & - & - & 6:00 PM & 29 & 108 \\
\hline 6:15 AM & - & & 6:15 PM & 22 & \\
\hline 6:30 AM & - & & 6:30 PM & 37 & \\
\hline 6:45 AM & - & & 6:45 PM & 20 & \\
\hline 7:00 AM & - & - & 7:00 PM & 26 & 92 \\
\hline 7:15 AM & - & & 7:15 PM & 21 & \\
\hline 7:30 AM & - & & 7:30 PM & 29 & \\
\hline 7:45 AM & - & & 7:45 PM & 16 & \\
\hline 8:00 AM & - & - & 8:00 PM & 16 & 61 \\
\hline 8:15 AM & - & & 8:15 PM & 13 & \\
\hline 8:30 AM & - & & 8:30 PM & 21 & \\
\hline 8:45 AM & - & & 8:45 PM & 11 & \\
\hline 9:00 AM & - & 25 & 9:00 PM & 9 & 50 \\
\hline 9:15 AM & 7 & & 9:15 PM & 15 & \\
\hline 9:30 AM & 10 & & 9:30 PM & 12 & \\
\hline 9:45 AM & 8 & & 9:45 PM & 14 & \\
\hline 10:00 AM & 7 & 47 & 10:00 PM & 11 & 59 \\
\hline 10:15 AM & 16 & & 10:15 PM & 14 & \\
\hline 10:30 AM & 11 & & 10:30 PM & 18 & \\
\hline 10:45 AM & 13 & & 10:45 PM & 16 & \\
\hline 11:00 AM & 16 & 60 & 11:00 PM & 7 & 37 \\
\hline 11:15 AM & 9 & & 11:15 PM & 13 & \\
\hline 11:30 AM & 21 & & 11:30 PM & 11 & \\
\hline 11:45 AM & 14 & & 11:45 PM & 6 & \\
\hline & & Total & & & \\
\hline 12:00 AM & PM & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & 12 Hour Count & 1100 & \\
\hline Peak Hour & AM & & Peak Hour & 3:30 PM & \\
\hline Peak Volume & & & Peak Volume & 138 & \\
\hline Factor & & & Factor & 0.84 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 3 & 20 & 12:00 PM & 26 & 79 \\
\hline 12:15 AM & 6 & & 12:15 PM & 18 & \\
\hline 12:30 AM & 4 & & 12:30 PM & 9 & \\
\hline 12:45 AM & 7 & & 12:45 PM & 26 & \\
\hline 1:00 AM & 7 & 24 & 1:00 PM & 24 & 107 \\
\hline 1:15 AM & 5 & & 1:15 PM & 23 & \\
\hline 1:30 AM & 6 & & 1:30 PM & 33 & \\
\hline 1:45 AM & 6 & & 1:45 PM & 27 & \\
\hline 2:00 AM & 4 & 14 & 2:00 PM & 18 & 100 \\
\hline 2:15 AM & 4 & & 2:15 PM & 28 & \\
\hline 2:30 AM & 3 & & 2:30 PM & 30 & \\
\hline 2:45 AM & 3 & & 2:45 PM & 24 & \\
\hline 3:00 AM & 3 & 10 & 3:00 PM & 28 & 160 \\
\hline 3:15 AM & 3 & & 3:15 PM & 48 & \\
\hline 3:30 AM & 3 & & 3:30 PM & 37 & \\
\hline 3:45 AM & 1 & & 3:45 PM & 47 & \\
\hline 4:00 AM & 2 & 4 & 4:00 PM & 59 & 272 \\
\hline 4:15 AM & 0 & & 4:15 PM & 50 & \\
\hline 4:30 AM & 1 & & 4:30 PM & 73 & \\
\hline 4:45 AM & 1 & & 4:45 PM & 90 & \\
\hline 5:00 AM & 2 & 9 & 5:00 PM & 103 & 548 \\
\hline 5:15 AM & 3 & & 5:15 PM & 133 & \\
\hline 5:30 AM & 0 & & 5:30 PM & 149 & \\
\hline 5:45 AM & 4 & & 5:45 PM & 163 & \\
\hline 6:00 AM & 1 & 11 & 6:00 PM & 100 & 419 \\
\hline 6:15 AM & 4 & & 6:15 PM & 139 & \\
\hline 6:30 AM & 1 & & 6:30 PM & 98 & \\
\hline 6:45 AM & 5 & & 6:45 PM & 82 & \\
\hline 7:00 AM & 3 & 23 & 7:00 PM & 67 & 178 \\
\hline 7:15 AM & 3 & & 7:15 PM & 55 & \\
\hline 7:30 AM & 6 & & 7:30 PM & 36 & \\
\hline 7:45 AM & 11 & & 7:45 PM & 20 & \\
\hline 8:00 AM & 16 & 85 & 8:00 PM & 17 & 80 \\
\hline 8:15 AM & 11 & & 8:15 PM & 18 & \\
\hline 8:30 AM & 19 & & 8:30 PM & 19 & \\
\hline 8:45 AM & 39 & & 8:45 PM & 26 & \\
\hline 9:00 AM & 31 & 108 & 9:00 PM & 13 & 52 \\
\hline 9:15 AM & 28 & & 9:15 PM & 10 & \\
\hline 9:30 AM & 19 & & 9:30 PM & 15 & \\
\hline 9:45 AM & 30 & & 9:45 PM & 14 & \\
\hline 10:00 AM & 21 & 65 & 10:00 PM & 16 & 47 \\
\hline 10:15 AM & 8 & & 10:15 PM & 13 & \\
\hline 10:30 AM & 18 & & 10:30 PM & 9 & \\
\hline 10:45 AM & 18 & & 10:45 PM & 9 & \\
\hline 11:00 AM & 15 & 74 & 11:00 PM & 15 & 32 \\
\hline 11:15 AM & 16 & & 11:15 PM & 5 & \\
\hline 11:30 AM & 21 & & 11:30 PM & 5 & \\
\hline 11:45 AM & 22 & & 11:45 PM & 7 & \\
\hline
\end{tabular}

24 Hour Total
2521

\section*{12:00 AM - 12:00 PM}

12 Hour Count 447
Peak Hour 8:30 AM
Peak Volume 117
Factor 0.75

12:00 PM - 12:00 AM
12 Hour Count 2074
Peak Hour 5:30 PM
Peak Volume 551
Factor 0.85

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 8 & 23 & 12:00 PM & 24 & 79 \\
\hline 12:15 AM & 7 & & 12:15 PM & 17 & \\
\hline 12:30 AM & 5 & & 12:30 PM & 20 & \\
\hline 12:45 AM & 3 & & 12:45 PM & 18 & \\
\hline 1:00 AM & 6 & 13 & 1:00 PM & 21 & 87 \\
\hline 1:15 AM & 1 & & 1:15 PM & 15 & \\
\hline 1:30 AM & 5 & & 1:30 PM & 24 & \\
\hline 1:45 AM & 1 & & 1:45 PM & 27 & \\
\hline 2:00 AM & 7 & 13 & 2:00 PM & 20 & 107 \\
\hline 2:15 AM & 2 & & 2:15 PM & 24 & \\
\hline 2:30 AM & 0 & & 2:30 PM & 36 & \\
\hline 2:45 AM & 4 & & 2:45 PM & 27 & \\
\hline 3:00 AM & 1 & 12 & 3:00 PM & 25 & 132 \\
\hline 3:15 AM & 1 & & 3:15 PM & 42 & \\
\hline 3:30 AM & 7 & & 3:30 PM & 35 & \\
\hline 3:45 AM & 3 & & 3:45 PM & 30 & \\
\hline 4:00 AM & 0 & 5 & 4:00 PM & 57 & 286 \\
\hline 4:15 AM & 0 & & 4:15 PM & 66 & \\
\hline 4:30 AM & 3 & & 4:30 PM & 79 & \\
\hline 4:45 AM & 2 & & 4:45 PM & 84 & \\
\hline 5:00 AM & 3 & 5 & 5:00 PM & 90 & 351 \\
\hline 5:15 AM & 1 & & 5:15 PM & 91 & \\
\hline 5:30 AM & 1 & & 5:30 PM & 94 & \\
\hline 5:45 AM & 0 & & 5:45 PM & 76 & \\
\hline 6:00 AM & 0 & 10 & 6:00 PM & 102 & 379 \\
\hline 6:15 AM & 2 & & 6:15 PM & 117 & \\
\hline 6:30 AM & 2 & & 6:30 PM & 86 & \\
\hline 6:45 AM & 6 & & 6:45 PM & 74 & \\
\hline 7:00 AM & 6 & 22 & 7:00 PM & 59 & 165 \\
\hline 7:15 AM & 2 & & 7:15 PM & 25 & \\
\hline 7:30 AM & 5 & & 7:30 PM & 40 & \\
\hline 7:45 AM & 9 & & 7:45 PM & 41 & \\
\hline 8:00 AM & 10 & 90 & 8:00 PM & 28 & 92 \\
\hline 8:15 AM & 21 & & 8:15 PM & 25 & \\
\hline 8:30 AM & 22 & & 8:30 PM & 22 & \\
\hline 8:45 AM & 37 & & 8:45 PM & 17 & \\
\hline 9:00 AM & 37 & 122 & 9:00 PM & 16 & 60 \\
\hline 9:15 AM & 30 & & 9:15 PM & 16 & \\
\hline 9:30 AM & 31 & & 9:30 PM & 15 & \\
\hline 9:45 AM & 24 & & 9:45 PM & 13 & \\
\hline 10:00 AM & 20 & 83 & 10:00 PM & 16 & 49 \\
\hline 10:15 AM & 22 & & 10:15 PM & 11 & \\
\hline 10:30 AM & 21 & & 10:30 PM & 13 & \\
\hline 10:45 AM & 20 & & 10:45 PM & 9 & \\
\hline 11:00 AM & 12 & 61 & 11:00 PM & 24 & 46 \\
\hline 11:15 AM & 12 & & 11:15 PM & 7 & \\
\hline 11:30 AM & 14 & & 11:30 PM & 10 & \\
\hline 11:45 AM & 23 & & 11:45 PM & 5 & \\
\hline
\end{tabular}

24 Hour Total
2292

\section*{12:00 AM - 12:00 PM}

12 Hour Count 459
Peak Hour 8:45 AM
Peak Volume 135
Factor 0.91

12:00 PM - 12:00 AM
12 Hour Count 1833
Peak Hour 5:30 PM
Peak Volume 389
Factor 0.83

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 6 & 19 & 12:00 PM & 32 & 121 \\
\hline 12:15 AM & 4 & & 12:15 PM & 22 & \\
\hline 12:30 AM & 4 & & 12:30 PM & 27 & \\
\hline 12:45 AM & 5 & & 12:45 PM & 40 & \\
\hline 1:00 AM & 6 & 16 & 1:00 PM & 28 & 121 \\
\hline 1:15 AM & 3 & & 1:15 PM & 25 & \\
\hline 1:30 AM & 5 & & 1:30 PM & 34 & \\
\hline 1:45 AM & 2 & & 1:45 PM & 34 & \\
\hline 2:00 AM & 2 & 9 & 2:00 PM & 28 & 133 \\
\hline 2:15 AM & 3 & & 2:15 PM & 26 & \\
\hline 2:30 AM & 3 & & 2:30 PM & 40 & \\
\hline 2:45 AM & 1 & & 2:45 PM & 39 & \\
\hline 3:00 AM & 1 & 6 & 3:00 PM & 38 & 163 \\
\hline 3:15 AM & 2 & & 3:15 PM & 42 & \\
\hline 3:30 AM & 0 & & 3:30 PM & 39 & \\
\hline 3:45 AM & 3 & & 3:45 PM & 44 & \\
\hline 4:00 AM & 1 & 11 & 4:00 PM & 61 & 260 \\
\hline 4:15 AM & 5 & & 4:15 PM & 54 & \\
\hline 4:30 AM & 2 & & 4:30 PM & 84 & \\
\hline 4:45 AM & 3 & & 4:45 PM & 61 & \\
\hline 5:00 AM & 5 & 11 & 5:00 PM & 91 & 430 \\
\hline 5:15 AM & 2 & & 5:15 PM & 107 & \\
\hline 5:30 AM & 2 & & 5:30 PM & 114 & \\
\hline 5:45 AM & 2 & & 5:45 PM & 118 & \\
\hline 6:00 AM & 1 & 10 & 6:00 PM & 94 & 410 \\
\hline 6:15 AM & 0 & & 6:15 PM & 125 & \\
\hline 6:30 AM & 4 & & 6:30 PM & 99 & \\
\hline 6:45 AM & 5 & & 6:45 PM & 92 & \\
\hline 7:00 AM & 6 & 33 & 7:00 PM & 70 & 198 \\
\hline 7:15 AM & 5 & & 7:15 PM & 54 & \\
\hline 7:30 AM & 9 & & 7:30 PM & 40 & \\
\hline 7:45 AM & 13 & & 7:45 PM & 34 & \\
\hline 8:00 AM & 12 & 95 & 8:00 PM & 33 & 99 \\
\hline 8:15 AM & 18 & & 8:15 PM & 24 & \\
\hline 8:30 AM & 25 & & 8:30 PM & 22 & \\
\hline 8:45 AM & 40 & & 8:45 PM & 20 & \\
\hline 9:00 AM & 43 & 124 & 9:00 PM & 25 & 65 \\
\hline 9:15 AM & 34 & & 9:15 PM & 20 & \\
\hline 9:30 AM & 25 & & 9:30 PM & 13 & \\
\hline 9:45 AM & 22 & & 9:45 PM & 7 & \\
\hline 10:00 AM & 28 & 90 & 10:00 PM & 21 & 48 \\
\hline 10:15 AM & 19 & & 10:15 PM & 11 & \\
\hline 10:30 AM & 27 & & 10:30 PM & 6 & \\
\hline 10:45 AM & 16 & & 10:45 PM & 10 & \\
\hline 11:00 AM & 21 & 87 & 11:00 PM & 15 & 44 \\
\hline 11:15 AM & 22 & & 11:15 PM & 16 & \\
\hline 11:30 AM & 23 & & 11:30 PM & 8 & \\
\hline 11:45 AM & 21 & & 11:45 PM & 5 & \\
\hline & & r Total & & & \\
\hline 12:00 AM & PM & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & 12 Hour Count & 2092 & \\
\hline Peak Hour & & & Peak Hour & 5:30 PM & \\
\hline Peak Volume & & & Peak Volume & 451 & \\
\hline Factor & & & Factor & 0.90 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 8 & 19 & 12:00 PM & 24 & 108 \\
\hline 12:15 AM & 6 & & 12:15 PM & 28 & \\
\hline 12:30 AM & 1 & & 12:30 PM & 26 & \\
\hline 12:45 AM & 4 & & 12:45 PM & 30 & \\
\hline 1:00 AM & 4 & 18 & 1:00 PM & 22 & 113 \\
\hline 1:15 AM & 4 & & 1:15 PM & 32 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 26 & \\
\hline 1:45 AM & 2 & & 1:45 PM & 33 & \\
\hline 2:00 AM & 1 & 11 & 2:00 PM & 40 & 120 \\
\hline 2:15 AM & 5 & & 2:15 PM & 28 & \\
\hline 2:30 AM & 3 & & 2:30 PM & 24 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 28 & \\
\hline 3:00 AM & 0 & 3 & 3:00 PM & 22 & 166 \\
\hline 3:15 AM & 1 & & 3:15 PM & 48 & \\
\hline 3:30 AM & 0 & & 3:30 PM & 48 & \\
\hline 3:45 AM & 2 & & 3:45 PM & 48 & \\
\hline 4:00 AM & 1 & 11 & 4:00 PM & 60 & 276 \\
\hline 4:15 AM & 3 & & 4:15 PM & 62 & \\
\hline 4:30 AM & 3 & & 4:30 PM & 81 & \\
\hline 4:45 AM & 4 & & 4:45 PM & 73 & \\
\hline 5:00 AM & 0 & 3 & 5:00 PM & 94 & 440 \\
\hline 5:15 AM & 0 & & 5:15 PM & 106 & \\
\hline 5:30 AM & 1 & & 5:30 PM & 122 & \\
\hline 5:45 AM & 2 & & 5:45 PM & 118 & \\
\hline 6:00 AM & 4 & 12 & 6:00 PM & 126 & 450 \\
\hline 6:15 AM & 3 & & 6:15 PM & 111 & \\
\hline 6:30 AM & 1 & & 6:30 PM & 117 & \\
\hline 6:45 AM & 4 & & 6:45 PM & 96 & \\
\hline 7:00 AM & 5 & 24 & 7:00 PM & 86 & 237 \\
\hline 7:15 AM & 1 & & 7:15 PM & 64 & \\
\hline 7:30 AM & 5 & & 7:30 PM & 55 & \\
\hline 7:45 AM & 13 & & 7:45 PM & 32 & \\
\hline 8:00 AM & 11 & 91 & 8:00 PM & 36 & 107 \\
\hline 8:15 AM & 16 & & 8:15 PM & 23 & \\
\hline 8:30 AM & 24 & & 8:30 PM & 31 & \\
\hline 8:45 AM & 40 & & 8:45 PM & 17 & \\
\hline 9:00 AM & 35 & 121 & 9:00 PM & 30 & 94 \\
\hline 9:15 AM & 33 & & 9:15 PM & 27 & \\
\hline 9:30 AM & 25 & & 9:30 PM & 21 & \\
\hline 9:45 AM & 28 & & 9:45 PM & 16 & \\
\hline 10:00 AM & 21 & 72 & 10:00 PM & 21 & 63 \\
\hline 10:15 AM & 16 & & 10:15 PM & 15 & \\
\hline 10:30 AM & 20 & & 10:30 PM & 18 & \\
\hline 10:45 AM & 15 & & 10:45 PM & 9 & \\
\hline 11:00 AM & 20 & 73 & 11:00 PM & 11 & 48 \\
\hline 11:15 AM & 19 & & 11:15 PM & 15 & \\
\hline 11:30 AM & 12 & & 11:30 PM & 16 & \\
\hline 11:45 AM & 22 & & 11:45 PM & 6 & \\
\hline
\end{tabular}

24 Hour Total
2680

12:00 AM - 12:00 PM
12 Hour Count 458
Peak Hour 8:45 AM
Peak Volume 133
Factor 0.83

12:00 PM - 12:00 AM
12 Hour Count 2222
Peak Hour 5:30 PM
Peak Volume 477
Factor 0.95

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 6 & 27 & 12:00 PM & 21 & 96 \\
\hline 12:15 AM & 6 & & 12:15 PM & 28 & \\
\hline 12:30 AM & 8 & & 12:30 PM & 27 & \\
\hline 12:45 AM & 7 & & 12:45 PM & 20 & \\
\hline 1:00 AM & 6 & 24 & 1:00 PM & 30 & 105 \\
\hline 1:15 AM & 7 & & 1:15 PM & 30 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 23 & \\
\hline 1:45 AM & 3 & & 1:45 PM & 22 & \\
\hline 2:00 AM & 0 & 7 & 2:00 PM & 30 & 119 \\
\hline 2:15 AM & 4 & & 2:15 PM & 27 & \\
\hline 2:30 AM & 1 & & 2:30 PM & 38 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 24 & \\
\hline 3:00 AM & 3 & 9 & 3:00 PM & 50 & 196 \\
\hline 3:15 AM & 2 & & 3:15 PM & 38 & \\
\hline 3:30 AM & 2 & & 3:30 PM & 48 & \\
\hline 3:45 AM & 2 & & 3:45 PM & 60 & \\
\hline 4:00 AM & 1 & 7 & 4:00 PM & 58 & 294 \\
\hline 4:15 AM & 0 & & 4:15 PM & 64 & \\
\hline 4:30 AM & 4 & & 4:30 PM & 80 & \\
\hline 4:45 AM & 2 & & 4:45 PM & 92 & \\
\hline 5:00 AM & 3 & 8 & 5:00 PM & 96 & 415 \\
\hline 5:15 AM & 2 & & 5:15 PM & 105 & \\
\hline 5:30 AM & 2 & & 5:30 PM & 108 & \\
\hline 5:45 AM & 1 & & 5:45 PM & 106 & \\
\hline 6:00 AM & 1 & 4 & 6:00 PM & 122 & 400 \\
\hline 6:15 AM & 0 & & 6:15 PM & 114 & \\
\hline 6:30 AM & 0 & & 6:30 PM & 87 & \\
\hline 6:45 AM & 3 & & 6:45 PM & 77 & \\
\hline 7:00 AM & 5 & 28 & 7:00 PM & 60 & 178 \\
\hline 7:15 AM & 5 & & 7:15 PM & 48 & \\
\hline 7:30 AM & 5 & & 7:30 PM & 42 & \\
\hline 7:45 AM & 13 & & 7:45 PM & 28 & \\
\hline 8:00 AM & 12 & 88 & 8:00 PM & 26 & 93 \\
\hline 8:15 AM & 14 & & 8:15 PM & 28 & \\
\hline 8:30 AM & 30 & & 8:30 PM & 19 & \\
\hline 8:45 AM & 32 & & 8:45 PM & 20 & \\
\hline 9:00 AM & 34 & 109 & 9:00 PM & 21 & 75 \\
\hline 9:15 AM & 28 & & 9:15 PM & 13 & \\
\hline 9:30 AM & 26 & & 9:30 PM & 19 & \\
\hline 9:45 AM & 21 & & 9:45 PM & 22 & \\
\hline 10:00 AM & 26 & 69 & 10:00 PM & 13 & 56 \\
\hline 10:15 AM & 24 & & 10:15 PM & 15 & \\
\hline 10:30 AM & 11 & & 10:30 PM & 15 & \\
\hline 10:45 AM & 8 & & 10:45 PM & 13 & \\
\hline 11:00 AM & 13 & 74 & 11:00 PM & 16 & 62 \\
\hline 11:15 AM & 24 & & 11:15 PM & 18 & \\
\hline 11:30 AM & 14 & & 11:30 PM & 17 & \\
\hline 11:45 AM & 23 & & 11:45 PM & 11 & \\
\hline
\end{tabular}

24 Hour Total

12:00 AM - 12:00 PM
12 Hour Count 454
Peak Hour 8:30 AM
Peak Volume 124
Factor 0.91

12:00 PM - 12:00 AM
12 Hour Count 2089
Peak Hour 5:30 PM
Peak Volume 450
Factor 0.92

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 9 & 30 & 12:00 PM & 21 & 77 \\
\hline 12:15 AM & 9 & & 12:15 PM & 19 & \\
\hline 12:30 AM & 7 & & 12:30 PM & 16 & \\
\hline 12:45 AM & 5 & & 12:45 PM & 21 & \\
\hline 1:00 AM & 5 & 24 & 1:00 PM & 20 & 107 \\
\hline 1:15 AM & 8 & & 1:15 PM & 22 & \\
\hline 1:30 AM & 7 & & 1:30 PM & 27 & \\
\hline 1:45 AM & 4 & & 1:45 PM & 38 & \\
\hline 2:00 AM & 10 & 21 & 2:00 PM & 20 & 102 \\
\hline 2:15 AM & 2 & & 2:15 PM & 21 & \\
\hline 2:30 AM & 3 & & 2:30 PM & 26 & \\
\hline 2:45 AM & 6 & & 2:45 PM & 35 & \\
\hline 3:00 AM & 1 & 10 & 3:00 PM & 39 & 139 \\
\hline 3:15 AM & 1 & & 3:15 PM & 36 & \\
\hline 3:30 AM & 4 & & 3:30 PM & 34 & \\
\hline 3:45 AM & 4 & & 3:45 PM & 30 & \\
\hline 4:00 AM & 1 & 11 & 4:00 PM & 44 & 138 \\
\hline 4:15 AM & 6 & & 4:15 PM & 32 & \\
\hline 4:30 AM & 2 & & 4:30 PM & 30 & \\
\hline 4:45 AM & 2 & & 4:45 PM & 32 & \\
\hline 5:00 AM & 1 & 5 & 5:00 PM & 37 & 167 \\
\hline 5:15 AM & 0 & & 5:15 PM & 37 & \\
\hline 5:30 AM & 1 & & 5:30 PM & 45 & \\
\hline 5:45 AM & 3 & & 5:45 PM & 48 & \\
\hline 6:00 AM & 1 & 7 & 6:00 PM & 36 & 116 \\
\hline 6:15 AM & 0 & & 6:15 PM & 23 & \\
\hline 6:30 AM & 3 & & 6:30 PM & 32 & \\
\hline 6:45 AM & 3 & & 6:45 PM & 25 & \\
\hline 7:00 AM & 6 & 24 & 7:00 PM & 27 & 109 \\
\hline 7:15 AM & 3 & & 7:15 PM & 24 & \\
\hline 7:30 AM & 7 & & 7:30 PM & 26 & \\
\hline 7:45 AM & 8 & & 7:45 PM & 32 & \\
\hline 8:00 AM & 7 & 23 & 8:00 PM & 14 & 77 \\
\hline 8:15 AM & 5 & & 8:15 PM & 20 & \\
\hline 8:30 AM & 3 & & 8:30 PM & 17 & \\
\hline 8:45 AM & 8 & & 8:45 PM & 26 & \\
\hline 9:00 AM & 11 & 47 & 9:00 PM & 24 & 77 \\
\hline 9:15 AM & 13 & & 9:15 PM & 11 & \\
\hline 9:30 AM & 9 & & 9:30 PM & 25 & \\
\hline 9:45 AM & 14 & & 9:45 PM & 17 & \\
\hline 10:00 AM & 7 & 59 & 10:00 PM & 6 & 41 \\
\hline 10:15 AM & 19 & & 10:15 PM & 12 & \\
\hline 10:30 AM & 10 & & 10:30 PM & 13 & \\
\hline 10:45 AM & 23 & & 10:45 PM & 10 & \\
\hline 11:00 AM & 11 & 54 & 11:00 PM & 14 & 43 \\
\hline 11:15 AM & 15 & & 11:15 PM & 9 & \\
\hline 11:30 AM & 16 & & 11:30 PM & 8 & \\
\hline 11:45 AM & 12 & & 11:45 PM & 12 & \\
\hline
\end{tabular}

24 Hour Total
1508

12:00 AM - 12:00 PM
12 Hour Count 315
Peak Hour 10:45 AM
Peak Volume 65
Factor 0.71

12:00 PM - 12:00 AM
12 Hour Count 1193
Peak Hour 5:00 PM
Peak Volume 167
Factor 0.87

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 14 & 39 & 12:00 PM & 12 & 75 \\
\hline 12:15 AM & 12 & & 12:15 PM & 21 & \\
\hline 12:30 AM & 4 & & 12:30 PM & 20 & \\
\hline 12:45 AM & 9 & & 12:45 PM & 22 & \\
\hline 1:00 AM & 8 & 24 & 1:00 PM & 27 & 122 \\
\hline 1:15 AM & 4 & & 1:15 PM & 31 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 30 & \\
\hline 1:45 AM & 4 & & 1:45 PM & 34 & \\
\hline 2:00 AM & 9 & 26 & 2:00 PM & 34 & 132 \\
\hline 2:15 AM & 8 & & 2:15 PM & 30 & \\
\hline 2:30 AM & 6 & & 2:30 PM & 38 & \\
\hline 2:45 AM & 3 & & 2:45 PM & 30 & \\
\hline 3:00 AM & 3 & 17 & 3:00 PM & 39 & 151 \\
\hline 3:15 AM & 5 & & 3:15 PM & 46 & \\
\hline 3:30 AM & 6 & & 3:30 PM & 28 & \\
\hline 3:45 AM & 3 & & 3:45 PM & 38 & \\
\hline 4:00 AM & 4 & 10 & 4:00 PM & 34 & 142 \\
\hline 4:15 AM & 1 & & 4:15 PM & 38 & \\
\hline 4:30 AM & 1 & & 4:30 PM & 40 & \\
\hline 4:45 AM & 4 & & 4:45 PM & 30 & \\
\hline 5:00 AM & 0 & 4 & 5:00 PM & 42 & 183 \\
\hline 5:15 AM & 1 & & 5:15 PM & 44 & \\
\hline 5:30 AM & 2 & & 5:30 PM & 53 & \\
\hline 5:45 AM & 1 & & 5:45 PM & 44 & \\
\hline 6:00 AM & 4 & 6 & 6:00 PM & 57 & 190 \\
\hline 6:15 AM & 0 & & 6:15 PM & 34 & \\
\hline 6:30 AM & 1 & & 6:30 PM & 50 & \\
\hline 6:45 AM & 1 & & 6:45 PM & 49 & \\
\hline 7:00 AM & 6 & 19 & 7:00 PM & 33 & 91 \\
\hline 7:15 AM & 4 & & 7:15 PM & 25 & \\
\hline 7:30 AM & 3 & & 7:30 PM & 18 & \\
\hline 7:45 AM & 6 & & 7:45 PM & 15 & \\
\hline 8:00 AM & 3 & 15 & 8:00 PM & 25 & 80 \\
\hline 8:15 AM & 2 & & 8:15 PM & 18 & \\
\hline 8:30 AM & 6 & & 8:30 PM & 19 & \\
\hline 8:45 AM & 4 & & 8:45 PM & 18 & \\
\hline 9:00 AM & 9 & 39 & 9:00 PM & 14 & 71 \\
\hline 9:15 AM & 10 & & 9:15 PM & 21 & \\
\hline 9:30 AM & 7 & & 9:30 PM & 12 & \\
\hline 9:45 AM & 13 & & 9:45 PM & 24 & \\
\hline 10:00 AM & 8 & 42 & 10:00 PM & 14 & 54 \\
\hline 10:15 AM & 12 & & 10:15 PM & 17 & \\
\hline 10:30 AM & 10 & & 10:30 PM & 14 & \\
\hline 10:45 AM & 12 & & 10:45 PM & 9 & \\
\hline 11:00 AM & 11 & 56 & 11:00 PM & 12 & 41 \\
\hline 11:15 AM & 18 & & 11:15 PM & 10 & \\
\hline 11:30 AM & 9 & & 11:30 PM & 11 & \\
\hline 11:45 AM & 18 & & 11:45 PM & 8 & \\
\hline
\end{tabular}

24 Hour Total
1629

12:00 AM - 12:00 PM
12 Hour Count 297
Peak Hour 11:00 AM
Peak Volume 56
Factor 0.78

12:00 PM - 12:00 AM
12 Hour Count 1332
Peak Hour 5:15 PM
Peak Volume 198
Factor 0.87

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr On Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & 4 & 28 & & & \\
\hline 12:15 AM & 9 & & & & \\
\hline 12:30 AM & 8 & & & & \\
\hline 12:45 AM & 7 & & & & \\
\hline 1:00 AM & 4 & 15 & & & \\
\hline 1:15 AM & 4 & & & & \\
\hline 1:30 AM & 3 & & & & \\
\hline 1:45 AM & 4 & & & & \\
\hline 2:00 AM & 4 & 14 & & & \\
\hline 2:15 AM & 6 & & & & \\
\hline 2:30 AM & 2 & & & & \\
\hline 2:45 AM & 2 & & & & \\
\hline 3:00 AM & 3 & 11 & & & \\
\hline 3:15 AM & 1 & & & & \\
\hline 3:30 AM & 4 & & & & \\
\hline 3:45 AM & 3 & & & & \\
\hline 4:00 AM & 1 & 13 & & & \\
\hline 4:15 AM & 6 & & & & \\
\hline 4:30 AM & 1 & & & & \\
\hline 4:45 AM & 5 & & & & \\
\hline 5:00 AM & 2 & 9 & & & \\
\hline 5:15 AM & 4 & & & & \\
\hline 5:30 AM & 3 & & & & \\
\hline 5:45 AM & 0 & & & & \\
\hline 6:00 AM & 2 & 13 & & & \\
\hline 6:15 AM & 2 & & & & \\
\hline 6:30 AM & 2 & & & & \\
\hline 6:45 AM & 7 & & & & \\
\hline 7:00 AM & 3 & 12 & & & \\
\hline 7:15 AM & 9 & & & & \\
\hline & & Total & 115 & & \\
\hline 12:00 AM & & & & 12:00 PM & 12:00 AM \\
\hline 12 Hour Count & & & & 12 Hour Count & 0 \\
\hline Peak Hour & & & & Peak Hour & - \\
\hline Peak Volume & & & & Peak Volume & - \\
\hline Factor & & & & Factor & - \\
\hline
\end{tabular}

\section*{LOCATION 4 \\ SEABROOK BRIDGE LAKESHORE DR. EXIT RAMP Tube Counts}

\section*{ITS Regional, LLC.}

4744 Kawanee Avenue
Metairie, LA 70006
Site: Lakeshore Dr Off Ramp

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & - & - & 12:00 PM & 21 & 99 \\
\hline 12:15 AM & - & & 12:15 PM & 26 & \\
\hline 12:30 AM & - & & 12:30 PM & 25 & \\
\hline 12:45 AM & - & & 12:45 PM & 27 & \\
\hline 1:00 AM & - & - & 1:00 PM & 24 & 96 \\
\hline 1:15 AM & - & & 1:15 PM & 22 & \\
\hline 1:30 AM & - & & 1:30 PM & 24 & \\
\hline 1:45 AM & - & & 1:45 PM & 26 & \\
\hline 2:00 AM & - & - & 2:00 PM & 25 & 106 \\
\hline 2:15 AM & - & & 2:15 PM & 25 & \\
\hline 2:30 AM & - & & 2:30 PM & 30 & \\
\hline 2:45 AM & - & & 2:45 PM & 26 & \\
\hline 3:00 AM & - & - & 3:00 PM & 27 & 99 \\
\hline 3:15 AM & - & & 3:15 PM & 28 & \\
\hline 3:30 AM & - & & 3:30 PM & 24 & \\
\hline 3:45 AM & - & & 3:45 PM & 20 & \\
\hline 4:00 AM & - & - & 4:00 PM & 24 & 100 \\
\hline 4:15 AM & - & & 4:15 PM & 26 & \\
\hline 4:30 AM & - & & 4:30 PM & 28 & \\
\hline 4:45 AM & - & & 4:45 PM & 22 & \\
\hline 5:00 AM & - & - & 5:00 PM & 38 & 115 \\
\hline 5:15 AM & - & & 5:15 PM & 28 & \\
\hline 5:30 AM & - & & 5:30 PM & 27 & \\
\hline 5:45 AM & - & & 5:45 PM & 22 & \\
\hline 6:00 AM & - & - & 6:00 PM & 32 & 97 \\
\hline 6:15 AM & - & & 6:15 PM & 20 & \\
\hline 6:30 AM & - & & 6:30 PM & 18 & \\
\hline 6:45 AM & - & & 6:45 PM & 27 & \\
\hline 7:00 AM & - & - & 7:00 PM & 23 & 84 \\
\hline 7:15 AM & - & & 7:15 PM & 26 & \\
\hline 7:30 AM & - & & 7:30 PM & 20 & \\
\hline 7:45 AM & - & & 7:45 PM & 15 & \\
\hline 8:00 AM & - & - & 8:00 PM & 12 & 35 \\
\hline 8:15 AM & - & & 8:15 PM & 10 & \\
\hline 8:30 AM & - & & 8:30 PM & 8 & \\
\hline 8:45 AM & - & & 8:45 PM & 5 & \\
\hline 9:00 AM & - & 35 & 9:00 PM & 14 & 38 \\
\hline 9:15 AM & 10 & & 9:15 PM & 7 & \\
\hline 9:30 AM & 10 & & 9:30 PM & 12 & \\
\hline 9:45 AM & 15 & & 9:45 PM & 5 & \\
\hline 10:00 AM & 16 & 54 & 10:00 PM & 4 & 40 \\
\hline 10:15 AM & 13 & & 10:15 PM & 15 & \\
\hline 10:30 AM & 9 & & 10:30 PM & 12 & \\
\hline 10:45 AM & 16 & & 10:45 PM & 9 & \\
\hline 11:00 AM & 16 & 69 & 11:00 PM & 11 & 28 \\
\hline 11:15 AM & 16 & & 11:15 PM & 6 & \\
\hline 11:30 AM & 16 & & 11:30 PM & 7 & \\
\hline 11:45 AM & 21 & & 11:45 PM & 4 & \\
\hline & & Total & & & \\
\hline 12:00 AM & PM & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & 12 Hour Count & 937 & \\
\hline Peak Hour & & & Peak Hour & 4:30 PM & \\
\hline Peak Volume & & & Peak Volume & 116 & \\
\hline Factor & & & Factor & 0.76 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 8 & 27 & 12:00 PM & 24 & 82 \\
\hline 12:15 AM & 10 & & 12:15 PM & 12 & \\
\hline 12:30 AM & 5 & & 12:30 PM & 24 & \\
\hline 12:45 AM & 4 & & 12:45 PM & 22 & \\
\hline 1:00 AM & 3 & 15 & 1:00 PM & 26 & 97 \\
\hline 1:15 AM & 7 & & 1:15 PM & 20 & \\
\hline 1:30 AM & 1 & & 1:30 PM & 25 & \\
\hline 1:45 AM & 4 & & 1:45 PM & 26 & \\
\hline 2:00 AM & 1 & 9 & 2:00 PM & 27 & 113 \\
\hline 2:15 AM & 2 & & 2:15 PM & 26 & \\
\hline 2:30 AM & 2 & & 2:30 PM & 28 & \\
\hline 2:45 AM & 4 & & 2:45 PM & 32 & \\
\hline 3:00 AM & 3 & 7 & 3:00 PM & 36 & 155 \\
\hline 3:15 AM & 1 & & 3:15 PM & 35 & \\
\hline 3:30 AM & 1 & & 3:30 PM & 38 & \\
\hline 3:45 AM & 2 & & 3:45 PM & 46 & \\
\hline 4:00 AM & 2 & 3 & 4:00 PM & 43 & 203 \\
\hline 4:15 AM & 0 & & 4:15 PM & 40 & \\
\hline 4:30 AM & 0 & & 4:30 PM & 70 & \\
\hline 4:45 AM & 1 & & 4:45 PM & 50 & \\
\hline 5:00 AM & 4 & 8 & 5:00 PM & 38 & 136 \\
\hline 5:15 AM & 1 & & 5:15 PM & 29 & \\
\hline 5:30 AM & 2 & & 5:30 PM & 39 & \\
\hline 5:45 AM & 1 & & 5:45 PM & 30 & \\
\hline 6:00 AM & 4 & 40 & 6:00 PM & 42 & 120 \\
\hline 6:15 AM & 4 & & 6:15 PM & 34 & \\
\hline 6:30 AM & 12 & & 6:30 PM & 28 & \\
\hline 6:45 AM & 20 & & 6:45 PM & 16 & \\
\hline 7:00 AM & 14 & 161 & 7:00 PM & 22 & 73 \\
\hline 7:15 AM & 26 & & 7:15 PM & 22 & \\
\hline 7:30 AM & 37 & & 7:30 PM & 19 & \\
\hline 7:45 AM & 84 & & 7:45 PM & 10 & \\
\hline 8:00 AM & 152 & 912 & 8:00 PM & 14 & 54 \\
\hline 8:15 AM & 214 & & 8:15 PM & 16 & \\
\hline 8:30 AM & 264 & & 8:30 PM & 14 & \\
\hline 8:45 AM & 282 & & 8:45 PM & 10 & \\
\hline 9:00 AM & 241 & 568 & 9:00 PM & 9 & 33 \\
\hline 9:15 AM & 208 & & 9:15 PM & 10 & \\
\hline 9:30 AM & 77 & & 9:30 PM & 8 & \\
\hline 9:45 AM & 42 & & 9:45 PM & 6 & \\
\hline 10:00 AM & 24 & 94 & 10:00 PM & 10 & 29 \\
\hline 10:15 AM & 24 & & 10:15 PM & 6 & \\
\hline 10:30 AM & 34 & & 10:30 PM & 5 & \\
\hline 10:45 AM & 12 & & 10:45 PM & 8 & \\
\hline 11:00 AM & 30 & 110 & 11:00 PM & 4 & 17 \\
\hline 11:15 AM & 26 & & 11:15 PM & 3 & \\
\hline 11:30 AM & 28 & & 11:30 PM & 5 & \\
\hline 11:45 AM & 26 & & 11:45 PM & 5 & \\
\hline
\end{tabular}

24 Hour Total
3066

12:00 AM - 12:00 PM
\begin{tabular}{rl}
12 Hour Count & 1954 \\
Peak Hour & \(8: 15 \mathrm{AM}\) \\
Peak Volume & 1001 \\
Factor & 0.89
\end{tabular}

12:00 PM - 12:00 AM
12 Hour Count 1112
Peak Hour 4:00 PM
Peak Volume 203
Factor 0.73

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 5 & 19 & 12:00 PM & 19 & 75 \\
\hline 12:15 AM & 3 & & 12:15 PM & 22 & \\
\hline 12:30 AM & 7 & & 12:30 PM & 18 & \\
\hline 12:45 AM & 4 & & 12:45 PM & 16 & \\
\hline 1:00 AM & 4 & 7 & 1:00 PM & 22 & 105 \\
\hline 1:15 AM & 2 & & 1:15 PM & 23 & \\
\hline 1:30 AM & 0 & & 1:30 PM & 34 & \\
\hline 1:45 AM & 1 & & 1:45 PM & 26 & \\
\hline 2:00 AM & 3 & 4 & 2:00 PM & 18 & 86 \\
\hline 2:15 AM & 0 & & 2:15 PM & 20 & \\
\hline 2:30 AM & 0 & & 2:30 PM & 28 & \\
\hline 2:45 AM & 1 & & 2:45 PM & 20 & \\
\hline 3:00 AM & 4 & 9 & 3:00 PM & 26 & 127 \\
\hline 3:15 AM & 2 & & 3:15 PM & 34 & \\
\hline 3:30 AM & 3 & & 3:30 PM & 31 & \\
\hline 3:45 AM & 0 & & 3:45 PM & 36 & \\
\hline 4:00 AM & 0 & 5 & 4:00 PM & 28 & 146 \\
\hline 4:15 AM & 3 & & 4:15 PM & 36 & \\
\hline 4:30 AM & 0 & & 4:30 PM & 40 & \\
\hline 4:45 AM & 2 & & 4:45 PM & 42 & \\
\hline 5:00 AM & 2 & 10 & 5:00 PM & 49 & 146 \\
\hline 5:15 AM & 2 & & 5:15 PM & 32 & \\
\hline 5:30 AM & 3 & & 5:30 PM & 35 & \\
\hline 5:45 AM & 3 & & 5:45 PM & 30 & \\
\hline 6:00 AM & 6 & 28 & 6:00 PM & 30 & 118 \\
\hline 6:15 AM & 1 & & 6:15 PM & 38 & \\
\hline 6:30 AM & 2 & & 6:30 PM & 28 & \\
\hline 6:45 AM & 19 & & 6:45 PM & 22 & \\
\hline 7:00 AM & 15 & 121 & 7:00 PM & 18 & 84 \\
\hline 7:15 AM & 22 & & 7:15 PM & 26 & \\
\hline 7:30 AM & 24 & & 7:30 PM & 20 & \\
\hline 7:45 AM & 60 & & 7:45 PM & 20 & \\
\hline 8:00 AM & 116 & 774 & 8:00 PM & 19 & 50 \\
\hline 8:15 AM & 157 & & 8:15 PM & 13 & \\
\hline 8:30 AM & 231 & & 8:30 PM & 10 & \\
\hline 8:45 AM & 270 & & 8:45 PM & 8 & \\
\hline 9:00 AM & 190 & 464 & 9:00 PM & 8 & 37 \\
\hline 9:15 AM & 158 & & 9:15 PM & 7 & \\
\hline 9:30 AM & 72 & & 9:30 PM & 10 & \\
\hline 9:45 AM & 44 & & 9:45 PM & 12 & \\
\hline 10:00 AM & 48 & 130 & 10:00 PM & 14 & 47 \\
\hline 10:15 AM & 34 & & 10:15 PM & 10 & \\
\hline 10:30 AM & 24 & & 10:30 PM & 8 & \\
\hline 10:45 AM & 24 & & 10:45 PM & 15 & \\
\hline 11:00 AM & 25 & 93 & 11:00 PM & 9 & 28 \\
\hline 11:15 AM & 34 & & 11:15 PM & 10 & \\
\hline 11:30 AM & 21 & & 11:30 PM & 3 & \\
\hline 11:45 AM & 13 & & 11:45 PM & 6 & \\
\hline
\end{tabular}

24 Hour Total
2713

12:00 AM - 12:00 PM
12 Hour Count 1664
Peak Hour 8:30 AM
Peak Volume 849
Factor 0.79

12:00 PM - 12:00 AM
12 Hour Count 1049
Peak Hour \(4: 15\) PM
Peak Volume 167
Factor 0.85

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 4 & 15 & 12:00 PM & 28 & 101 \\
\hline 12:15 AM & 6 & & 12:15 PM & 19 & \\
\hline 12:30 AM & 3 & & 12:30 PM & 24 & \\
\hline 12:45 AM & 2 & & 12:45 PM & 30 & \\
\hline 1:00 AM & 3 & 13 & 1:00 PM & 35 & 105 \\
\hline 1:15 AM & 7 & & 1:15 PM & 26 & \\
\hline 1:30 AM & 0 & & 1:30 PM & 24 & \\
\hline 1:45 AM & 3 & & 1:45 PM & 20 & \\
\hline 2:00 AM & 0 & 8 & 2:00 PM & 26 & 104 \\
\hline 2:15 AM & 4 & & 2:15 PM & 31 & \\
\hline 2:30 AM & 2 & & 2:30 PM & 22 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 25 & \\
\hline 3:00 AM & 4 & 5 & 3:00 PM & 34 & 135 \\
\hline 3:15 AM & 0 & & 3:15 PM & 26 & \\
\hline 3:30 AM & 1 & & 3:30 PM & 44 & \\
\hline 3:45 AM & 0 & & 3:45 PM & 31 & \\
\hline 4:00 AM & 3 & 10 & 4:00 PM & 42 & 145 \\
\hline 4:15 AM & 1 & & 4:15 PM & 39 & \\
\hline 4:30 AM & 2 & & 4:30 PM & 40 & \\
\hline 4:45 AM & 4 & & 4:45 PM & 24 & \\
\hline 5:00 AM & 1 & 11 & 5:00 PM & 36 & 150 \\
\hline 5:15 AM & 6 & & 5:15 PM & 37 & \\
\hline 5:30 AM & 3 & & 5:30 PM & 44 & \\
\hline 5:45 AM & 1 & & 5:45 PM & 33 & \\
\hline 6:00 AM & 5 & 34 & 6:00 PM & 40 & 126 \\
\hline 6:15 AM & 2 & & 6:15 PM & 40 & \\
\hline 6:30 AM & 8 & & 6:30 PM & 26 & \\
\hline 6:45 AM & 19 & & 6:45 PM & 20 & \\
\hline 7:00 AM & 15 & 171 & 7:00 PM & 14 & 45 \\
\hline 7:15 AM & 24 & & 7:15 PM & 10 & \\
\hline 7:30 AM & 39 & & 7:30 PM & 10 & \\
\hline 7:45 AM & 93 & & 7:45 PM & 11 & \\
\hline 8:00 AM & 145 & 981 & 8:00 PM & 10 & 41 \\
\hline 8:15 AM & 266 & & 8:15 PM & 12 & \\
\hline 8:30 AM & 324 & & 8:30 PM & 13 & \\
\hline 8:45 AM & 246 & & 8:45 PM & 6 & \\
\hline 9:00 AM & 168 & 437 & 9:00 PM & 12 & 38 \\
\hline 9:15 AM & 144 & & 9:15 PM & 10 & \\
\hline 9:30 AM & 72 & & 9:30 PM & 13 & \\
\hline 9:45 AM & 53 & & 9:45 PM & 3 & \\
\hline 10:00 AM & 35 & 145 & 10:00 PM & 4 & 27 \\
\hline 10:15 AM & 38 & & 10:15 PM & 4 & \\
\hline 10:30 AM & 42 & & 10:30 PM & 13 & \\
\hline 10:45 AM & 30 & & 10:45 PM & 6 & \\
\hline 11:00 AM & 26 & 92 & 11:00 PM & 9 & 24 \\
\hline 11:15 AM & 19 & & 11:15 PM & 7 & \\
\hline 11:30 AM & 18 & & 11:30 PM & 2 & \\
\hline 11:45 AM & 29 & & 11:45 PM & 6 & \\
\hline
\end{tabular}

24 Hour Total

\section*{12:00 AM - 12:00 PM}

12 Hour Count 1922
Peak Hour 8:15 AM
Peak Volume 1004
Factor 0.77

12:00 PM - 12:00 AM
12 Hour Count 1041
Peak Hour 5:30 PM
Peak Volume 157
Factor 0.89

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 3 & 14 & 12:00 PM & 0 & 106 \\
\hline 12:15 AM & 2 & & 12:15 PM & 42 & \\
\hline 12:30 AM & 6 & & 12:30 PM & 22 & \\
\hline 12:45 AM & 3 & & 12:45 PM & 42 & \\
\hline 1:00 AM & 2 & 9 & 1:00 PM & 30 & 114 \\
\hline 1:15 AM & 1 & & 1:15 PM & 34 & \\
\hline 1:30 AM & 2 & & 1:30 PM & 30 & \\
\hline 1:45 AM & 4 & & 1:45 PM & 20 & \\
\hline 2:00 AM & 1 & 7 & 2:00 PM & 30 & 119 \\
\hline 2:15 AM & 3 & & 2:15 PM & 28 & \\
\hline 2:30 AM & 1 & & 2:30 PM & 28 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 33 & \\
\hline 3:00 AM & 1 & 5 & 3:00 PM & 30 & 178 \\
\hline 3:15 AM & 0 & & 3:15 PM & 50 & \\
\hline 3:30 AM & 2 & & 3:30 PM & 46 & \\
\hline 3:45 AM & 2 & & 3:45 PM & 52 & \\
\hline 4:00 AM & 1 & 7 & 4:00 PM & 40 & 166 \\
\hline 4:15 AM & 2 & & 4:15 PM & 42 & \\
\hline 4:30 AM & 1 & & 4:30 PM & 42 & \\
\hline 4:45 AM & 3 & & 4:45 PM & 42 & \\
\hline 5:00 AM & 2 & 10 & 5:00 PM & 36 & 170 \\
\hline 5:15 AM & 2 & & 5:15 PM & 42 & \\
\hline 5:30 AM & 5 & & 5:30 PM & 40 & \\
\hline 5:45 AM & 1 & & 5:45 PM & 52 & \\
\hline 6:00 AM & 4 & 25 & 6:00 PM & 44 & 169 \\
\hline 6:15 AM & 2 & & 6:15 PM & 46 & \\
\hline 6:30 AM & 2 & & 6:30 PM & 43 & \\
\hline 6:45 AM & 17 & & 6:45 PM & 36 & \\
\hline 7:00 AM & 20 & 169 & 7:00 PM & 22 & 93 \\
\hline 7:15 AM & 17 & & 7:15 PM & 27 & \\
\hline 7:30 AM & 38 & & 7:30 PM & 26 & \\
\hline 7:45 AM & 94 & & 7:45 PM & 18 & \\
\hline 8:00 AM & 148 & 973 & 8:00 PM & 12 & 52 \\
\hline 8:15 AM & 256 & & 8:15 PM & 14 & \\
\hline 8:30 AM & 291 & & 8:30 PM & 14 & \\
\hline 8:45 AM & 278 & & 8:45 PM & 12 & \\
\hline 9:00 AM & 145 & 419 & 9:00 PM & 17 & 51 \\
\hline 9:15 AM & 144 & & 9:15 PM & 14 & \\
\hline 9:30 AM & 75 & & 9:30 PM & 7 & \\
\hline 9:45 AM & 55 & & 9:45 PM & 13 & \\
\hline 10:00 AM & 46 & 135 & 10:00 PM & 8 & 35 \\
\hline 10:15 AM & 30 & & 10:15 PM & 12 & \\
\hline 10:30 AM & 32 & & 10:30 PM & 8 & \\
\hline 10:45 AM & 27 & & 10:45 PM & 7 & \\
\hline 11:00 AM & 30 & 103 & 11:00 PM & 5 & 24 \\
\hline 11:15 AM & 22 & & 11:15 PM & 5 & \\
\hline 11:30 AM & 26 & & 11:30 PM & 4 & \\
\hline 11:45 AM & 25 & & 11:45 PM & 10 & \\
\hline
\end{tabular}

24 Hour Total
3153

\section*{12:00 AM - 12:00 PM}

12 Hour Count 1876
Peak Hour 8:00 AM
Peak Volume 973
Factor 0.84

12:00 PM - 12:00 AM
12 Hour Count 1277
Peak Hour 3:15 PM
Peak Volume 188
Factor 0.90

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 6 & 22 & 12:00 PM & 30 & 96 \\
\hline 12:15 AM & 5 & & 12:15 PM & 16 & \\
\hline 12:30 AM & 5 & & 12:30 PM & 20 & \\
\hline 12:45 AM & 6 & & 12:45 PM & 30 & \\
\hline 1:00 AM & 6 & 11 & 1:00 PM & 24 & 101 \\
\hline 1:15 AM & 3 & & 1:15 PM & 20 & \\
\hline 1:30 AM & 1 & & 1:30 PM & 27 & \\
\hline 1:45 AM & 1 & & 1:45 PM & 30 & \\
\hline 2:00 AM & 0 & 10 & 2:00 PM & 24 & 101 \\
\hline 2:15 AM & 4 & & 2:15 PM & 30 & \\
\hline 2:30 AM & 3 & & 2:30 PM & 19 & \\
\hline 2:45 AM & 3 & & 2:45 PM & 28 & \\
\hline 3:00 AM & 2 & 9 & 3:00 PM & 36 & 164 \\
\hline 3:15 AM & 0 & & 3:15 PM & 34 & \\
\hline 3:30 AM & 6 & & 3:30 PM & 48 & \\
\hline 3:45 AM & 1 & & 3:45 PM & 46 & \\
\hline 4:00 AM & 1 & 5 & 4:00 PM & 56 & 182 \\
\hline 4:15 AM & 0 & & 4:15 PM & 44 & \\
\hline 4:30 AM & 2 & & 4:30 PM & 46 & \\
\hline 4:45 AM & 2 & & 4:45 PM & 36 & \\
\hline 5:00 AM & 6 & 9 & 5:00 PM & 32 & 136 \\
\hline 5:15 AM & 2 & & 5:15 PM & 34 & \\
\hline 5:30 AM & 1 & & 5:30 PM & 36 & \\
\hline 5:45 AM & 0 & & 5:45 PM & 34 & \\
\hline 6:00 AM & 3 & 18 & 6:00 PM & 34 & 148 \\
\hline 6:15 AM & 4 & & 6:15 PM & 46 & \\
\hline 6:30 AM & 5 & & 6:30 PM & 36 & \\
\hline 6:45 AM & 6 & & 6:45 PM & 32 & \\
\hline 7:00 AM & 24 & 134 & 7:00 PM & 21 & 62 \\
\hline 7:15 AM & 15 & & 7:15 PM & 20 & \\
\hline 7:30 AM & 34 & & 7:30 PM & 15 & \\
\hline 7:45 AM & 61 & & 7:45 PM & 6 & \\
\hline 8:00 AM & 168 & 866 & 8:00 PM & 20 & 58 \\
\hline 8:15 AM & 224 & & 8:15 PM & 12 & \\
\hline 8:30 AM & 250 & & 8:30 PM & 14 & \\
\hline 8:45 AM & 224 & & 8:45 PM & 12 & \\
\hline 9:00 AM & 122 & 350 & 9:00 PM & 8 & 44 \\
\hline 9:15 AM & 114 & & 9:15 PM & 13 & \\
\hline 9:30 AM & 76 & & 9:30 PM & 16 & \\
\hline 9:45 AM & 38 & & 9:45 PM & 7 & \\
\hline 10:00 AM & 34 & 137 & 10:00 PM & 12 & 42 \\
\hline 10:15 AM & 25 & & 10:15 PM & 3 & \\
\hline 10:30 AM & 36 & & 10:30 PM & 9 & \\
\hline 10:45 AM & 42 & & 10:45 PM & 18 & \\
\hline 11:00 AM & 20 & 92 & 11:00 PM & 12 & 32 \\
\hline 11:15 AM & 22 & & 11:15 PM & 2 & \\
\hline 11:30 AM & 28 & & 11:30 PM & 10 & \\
\hline 11:45 AM & 22 & & 11:45 PM & 8 & \\
\hline
\end{tabular}

24 Hour Total
2829

12:00 AM - 12:00 PM
\(\begin{aligned} 12 \text { Hour Count } & 1663 \\ \text { Peak Hour } & 8: 00 \mathrm{AM} \\ \text { Peak Volume } & 866 \\ \text { Factor } & 0.87\end{aligned}\)

12:00 PM - 12:00 AM
12 Hour Count 1166
Peak Hour 3:30 PM
Peak Volume 194
Factor 0.87

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & 7 & 30 & 12:00 PM & 24 & 87 \\
\hline 12:15 AM & 8 & & 12:15 PM & 21 & \\
\hline 12:30 AM & 9 & & 12:30 PM & 20 & \\
\hline 12:45 AM & 6 & & 12:45 PM & 22 & \\
\hline 1:00 AM & 4 & 20 & 1:00 PM & 27 & 119 \\
\hline 1:15 AM & 6 & & 1:15 PM & 32 & \\
\hline 1:30 AM & 6 & & 1:30 PM & 34 & \\
\hline 1:45 AM & 4 & & 1:45 PM & 26 & \\
\hline 2:00 AM & 10 & 14 & 2:00 PM & 15 & 97 \\
\hline 2:15 AM & 2 & & 2:15 PM & 18 & \\
\hline 2:30 AM & 0 & & 2:30 PM & 22 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 42 & \\
\hline 3:00 AM & 3 & 7 & 3:00 PM & 32 & 115 \\
\hline 3:15 AM & 0 & & 3:15 PM & 34 & \\
\hline 3:30 AM & 2 & & 3:30 PM & 28 & \\
\hline 3:45 AM & 2 & & 3:45 PM & 21 & \\
\hline 4:00 AM & 1 & 5 & 4:00 PM & 30 & 127 \\
\hline 4:15 AM & 0 & & 4:15 PM & 35 & \\
\hline 4:30 AM & 3 & & 4:30 PM & 26 & \\
\hline 4:45 AM & 1 & & 4:45 PM & 36 & \\
\hline 5:00 AM & 0 & 8 & 5:00 PM & 24 & 91 \\
\hline 5:15 AM & 3 & & 5:15 PM & 18 & \\
\hline 5:30 AM & 4 & & 5:30 PM & 24 & \\
\hline 5:45 AM & 1 & & 5:45 PM & 25 & \\
\hline 6:00 AM & 4 & 13 & 6:00 PM & 30 & 107 \\
\hline 6:15 AM & 2 & & 6:15 PM & 27 & \\
\hline 6:30 AM & 5 & & 6:30 PM & 28 & \\
\hline 6:45 AM & 2 & & 6:45 PM & 22 & \\
\hline 7:00 AM & 2 & 23 & 7:00 PM & 27 & 82 \\
\hline 7:15 AM & 6 & & 7:15 PM & 23 & \\
\hline 7:30 AM & 3 & & 7:30 PM & 12 & \\
\hline 7:45 AM & 12 & & 7:45 PM & 20 & \\
\hline 8:00 AM & 10 & 47 & 8:00 PM & 12 & 59 \\
\hline 8:15 AM & 6 & & 8:15 PM & 16 & \\
\hline 8:30 AM & 9 & & 8:30 PM & 14 & \\
\hline 8:45 AM & 22 & & 8:45 PM & 17 & \\
\hline 9:00 AM & 18 & 69 & 9:00 PM & 20 & 55 \\
\hline 9:15 AM & 23 & & 9:15 PM & 12 & \\
\hline 9:30 AM & 14 & & 9:30 PM & 16 & \\
\hline 9:45 AM & 14 & & 9:45 PM & 7 & \\
\hline 10:00 AM & 18 & 69 & 10:00 PM & 10 & 35 \\
\hline 10:15 AM & 11 & & 10:15 PM & 5 & \\
\hline 10:30 AM & 16 & & 10:30 PM & 14 & \\
\hline 10:45 AM & 24 & & 10:45 PM & 6 & \\
\hline 11:00 AM & 12 & 69 & 11:00 PM & 8 & 33 \\
\hline 11:15 AM & 18 & & 11:15 PM & 8 & \\
\hline 11:30 AM & 12 & & 11:30 PM & 9 & \\
\hline 11:45 AM & 27 & & 11:45 PM & 8 & \\
\hline & & Total & & & \\
\hline 12:00 AM & & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & 12 Hour Count & 1007 & \\
\hline Peak Hour & & & Peak Hour & 2:45 PM & \\
\hline Peak Volume & & & Peak Volume & 136 & \\
\hline Factor & & & Factor & 0.81 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Lakeshore Dr Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 4 & 22 & 12:00 PM & 12 & 86 \\
\hline 12:15 AM & 8 & & 12:15 PM & 24 & \\
\hline 12:30 AM & 5 & & 12:30 PM & 20 & \\
\hline 12:45 AM & 5 & & 12:45 PM & 30 & \\
\hline 1:00 AM & 7 & 17 & 1:00 PM & 26 & 96 \\
\hline 1:15 AM & 2 & & 1:15 PM & 26 & \\
\hline 1:30 AM & 5 & & 1:30 PM & 22 & \\
\hline 1:45 AM & 3 & & 1:45 PM & 22 & \\
\hline 2:00 AM & 5 & 15 & 2:00 PM & 38 & 138 \\
\hline 2:15 AM & 6 & & 2:15 PM & 40 & \\
\hline 2:30 AM & 2 & & 2:30 PM & 30 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 30 & \\
\hline 3:00 AM & 3 & 9 & 3:00 PM & 35 & 134 \\
\hline 3:15 AM & 1 & & 3:15 PM & 30 & \\
\hline 3:30 AM & 2 & & 3:30 PM & 33 & \\
\hline 3:45 AM & 3 & & 3:45 PM & 36 & \\
\hline 4:00 AM & 2 & 2 & 4:00 PM & 36 & 168 \\
\hline 4:15 AM & 0 & & 4:15 PM & 44 & \\
\hline 4:30 AM & 0 & & 4:30 PM & 46 & \\
\hline 4:45 AM & 0 & & 4:45 PM & 42 & \\
\hline 5:00 AM & 3 & 10 & 5:00 PM & 46 & 166 \\
\hline 5:15 AM & 2 & & 5:15 PM & 38 & \\
\hline 5:30 AM & 2 & & 5:30 PM & 46 & \\
\hline 5:45 AM & 3 & & 5:45 PM & 36 & \\
\hline 6:00 AM & 1 & 9 & 6:00 PM & 31 & 124 \\
\hline 6:15 AM & 2 & & 6:15 PM & 34 & \\
\hline 6:30 AM & 3 & & 6:30 PM & 34 & \\
\hline 6:45 AM & 3 & & 6:45 PM & 25 & \\
\hline 7:00 AM & 1 & 19 & 7:00 PM & 25 & 81 \\
\hline 7:15 AM & 1 & & 7:15 PM & 16 & \\
\hline 7:30 AM & 5 & & 7:30 PM & 22 & \\
\hline 7:45 AM & 12 & & 7:45 PM & 18 & \\
\hline 8:00 AM & 8 & 26 & 8:00 PM & 16 & 54 \\
\hline 8:15 AM & 8 & & 8:15 PM & 10 & \\
\hline 8:30 AM & 5 & & 8:30 PM & 18 & \\
\hline 8:45 AM & 5 & & 8:45 PM & 10 & \\
\hline 9:00 AM & 6 & 32 & 9:00 PM & 6 & 42 \\
\hline 9:15 AM & 14 & & 9:15 PM & 14 & \\
\hline 9:30 AM & 6 & & 9:30 PM & 7 & \\
\hline 9:45 AM & 6 & & 9:45 PM & 15 & \\
\hline 10:00 AM & 14 & 47 & 10:00 PM & 11 & 46 \\
\hline 10:15 AM & 5 & & 10:15 PM & 9 & \\
\hline 10:30 AM & 14 & & 10:30 PM & 15 & \\
\hline 10:45 AM & 14 & & 10:45 PM & 11 & \\
\hline 11:00 AM & 20 & 72 & 11:00 PM & 7 & 26 \\
\hline 11:15 AM & 15 & & 11:15 PM & 6 & \\
\hline 11:30 AM & 19 & & 11:30 PM & 4 & \\
\hline 11:45 AM & 18 & & 11:45 PM & 9 & \\
\hline
\end{tabular}

24 Hour Total
1441

12:00 AM - 12:00 PM
12 Hour Count 280
Peak Hour 11:00 AM
Peak Volume 72
Factor 0.90

12:00 PM - 12:00 AM
12 Hour Count 1161
Peak Hour \(4: 15\) PM
Peak Volume 178
Factor 0.97

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|c|}{Lakeshore Dr Off Ramp} \\
\hline Interval Start & & & Interval Start \\
\hline 12:00 AM & 5 & 26 & \\
\hline 12:15 AM & 10 & & \\
\hline 12:30 AM & 2 & & \\
\hline 12:45 AM & 9 & & \\
\hline 1:00 AM & 8 & 22 & \\
\hline 1:15 AM & 6 & & \\
\hline 1:30 AM & 6 & & \\
\hline 1:45 AM & 2 & & \\
\hline 2:00 AM & 3 & 12 & \\
\hline 2:15 AM & 5 & & \\
\hline 2:30 AM & 2 & & \\
\hline 2:45 AM & 2 & & \\
\hline 3:00 AM & 0 & 3 & \\
\hline 3:15 AM & 2 & & \\
\hline 3:30 AM & 0 & & \\
\hline 3:45 AM & 1 & & \\
\hline 4:00 AM & 3 & 9 & \\
\hline 4:15 AM & 2 & & \\
\hline 4:30 AM & 1 & & \\
\hline 4:45 AM & 3 & & \\
\hline 5:00 AM & 2 & 9 & \\
\hline 5:15 AM & 3 & & \\
\hline 5:30 AM & 0 & & \\
\hline 5:45 AM & 4 & & \\
\hline 6:00 AM & 7 & 39 & \\
\hline 6:15 AM & 4 & & \\
\hline 6:30 AM & 12 & & \\
\hline 6:45 AM & 16 & & \\
\hline 7:00 AM & 13 & 72 & \\
\hline 7:15 AM & 18 & & \\
\hline 7:30 AM & 41 & & \\
\hline
\end{tabular}

\section*{24 Hour Total 192}

12:00 AM - 12:00 PM
12 Hour Count 192
Peak Hour 6:45 AM
Peak Volume 88
Factor 0.54

12:00 PM - 12:00 AM
12 Hour Count 0
Peak Hour -
Peak Volume -
Factor -

\section*{LOCATION 5 \\ SEABROOK BRIDGE HAYNE BLVD. EXIT RAMP Tube Counts}

\section*{ITS Regional, LLC.}

4744 Kawanee Avenue
Metairie, LA 70006
Site: Hayne Blvd Off Ramp
1/23/2022
Sunday
Daily Volume, per Channel (Volume factor 0.5)


Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Hayne Blvd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 12 & 36 & 12:00 PM & 56 & 248 \\
\hline 12:15 AM & 9 & & 12:15 PM & 64 & \\
\hline 12:30 AM & 8 & & 12:30 PM & 76 & \\
\hline 12:45 AM & 7 & & 12:45 PM & 52 & \\
\hline 1:00 AM & 9 & 28 & 1:00 PM & 66 & 268 \\
\hline 1:15 AM & 4 & & 1:15 PM & 66 & \\
\hline 1:30 AM & 7 & & 1:30 PM & 68 & \\
\hline 1:45 AM & 8 & & 1:45 PM & 68 & \\
\hline 2:00 AM & 2 & 9 & 2:00 PM & 76 & 391 \\
\hline 2:15 AM & 3 & & 2:15 PM & 87 & \\
\hline 2:30 AM & 3 & & 2:30 PM & 116 & \\
\hline 2:45 AM & 1 & & 2:45 PM & 112 & \\
\hline 3:00 AM & 3 & 6 & 3:00 PM & 129 & 732 \\
\hline 3:15 AM & 2 & & 3:15 PM & 167 & \\
\hline 3:30 AM & 0 & & 3:30 PM & 182 & \\
\hline 3:45 AM & 1 & & 3:45 PM & 254 & \\
\hline 4:00 AM & 2 & 7 & 4:00 PM & 268 & 1194 \\
\hline 4:15 AM & 3 & & 4:15 PM & 306 & \\
\hline 4:30 AM & 1 & & 4:30 PM & 320 & \\
\hline 4:45 AM & 1 & & 4:45 PM & 300 & \\
\hline 5:00 AM & 2 & 23 & 5:00 PM & 306 & 1196 \\
\hline 5:15 AM & 5 & & 5:15 PM & 320 & \\
\hline 5:30 AM & 10 & & 5:30 PM & 292 & \\
\hline 5:45 AM & 6 & & 5:45 PM & 278 & \\
\hline 6:00 AM & 7 & 59 & 6:00 PM & 209 & 613 \\
\hline 6:15 AM & 10 & & 6:15 PM & 174 & \\
\hline 6:30 AM & 8 & & 6:30 PM & 146 & \\
\hline 6:45 AM & 34 & & 6:45 PM & 84 & \\
\hline 7:00 AM & 42 & 278 & 7:00 PM & 62 & 234 \\
\hline 7:15 AM & 43 & & 7:15 PM & 60 & \\
\hline 7:30 AM & 83 & & 7:30 PM & 60 & \\
\hline 7:45 AM & 110 & & 7:45 PM & 52 & \\
\hline 8:00 AM & 101 & 351 & 8:00 PM & 40 & 185 \\
\hline 8:15 AM & 106 & & 8:15 PM & 57 & \\
\hline 8:30 AM & 63 & & 8:30 PM & 44 & \\
\hline 8:45 AM & 81 & & 8:45 PM & 44 & \\
\hline 9:00 AM & 60 & 206 & 9:00 PM & 43 & 119 \\
\hline 9:15 AM & 48 & & 9:15 PM & 24 & \\
\hline 9:30 AM & 52 & & 9:30 PM & 18 & \\
\hline 9:45 AM & 46 & & 9:45 PM & 34 & \\
\hline 10:00 AM & 33 & 168 & 10:00 PM & 26 & 78 \\
\hline 10:15 AM & 37 & & 10:15 PM & 18 & \\
\hline 10:30 AM & 31 & & 10:30 PM & 16 & \\
\hline 10:45 AM & 67 & & 10:45 PM & 18 & \\
\hline 11:00 AM & 60 & 223 & 11:00 PM & 18 & 55 \\
\hline 11:15 AM & 48 & & 11:15 PM & 15 & \\
\hline 11:30 AM & 56 & & 11:30 PM & 13 & \\
\hline 11:45 AM & 59 & & 11:45 PM & 9 & \\
\hline
\end{tabular}

24 Hour Total
12:00 AM - 12:00 PM
12 Hour Count 1394
Peak Hour 7:30 AM
Peak Volume 400
Factor 0.91

12:00 PM - 12:00 AM
12 Hour Count 5313
Peak Hour 4:30 PM
Peak Volume 1246
Factor 0.97

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Hayne Blvd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 6 & 27 & 12:00 PM & 50 & 214 \\
\hline 12:15 AM & 6 & & 12:15 PM & 54 & \\
\hline 12:30 AM & 7 & & 12:30 PM & 44 & \\
\hline 12:45 AM & 8 & & 12:45 PM & 66 & \\
\hline 1:00 AM & 6 & 17 & 1:00 PM & 58 & 285 \\
\hline 1:15 AM & 8 & & 1:15 PM & 68 & \\
\hline 1:30 AM & 1 & & 1:30 PM & 76 & \\
\hline 1:45 AM & 2 & & 1:45 PM & 83 & \\
\hline 2:00 AM & 5 & 12 & 2:00 PM & 82 & 355 \\
\hline 2:15 AM & 4 & & 2:15 PM & 92 & \\
\hline 2:30 AM & 1 & & 2:30 PM & 92 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 89 & \\
\hline 3:00 AM & 0 & 6 & 3:00 PM & 150 & 676 \\
\hline 3:15 AM & 1 & & 3:15 PM & 142 & \\
\hline 3:30 AM & 2 & & 3:30 PM & 174 & \\
\hline 3:45 AM & 3 & & 3:45 PM & 210 & \\
\hline 4:00 AM & 1 & 8 & 4:00 PM & 212 & 940 \\
\hline 4:15 AM & 4 & & 4:15 PM & 254 & \\
\hline 4:30 AM & 2 & & 4:30 PM & 246 & \\
\hline 4:45 AM & 1 & & 4:45 PM & 228 & \\
\hline 5:00 AM & 1 & 24 & 5:00 PM & 232 & 983 \\
\hline 5:15 AM & 4 & & 5:15 PM & 278 & \\
\hline 5:30 AM & 10 & & 5:30 PM & 266 & \\
\hline 5:45 AM & 9 & & 5:45 PM & 207 & \\
\hline 6:00 AM & 9 & 52 & 6:00 PM & 172 & 504 \\
\hline 6:15 AM & 6 & & 6:15 PM & 130 & \\
\hline 6:30 AM & 8 & & 6:30 PM & 112 & \\
\hline 6:45 AM & 29 & & 6:45 PM & 90 & \\
\hline 7:00 AM & 35 & 311 & 7:00 PM & 84 & 260 \\
\hline 7:15 AM & 64 & & 7:15 PM & 64 & \\
\hline 7:30 AM & 98 & & 7:30 PM & 52 & \\
\hline 7:45 AM & 114 & & 7:45 PM & 60 & \\
\hline 8:00 AM & 134 & 374 & 8:00 PM & 61 & 179 \\
\hline 8:15 AM & 104 & & 8:15 PM & 48 & \\
\hline 8:30 AM & 70 & & 8:30 PM & 37 & \\
\hline 8:45 AM & 66 & & 8:45 PM & 33 & \\
\hline 9:00 AM & 48 & 193 & 9:00 PM & 35 & 119 \\
\hline 9:15 AM & 41 & & 9:15 PM & 28 & \\
\hline 9:30 AM & 58 & & 9:30 PM & 36 & \\
\hline 9:45 AM & 46 & & 9:45 PM & 20 & \\
\hline 10:00 AM & 46 & 197 & 10:00 PM & 32 & 99 \\
\hline 10:15 AM & 52 & & 10:15 PM & 20 & \\
\hline 10:30 AM & 50 & & 10:30 PM & 18 & \\
\hline 10:45 AM & 49 & & 10:45 PM & 29 & \\
\hline 11:00 AM & 52 & 219 & 11:00 PM & 14 & 50 \\
\hline 11:15 AM & 58 & & 11:15 PM & 11 & \\
\hline 11:30 AM & 60 & & 11:30 PM & 12 & \\
\hline 11:45 AM & 49 & & 11:45 PM & 13 & \\
\hline
\end{tabular}

24 Hour Total
6104

\section*{12:00 AM - 12:00 PM}

12 Hour Count 1440
Peak Hour 7:30 AM
Peak Volume 450
Factor 0.84

12:00 PM - 12:00 AM
12 Hour Count 4664
Peak Hour 4:45 PM
Peak Volume 1004
Factor 0.90

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Hayne Blvd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 8 & 32 & 12:00 PM & 72 & 243 \\
\hline 12:15 AM & 10 & & 12:15 PM & 50 & \\
\hline 12:30 AM & 5 & & 12:30 PM & 59 & \\
\hline 12:45 AM & 9 & & 12:45 PM & 62 & \\
\hline 1:00 AM & 6 & 26 & 1:00 PM & 75 & 315 \\
\hline 1:15 AM & 9 & & 1:15 PM & 82 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 71 & \\
\hline 1:45 AM & 3 & & 1:45 PM & 87 & \\
\hline 2:00 AM & 4 & 10 & 2:00 PM & 80 & 378 \\
\hline 2:15 AM & 4 & & 2:15 PM & 88 & \\
\hline 2:30 AM & 1 & & 2:30 PM & 92 & \\
\hline 2:45 AM & 1 & & 2:45 PM & 118 & \\
\hline 3:00 AM & 6 & 13 & 3:00 PM & 144 & 688 \\
\hline 3:15 AM & 4 & & 3:15 PM & 158 & \\
\hline 3:30 AM & 1 & & 3:30 PM & 172 & \\
\hline 3:45 AM & 2 & & 3:45 PM & 214 & \\
\hline 4:00 AM & 2 & 8 & 4:00 PM & 224 & 1020 \\
\hline 4:15 AM & 0 & & 4:15 PM & 255 & \\
\hline 4:30 AM & 2 & & 4:30 PM & 270 & \\
\hline 4:45 AM & 4 & & 4:45 PM & 271 & \\
\hline 5:00 AM & 5 & 24 & 5:00 PM & 266 & 1124 \\
\hline 5:15 AM & 6 & & 5:15 PM & 308 & \\
\hline 5:30 AM & 8 & & 5:30 PM & 276 & \\
\hline 5:45 AM & 5 & & 5:45 PM & 274 & \\
\hline 6:00 AM & 8 & 63 & 6:00 PM & 196 & 635 \\
\hline 6:15 AM & 8 & & 6:15 PM & 170 & \\
\hline 6:30 AM & 15 & & 6:30 PM & 140 & \\
\hline 6:45 AM & 32 & & 6:45 PM & 129 & \\
\hline 7:00 AM & 46 & 287 & 7:00 PM & 94 & 312 \\
\hline 7:15 AM & 49 & & 7:15 PM & 91 & \\
\hline 7:30 AM & 66 & & 7:30 PM & 64 & \\
\hline 7:45 AM & 126 & & 7:45 PM & 63 & \\
\hline 8:00 AM & 102 & 341 & 8:00 PM & 56 & 192 \\
\hline 8:15 AM & 87 & & 8:15 PM & 54 & \\
\hline 8:30 AM & 66 & & 8:30 PM & 46 & \\
\hline 8:45 AM & 86 & & 8:45 PM & 36 & \\
\hline 9:00 AM & 66 & 236 & 9:00 PM & 43 & 136 \\
\hline 9:15 AM & 64 & & 9:15 PM & 36 & \\
\hline 9:30 AM & 58 & & 9:30 PM & 34 & \\
\hline 9:45 AM & 48 & & 9:45 PM & 23 & \\
\hline 10:00 AM & 52 & 208 & 10:00 PM & 31 & 107 \\
\hline 10:15 AM & 50 & & 10:15 PM & 27 & \\
\hline 10:30 AM & 58 & & 10:30 PM & 27 & \\
\hline 10:45 AM & 48 & & 10:45 PM & 22 & \\
\hline 11:00 AM & 62 & 249 & 11:00 PM & 19 & 61 \\
\hline 11:15 AM & 53 & & 11:15 PM & 20 & \\
\hline 11:30 AM & 72 & & 11:30 PM & 13 & \\
\hline 11:45 AM & 62 & & 11:45 PM & 9 & \\
\hline
\end{tabular}

24 Hour Total
6708

12:00 AM - 12:00 PM
12 Hour Count 1497
Peak Hour 7:30 AM
Peak Volume 381
Factor 0.76

12:00 PM - 12:00 AM
12 Hour Count 5211
Peak Hour 5:00 PM
Peak Volume 1124
Factor 0.91

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Hayne Blvd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 17 & 41 & 12:00 PM & 62 & 288 \\
\hline 12:15 AM & 8 & & 12:15 PM & 78 & \\
\hline 12:30 AM & 8 & & 12:30 PM & 68 & \\
\hline 12:45 AM & 8 & & 12:45 PM & 80 & \\
\hline 1:00 AM & 3 & 23 & 1:00 PM & 74 & 305 \\
\hline 1:15 AM & 8 & & 1:15 PM & 74 & \\
\hline 1:30 AM & 7 & & 1:30 PM & 76 & \\
\hline 1:45 AM & 5 & & 1:45 PM & 81 & \\
\hline 2:00 AM & 0 & 6 & 2:00 PM & 74 & 389 \\
\hline 2:15 AM & 3 & & 2:15 PM & 101 & \\
\hline 2:30 AM & 1 & & 2:30 PM & 100 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 114 & \\
\hline 3:00 AM & 4 & 11 & 3:00 PM & 163 & 759 \\
\hline 3:15 AM & 2 & & 3:15 PM & 168 & \\
\hline 3:30 AM & 3 & & 3:30 PM & 192 & \\
\hline 3:45 AM & 2 & & 3:45 PM & 236 & \\
\hline 4:00 AM & 3 & 8 & 4:00 PM & 196 & 972 \\
\hline 4:15 AM & 1 & & 4:15 PM & 240 & \\
\hline 4:30 AM & 3 & & 4:30 PM & 270 & \\
\hline 4:45 AM & 1 & & 4:45 PM & 266 & \\
\hline 5:00 AM & 2 & 20 & 5:00 PM & 290 & 1220 \\
\hline 5:15 AM & 5 & & 5:15 PM & 280 & \\
\hline 5:30 AM & 8 & & 5:30 PM & 330 & \\
\hline 5:45 AM & 5 & & 5:45 PM & 320 & \\
\hline 6:00 AM & 12 & 67 & 6:00 PM & 276 & 819 \\
\hline 6:15 AM & 8 & & 6:15 PM & 231 & \\
\hline 6:30 AM & 14 & & 6:30 PM & 178 & \\
\hline 6:45 AM & 33 & & 6:45 PM & 134 & \\
\hline 7:00 AM & 42 & 296 & 7:00 PM & 118 & 352 \\
\hline 7:15 AM & 46 & & 7:15 PM & 100 & \\
\hline 7:30 AM & 94 & & 7:30 PM & 72 & \\
\hline 7:45 AM & 114 & & 7:45 PM & 62 & \\
\hline 8:00 AM & 116 & 338 & 8:00 PM & 67 & 252 \\
\hline 8:15 AM & 88 & & 8:15 PM & 58 & \\
\hline 8:30 AM & 64 & & 8:30 PM & 67 & \\
\hline 8:45 AM & 70 & & 8:45 PM & 60 & \\
\hline 9:00 AM & 62 & 235 & 9:00 PM & 36 & 128 \\
\hline 9:15 AM & 52 & & 9:15 PM & 34 & \\
\hline 9:30 AM & 56 & & 9:30 PM & 34 & \\
\hline 9:45 AM & 65 & & 9:45 PM & 24 & \\
\hline 10:00 AM & 46 & 204 & 10:00 PM & 27 & 101 \\
\hline 10:15 AM & 60 & & 10:15 PM & 27 & \\
\hline 10:30 AM & 47 & & 10:30 PM & 23 & \\
\hline 10:45 AM & 51 & & 10:45 PM & 24 & \\
\hline 11:00 AM & 0 & 230 & 11:00 PM & 14 & 56 \\
\hline 11:15 AM & 122 & & 11:15 PM & 13 & \\
\hline 11:30 AM & 62 & & 11:30 PM & 21 & \\
\hline 11:45 AM & 46 & & 11:45 PM & 8 & \\
\hline & & r Total & & & \\
\hline 12:00 AM & PM & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & 12 Hour Count & 5641 & \\
\hline Peak Hour & & & Peak Hour & 5:00 PM & \\
\hline Peak Volume & & & Peak Volume & 1220 & \\
\hline Factor & & & Factor & 0.92 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Hayne Blvd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 12 & 36 & 12:00 PM & 74 & 311 \\
\hline 12:15 AM & 11 & & 12:15 PM & 75 & \\
\hline 12:30 AM & 8 & & 12:30 PM & 80 & \\
\hline 12:45 AM & 5 & & 12:45 PM & 82 & \\
\hline 1:00 AM & 5 & 12 & 1:00 PM & 69 & 318 \\
\hline 1:15 AM & 3 & & 1:15 PM & 72 & \\
\hline 1:30 AM & 2 & & 1:30 PM & 94 & \\
\hline 1:45 AM & 2 & & 1:45 PM & 83 & \\
\hline 2:00 AM & 5 & 13 & 2:00 PM & 101 & 437 \\
\hline 2:15 AM & 2 & & 2:15 PM & 104 & \\
\hline 2:30 AM & 4 & & 2:30 PM & 116 & \\
\hline 2:45 AM & 2 & & 2:45 PM & 116 & \\
\hline 3:00 AM & 6 & 18 & 3:00 PM & 122 & 712 \\
\hline 3:15 AM & 1 & & 3:15 PM & 164 & \\
\hline 3:30 AM & 5 & & 3:30 PM & 212 & \\
\hline 3:45 AM & 6 & & 3:45 PM & 214 & \\
\hline 4:00 AM & 0 & 9 & 4:00 PM & 256 & 1110 \\
\hline 4:15 AM & 5 & & 4:15 PM & 272 & \\
\hline 4:30 AM & 1 & & 4:30 PM & 300 & \\
\hline 4:45 AM & 3 & & 4:45 PM & 282 & \\
\hline 5:00 AM & 4 & 16 & 5:00 PM & 285 & 1131 \\
\hline 5:15 AM & 2 & & 5:15 PM & 306 & \\
\hline 5:30 AM & 5 & & 5:30 PM & 284 & \\
\hline 5:45 AM & 5 & & 5:45 PM & 256 & \\
\hline 6:00 AM & 12 & 62 & 6:00 PM & 213 & 516 \\
\hline 6:15 AM & 14 & & 6:15 PM & 190 & \\
\hline 6:30 AM & 11 & & 6:30 PM & 113 & \\
\hline 6:45 AM & 25 & & 6:45 PM & 0 & \\
\hline 7:00 AM & 43 & 312 & 7:00 PM & 154 & 374 \\
\hline 7:15 AM & 50 & & 7:15 PM & 86 & \\
\hline 7:30 AM & 80 & & 7:30 PM & 84 & \\
\hline 7:45 AM & 139 & & 7:45 PM & 50 & \\
\hline 8:00 AM & 109 & 304 & 8:00 PM & 60 & 221 \\
\hline 8:15 AM & 74 & & 8:15 PM & 52 & \\
\hline 8:30 AM & 62 & & 8:30 PM & 57 & \\
\hline 8:45 AM & 59 & & 8:45 PM & 52 & \\
\hline 9:00 AM & 72 & 236 & 9:00 PM & 46 & 149 \\
\hline 9:15 AM & 66 & & 9:15 PM & 32 & \\
\hline 9:30 AM & 48 & & 9:30 PM & 34 & \\
\hline 9:45 AM & 50 & & 9:45 PM & 37 & \\
\hline 10:00 AM & 53 & 216 & 10:00 PM & 33 & 137 \\
\hline 10:15 AM & 50 & & 10:15 PM & 36 & \\
\hline 10:30 AM & 59 & & 10:30 PM & 30 & \\
\hline 10:45 AM & 54 & & 10:45 PM & 38 & \\
\hline 11:00 AM & 56 & 232 & 11:00 PM & 19 & 75 \\
\hline 11:15 AM & 48 & & 11:15 PM & 23 & \\
\hline 11:30 AM & 64 & & 11:30 PM & 16 & \\
\hline 11:45 AM & 64 & & 11:45 PM & 17 & \\
\hline
\end{tabular}

24 Hour Total
12:00 AM - 12:00 PM
12 Hour Count 1466
Peak Hour 7:30 AM
Peak Volume 402
Factor 0.72

12:00 PM - 12:00 AM
12 Hour Count 5491
Peak Hour 4:30 PM
Peak Volume 1173
Factor 0.96

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Hayne Blvd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 16 & 56 & 12:00 PM & 72 & 318 \\
\hline 12:15 AM & 14 & & 12:15 PM & 79 & \\
\hline 12:30 AM & 14 & & 12:30 PM & 98 & \\
\hline 12:45 AM & 12 & & 12:45 PM & 69 & \\
\hline 1:00 AM & 19 & 44 & 1:00 PM & 78 & 309 \\
\hline 1:15 AM & 11 & & 1:15 PM & 68 & \\
\hline 1:30 AM & 12 & & 1:30 PM & 70 & \\
\hline 1:45 AM & 2 & & 1:45 PM & 93 & \\
\hline 2:00 AM & 8 & 28 & 2:00 PM & 95 & 345 \\
\hline 2:15 AM & 3 & & 2:15 PM & 74 & \\
\hline 2:30 AM & 12 & & 2:30 PM & 85 & \\
\hline 2:45 AM & 5 & & 2:45 PM & 91 & \\
\hline 3:00 AM & 5 & 17 & 3:00 PM & 92 & 375 \\
\hline 3:15 AM & 6 & & 3:15 PM & 88 & \\
\hline 3:30 AM & 3 & & 3:30 PM & 90 & \\
\hline 3:45 AM & 3 & & 3:45 PM & 105 & \\
\hline 4:00 AM & 0 & 7 & 4:00 PM & 94 & 426 \\
\hline 4:15 AM & 4 & & 4:15 PM & 97 & \\
\hline 4:30 AM & 2 & & 4:30 PM & 119 & \\
\hline 4:45 AM & 1 & & 4:45 PM & 116 & \\
\hline 5:00 AM & 3 & 12 & 5:00 PM & 96 & 366 \\
\hline 5:15 AM & 2 & & 5:15 PM & 91 & \\
\hline 5:30 AM & 2 & & 5:30 PM & 92 & \\
\hline 5:45 AM & 5 & & 5:45 PM & 87 & \\
\hline 6:00 AM & 6 & 26 & 6:00 PM & 92 & 295 \\
\hline 6:15 AM & 3 & & 6:15 PM & 79 & \\
\hline 6:30 AM & 8 & & 6:30 PM & 62 & \\
\hline 6:45 AM & 9 & & 6:45 PM & 62 & \\
\hline 7:00 AM & 15 & 63 & 7:00 PM & 83 & 229 \\
\hline 7:15 AM & 15 & & 7:15 PM & 50 & \\
\hline 7:30 AM & 15 & & 7:30 PM & 54 & \\
\hline 7:45 AM & 18 & & 7:45 PM & 42 & \\
\hline 8:00 AM & 20 & 117 & 8:00 PM & 36 & 168 \\
\hline 8:15 AM & 33 & & 8:15 PM & 48 & \\
\hline 8:30 AM & 29 & & 8:30 PM & 40 & \\
\hline 8:45 AM & 35 & & 8:45 PM & 44 & \\
\hline 9:00 AM & 42 & 195 & 9:00 PM & 29 & 141 \\
\hline 9:15 AM & 46 & & 9:15 PM & 44 & \\
\hline 9:30 AM & 44 & & 9:30 PM & 36 & \\
\hline 9:45 AM & 63 & & 9:45 PM & 32 & \\
\hline 10:00 AM & 52 & 200 & 10:00 PM & 38 & 121 \\
\hline 10:15 AM & 52 & & 10:15 PM & 24 & \\
\hline 10:30 AM & 56 & & 10:30 PM & 33 & \\
\hline 10:45 AM & 40 & & 10:45 PM & 26 & \\
\hline 11:00 AM & 52 & 256 & 11:00 PM & 19 & 74 \\
\hline 11:15 AM & 67 & & 11:15 PM & 19 & \\
\hline 11:30 AM & 64 & & 11:30 PM & 18 & \\
\hline 11:45 AM & 73 & & 11:45 PM & 18 & \\
\hline
\end{tabular}

24 Hour Total
4188

12:00 AM - 12:00 PM
12 Hour Count 1021
Peak Hour 11:00 AM
Peak Volume 256
Factor 0.88

12:00 PM - 12:00 AM
12 Hour Count 3167
Peak Hour \(\quad\) 4:15 PM
Peak Volume 428
Factor 0.90

Daily Volume, per Channel (Volume factor 0.5)


24 Hour Total
3598

\section*{12:00 AM - 12:00 PM}

12 Hour Count 867
Peak Hour 11:00 AM
Peak Volume 225
Factor 0.78

12:00 PM - 12:00 AM
12 Hour Count 2731
Peak Hour 2:30 PM
Peak Volume 330
Factor 0.92

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Hayne Blvd Off Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|c|}{Interval Start} \\
\hline 12:00 AM & 14 & 28 & & & \\
\hline 12:15 AM & 2 & & & & \\
\hline 12:30 AM & 5 & & & & \\
\hline 12:45 AM & 7 & & & & \\
\hline 1:00 AM & 8 & 24 & & & \\
\hline 1:15 AM & 6 & & & & \\
\hline 1:30 AM & 4 & & & & \\
\hline 1:45 AM & 6 & & & & \\
\hline 2:00 AM & 3 & 7 & & & \\
\hline 2:15 AM & 1 & & & & \\
\hline 2:30 AM & 1 & & & & \\
\hline 2:45 AM & 2 & & & & \\
\hline 3:00 AM & 3 & 11 & & & \\
\hline 3:15 AM & 4 & & & & \\
\hline 3:30 AM & 1 & & & & \\
\hline 3:45 AM & 3 & & & & \\
\hline 4:00 AM & 2 & 10 & & & \\
\hline 4:15 AM & 2 & & & & \\
\hline 4:30 AM & 3 & & & & \\
\hline 4:45 AM & 3 & & & & \\
\hline 5:00 AM & 4 & 30 & & & \\
\hline 5:15 AM & 5 & & & & \\
\hline 5:30 AM & 10 & & & & \\
\hline 5:45 AM & 11 & & & & \\
\hline 6:00 AM & 12 & 40 & & & \\
\hline 6:15 AM & 12 & & & & \\
\hline 6:30 AM & 16 & & & & \\
\hline & & 24 Hour Total & 150 & & \\
\hline 12:00 AM & 12:00 PM & & & 12:00 PM & 12:00 AM \\
\hline 12 Hour Count & 150 & & & 12 Hour Count & 0 \\
\hline Peak Hour & 5:45 AM & & & Peak Hour & - \\
\hline Peak Volume & 51 & & & Peak Volume & - \\
\hline Factor & 0.80 & & & Factor & - \\
\hline
\end{tabular}

\section*{LOCATION 6}

\section*{DANZIGER BRIDGE (US 90) FRANCE RD. ENTRANCE RAMP Tube Counts}

\section*{ITS Regional, LLC.}

4744 Kawanee Avenue
Metairie, LA 70006
Site: France Rd On Ramp

Daily Volume, per Channel (Volume factor 0.5)


Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 38 & 93 & 12:00 PM & 84 & 324 \\
\hline 12:15 AM & 18 & & 12:15 PM & 90 & \\
\hline 12:30 AM & 19 & & 12:30 PM & 76 & \\
\hline 12:45 AM & 18 & & 12:45 PM & 74 & \\
\hline 1:00 AM & 12 & 40 & 1:00 PM & 84 & 380 \\
\hline 1:15 AM & 12 & & 1:15 PM & 90 & \\
\hline 1:30 AM & 13 & & 1:30 PM & 106 & \\
\hline 1:45 AM & 3 & & 1:45 PM & 100 & \\
\hline 2:00 AM & 9 & 32 & 2:00 PM & 86 & 379 \\
\hline 2:15 AM & 11 & & 2:15 PM & 108 & \\
\hline 2:30 AM & 6 & & 2:30 PM & 81 & \\
\hline 2:45 AM & 6 & & 2:45 PM & 104 & \\
\hline 3:00 AM & 6 & 22 & 3:00 PM & 95 & 552 \\
\hline 3:15 AM & 4 & & 3:15 PM & 133 & \\
\hline 3:30 AM & 6 & & 3:30 PM & 147 & \\
\hline 3:45 AM & 6 & & 3:45 PM & 177 & \\
\hline 4:00 AM & 4 & 26 & 4:00 PM & 100 & 662 \\
\hline 4:15 AM & 8 & & 4:15 PM & 130 & \\
\hline 4:30 AM & 5 & & 4:30 PM & 236 & \\
\hline 4:45 AM & 9 & & 4:45 PM & 196 & \\
\hline 5:00 AM & 8 & 38 & 5:00 PM & 126 & 475 \\
\hline 5:15 AM & 6 & & 5:15 PM & 109 & \\
\hline 5:30 AM & 8 & & 5:30 PM & 128 & \\
\hline 5:45 AM & 16 & & 5:45 PM & 112 & \\
\hline 6:00 AM & 10 & 68 & 6:00 PM & 141 & 489 \\
\hline 6:15 AM & 7 & & 6:15 PM & 119 & \\
\hline 6:30 AM & 17 & & 6:30 PM & 115 & \\
\hline 6:45 AM & 34 & & 6:45 PM & 114 & \\
\hline 7:00 AM & 42 & 198 & 7:00 PM & 94 & 376 \\
\hline 7:15 AM & 48 & & 7:15 PM & 98 & \\
\hline 7:30 AM & 46 & & 7:30 PM & 86 & \\
\hline 7:45 AM & 62 & & 7:45 PM & 98 & \\
\hline 8:00 AM & 70 & 374 & 8:00 PM & 90 & 240 \\
\hline 8:15 AM & 78 & & 8:15 PM & 69 & \\
\hline 8:30 AM & 88 & & 8:30 PM & 41 & \\
\hline 8:45 AM & 138 & & 8:45 PM & 40 & \\
\hline 9:00 AM & 137 & 449 & 9:00 PM & 62 & 189 \\
\hline 9:15 AM & 122 & & 9:15 PM & 53 & \\
\hline 9:30 AM & 96 & & 9:30 PM & 44 & \\
\hline 9:45 AM & 94 & & 9:45 PM & 30 & \\
\hline 10:00 AM & 104 & 393 & 10:00 PM & 31 & 122 \\
\hline 10:15 AM & 102 & & 10:15 PM & 19 & \\
\hline 10:30 AM & 92 & & 10:30 PM & 46 & \\
\hline 10:45 AM & 95 & & 10:45 PM & 26 & \\
\hline 11:00 AM & 87 & 373 & 11:00 PM & 32 & 109 \\
\hline 11:15 AM & 82 & & 11:15 PM & 20 & \\
\hline 11:30 AM & 114 & & 11:30 PM & 27 & \\
\hline 11:45 AM & 90 & & 11:45 PM & 30 & \\
\hline
\end{tabular}

24 Hour Total
6403

12:00 AM - 12:00 PM
12 Hour Count 2106
Peak Hour 8:45 AM
Peak Volume 493
Factor 0.89

12:00 PM - 12:00 AM
12 Hour Count 4297
Peak Hour \(\quad\) 4:15 PM
Peak Volume 688
Factor 0.73

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 20 & 66 & 12:00 PM & 83 & 323 \\
\hline 12:15 AM & 16 & & 12:15 PM & 74 & \\
\hline 12:30 AM & 16 & & 12:30 PM & 72 & \\
\hline 12:45 AM & 14 & & 12:45 PM & 94 & \\
\hline 1:00 AM & 9 & 39 & 1:00 PM & 98 & 360 \\
\hline 1:15 AM & 10 & & 1:15 PM & 100 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 60 & \\
\hline 1:45 AM & 12 & & 1:45 PM & 102 & \\
\hline 2:00 AM & 12 & 28 & 2:00 PM & 104 & 415 \\
\hline 2:15 AM & 5 & & 2:15 PM & 134 & \\
\hline 2:30 AM & 3 & & 2:30 PM & 80 & \\
\hline 2:45 AM & 8 & & 2:45 PM & 97 & \\
\hline 3:00 AM & 6 & 28 & 3:00 PM & 102 & 391 \\
\hline 3:15 AM & 5 & & 3:15 PM & 70 & \\
\hline 3:30 AM & 13 & & 3:30 PM & 117 & \\
\hline 3:45 AM & 4 & & 3:45 PM & 102 & \\
\hline 4:00 AM & 8 & 31 & 4:00 PM & 121 & 623 \\
\hline 4:15 AM & 6 & & 4:15 PM & 128 & \\
\hline 4:30 AM & 12 & & 4:30 PM & 208 & \\
\hline 4:45 AM & 5 & & 4:45 PM & 166 & \\
\hline 5:00 AM & 9 & 41 & 5:00 PM & 184 & 655 \\
\hline 5:15 AM & 8 & & 5:15 PM & 170 & \\
\hline 5:30 AM & 9 & & 5:30 PM & 154 & \\
\hline 5:45 AM & 15 & & 5:45 PM & 147 & \\
\hline 6:00 AM & 11 & 78 & 6:00 PM & 134 & 542 \\
\hline 6:15 AM & 13 & & 6:15 PM & 132 & \\
\hline 6:30 AM & 14 & & 6:30 PM & 124 & \\
\hline 6:45 AM & 40 & & 6:45 PM & 152 & \\
\hline 7:00 AM & 22 & 170 & 7:00 PM & 120 & 376 \\
\hline 7:15 AM & 44 & & 7:15 PM & 98 & \\
\hline 7:30 AM & 48 & & 7:30 PM & 82 & \\
\hline 7:45 AM & 56 & & 7:45 PM & 76 & \\
\hline 8:00 AM & 66 & 370 & 8:00 PM & 65 & 226 \\
\hline 8:15 AM & 60 & & 8:15 PM & 55 & \\
\hline 8:30 AM & 98 & & 8:30 PM & 66 & \\
\hline 8:45 AM & 146 & & 8:45 PM & 40 & \\
\hline 9:00 AM & 132 & 421 & 9:00 PM & 66 & 204 \\
\hline 9:15 AM & 96 & & 9:15 PM & 46 & \\
\hline 9:30 AM & 111 & & 9:30 PM & 60 & \\
\hline 9:45 AM & 82 & & 9:45 PM & 32 & \\
\hline 10:00 AM & 118 & 387 & 10:00 PM & 44 & 153 \\
\hline 10:15 AM & 95 & & 10:15 PM & 25 & \\
\hline 10:30 AM & 88 & & 10:30 PM & 43 & \\
\hline 10:45 AM & 86 & & 10:45 PM & 41 & \\
\hline 11:00 AM & 86 & 342 & 11:00 PM & 28 & 98 \\
\hline 11:15 AM & 72 & & 11:15 PM & 26 & \\
\hline 11:30 AM & 101 & & 11:30 PM & 26 & \\
\hline 11:45 AM & 83 & & 11:45 PM & 18 & \\
\hline
\end{tabular}

24 Hour Total
6367

12:00 AM - 12:00 PM
12 Hour Count 2001
Peak Hour 8:45 AM
Peak Volume 485
Factor 0.83

12:00 PM - 12:00 AM
12 Hour Count 4366
Peak Hour \(\quad\) 4:30 PM
Peak Volume 728
Factor 0.88

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd On Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & 34 & 80 & 12:00 PM & 113 & 429 \\
\hline 12:15 AM & 22 & & 12:15 PM & 98 & \\
\hline 12:30 AM & 14 & & 12:30 PM & 86 & \\
\hline 12:45 AM & 10 & & 12:45 PM & 132 & \\
\hline 1:00 AM & 8 & 46 & 1:00 PM & 108 & 517 \\
\hline 1:15 AM & 15 & & 1:15 PM & 113 & \\
\hline 1:30 AM & 13 & & 1:30 PM & 130 & \\
\hline 1:45 AM & 10 & & 1:45 PM & 166 & \\
\hline 2:00 AM & 3 & 20 & 2:00 PM & 158 & 536 \\
\hline 2:15 AM & 6 & & 2:15 PM & 151 & \\
\hline 2:30 AM & 6 & & 2:30 PM & 107 & \\
\hline 2:45 AM & 5 & & 2:45 PM & 120 & \\
\hline 3:00 AM & 4 & 32 & 3:00 PM & 126 & 597 \\
\hline 3:15 AM & 13 & & 3:15 PM & 149 & \\
\hline 3:30 AM & 5 & & 3:30 PM & 128 & \\
\hline 3:45 AM & 10 & & 3:45 PM & 194 & \\
\hline 4:00 AM & 6 & 25 & 4:00 PM & 116 & 685 \\
\hline 4:15 AM & 9 & & 4:15 PM & 170 & \\
\hline 4:30 AM & 4 & & 4:30 PM & 208 & \\
\hline 4:45 AM & 6 & & 4:45 PM & 191 & \\
\hline 5:00 AM & 8 & 45 & 5:00 PM & 244 & 797 \\
\hline 5:15 AM & 11 & & 5:15 PM & 232 & \\
\hline 5:30 AM & 11 & & 5:30 PM & 156 & \\
\hline 5:45 AM & 15 & & 5:45 PM & 165 & \\
\hline 6:00 AM & 12 & 95 & 6:00 PM & 232 & 768 \\
\hline 6:15 AM & 17 & & 6:15 PM & 186 & \\
\hline 6:30 AM & 24 & & 6:30 PM & 168 & \\
\hline 6:45 AM & 42 & & 6:45 PM & 182 & \\
\hline 7:00 AM & 37 & 191 & 7:00 PM & 138 & 501 \\
\hline 7:15 AM & 38 & & 7:15 PM & 136 & \\
\hline 7:30 AM & 48 & & 7:30 PM & 108 & \\
\hline 7:45 AM & 68 & & 7:45 PM & 119 & \\
\hline 8:00 AM & 61 & 402 & 8:00 PM & 82 & 264 \\
\hline 8:15 AM & 75 & & 8:15 PM & 73 & \\
\hline 8:30 AM & 98 & & 8:30 PM & 56 & \\
\hline 8:45 AM & 168 & & 8:45 PM & 53 & \\
\hline 9:00 AM & 154 & 516 & 9:00 PM & 55 & 197 \\
\hline 9:15 AM & 134 & & 9:15 PM & 49 & \\
\hline 9:30 AM & 108 & & 9:30 PM & 51 & \\
\hline 9:45 AM & 120 & & 9:45 PM & 42 & \\
\hline 10:00 AM & 130 & 481 & 10:00 PM & 40 & 151 \\
\hline 10:15 AM & 130 & & 10:15 PM & 44 & \\
\hline 10:30 AM & 87 & & 10:30 PM & 32 & \\
\hline 10:45 AM & 134 & & 10:45 PM & 35 & \\
\hline 11:00 AM & 118 & 392 & 11:00 PM & 26 & 109 \\
\hline 11:15 AM & 76 & & 11:15 PM & 43 & \\
\hline 11:30 AM & 100 & & 11:30 PM & 20 & \\
\hline 11:45 AM & 98 & & 11:45 PM & 20 & \\
\hline & & ur Total & & & \\
\hline 12:00 AM & PM & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & 12 Hour Count & 5551 & \\
\hline Peak Hour & & & Peak Hour & 4:30 PM & \\
\hline Peak Volume & & & Peak Volume & 875 & \\
\hline Factor & & & Factor & 0.90 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 22 & 58 & 12:00 PM & 104 & 437 \\
\hline 12:15 AM & 12 & & 12:15 PM & 120 & \\
\hline 12:30 AM & 16 & & 12:30 PM & 114 & \\
\hline 12:45 AM & 8 & & 12:45 PM & 99 & \\
\hline 1:00 AM & 18 & 56 & 1:00 PM & 122 & 432 \\
\hline 1:15 AM & 12 & & 1:15 PM & 112 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 110 & \\
\hline 1:45 AM & 18 & & 1:45 PM & 88 & \\
\hline 2:00 AM & 8 & 32 & 2:00 PM & 140 & 453 \\
\hline 2:15 AM & 9 & & 2:15 PM & 97 & \\
\hline 2:30 AM & 8 & & 2:30 PM & 105 & \\
\hline 2:45 AM & 7 & & 2:45 PM & 111 & \\
\hline 3:00 AM & 4 & 23 & 3:00 PM & 151 & 606 \\
\hline 3:15 AM & 7 & & 3:15 PM & 156 & \\
\hline 3:30 AM & 6 & & 3:30 PM & 168 & \\
\hline 3:45 AM & 6 & & 3:45 PM & 131 & \\
\hline 4:00 AM & 6 & 34 & 4:00 PM & 134 & 737 \\
\hline 4:15 AM & 18 & & 4:15 PM & 182 & \\
\hline 4:30 AM & 4 & & 4:30 PM & 224 & \\
\hline 4:45 AM & 6 & & 4:45 PM & 197 & \\
\hline 5:00 AM & 13 & 59 & 5:00 PM & 251 & 849 \\
\hline 5:15 AM & 14 & & 5:15 PM & 203 & \\
\hline 5:30 AM & 14 & & 5:30 PM & 195 & \\
\hline 5:45 AM & 18 & & 5:45 PM & 200 & \\
\hline 6:00 AM & 16 & 92 & 6:00 PM & 152 & 799 \\
\hline 6:15 AM & 20 & & 6:15 PM & 200 & \\
\hline 6:30 AM & 24 & & 6:30 PM & 253 & \\
\hline 6:45 AM & 32 & & 6:45 PM & 194 & \\
\hline 7:00 AM & 38 & 216 & 7:00 PM & 150 & 546 \\
\hline 7:15 AM & 34 & & 7:15 PM & 170 & \\
\hline 7:30 AM & 64 & & 7:30 PM & 112 & \\
\hline 7:45 AM & 80 & & 7:45 PM & 114 & \\
\hline 8:00 AM & 62 & 434 & 8:00 PM & 114 & 344 \\
\hline 8:15 AM & 88 & & 8:15 PM & 90 & \\
\hline 8:30 AM & 100 & & 8:30 PM & 66 & \\
\hline 8:45 AM & 184 & & 8:45 PM & 74 & \\
\hline 9:00 AM & 175 & 524 & 9:00 PM & 57 & 239 \\
\hline 9:15 AM & 154 & & 9:15 PM & 73 & \\
\hline 9:30 AM & 106 & & 9:30 PM & 49 & \\
\hline 9:45 AM & 89 & & 9:45 PM & 60 & \\
\hline 10:00 AM & 106 & 486 & 10:00 PM & 54 & 167 \\
\hline 10:15 AM & 130 & & 10:15 PM & 33 & \\
\hline 10:30 AM & 130 & & 10:30 PM & 37 & \\
\hline 10:45 AM & 120 & & 10:45 PM & 43 & \\
\hline 11:00 AM & 71 & 308 & 11:00 PM & 34 & 132 \\
\hline 11:15 AM & 90 & & 11:15 PM & 26 & \\
\hline 11:30 AM & 59 & & 11:30 PM & 36 & \\
\hline 11:45 AM & 88 & & 11:45 PM & 36 & \\
\hline
\end{tabular}

24 Hour Total

12:00 AM - 12:00 PM
12 Hour Count 2322
Peak Hour 8:45 AM
Peak Volume 619
Factor 0.84

12:00 PM - 12:00 AM
12 Hour Count 5741
Peak Hour \(\quad\) 4:30 PM
Peak Volume 875
Factor 0.87

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 23 & 83 & 12:00 PM & 136 & 475 \\
\hline 12:15 AM & 26 & & 12:15 PM & 104 & \\
\hline 12:30 AM & 21 & & 12:30 PM & 101 & \\
\hline 12:45 AM & 13 & & 12:45 PM & 134 & \\
\hline 1:00 AM & 16 & 68 & 1:00 PM & 130 & 537 \\
\hline 1:15 AM & 11 & & 1:15 PM & 156 & \\
\hline 1:30 AM & 23 & & 1:30 PM & 170 & \\
\hline 1:45 AM & 18 & & 1:45 PM & 81 & \\
\hline 2:00 AM & 9 & 36 & 2:00 PM & 142 & 510 \\
\hline 2:15 AM & 8 & & 2:15 PM & 103 & \\
\hline 2:30 AM & 9 & & 2:30 PM & 118 & \\
\hline 2:45 AM & 10 & & 2:45 PM & 147 & \\
\hline 3:00 AM & 10 & 36 & 3:00 PM & 127 & 539 \\
\hline 3:15 AM & 6 & & 3:15 PM & 138 & \\
\hline 3:30 AM & 10 & & 3:30 PM & 142 & \\
\hline 3:45 AM & 10 & & 3:45 PM & 132 & \\
\hline 4:00 AM & 12 & 29 & 4:00 PM & 153 & 730 \\
\hline 4:15 AM & 4 & & 4:15 PM & 197 & \\
\hline 4:30 AM & 6 & & 4:30 PM & 206 & \\
\hline 4:45 AM & 7 & & 4:45 PM & 174 & \\
\hline 5:00 AM & 9 & 45 & 5:00 PM & 172 & 751 \\
\hline 5:15 AM & 11 & & 5:15 PM & 183 & \\
\hline 5:30 AM & 8 & & 5:30 PM & 210 & \\
\hline 5:45 AM & 17 & & 5:45 PM & 186 & \\
\hline 6:00 AM & 10 & 87 & 6:00 PM & 172 & 624 \\
\hline 6:15 AM & 18 & & 6:15 PM & 176 & \\
\hline 6:30 AM & 20 & & 6:30 PM & 146 & \\
\hline 6:45 AM & 39 & & 6:45 PM & 130 & \\
\hline 7:00 AM & 50 & 191 & 7:00 PM & 172 & 530 \\
\hline 7:15 AM & 23 & & 7:15 PM & 149 & \\
\hline 7:30 AM & 60 & & 7:30 PM & 111 & \\
\hline 7:45 AM & 58 & & 7:45 PM & 98 & \\
\hline 8:00 AM & 82 & 443 & 8:00 PM & 92 & 308 \\
\hline 8:15 AM & 80 & & 8:15 PM & 80 & \\
\hline 8:30 AM & 112 & & 8:30 PM & 68 & \\
\hline 8:45 AM & 169 & & 8:45 PM & 68 & \\
\hline 9:00 AM & 170 & 534 & 9:00 PM & 62 & 260 \\
\hline 9:15 AM & 116 & & 9:15 PM & 64 & \\
\hline 9:30 AM & 126 & & 9:30 PM & 72 & \\
\hline 9:45 AM & 122 & & 9:45 PM & 62 & \\
\hline 10:00 AM & 96 & 471 & 10:00 PM & 46 & 148 \\
\hline 10:15 AM & 80 & & 10:15 PM & 32 & \\
\hline 10:30 AM & 153 & & 10:30 PM & 42 & \\
\hline 10:45 AM & 142 & & 10:45 PM & 28 & \\
\hline 11:00 AM & 126 & 517 & 11:00 PM & 39 & 158 \\
\hline 11:15 AM & 178 & & 11:15 PM & 44 & \\
\hline 11:30 AM & 115 & & 11:30 PM & 33 & \\
\hline 11:45 AM & 98 & & 11:45 PM & 42 & \\
\hline
\end{tabular}

24 Hour Total
8110

12:00 AM - 12:00 PM
12 Hour Count 2540
Peak Hour 10:30 AM
Peak Volume 599
Factor 0.84

12:00 PM - 12:00 AM
12 Hour Count 5570
Peak Hour 5:00 PM
Peak Volume 751
Factor 0.89

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 30 & 104 & 12:00 PM & 88 & 338 \\
\hline 12:15 AM & 26 & & 12:15 PM & 74 & \\
\hline 12:30 AM & 20 & & 12:30 PM & 94 & \\
\hline 12:45 AM & 28 & & 12:45 PM & 82 & \\
\hline 1:00 AM & 22 & 95 & 1:00 PM & 146 & 453 \\
\hline 1:15 AM & 24 & & 1:15 PM & 126 & \\
\hline 1:30 AM & 28 & & 1:30 PM & 89 & \\
\hline 1:45 AM & 21 & & 1:45 PM & 92 & \\
\hline 2:00 AM & 14 & 57 & 2:00 PM & 108 & 419 \\
\hline 2:15 AM & 16 & & 2:15 PM & 112 & \\
\hline 2:30 AM & 14 & & 2:30 PM & 102 & \\
\hline 2:45 AM & 13 & & 2:45 PM & 97 & \\
\hline 3:00 AM & 4 & 44 & 3:00 PM & 106 & 424 \\
\hline 3:15 AM & 16 & & 3:15 PM & 88 & \\
\hline 3:30 AM & 14 & & 3:30 PM & 110 & \\
\hline 3:45 AM & 10 & & 3:45 PM & 120 & \\
\hline 4:00 AM & 11 & 42 & 4:00 PM & 86 & 371 \\
\hline 4:15 AM & 15 & & 4:15 PM & 100 & \\
\hline 4:30 AM & 6 & & 4:30 PM & 91 & \\
\hline 4:45 AM & 10 & & 4:45 PM & 94 & \\
\hline 5:00 AM & 8 & 48 & 5:00 PM & 83 & 427 \\
\hline 5:15 AM & 12 & & 5:15 PM & 106 & \\
\hline 5:30 AM & 8 & & 5:30 PM & 102 & \\
\hline 5:45 AM & 20 & & 5:45 PM & 136 & \\
\hline 6:00 AM & 16 & 51 & 6:00 PM & 156 & 462 \\
\hline 6:15 AM & 5 & & 6:15 PM & 112 & \\
\hline 6:30 AM & 14 & & 6:30 PM & 100 & \\
\hline 6:45 AM & 16 & & 6:45 PM & 94 & \\
\hline 7:00 AM & 14 & 97 & 7:00 PM & 106 & 342 \\
\hline 7:15 AM & 14 & & 7:15 PM & 85 & \\
\hline 7:30 AM & 24 & & 7:30 PM & 64 & \\
\hline 7:45 AM & 45 & & 7:45 PM & 87 & \\
\hline 8:00 AM & 17 & 110 & 8:00 PM & 108 & 356 \\
\hline 8:15 AM & 22 & & 8:15 PM & 120 & \\
\hline 8:30 AM & 24 & & 8:30 PM & 61 & \\
\hline 8:45 AM & 47 & & 8:45 PM & 67 & \\
\hline 9:00 AM & 42 & 216 & 9:00 PM & 47 & 238 \\
\hline 9:15 AM & 50 & & 9:15 PM & 68 & \\
\hline 9:30 AM & 52 & & 9:30 PM & 54 & \\
\hline 9:45 AM & 72 & & 9:45 PM & 69 & \\
\hline 10:00 AM & 70 & 290 & 10:00 PM & 38 & 199 \\
\hline 10:15 AM & 76 & & 10:15 PM & 54 & \\
\hline 10:30 AM & 50 & & 10:30 PM & 59 & \\
\hline 10:45 AM & 94 & & 10:45 PM & 48 & \\
\hline 11:00 AM & 60 & 316 & 11:00 PM & 36 & 169 \\
\hline 11:15 AM & 98 & & 11:15 PM & 57 & \\
\hline 11:30 AM & 50 & & 11:30 PM & 38 & \\
\hline 11:45 AM & 108 & & 11:45 PM & 38 & \\
\hline
\end{tabular}

24 Hour Total
5668

12:00 AM - 12:00 PM
12 Hour Count 1470
Peak Hour 11:00 AM
Peak Volume 316
Factor 0.73

12:00 PM - 12:00 AM
12 Hour Count 4198
Peak Hour 5:30 PM
Peak Volume 506
Factor 0.81

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd On Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 24 & 131 & 12:00 PM & 82 & 362 \\
\hline 12:15 AM & 29 & & 12:15 PM & 74 & \\
\hline 12:30 AM & 40 & & 12:30 PM & 74 & \\
\hline 12:45 AM & 38 & & 12:45 PM & 132 & \\
\hline 1:00 AM & 30 & 77 & 1:00 PM & 86 & 336 \\
\hline 1:15 AM & 16 & & 1:15 PM & 70 & \\
\hline 1:30 AM & 13 & & 1:30 PM & 74 & \\
\hline 1:45 AM & 18 & & 1:45 PM & 106 & \\
\hline 2:00 AM & 24 & 72 & 2:00 PM & 90 & 317 \\
\hline 2:15 AM & 25 & & 2:15 PM & 67 & \\
\hline 2:30 AM & 13 & & 2:30 PM & 74 & \\
\hline 2:45 AM & 10 & & 2:45 PM & 86 & \\
\hline 3:00 AM & 12 & 54 & 3:00 PM & 58 & 291 \\
\hline 3:15 AM & 12 & & 3:15 PM & 72 & \\
\hline 3:30 AM & 10 & & 3:30 PM & 80 & \\
\hline 3:45 AM & 20 & & 3:45 PM & 81 & \\
\hline 4:00 AM & 12 & 42 & 4:00 PM & 78 & 286 \\
\hline 4:15 AM & 12 & & 4:15 PM & 68 & \\
\hline 4:30 AM & 6 & & 4:30 PM & 64 & \\
\hline 4:45 AM & 12 & & 4:45 PM & 76 & \\
\hline 5:00 AM & 6 & 28 & 5:00 PM & 55 & 237 \\
\hline 5:15 AM & 3 & & 5:15 PM & 66 & \\
\hline 5:30 AM & 14 & & 5:30 PM & 54 & \\
\hline 5:45 AM & 5 & & 5:45 PM & 62 & \\
\hline 6:00 AM & 7 & 26 & 6:00 PM & 66 & 350 \\
\hline 6:15 AM & 1 & & 6:15 PM & 72 & \\
\hline 6:30 AM & 6 & & 6:30 PM & 72 & \\
\hline 6:45 AM & 12 & & 6:45 PM & 140 & \\
\hline 7:00 AM & 8 & 48 & 7:00 PM & 102 & 342 \\
\hline 7:15 AM & 12 & & 7:15 PM & 82 & \\
\hline 7:30 AM & 10 & & 7:30 PM & 72 & \\
\hline 7:45 AM & 18 & & 7:45 PM & 86 & \\
\hline 8:00 AM & 15 & 107 & 8:00 PM & 66 & 231 \\
\hline 8:15 AM & 27 & & 8:15 PM & 53 & \\
\hline 8:30 AM & 27 & & 8:30 PM & 60 & \\
\hline 8:45 AM & 38 & & 8:45 PM & 52 & \\
\hline 9:00 AM & 22 & 176 & 9:00 PM & 53 & 216 \\
\hline 9:15 AM & 52 & & 9:15 PM & 62 & \\
\hline 9:30 AM & 60 & & 9:30 PM & 41 & \\
\hline 9:45 AM & 42 & & 9:45 PM & 60 & \\
\hline 10:00 AM & 58 & 214 & 10:00 PM & 43 & 203 \\
\hline 10:15 AM & 49 & & 10:15 PM & 70 & \\
\hline 10:30 AM & 57 & & 10:30 PM & 53 & \\
\hline 10:45 AM & 50 & & 10:45 PM & 37 & \\
\hline 11:00 AM & 54 & 253 & 11:00 PM & 30 & 142 \\
\hline 11:15 AM & 50 & & 11:15 PM & 36 & \\
\hline 11:30 AM & 77 & & 11:30 PM & 44 & \\
\hline 11:45 AM & 72 & & 11:45 PM & 32 & \\
\hline
\end{tabular}

24 Hour Total
4541

12:00 AM - 12:00 PM
12 Hour Count 1228
Peak Hour 11:00 AM
Peak Volume 253
Factor 0.82

12:00 PM - 12:00 AM
12 Hour Count 3313
Peak Hour 6:30 PM
Peak Volume 396
Factor 0.71

Daily Volume, per Channel (Volume factor 0.5)


\section*{LOCATION 7}

\section*{DANZIGER BRIDGE (US 90) FRANCE RD. EXIT RAMP}

\section*{Tube Counts}

\section*{ITS Regional, LLC.}

4744 Kawanee Avenue
Metairie, LA 70006
Site: France Rd Off Ramp

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|c|}{France Rd Off Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & \multicolumn{5}{|c|}{Interval Start} \\
\hline 12:00 AM & - & - & & 12:00 PM & 60 & 179 \\
\hline 12:15 AM & - & & & 12:15 PM & 34 & \\
\hline 12:30 AM & - & & & 12:30 PM & 39 & \\
\hline 12:45 AM & - & & & 12:45 PM & 46 & \\
\hline 1:00 AM & - & - & & 1:00 PM & 47 & 149 \\
\hline 1:15 AM & - & & & 1:15 PM & 42 & \\
\hline 1:30 AM & - & & & 1:30 PM & 50 & \\
\hline 1:45 AM & - & & & 1:45 PM & 10 & \\
\hline 2:00 AM & - & - & & 2:00 PM & 42 & 179 \\
\hline 2:15 AM & - & & & 2:15 PM & 34 & \\
\hline 2:30 AM & - & & & 2:30 PM & 50 & \\
\hline 2:45 AM & - & & & 2:45 PM & 53 & \\
\hline 3:00 AM & - & - & & 3:00 PM & 59 & 189 \\
\hline 3:15 AM & - & & & 3:15 PM & 47 & \\
\hline 3:30 AM & - & & & 3:30 PM & 40 & \\
\hline 3:45 AM & - & & & 3:45 PM & 43 & \\
\hline 4:00 AM & - & - & & 4:00 PM & 44 & 172 \\
\hline 4:15 AM & - & & & 4:15 PM & 41 & \\
\hline 4:30 AM & - & & & 4:30 PM & 32 & \\
\hline 4:45 AM & - & & & 4:45 PM & 55 & \\
\hline 5:00 AM & - & - & & 5:00 PM & 42 & 170 \\
\hline 5:15 AM & - & & & 5:15 PM & 36 & \\
\hline 5:30 AM & - & & & 5:30 PM & 48 & \\
\hline 5:45 AM & - & & & 5:45 PM & 44 & \\
\hline 6:00 AM & - & - & & 6:00 PM & 64 & 195 \\
\hline 6:15 AM & - & & & 6:15 PM & 39 & \\
\hline 6:30 AM & - & & & 6:30 PM & 52 & \\
\hline 6:45 AM & - & & & 6:45 PM & 40 & \\
\hline 7:00 AM & - & - & & 7:00 PM & 50 & 184 \\
\hline 7:15 AM & - & & & 7:15 PM & 32 & \\
\hline 7:30 AM & - & & & 7:30 PM & 46 & \\
\hline 7:45 AM & - & & & 7:45 PM & 56 & \\
\hline 8:00 AM & - & - & & 8:00 PM & 53 & 163 \\
\hline 8:15 AM & - & & & 8:15 PM & 30 & \\
\hline 8:30 AM & - & & & 8:30 PM & 34 & \\
\hline 8:45 AM & - & & & 8:45 PM & 46 & \\
\hline 9:00 AM & - & - & & 9:00 PM & 36 & 107 \\
\hline 9:15 AM & - & & & 9:15 PM & 22 & \\
\hline 9:30 AM & - & & & 9:30 PM & 26 & \\
\hline 9:45 AM & - & & & 9:45 PM & 23 & \\
\hline 10:00 AM & 18 & 146 & & 10:00 PM & 35 & 99 \\
\hline 10:15 AM & 36 & & & 10:15 PM & 26 & \\
\hline 10:30 AM & 46 & & & 10:30 PM & 20 & \\
\hline 10:45 AM & 46 & & & 10:45 PM & 18 & \\
\hline 11:00 AM & 45 & 187 & & 11:00 PM & 12 & 74 \\
\hline 11:15 AM & 52 & & & 11:15 PM & 22 & \\
\hline 11:30 AM & 44 & & & 11:30 PM & 16 & \\
\hline 11:45 AM & 46 & & & 11:45 PM & 24 & \\
\hline & & 24 Hour Total & 2193 & & & \\
\hline 12:00 AM & & & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & & 12 Hour Count & 1860 & \\
\hline Peak Hour & & & & Peak Hour & 2:30 PM & \\
\hline Peak Volume & & & & Peak Volume & 209 & \\
\hline Factor & & & & Factor & 0.89 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & 17 & 62 & 12:00 PM & 74 & 282 \\
\hline 12:15 AM & 19 & & 12:15 PM & 66 & \\
\hline 12:30 AM & 14 & & 12:30 PM & 64 & \\
\hline 12:45 AM & 12 & & 12:45 PM & 78 & \\
\hline 1:00 AM & 12 & 44 & 1:00 PM & 61 & 285 \\
\hline 1:15 AM & 12 & & 1:15 PM & 83 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 79 & \\
\hline 1:45 AM & 12 & & 1:45 PM & 62 & \\
\hline 2:00 AM & 4 & 21 & 2:00 PM & 64 & 280 \\
\hline 2:15 AM & 7 & & 2:15 PM & 60 & \\
\hline 2:30 AM & 6 & & 2:30 PM & 60 & \\
\hline 2:45 AM & 4 & & 2:45 PM & 96 & \\
\hline 3:00 AM & 14 & 49 & 3:00 PM & 83 & 257 \\
\hline 3:15 AM & 14 & & 3:15 PM & 62 & \\
\hline 3:30 AM & 10 & & 3:30 PM & 64 & \\
\hline 3:45 AM & 11 & & 3:45 PM & 48 & \\
\hline 4:00 AM & 7 & 23 & 4:00 PM & 50 & 245 \\
\hline 4:15 AM & 8 & & 4:15 PM & 63 & \\
\hline 4:30 AM & 4 & & 4:30 PM & 70 & \\
\hline 4:45 AM & 4 & & 4:45 PM & 62 & \\
\hline 5:00 AM & 6 & 51 & 5:00 PM & 54 & 196 \\
\hline 5:15 AM & 16 & & 5:15 PM & 50 & \\
\hline 5:30 AM & 14 & & 5:30 PM & 46 & \\
\hline 5:45 AM & 15 & & 5:45 PM & 46 & \\
\hline 6:00 AM & 11 & 100 & 6:00 PM & 68 & 236 \\
\hline 6:15 AM & 22 & & 6:15 PM & 66 & \\
\hline 6:30 AM & 31 & & 6:30 PM & 52 & \\
\hline 6:45 AM & 36 & & 6:45 PM & 50 & \\
\hline 7:00 AM & 46 & 331 & 7:00 PM & 72 & 213 \\
\hline 7:15 AM & 57 & & 7:15 PM & 50 & \\
\hline 7:30 AM & 94 & & 7:30 PM & 45 & \\
\hline 7:45 AM & 134 & & 7:45 PM & 46 & \\
\hline 8:00 AM & 144 & 762 & 8:00 PM & 42 & 157 \\
\hline 8:15 AM & 179 & & 8:15 PM & 28 & \\
\hline 8:30 AM & 213 & & 8:30 PM & 48 & \\
\hline 8:45 AM & 226 & & 8:45 PM & 39 & \\
\hline 9:00 AM & 206 & 548 & 9:00 PM & 19 & 99 \\
\hline 9:15 AM & 142 & & 9:15 PM & 26 & \\
\hline 9:30 AM & 118 & & 9:30 PM & 28 & \\
\hline 9:45 AM & 82 & & 9:45 PM & 26 & \\
\hline 10:00 AM & 102 & 322 & 10:00 PM & 14 & 73 \\
\hline 10:15 AM & 81 & & 10:15 PM & 16 & \\
\hline 10:30 AM & 75 & & 10:30 PM & 21 & \\
\hline 10:45 AM & 64 & & 10:45 PM & 22 & \\
\hline 11:00 AM & 55 & 266 & 11:00 PM & 25 & 81 \\
\hline 11:15 AM & 54 & & 11:15 PM & 20 & \\
\hline 11:30 AM & 69 & & 11:30 PM & 8 & \\
\hline 11:45 AM & 88 & & 11:45 PM & 28 & \\
\hline & & r Total & & & \\
\hline \multicolumn{2}{|l|}{12:00 AM - 12:00 PM} & & \multicolumn{2}{|l|}{12:00 PM - 12:00 AM} & \\
\hline 12 Hour Count & 2579 & & 12 Hour Count & 2404 & \\
\hline Peak Hour & 8:15 AM & & Peak Hour & 2:45 PM & \\
\hline Peak Volume & 824 & & Peak Volume & 305 & \\
\hline Factor & 0.91 & & Factor & 0.79 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & 10 & 40 & 12:00 PM & 38 & 211 \\
\hline 12:15 AM & 6 & & 12:15 PM & 39 & \\
\hline 12:30 AM & 12 & & 12:30 PM & 64 & \\
\hline 12:45 AM & 12 & & 12:45 PM & 70 & \\
\hline 1:00 AM & 5 & 36 & 1:00 PM & 54 & 236 \\
\hline 1:15 AM & 8 & & 1:15 PM & 56 & \\
\hline 1:30 AM & 14 & & 1:30 PM & 62 & \\
\hline 1:45 AM & 9 & & 1:45 PM & 64 & \\
\hline 2:00 AM & 7 & 17 & 2:00 PM & 61 & 202 \\
\hline 2:15 AM & 3 & & 2:15 PM & 48 & \\
\hline 2:30 AM & 2 & & 2:30 PM & 41 & \\
\hline 2:45 AM & 5 & & 2:45 PM & 52 & \\
\hline 3:00 AM & 4 & 18 & 3:00 PM & 70 & 266 \\
\hline 3:15 AM & 2 & & 3:15 PM & 49 & \\
\hline 3:30 AM & 8 & & 3:30 PM & 72 & \\
\hline 3:45 AM & 4 & & 3:45 PM & 75 & \\
\hline 4:00 AM & 10 & 36 & 4:00 PM & 68 & 280 \\
\hline 4:15 AM & 5 & & 4:15 PM & 74 & \\
\hline 4:30 AM & 12 & & 4:30 PM & 64 & \\
\hline 4:45 AM & 9 & & 4:45 PM & 74 & \\
\hline 5:00 AM & 10 & 52 & 5:00 PM & 92 & 312 \\
\hline 5:15 AM & 10 & & 5:15 PM & 84 & \\
\hline 5:30 AM & 14 & & 5:30 PM & 78 & \\
\hline 5:45 AM & 18 & & 5:45 PM & 58 & \\
\hline 6:00 AM & 18 & 120 & 6:00 PM & 74 & 280 \\
\hline 6:15 AM & 25 & & 6:15 PM & 70 & \\
\hline 6:30 AM & 28 & & 6:30 PM & 62 & \\
\hline 6:45 AM & 49 & & 6:45 PM & 74 & \\
\hline 7:00 AM & 48 & 309 & 7:00 PM & 64 & 225 \\
\hline 7:15 AM & 52 & & 7:15 PM & 54 & \\
\hline 7:30 AM & 78 & & 7:30 PM & 49 & \\
\hline 7:45 AM & 131 & & 7:45 PM & 58 & \\
\hline 8:00 AM & 126 & 590 & 8:00 PM & 41 & 155 \\
\hline 8:15 AM & 142 & & 8:15 PM & 45 & \\
\hline 8:30 AM & 167 & & 8:30 PM & 41 & \\
\hline 8:45 AM & 155 & & 8:45 PM & 28 & \\
\hline 9:00 AM & 142 & 530 & 9:00 PM & 23 & 96 \\
\hline 9:15 AM & 165 & & 9:15 PM & 37 & \\
\hline 9:30 AM & 84 & & 9:30 PM & 12 & \\
\hline 9:45 AM & 139 & & 9:45 PM & 24 & \\
\hline 10:00 AM & 87 & 284 & 10:00 PM & 24 & 84 \\
\hline 10:15 AM & 68 & & 10:15 PM & 22 & \\
\hline 10:30 AM & 75 & & 10:30 PM & 18 & \\
\hline 10:45 AM & 54 & & 10:45 PM & 20 & \\
\hline 11:00 AM & 56 & 204 & 11:00 PM & 20 & 68 \\
\hline 11:15 AM & 40 & & 11:15 PM & 20 & \\
\hline 11:30 AM & 54 & & 11:30 PM & 16 & \\
\hline 11:45 AM & 54 & & 11:45 PM & 12 & \\
\hline & & ur Total & & & \\
\hline \multicolumn{2}{|l|}{12:00 AM - 12:00 PM} & & \multicolumn{2}{|l|}{12:00 PM - 12:00 AM} & \\
\hline \multicolumn{2}{|l|}{12 Hour Count 2236} & & \multicolumn{2}{|l|}{12 Hour Count 2415} & \\
\hline Peak Hour & 8:30 AM & & Peak Hour & 4:45 PM & \\
\hline Peak Volume & 629 & & Peak Volume & 328 & \\
\hline Factor & 0.94 & & Factor & 0.89 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 18 & 61 & 12:00 PM & 80 & 283 \\
\hline 12:15 AM & 18 & & 12:15 PM & 72 & \\
\hline 12:30 AM & 13 & & 12:30 PM & 62 & \\
\hline 12:45 AM & 12 & & 12:45 PM & 69 & \\
\hline 1:00 AM & 6 & 27 & 1:00 PM & 76 & 303 \\
\hline 1:15 AM & 8 & & 1:15 PM & 66 & \\
\hline 1:30 AM & 9 & & 1:30 PM & 81 & \\
\hline 1:45 AM & 4 & & 1:45 PM & 80 & \\
\hline 2:00 AM & 1 & 21 & 2:00 PM & 60 & 290 \\
\hline 2:15 AM & 7 & & 2:15 PM & 78 & \\
\hline 2:30 AM & 5 & & 2:30 PM & 88 & \\
\hline 2:45 AM & 8 & & 2:45 PM & 64 & \\
\hline 3:00 AM & 4 & 21 & 3:00 PM & 84 & 350 \\
\hline 3:15 AM & 7 & & 3:15 PM & 104 & \\
\hline 3:30 AM & 4 & & 3:30 PM & 88 & \\
\hline 3:45 AM & 6 & & 3:45 PM & 74 & \\
\hline 4:00 AM & 8 & 26 & 4:00 PM & 81 & 310 \\
\hline 4:15 AM & 2 & & 4:15 PM & 81 & \\
\hline 4:30 AM & 8 & & 4:30 PM & 84 & \\
\hline 4:45 AM & 8 & & 4:45 PM & 64 & \\
\hline 5:00 AM & 1 & 22 & 5:00 PM & 108 & 351 \\
\hline 5:15 AM & 4 & & 5:15 PM & 86 & \\
\hline 5:30 AM & 6 & & 5:30 PM & 81 & \\
\hline 5:45 AM & 11 & & 5:45 PM & 76 & \\
\hline 6:00 AM & 10 & 111 & 6:00 PM & 92 & 307 \\
\hline 6:15 AM & 24 & & 6:15 PM & 76 & \\
\hline 6:30 AM & 32 & & 6:30 PM & 74 & \\
\hline 6:45 AM & 45 & & 6:45 PM & 65 & \\
\hline 7:00 AM & 40 & 306 & 7:00 PM & 67 & 239 \\
\hline 7:15 AM & 70 & & 7:15 PM & 60 & \\
\hline 7:30 AM & 92 & & 7:30 PM & 58 & \\
\hline 7:45 AM & 104 & & 7:45 PM & 54 & \\
\hline 8:00 AM & 118 & 588 & 8:00 PM & 46 & 190 \\
\hline 8:15 AM & 152 & & 8:15 PM & 36 & \\
\hline 8:30 AM & 158 & & 8:30 PM & 60 & \\
\hline 8:45 AM & 160 & & 8:45 PM & 48 & \\
\hline 9:00 AM & 114 & 467 & 9:00 PM & 28 & 118 \\
\hline 9:15 AM & 121 & & 9:15 PM & 32 & \\
\hline 9:30 AM & 116 & & 9:30 PM & 32 & \\
\hline 9:45 AM & 116 & & 9:45 PM & 26 & \\
\hline 10:00 AM & 82 & 326 & 10:00 PM & 30 & 91 \\
\hline 10:15 AM & 90 & & 10:15 PM & 25 & \\
\hline 10:30 AM & 72 & & 10:30 PM & 22 & \\
\hline 10:45 AM & 82 & & 10:45 PM & 14 & \\
\hline 11:00 AM & 79 & 285 & 11:00 PM & 24 & 78 \\
\hline 11:15 AM & 58 & & 11:15 PM & 26 & \\
\hline 11:30 AM & 74 & & 11:30 PM & 18 & \\
\hline 11:45 AM & 74 & & 11:45 PM & 10 & \\
\hline
\end{tabular}

24 Hour Total
5171

\section*{12:00 AM - 12:00 PM}

12 Hour Count 2261
Peak Hour 8:00 AM
Peak Volume 588
Factor 0.92

12:00 PM - 12:00 AM
12 Hour Count 2910
Peak Hour 5:00 PM
Peak Volume 351
Factor 0.81

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline \multicolumn{2}{|l|}{Interval Start} & & \multicolumn{3}{|l|}{Interval Start} \\
\hline 12:00 AM & 10 & 43 & 12:00 PM & 77 & 323 \\
\hline 12:15 AM & 14 & & 12:15 PM & 92 & \\
\hline 12:30 AM & 13 & & 12:30 PM & 60 & \\
\hline 12:45 AM & 6 & & 12:45 PM & 94 & \\
\hline 1:00 AM & 8 & 27 & 1:00 PM & 58 & 254 \\
\hline 1:15 AM & 5 & & 1:15 PM & 55 & \\
\hline 1:30 AM & 8 & & 1:30 PM & 81 & \\
\hline 1:45 AM & 6 & & 1:45 PM & 60 & \\
\hline 2:00 AM & 8 & 30 & 2:00 PM & 84 & 275 \\
\hline 2:15 AM & 6 & & 2:15 PM & 50 & \\
\hline 2:30 AM & 8 & & 2:30 PM & 69 & \\
\hline 2:45 AM & 8 & & 2:45 PM & 72 & \\
\hline 3:00 AM & 16 & 40 & 3:00 PM & 86 & 401 \\
\hline 3:15 AM & 4 & & 3:15 PM & 94 & \\
\hline 3:30 AM & 10 & & 3:30 PM & 113 & \\
\hline 3:45 AM & 10 & & 3:45 PM & 108 & \\
\hline 4:00 AM & 9 & 31 & 4:00 PM & 94 & 377 \\
\hline 4:15 AM & 8 & & 4:15 PM & 102 & \\
\hline 4:30 AM & 4 & & 4:30 PM & 95 & \\
\hline 4:45 AM & 10 & & 4:45 PM & 86 & \\
\hline 5:00 AM & 14 & 49 & 5:00 PM & 104 & 379 \\
\hline 5:15 AM & 3 & & 5:15 PM & 111 & \\
\hline 5:30 AM & 14 & & 5:30 PM & 86 & \\
\hline 5:45 AM & 18 & & 5:45 PM & 78 & \\
\hline 6:00 AM & 22 & 130 & 6:00 PM & 88 & 340 \\
\hline 6:15 AM & 26 & & 6:15 PM & 86 & \\
\hline 6:30 AM & 38 & & 6:30 PM & 72 & \\
\hline 6:45 AM & 44 & & 6:45 PM & 94 & \\
\hline 7:00 AM & 60 & 315 & 7:00 PM & 62 & 247 \\
\hline 7:15 AM & 64 & & 7:15 PM & 64 & \\
\hline 7:30 AM & 92 & & 7:30 PM & 56 & \\
\hline 7:45 AM & 99 & & 7:45 PM & 65 & \\
\hline 8:00 AM & 105 & 625 & 8:00 PM & 74 & 209 \\
\hline 8:15 AM & 147 & & 8:15 PM & 54 & \\
\hline 8:30 AM & 174 & & 8:30 PM & 37 & \\
\hline 8:45 AM & 199 & & 8:45 PM & 44 & \\
\hline 9:00 AM & 138 & 450 & 9:00 PM & 26 & 119 \\
\hline 9:15 AM & 100 & & 9:15 PM & 25 & \\
\hline 9:30 AM & 101 & & 9:30 PM & 34 & \\
\hline 9:45 AM & 111 & & 9:45 PM & 34 & \\
\hline 10:00 AM & 80 & 323 & 10:00 PM & 24 & 88 \\
\hline 10:15 AM & 92 & & 10:15 PM & 28 & \\
\hline 10:30 AM & 87 & & 10:30 PM & 20 & \\
\hline 10:45 AM & 64 & & 10:45 PM & 16 & \\
\hline 11:00 AM & 82 & 309 & 11:00 PM & 20 & 67 \\
\hline 11:15 AM & 86 & & 11:15 PM & 16 & \\
\hline 11:30 AM & 74 & & 11:30 PM & 17 & \\
\hline 11:45 AM & 67 & & 11:45 PM & 14 & \\
\hline & & ur Total & & & \\
\hline 12:00 AM & PM & & 12:00 PM & 12:00 AM & \\
\hline 12 Hour Count & & & 12 Hour Count & 3079 & \\
\hline Peak Hour & & & Peak Hour & 3:30 PM & \\
\hline Peak Volume & & & Peak Volume & 417 & \\
\hline Factor & & & Factor & 0.92 & \\
\hline
\end{tabular}

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 18 & 58 & 12:00 PM & 80 & 293 \\
\hline 12:15 AM & 13 & & 12:15 PM & 56 & \\
\hline 12:30 AM & 13 & & 12:30 PM & 76 & \\
\hline 12:45 AM & 14 & & 12:45 PM & 81 & \\
\hline 1:00 AM & 7 & 28 & 1:00 PM & 82 & 344 \\
\hline 1:15 AM & 6 & & 1:15 PM & 80 & \\
\hline 1:30 AM & 7 & & 1:30 PM & 83 & \\
\hline 1:45 AM & 8 & & 1:45 PM & 99 & \\
\hline 2:00 AM & 9 & 33 & 2:00 PM & 58 & 302 \\
\hline 2:15 AM & 8 & & 2:15 PM & 90 & \\
\hline 2:30 AM & 6 & & 2:30 PM & 72 & \\
\hline 2:45 AM & 10 & & 2:45 PM & 82 & \\
\hline 3:00 AM & 14 & 44 & 3:00 PM & 83 & 340 \\
\hline 3:15 AM & 12 & & 3:15 PM & 84 & \\
\hline 3:30 AM & 8 & & 3:30 PM & 84 & \\
\hline 3:45 AM & 10 & & 3:45 PM & 89 & \\
\hline 4:00 AM & 14 & 40 & 4:00 PM & 80 & 384 \\
\hline 4:15 AM & 10 & & 4:15 PM & 102 & \\
\hline 4:30 AM & 4 & & 4:30 PM & 119 & \\
\hline 4:45 AM & 12 & & 4:45 PM & 83 & \\
\hline 5:00 AM & 6 & 34 & 5:00 PM & 113 & 384 \\
\hline 5:15 AM & 4 & & 5:15 PM & 94 & \\
\hline 5:30 AM & 7 & & 5:30 PM & 90 & \\
\hline 5:45 AM & 17 & & 5:45 PM & 87 & \\
\hline 6:00 AM & 20 & 119 & 6:00 PM & 98 & 334 \\
\hline 6:15 AM & 26 & & 6:15 PM & 91 & \\
\hline 6:30 AM & 35 & & 6:30 PM & 71 & \\
\hline 6:45 AM & 38 & & 6:45 PM & 74 & \\
\hline 7:00 AM & 60 & 308 & 7:00 PM & 66 & 253 \\
\hline 7:15 AM & 56 & & 7:15 PM & 67 & \\
\hline 7:30 AM & 84 & & 7:30 PM & 64 & \\
\hline 7:45 AM & 108 & & 7:45 PM & 56 & \\
\hline 8:00 AM & 103 & 515 & 8:00 PM & 74 & 229 \\
\hline 8:15 AM & 134 & & 8:15 PM & 55 & \\
\hline 8:30 AM & 142 & & 8:30 PM & 54 & \\
\hline 8:45 AM & 136 & & 8:45 PM & 46 & \\
\hline 9:00 AM & 137 & 430 & 9:00 PM & 32 & 146 \\
\hline 9:15 AM & 117 & & 9:15 PM & 42 & \\
\hline 9:30 AM & 98 & & 9:30 PM & 36 & \\
\hline 9:45 AM & 78 & & 9:45 PM & 36 & \\
\hline 10:00 AM & 87 & 325 & 10:00 PM & 24 & 105 \\
\hline 10:15 AM & 96 & & 10:15 PM & 37 & \\
\hline 10:30 AM & 58 & & 10:30 PM & 26 & \\
\hline 10:45 AM & 84 & & 10:45 PM & 18 & \\
\hline 11:00 AM & 91 & 320 & 11:00 PM & 36 & 119 \\
\hline 11:15 AM & 66 & & 11:15 PM & 23 & \\
\hline 11:30 AM & 81 & & 11:30 PM & 34 & \\
\hline 11:45 AM & 82 & & 11:45 PM & 26 & \\
\hline
\end{tabular}

24 Hour Total
12:00 AM - 12:00 PM
12 Hour Count 2254
Peak Hour 8:15 AM
Peak Volume 549
Factor 0.97

12:00 PM - 12:00 AM
12 Hour Count 3233
Peak Hour \(4: 15\) PM
Peak Volume 417
Factor 0.88

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 14 & 57 & 12:00 PM & 75 & 282 \\
\hline 12:15 AM & 13 & & 12:15 PM & 68 & \\
\hline 12:30 AM & 18 & & 12:30 PM & 67 & \\
\hline 12:45 AM & 12 & & 12:45 PM & 72 & \\
\hline 1:00 AM & 21 & 58 & 1:00 PM & 72 & 270 \\
\hline 1:15 AM & 10 & & 1:15 PM & 66 & \\
\hline 1:30 AM & 16 & & 1:30 PM & 56 & \\
\hline 1:45 AM & 11 & & 1:45 PM & 76 & \\
\hline 2:00 AM & 7 & 29 & 2:00 PM & 76 & 256 \\
\hline 2:15 AM & 14 & & 2:15 PM & 64 & \\
\hline 2:30 AM & 4 & & 2:30 PM & 66 & \\
\hline 2:45 AM & 4 & & 2:45 PM & 50 & \\
\hline 3:00 AM & 10 & 43 & 3:00 PM & 78 & 264 \\
\hline 3:15 AM & 11 & & 3:15 PM & 73 & \\
\hline 3:30 AM & 15 & & 3:30 PM & 56 & \\
\hline 3:45 AM & 7 & & 3:45 PM & 57 & \\
\hline 4:00 AM & 12 & 38 & 4:00 PM & 70 & 280 \\
\hline 4:15 AM & 10 & & 4:15 PM & 66 & \\
\hline 4:30 AM & 6 & & 4:30 PM & 74 & \\
\hline 4:45 AM & 10 & & 4:45 PM & 70 & \\
\hline 5:00 AM & 6 & 31 & 5:00 PM & 46 & 200 \\
\hline 5:15 AM & 8 & & 5:15 PM & 62 & \\
\hline 5:30 AM & 9 & & 5:30 PM & 50 & \\
\hline 5:45 AM & 8 & & 5:45 PM & 42 & \\
\hline 6:00 AM & 10 & 53 & 6:00 PM & 54 & 222 \\
\hline 6:15 AM & 14 & & 6:15 PM & 76 & \\
\hline 6:30 AM & 8 & & 6:30 PM & 56 & \\
\hline 6:45 AM & 21 & & 6:45 PM & 36 & \\
\hline 7:00 AM & 9 & 61 & 7:00 PM & 62 & 202 \\
\hline 7:15 AM & 12 & & 7:15 PM & 50 & \\
\hline 7:30 AM & 16 & & 7:30 PM & 52 & \\
\hline 7:45 AM & 24 & & 7:45 PM & 38 & \\
\hline 8:00 AM & 34 & 147 & 8:00 PM & 44 & 178 \\
\hline 8:15 AM & 38 & & 8:15 PM & 48 & \\
\hline 8:30 AM & 34 & & 8:30 PM & 49 & \\
\hline 8:45 AM & 41 & & 8:45 PM & 37 & \\
\hline 9:00 AM & 28 & 202 & 9:00 PM & 34 & 137 \\
\hline 9:15 AM & 58 & & 9:15 PM & 30 & \\
\hline 9:30 AM & 53 & & 9:30 PM & 37 & \\
\hline 9:45 AM & 63 & & 9:45 PM & 36 & \\
\hline 10:00 AM & 60 & 245 & 10:00 PM & 29 & 103 \\
\hline 10:15 AM & 60 & & 10:15 PM & 30 & \\
\hline 10:30 AM & 60 & & 10:30 PM & 24 & \\
\hline 10:45 AM & 65 & & 10:45 PM & 20 & \\
\hline 11:00 AM & 60 & 233 & 11:00 PM & 26 & 92 \\
\hline 11:15 AM & 65 & & 11:15 PM & 18 & \\
\hline 11:30 AM & 50 & & 11:30 PM & 28 & \\
\hline 11:45 AM & 58 & & 11:45 PM & 20 & \\
\hline
\end{tabular}

24 Hour Total
3683

\section*{12:00 AM - 12:00 PM}

12 Hour Count 1197
Peak Hour 10:30 AM
Peak Volume 250
Factor 0.96

12:00 PM - 12:00 AM
12 Hour Count 2486
Peak Hour 12:00 PM
Peak Volume 282
Factor 0.94

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline Interval Start & & & Interval Start & & \\
\hline 12:00 AM & 24 & 86 & 12:00 PM & 38 & 170 \\
\hline 12:15 AM & 19 & & 12:15 PM & 46 & \\
\hline 12:30 AM & 22 & & 12:30 PM & 42 & \\
\hline 12:45 AM & 21 & & 12:45 PM & 44 & \\
\hline 1:00 AM & 18 & 63 & 1:00 PM & 52 & 180 \\
\hline 1:15 AM & 23 & & 1:15 PM & 40 & \\
\hline 1:30 AM & 13 & & 1:30 PM & 42 & \\
\hline 1:45 AM & 9 & & 1:45 PM & 46 & \\
\hline 2:00 AM & 13 & 39 & 2:00 PM & 46 & 189 \\
\hline 2:15 AM & 6 & & 2:15 PM & 59 & \\
\hline 2:30 AM & 6 & & 2:30 PM & 42 & \\
\hline 2:45 AM & 14 & & 2:45 PM & 42 & \\
\hline 3:00 AM & 8 & 36 & 3:00 PM & 43 & 207 \\
\hline 3:15 AM & 7 & & 3:15 PM & 42 & \\
\hline 3:30 AM & 11 & & 3:30 PM & 64 & \\
\hline 3:45 AM & 10 & & 3:45 PM & 58 & \\
\hline 4:00 AM & 9 & 29 & 4:00 PM & 50 & 234 \\
\hline 4:15 AM & 6 & & 4:15 PM & 60 & \\
\hline 4:30 AM & 6 & & 4:30 PM & 56 & \\
\hline 4:45 AM & 8 & & 4:45 PM & 68 & \\
\hline 5:00 AM & 3 & 24 & 5:00 PM & 66 & 247 \\
\hline 5:15 AM & 7 & & 5:15 PM & 42 & \\
\hline 5:30 AM & 6 & & 5:30 PM & 101 & \\
\hline 5:45 AM & 8 & & 5:45 PM & 38 & \\
\hline 6:00 AM & 2 & 25 & 6:00 PM & 46 & 186 \\
\hline 6:15 AM & 5 & & 6:15 PM & 36 & \\
\hline 6:30 AM & 6 & & 6:30 PM & 54 & \\
\hline 6:45 AM & 12 & & 6:45 PM & 50 & \\
\hline 7:00 AM & 6 & 39 & 7:00 PM & 46 & 174 \\
\hline 7:15 AM & 12 & & 7:15 PM & 50 & \\
\hline 7:30 AM & 8 & & 7:30 PM & 34 & \\
\hline 7:45 AM & 13 & & 7:45 PM & 44 & \\
\hline 8:00 AM & 20 & 114 & 8:00 PM & 33 & 132 \\
\hline 8:15 AM & 26 & & 8:15 PM & 36 & \\
\hline 8:30 AM & 28 & & 8:30 PM & 33 & \\
\hline 8:45 AM & 40 & & 8:45 PM & 30 & \\
\hline 9:00 AM & 18 & 113 & 9:00 PM & 44 & 139 \\
\hline 9:15 AM & 22 & & 9:15 PM & 29 & \\
\hline 9:30 AM & 35 & & 9:30 PM & 30 & \\
\hline 9:45 AM & 38 & & 9:45 PM & 36 & \\
\hline 10:00 AM & 34 & 184 & 10:00 PM & 34 & 98 \\
\hline 10:15 AM & 42 & & 10:15 PM & 22 & \\
\hline 10:30 AM & 53 & & 10:30 PM & 24 & \\
\hline 10:45 AM & 55 & & 10:45 PM & 18 & \\
\hline 11:00 AM & 36 & 168 & 11:00 PM & 29 & 93 \\
\hline 11:15 AM & 38 & & 11:15 PM & 27 & \\
\hline 11:30 AM & 47 & & 11:30 PM & 14 & \\
\hline 11:45 AM & 47 & & 11:45 PM & 23 & \\
\hline
\end{tabular}

24 Hour Total

12:00 AM - 12:00 PM
12 Hour Count 920
Peak Hour 10:15 AM
Peak Volume 186
Factor 0.85

12:00 PM - 12:00 AM
12 Hour Count 2049
Peak Hour 4:45 PM
Peak Volume 277
Factor 0.69

Daily Volume, per Channel (Volume factor 0.5)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{France Rd Off Ramp} \\
\hline \multicolumn{4}{|l|}{Interval Start} & \multicolumn{2}{|l|}{Interval Start} \\
\hline 12:00 AM & 12 & 54 & & & \\
\hline 12:15 AM & 16 & & & & \\
\hline 12:30 AM & 10 & & & & \\
\hline 12:45 AM & 16 & & & & \\
\hline 1:00 AM & 13 & 41 & & & \\
\hline 1:15 AM & 12 & & & & \\
\hline 1:30 AM & 7 & & & & \\
\hline 1:45 AM & 9 & & & & \\
\hline 2:00 AM & 8 & 22 & & & \\
\hline 2:15 AM & 6 & & & & \\
\hline 2:30 AM & 4 & & & & \\
\hline 2:45 AM & 4 & & & & \\
\hline 3:00 AM & 2 & 28 & & & \\
\hline 3:15 AM & 12 & & & & \\
\hline 3:30 AM & 10 & & & & \\
\hline 3:45 AM & 4 & & & & \\
\hline 4:00 AM & 7 & 39 & & & \\
\hline 4:15 AM & 2 & & & & \\
\hline 4:30 AM & 18 & & & & \\
\hline 4:45 AM & 12 & & & & \\
\hline 5:00 AM & 3 & 43 & & & \\
\hline 5:15 AM & 10 & & & & \\
\hline 5:30 AM & 20 & & & & \\
\hline 5:45 AM & 10 & & & & \\
\hline 6:00 AM & 9 & 113 & & & \\
\hline 6:15 AM & 18 & & & & \\
\hline 6:30 AM & 37 & & & & \\
\hline 6:45 AM & 49 & & & & \\
\hline 7:00 AM & 58 & 288 & & & \\
\hline 7:15 AM & 70 & & & & \\
\hline 7:30 AM & 64 & & & & \\
\hline 7:45 AM & 96 & & & & \\
\hline 8:00 AM & 120 & 259 & & & \\
\hline 8:15 AM & 139 & & & & \\
\hline & & 24 Hour Total & 887 & & \\
\hline 12:00 AM & PM & & & 12:00 PM & 12:00 AM \\
\hline 12 Hour Count & & & & 12 Hour Count & 0 \\
\hline Peak Hour & & & & Peak Hour & - \\
\hline Peak Volume & & & & Peak Volume & - \\
\hline Factor & & & & Factor & - \\
\hline
\end{tabular}

\section*{Appendix G}

\author{
FHWA Vehicle Category Classification
}

\title{
New Orleans East Industrial Canal Crossing \\ Safety and Access Planning
}

\section*{Stage 0 Feasibility Study}

June 2022



\section*{Appendix H}

\section*{Oregon DOT Manual: Ch. 14.5 - Pedestrian Level of Traffic Stress}

\title{
New Orleans East
} Industrial Canal Crossing
Safety and Access Planning

\author{
Stage 0 Feasibility Study
}

June 2022



\subsection*{14.5 Pedestrian Level of Traffic Stress}

\subsection*{14.5.1 Purpose}

The purpose of the Pedestrian Level of Traffic Stress (PLTS) is to create a high-level inventory and a walkability/connectivity performance rating of pedestrian facilities in a community without needing a significant amount of data. The Pedestrian Level of Traffic Stress methodology classifies roadway segments according to the level of pressure or strain experienced by pedestrians and other sidewalk users. Other users include nonmotorized forms of transportation as well as motorized power chairs, scooters, and other
wheeled mobility devices which are permitted and assumed to use pedestrian facilities \({ }^{60}\). The PLTS method would typically be used during the creation of a Regional Transportation Plan (RTP), or Transportation System Plan (TSP). It can also be used for screening in a facility plan or project (See Section 14.2 for more information on applications). This methodology is intended for use in urban areas. It can be used in rural conditions where pedestrian facilities exist, however the method will yield a high PLTS where there is higher speed traffic.

\subsection*{14.5.2 Methodology}

PLTS was created to be a companion with the Bicycle Level of Traffic Stress (BLTS) \({ }^{61}\). Both methods group facilities into four different stress levels for segments, intersection approaches and intersection crossings. It is recommended that BLTS and PLTS be performed at the same time to completely understand the multimodal and intermodal deficiencies of an area. New techniques were developed to support the pedestrian segment method while the intersection crossings are adapted from the BLTS method, as these were based on a pedestrian's view of comfort and perceived safety. Like BLTS, the PLTS methodology does not require extensive data collection; much of the needed data is collected routinely and some of the data collected for PLTS overlaps with BLTS.

Segment data:
- Sidewalk condition and width
- Buffer type and width
- Bike lane width
- Parking width
- Number of lanes and posted speed
- Illumination presence
- General land use

Crossing data:
- Functional class
- Number of lanes and posted speeds
- Roadway average daily traffic (ADT) [optional]
- Sidewalk ramps
- Median refuge \& illumination presence
- Signalized general intersection features

\footnotetext{
\({ }^{60}\) A non-motorized form of transportation refers to vehicles that would not use the roadway to travel on a roadway. Motorized power chairs, scooters, and other wheeled mobility devices are permitted and assumed to use pedestrian facilities.
\({ }^{61}\) The BLTS methodology is based on the paper, Low Stress Bicycling and Network Connectivity, Mineta Transportation Institute, Report 11-19, May 2012 that was adapted by the Oregon Department of Transportation in 2014. This version can be found in the "Analysis Procedures Manual," Oregon Department of Transportation, Version 2, June 2015.
}

For state highways, a good portion of the data needed are available in ODOT's databases including the on-line TransGIS application. Sidewalk condition and width, buffer presence, bike lane width, numbers of lanes, posted speeds, functional class, traffic volumes, and sidewalk ramps are available. Other jurisdictions may have existing TSP or public works inventories of some of these items. Use of Internet-based aerial imagery and street-level tools will capture any remaining widths or presence variables such as parking and buffer widths or intersection/mid-block crossing features. Sidewalk condition will likely require some sort of field inventory if it not available from other sources. Volumes, if used, should be from existing sources, or already counted as part of the same study. Streets with similar characteristics with known volumes can be used as proxy for other streets in the study area. PLTS uses four levels of traffic stress with PLTS 1 being the lowest stress level:
- PLTS 1- Represents little to no traffic stress and requires little attention to the traffic situation. This is suitable for all users including children 10 years or younger, groups of people and people using a wheeled mobility device (WhMD \({ }^{62}\) ). The facility is a sidewalk or shared-use path with a buffer between the pedestrian and motor vehicle facility. Pedestrians feel safe and comfortable on the pedestrian facility. Motor vehicles are either far from the pedestrian facility and/or traveling at a low speed and volume. All users are willing to use this facility.
- PLTS 2- Represents little traffic stress but requires more attention to the traffic situation than of which young children may be capable. This would be suitable for children over 10, teens and adults. All users should be able to use the facility but, some factors may limit people using WhMDs. Sidewalk condition should be good with limited areas of fair condition. Roadways may have higher speeds and/or higher volumes. Most users are willing to use this facility.
- PLTS 3- Represents moderate stress and is suitable for adults. An able-bodied adult would feel uncomfortable but safe using this facility. This includes higher speed roadways with smaller buffers. Small areas in the facility may be impassable for a person using a WhMD and/or requires the user to travel on the shoulder/bike lane/street. Some users are willing to use this facility.
- PLTS 4- Represents high traffic stress. Only able-bodied adults with limited route choices would use this facility. Traffic speeds are moderate to high with narrow or no pedestrian facilities provided. Typical locations include high speed, multilane roadways with narrow sidewalks and buffers. This also includes facilities with no sidewalk. This could include evident trails next to roads or 'cut through' trails. Only the most confident or trip-purpose driven users will use this facility.

It should be noted that the trip purpose and route options affect the level of stress a person is willing to experience. A person making a work-based trip is typically willing to

\footnotetext{
\({ }^{62}\) A wheeled mobility device (WhMD) includes walkers, manual wheelchairs, power base chairs, and light weight scooters. Each of these devices requires the operator to maneuver and set the direction of travel. All of these devices can be operated independently and do not require additional people to maneuver the device. The American with Disability Act (ADA) (1990) sets limits on the vertical change in a surface to 0.5 inches.
}
experience a greater stress level than a person using the facility for recreation or exercise. Other elements including time of day, cost associated with other modes, ownership of vehicles, etc., influence the level of stress a person is willing to experience.

\section*{Additional Pedestrian Considerations}

PLTS does not include some additional factors that may influence the overall level of traffic stress. These considerations may be somewhat subjective and may not be easily measured. These factors include, but are not limited to, steep grades, neighborhood crime/personal security, access density, crash history, and heavy bicycle use (on sidewalk or path). If desired, the methodology could be modified to include these factors. If one or more negative conditions apply to a roadway, the final score can be further downgraded with proper documentation. Additional notation should be included if the downgrade was based on subjective observations.

\subsection*{14.5.3 PLTS Targets}

PLTS 2 is generally a reasonable minimum target for pedestrian routes. This level of accommodation will generally be acceptable to the majority of users. Higher stress levels may be acceptable in limited areas depending on the land use, population types, and roadway classifications, but they will generally not be comfortable for most users. Each land use has specific needs for the pedestrian network and study areas should have multiple targets for the different areas.

Facilities within a quarter mile of schools, and routes heavily used by children should use a target of PLTS 1. This is because of the large number of children that may use the system with little or no adult supervision. The area around elementary schools should contain no PLTS 3 or 4 because of the associated safety concerns and the discouraging effect that such facilities have on walking rates. Pedestrian facilities near middle and high schools may include PLTS 2, since the students are in the older age group, but PLTS 1 routes are ideal.

Other land uses should also have a target of PLTS 1; these include downtown cores, medical facilities, areas near assisted living/retirement centers, and transit stops. Downtown cores, for example, should have wide sidewalks with street furniture. Roadways near medical facilities and residential retirement complexes should have sidewalks in good condition with adequate width.

Transit stops should have facilities that connect the passengers from the origin of their trip to the destination of their trip. The PLTS should be overlaid with the typical \(1 / 4\) mile walking distance to transit for transit routes (or a roadway for a proposed route) to fully show where PLTS 1 is desired.

When setting targets, looking at the end user is vital. The land use that surrounds a corridor, pedestrian walking behavior, and local demographics will all influence the target PLTS for a corridor.

\subsection*{14.5.4 PLTS Criteria}

PLTS measures are derived from the physical characteristics of the roadway segment and intersection crossing. Pedestrians will go either direction on a sidewalk. If there is not a sidewalk, pedestrians typically walk in the opposite direction of traffic and both sides of the roadway should be classified.

The PLTS is broken into a number of different segment and crossing tables based on several physical characteristics of the corridor.

Variable Definitions: To complete the segment PLTS analysis, information on six different variables is used. The variable definitions are listed below:

Sidewalk \({ }^{63}\) Width: The physical width of the solid smooth surface (typically poured concrete, but could be asphalt, brick, or concrete paver blocks) that pedestrians use. This does not include solid surfaces that contain vegetation, additional lighting, street furniture, parking meters, etc. If a sidewalk has frequent obstructions (posts, poles, mailboxes, and encroaching vegetation) that limit the usable width, use the narrower or effective width instead of the physical width.

Sidewalk Condition: The sidewalk condition is a visual high-level classification process (see Exhibit 14-15). Sidewalk condition can vary within a block segment. Use the worst sidewalk condition, as a section of poor sidewalk can block some users from using the facility.

The criteria and pictures for each category are based off the Good-Fair-Poor (GFP) Pavement Condition Rating Manual for Bicycle and Pedestrian Facilities and the Pavement Distress Survey Manual developed by ODOT's Pavement Services Unit. These values are also generally compatible with the sidewalk condition ranking in ODOT's TransGIS tool. For each corridor segment the general pavement condition should be considered. A sidewalk segment that contains a mix of different conditions should be rated using the worst condition. For example, a sidewalk is smooth with only minor cracking but has a very large fault caused by a tree root. The sidewalk would be considered in "Very Poor" condition. For a sidewalk to be considered in "Fair" condition, none of the properties can be "Poor" or "Very Poor" and at least one is in the "Fair" category. For a sidewalk to be considered "Good"" all of the criteria must be met and it must be of relatively new construction. Additional examples are located in Appendix B.

If obtaining data from ODOT's online FACS_STIP or TransGIS tools for use in a PLTS analysis, please be aware that there is no "Very Poor" equivalent at this time. Analysts will need to field verify sidewalk sections marked as "Poor" to ensure that there are no "Very Poor" sections within them.

\footnotetext{
\({ }^{63}\) Sidewalk refers to sidewalks, shared-use paths, and pedestrian paths. The methodology was designed to be used for sidewalks but, can apply to other pedestrian facilities.
}

Exhibit 14-15 Sidewalk Condition Rating
\begin{tabular}{|c|c|c|}
\hline Rating & Facility Properties & Example \\
\hline Good & \begin{tabular}{l}
- No minor cracking \\
- No patching or raveling and has a very smooth surface \\
- No faulting \\
- New construction
\end{tabular} &  \\
\hline Fair & \begin{tabular}{l}
- Minor cracking (generally hairline) \\
- Minor patching and possibly some minor raveling evident. Surface is generally smooth \\
- Minor faulting (less than \(1 / 4 ")\)
\end{tabular} &  \\
\hline Poor & \begin{tabular}{l}
- Minor cracking in several locations \\
- Rough areas present but not extensive \\
- Faulting may be present but less than \(1 / 2\) " (No major faulting)
\end{tabular} &  \\
\hline Very Poor & \begin{tabular}{l}
- Major cracking patterns \\
- Rough conditions (major deterioration, raveling, loose aggregate, missing pavement, etc.) \\
- Faulting greater than \(1 / 2\) "
\end{tabular} &  \\
\hline No sidewalk & - No solid and smooth surface is present on the side of the roadway. Pedestrians use the travel lane, paved shoulder, or soil shoulder to travel along the roadway. &  \\
\hline
\end{tabular}

Physical Buffer Type: The physical buffer is the distance from the outside edge of sidewalk to the edge of pavement or curb. The buffer type is categorized into six major groups. This area is also referred to as the furniture or planter zone.

No Buffer: The narrower sidewalk ( \(<10 \mathrm{ft}\) in width) is adjacent to the curb (curb tight). The facility may still include a bike lane and/or on street parking (see total buffering width distance).


Solid Surface: The buffer is a hard surface that can contain buffering elements such as lighting, street furniture, parking meters, and bicycle racks. If the buffer is wide enough, street trees can also be present which help improve the walking experience. The buffer still allows people to maneuver to the roadway edge without leaving the solid surface. The surface material can also change to indicate a buffer (i.e., stamped concrete, pavers). Purely decorative buffers usually do not have any "furniture elements" in them. A wide sidewalk ( \(10+\) feet) can also be itself a buffer even if there is no extra delineation.

Landscaped: the area between the edge of the sidewalk and the curb includes a soil area with low shrubs or vegetation. The vegetation does not create a wall or reduce pedestrian sight distance. These can also have a ditch, slope, or other topographical feature.

Landscaped with trees: The area between the edge of the sidewalk and the curb includes trees. Once the trees are mature, a canopy effect is created over the pedestrian facility and the edge of roadway. Trees are spaced for heathy growing and sight distance is not limited. This buffer type tends to be wider than a regular landscaped buffer and also can have a ditch, slope, or other topographical feature included.

Vertical: A vertical buffer (i.e. retaining wall) elevates the pedestrian facility higher than the roadway surface. This typically contains an additional fence or pedestrian buffer facility.

Prevailing or Posted Speed: The prevailing (or average) speed is the recommended speed to be used in the methodology. If prevailing speed data are not available posted speed should be used.
Total Buffering Width: The total buffering width is the distance from the edge of the sidewalk to the edge of the travel lane. This includes but is not limited to:
- the physical buffer (above),
- on-street parking, if parking is not striped then assume the standard parking distances (six to eight feet) for the facility type
- Bicycle facility, and
- Shoulder


Total Number of Travel Lanes: The total number of travel lanes includes the total number of lanes on the segment. This includes the number of thru lanes for both directions, twoway left turn lanes (TWLTL), and continuous right turn lanes. For example, a five-lane roadway could have two thru lanes in each direction and one two-way left turn lane. Note: This category is different than used in the BLTS method because pedestrians can use either side of the roadway to go either direction and are not limited by one-way streets.

\section*{General Land Use}

The general land use of an area with the corresponding building placement, amenities, and attractions/destinations affects the overall desired walkability of a segment. Areas that are more pedestrian-friendly typically have more destinations for walking trips, a higher pedestrian presence, and the corresponding expectation from a vehicle driver's perspective. Land use types are grouped by the likelihood for a high number of origins and/or destinations, likely pedestrian presence, perceived attractiveness and exposure, noise, heavy vehicle use, and directness.
Intersection variable definitions:

Functional Class - This is the local or state functional class assigned to a roadway. These are typically included in a Transportation System or Regional Transportation Plan document.

Average Daily Traffic - This is the total daily traffic in both directions. These can be obtained from ODOT's Transportation Volume Tables, local counting programs, calculated from traffic counts or estimated from shorter duration counts. See APM Chapters 3 and 5. If ADTs are not readily available, the methodology allows a mid-range value to substitute.

\subsection*{14.5.5 PLTS Classifications}

The PLTS criteria are broken into two primary sections. Table-based criteria are applied separately for segments and intersection crossings. The follow sections outline the nine tables used to classify the PLTS for a roadway. The first four tables are the roadway segment criteria and the last five are for roadway intersections. The methodology uses the worst overall PLTS value for each segment and intersection crossing. The worst (highest) PLTS value of a series of segments and crossings will control a route.

\section*{Sidewalk Criteria}

The condition and geometry of the sidewalk is the first criterion in the PLTS methodology. The criterion splits sidewalks into greater than five feet and less than five feet in width. The five foot condition is based on federal and state design codes and recommendations. The federal standard for a sidewalk is five feet. In Oregon, the Oregon Bicycle and Pedestrian Design Guide (OBPDG) states that the standard pedestrian zone is six feet and those five feet may be acceptable in some areas (local and residential streets). Short ( \(<200^{\prime}\) ) sections can have widths as narrow as four feet. While sidewalks along a state highway may need to be wider, sidewalks in central business districts of heavy used pedestrian areas may also need to be wider. Guides such as the OBPDG and the Highway Design Manual (HDM) should be referenced for more information.

Exhibit 14-16 uses the overall condition and the effective (useable) width of the sidewalk. The purpose is to rate which groups of users can safely and comfortably utilize a facility. A narrow (from obstructions or actual width) or low quality sidewalk will not be passable for all user groups. The actual sidewalk width, especially if it is less than five feet, will impact the use by disabled people while effective width rates the comfort and flow of pedestrians along a sidewalk. The effective width is the simple average clear width of a sidewalk segment rather than following the more-detailed Highway Capacity Manual procedure.

Use the actual sidewalk width first in Exhibit 14-16 to see if the minimum actual width is present, then check the effective width if the sidewalk is at least six feet wide to determine the appropriate PLTS. If the effective width is less than five feet use the corresponding actual width rows as obstructions will still cause impediments to disabled users. A PLTS 1 sidewalk must be accessible to all users, have six effective feet or wider path, and in good or fair condition. If a segment does not have illumination, consider increasing the PLTS up one level. The impact of darkness requires increased awareness for safety/security and especially if the sidewalk is in poor condition or is not present.

Exhibit 14-16 Sidewalk Condition 1,3
\begin{tabular}{|l|l|l|c|c|c|c|}
\hline \multicolumn{2}{|c|}{\begin{tabular}{c} 
Actual/Effective \\
Sidewalk Width (ft)
\end{tabular}} \\
\cline { 3 - 7 } & & Good & Fair & Poor & \begin{tabular}{c} 
Very \\
Poor
\end{tabular} & \begin{tabular}{c} 
No \\
Sidewalk
\end{tabular} \\
\hline \multirow{4}{*}{ Actual } & \(<4\) & PLTS 4 & PLTS 4 & PLTS 4 & PLTS 4 & PLTS 4 \\
\hline Effective & \(\geq 4\) to \(<5\) & PLTS 3 & PLTS 3 & PLTS 3 & PLTS 4 & PLTS 4 \\
\cline { 2 - 7 } & \(\geq 5\) & PLTS 2 & PLTS 2 & PLTS 3 & PLTS 4 & PLTS 4 \\
\hline
\end{tabular}
\({ }^{1} \mathrm{Can}\) include other facilities such as walkways and shared-use paths
\({ }^{2}\) Effective width is the available/useable area for the pedestrian. Does not include areas occupied by store fronts or curb side features.
\({ }^{3}\) Consider increasing the PLTS one level (Max PLTS 4) for segments that do not have illumination. Darkness requires more awareness especially if sidewalk is in fair or worse condition.
\({ }^{4}\) Effective width should be proportional to volume as higher volume sidewalks should be wider than the base six feet. Use a minimum PLTS 2 for higher volume sidewalks that are not proportional (include documentation).

\subsection*{14.5.6 Physical Buffer Type Criteria}

The treatment of buffers is split into two parts: the physical buffer type and the total buffering width, which includes the physical buffer and any on-street areas outside the travel lanes (parking, bike lanes, and shoulders). The HDM and the OBPDG have standards and guidance pertaining to buffers. There are several advantages of having a buffer or furniture zone on a facility. The advantages include an increase in a pedestrian's sense of security, sidewalks that stay level over driveways, and improved drainage. Exhibit 14-17 shows stress levels associated with varying buffer types.

Exhibit 14-17 Physical Buffer Type
\begin{tabular}{|c|c|c|c|c|}
\hline \multicolumn{5}{|c|}{Physical Buffer Type} \\
\hline \multirow[t]{2}{*}{Buffer Type \({ }^{1}\)} & \multicolumn{4}{|c|}{Prevailing or Posted Speed} \\
\hline & \(\leq 25 \mathrm{MPH}\) & 30 MPH & 35 MPH & \(\geq 40 \mathrm{MPH}\) \\
\hline No Buffer (curb tight) & PLTS 2 & PLTS 3 & PLTS 3 & PLTS 4 \\
\hline Solid surface & PLTS \(2^{2}\) & PLTS 2 & PLTS 2 & PLTS 2 \\
\hline Landscaped & PLTS 1 & PLTS 2 & PLTS 2 & PLTS 2 \\
\hline Landscaped with trees & PLTS 1 & PLTS 1 & PLTS 1 & PLTS 2 \\
\hline Vertical & & & & \\
\hline
\end{tabular}
\({ }^{1}\) Combined buffers: If two or more of the buffer conditions apply, use the most appropriate, typically the lower stress level.
\({ }^{2}\) If street furniture, street trees, lighting, planters, surface change, etc. are present then the PLTS can be lowered to PLTS 1.

\subsection*{14.5.7 Total Buffering Width Criteria}

Exhibit 14-18 considers the stress associated with the total distance from the pedestrian to the vehicular traffic on one side of the roadway. The number of lanes is used to imply the level of the traffic volumes and functional classification of the roadway.

\section*{Exhibit 14-18 Total Buffering Width}
\begin{tabular}{|c|c|c|c|c|c|}
\hline Total & \multicolumn{5}{|c|}{ Total Buffering Width (ft) \({ }^{\mathbf{1}}\)} \\
\cline { 2 - 6 } \begin{tabular}{c} 
Number of \\
Travel \\
Lanes \\
(both \\
directions)
\end{tabular} & \(<\mathbf{5}\) & \(\mathbf{\mathbf { 5 } \text { to } < \mathbf { 1 0 }}\) & \(\mathbf{\geq 1 0}\) to \(<\mathbf{1 5}\) & \begin{tabular}{c}
\(\geq \mathbf{1 5}\) to \\
\(<\mathbf{2 5}\)
\end{tabular} & \(\mathbf{\geq 2 5}\) \\
\hline 2 & PLTS 2 & PLTS 2 & PLTS 1 & PLTS 1 & PLTS 1 \\
\hline 3 & PLTS 3 & PLTS 2 & PLTS 2 & PLTS 1 & PLTS 1 \\
\hline \(4-5\) & \begin{tabular}{c} 
PLTS \\
\(4^{2}\)
\end{tabular} & PLTS 3 & PLTS 2 & PLTS 1 & PLTS 1 \\
\hline 6 & \begin{tabular}{c} 
PLTS \\
\(4^{2}\)
\end{tabular} & PLTS 4 \({ }^{2}\) & PLTS 3 & PLTS 2 & PLTS 2 \\
\hline
\end{tabular}
\({ }^{1}\) Total Buffering Width is the summation of the width of buffer, width of parking, width of shoulder and width of the bike lane on the side same side of the roadway as the pedestrian facility being evaluated. \({ }^{2}\) Sections with a substantial physical barrier/tall railing between the travel lanes and the walkway (like might be found on a bridge) can be lowered to PLTS 3.

\subsection*{14.5.8 General Land Use Criteria}

The general land use can create an overall positive effect on walkability and use of certain facilities if destinations are frequent and convenient. Higher pedestrian use leads to a greater driver expectation and driving behaviors typically reflect such (i.e. more likely to yield). Conversely, land use can create a dampening effect to the point that it will not matter how well the facilities are laid out or constructed, the desire to walk on a segment is diminished if the facility goes through a perceived unattractive/unsecure/noisy/too-busy area. Areas that are more auto-oriented have lower driver expectations for pedestrians so yielding behaviors are much less likely. Exhibit 14-19 groups typical land use types by PLTS level with more pedestrian-friendly walkable areas getting lower PLTS levels.

If the PLTS analysis will be covering existing or future no-build conditions, then the General Land Use criteria should be included to fully show the impacts to the pedestrians. If alternatives are being analyzed, then this criteria should not be included. This will avoid accidentally eliminating the benefits of a solution due to the overall land use not changing. However, this criteria can be included for largescale alternatives/developments that do chanae the overall land use.

Exhibit 14-19 General Land Use
\begin{tabular}{|c|l|}
\hline PLTS & \multicolumn{1}{c|}{ Overall Land Use } \\
\hline 1 & \begin{tabular}{l} 
Residential, central business districts (CBD), neighborhood \\
commercial, parks and other public facilities, governmental \\
buildings/plazas, offices/office parks
\end{tabular} \\
\hline 2 & \begin{tabular}{l} 
Low density development, rural subdivisions, un-incorporated \\
communities, strip commercial, mixed employment
\end{tabular} \\
\hline 3 & Light industrial, big-box/auto-oriented commercial \\
\hline 4 & Heavy industrial, intermodal facilities, freeway interchanges \\
\hline
\end{tabular}

\subsection*{14.5.9 Crossing Criteria}

Unsignalized crossings at intersections or at mid-block can act as barriers to pedestrians, especially where there are a high number of lanes or higher speeds. The crossing can be an impediment to travel if the pedestrian has to cross four or more lanes at any speed or has to cross a 35 mph (or greater) street. The criteria for unsignalized intersection crossings depend on the functional class of the roadway, average daily traffic, speed limit, number of lanes, and presence of a median of sufficient width to provide for a twostage crossing. Average daily traffic (ADT) of the roadway being crossed can be optional if data are not available by using the footnoted columns in the following exhibits. Over or underpasses are considered as separate facilities and are PLTS 1.

For functionally classified local and collector streets use Exhibit 14-20 for crossing with and without a pedestrian median refuge. The vast majority of these roadways should be under the 5,000 ADT limit for the table, but if it is known that a facility has an abnormally high amount of traffic for its functional class (there also should be a count performed on this section; See APM Chapter 3), it should be compared with Exhibit 14-23 or Exhibit 14-24. Also, if a collector-level roadway has more than two lanes or is one-way, then Exhibit 14-23 or Exhibit 14-24 should be used.

Unsignalized crossings on functionally classified minor/major/principal arterial roadway sections should use Exhibit 14-21 for crossings without pedestrian median refuges. Sections with pedestrian refuge islands or are one-way should use Exhibit 14-23 and Exhibit 14-24. If ADT is not available for a section (or not possible to be estimated), use the midrange columns (as per table footnote) in these exhibits to find an appropriate PLTS. Enhanced arterial crossings (with or without refuge islands) can use Exhibit 14-22 to lower the PLTS to a maximum two level reduction or minimum PLTS 2.

When a crossing lacks "standard" modern ramps, the facility is limited to able-bodied users. A standard modern ramp will have a flatter grade, may have a level landing surface, and some sort of detectable surface for visually impaired pedestrians (usually an etched-in cross hatching). Current ADA-standard ramps have a thermoplastic "truncated dome" insert attached to the ramp surface, so these are relatively easy to spot. Older ramps with short and or steep grades (these almost never have any detectable surfaces) are considered equivalent to no ramp at all. Impaired users will either not use the facility or will be forced into an uncomfortable position by using the street via a nearby
driveway. In these cases, the minimum PLTS is 3 .
Pedestrian median refuges need to be at least six feet in width ( 10 feet for PLTS 1 eligibility) and have some sort of a raised concrete or vegetated island for protection. Crossings at roundabouts should use PLTS 1 for a single lane crossing of an entry or exit assuming that the splitter island is at least 10 feet wide, otherwise use PLTS 2. Two-lane exits and entries are PLTS 2.

Increase the PLTS by one level (to a maximum PLTS 4) if the intersection or mid-block crossing is not illuminated in Exhibits 14-20, 21, 23, and 24. Unlit crossings require more awareness by the pedestrian as they are harder for drivers to see and/or expect in darkness.

Exhibit 14-20 Collector \& Local Unsignalized Intersection Crossing 1, 2, 3,4
\begin{tabular}{|l|c|c|c|}
\hline \begin{tabular}{l} 
Prevailing \\
Speed or \\
Speed Limit \\
(mph)
\end{tabular} & \multicolumn{2}{|c|}{ No Median Refuge } & Median Refuge Present \\
\cline { 2 - 3 } & \multicolumn{2}{|c|}{ Total Lanes Crossed } & \begin{tabular}{c} 
Maximum One Through/Turn \\
Lane Crossed per Direction
\end{tabular} \\
\cline { 2 - 3 } & 1 Lane & 2 Lanes & PLTS 15 \\
\hline\(\leq 25\) & PLTS 1 & PLTS 1 & PLTS 1 \\
\hline 30 & PLTS 1 & PLTS 2 & PLTS 2 \\
\hline 35 & PLTS 2 & PLTS 2 & PLTS 3 \\
\hline\(\geq 40\) & PLTS 3 & PLTS 3 & PL \\
\hline
\end{tabular}
\({ }^{1}\) For street being crossed.
\({ }^{2}\) Minimum PLTS 3 when crossing lacks standard ramps.
\({ }^{3}\) Use Exhibit 14-23 or 14-24 for one-way streets, when ADT exceeds 5,000, or total number of lanes exceeds two. \({ }^{4}\) Street may be considered a one-lane road when no centerline is striped and when oncoming vehicles commonly yield to each other.
\({ }^{5}\) Refuge should be at least 10 feet for PLTS 1, otherwise use PLTS 2 for refuges 6 to \(<10\) feet.
Exhibit 14-21 Arterial Unsignalized Intersection Crossing Without a Median Refuge \({ }^{1,2}\)
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline \multirow{2}{*}{\begin{tabular}{l} 
Prevailing Speed \\
or \\
Speed Limit \\
(mph)
\end{tabular}} & \multicolumn{5}{|c|}{ Total Lanes Crossed (Both Directions) \({ }^{\mathbf{3}}\)} \\
\cline { 2 - 7 } & \multicolumn{4}{|c|}{\(\mathbf{2}\) Lanes } \\
\cline { 2 - 7 } & \begin{tabular}{c}
\(<\mathbf{5 , 0 0 0}\) \\
vpd
\end{tabular} & \begin{tabular}{c}
\(\mathbf{5 , 0 0 0}\) \\
\(\mathbf{9 , 0 0 0}\) \\
\(\mathbf{v p d}^{4}\)
\end{tabular} & \begin{tabular}{c}
\(>\mathbf{9 , 0 0 0}\) \\
vpd
\end{tabular} & \begin{tabular}{c}
\(<\mathbf{8 , 0 0 0}\) \\
vpd
\end{tabular} & \begin{tabular}{c}
\(\mathbf{8 , 0 0 0}\) \\
\(\mathbf{1 2 , 0 0 0} \mathbf{~ p d ~}^{4}\)
\end{tabular} & \begin{tabular}{c}
\(>\mathbf{1 2 , 0 0 0}\) \\
vpd
\end{tabular} \\
\hline\(\leq 25\) & PLTS 2 & PLTS 2 & PLTS 3 & PLTS 3 & PLTS 3 & PLTS 4 \\
\hline 30 & PLTS 2 & PLTS 3 & PLTS 3 & PLTS 3 & PLTS 3 & PLTS 4 \\
\hline 35 & PLTS 3 & PLTS 3 & PLTS 4 & PLTS 3 & PLTS 4 & PLTS 4 \\
\hline\(\geq 40\) & PLTS 3 & PLTS 4 & PLTS 4 & PLTS 4 & PLTS 4 & PLTS 4 \\
\hline
\end{tabular}
\({ }^{1}\) For street being crossed.
\({ }^{2}\) Minimum PLTS 3 when crossing lacks standard ramps.
\({ }^{3}\) For one-way streets, use Exhibit 14-10 and 14-24. Use PLTS 4 for crossings of four or more lanes.
\({ }^{4}\) Use these columns when ADT volumes are not available

\section*{Exhibit 14-22 Adjustments for Crosswalk Enhancements}
\begin{tabular}{|l|c|l|c|}
\hline \multicolumn{1}{|c|}{ Treatment } & Deduction & \multicolumn{1}{c|}{ Treatment } & Deduction \\
\hline Markings \(^{1}\) & 0.5 & In-street signs & 1.0 \\
\hline Roadside signage \(^{1}\) & 0.5 & Curb extensions & 0.5 \\
\hline Lighting & 0.5 & Raised crosswalk & 1.0 \\
\hline PAB & 1.0 & \multicolumn{3}{|l|}{} \\
\hline
\end{tabular}
\({ }^{1}\) Not applicable for roadways with pedestrian median refuges as crosswalk markings and roadside signage assumed as part of the basic installation.

Exhibit 14-23 Arterial Unsignalized Intersection Crossing (1 to 2 lanes) with a Median Refuge \({ }^{1,2}\)
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[t]{3}{*}{Prevailing Speed or Speed Limit (mph)} & \multicolumn{4}{|c|}{Maximum Through/Turn Lanes Crossed per Direction} \\
\hline & 1 Lane & \multicolumn{3}{|c|}{2 Lanes} \\
\hline & Any & <5,000 vpd & 5,000-9,000 vpd \(^{4}\) & >9,000 vpd \\
\hline \(\leq 25\) & PLTS \({ }^{3}\) & PLTS \({ }^{3}\) & PLTS 2 & PLTS 2 \\
\hline 30 & PLTS 2 & PLTS 2 & PLTS 2 & PLTS 2 \\
\hline 35 & PLTS 2 & PLTS 2 & PLTS 2 & PLTS 3 \\
\hline \(\geq 40\) & PLTS 3 & PLTS 3 & PLTS 3 & PLTS 4 \\
\hline
\end{tabular}
\({ }^{1}\) For street being crossed.
\({ }^{2}\) Minimum PLTS 3 when crossing lacks standard ramps.
\({ }^{3}\) Refuge should be at least 10 feet for PLTS 1, otherwise use PLTS 2 for refuges 6 to \(<10\) feet.
\({ }^{4}\) Use these columns when ADT volumes are not available.
Exhibit 14-24 Arterial Unsignalized Intersection Crossing (3 or more lanes) with a Median Refuge \({ }^{1,2}\)
\begin{tabular}{|l|c|c|c|c|}
\hline \multirow{2}{*}{\begin{tabular}{l} 
Prevailing Speed \\
o \\
Speed Limit \\
(mph)
\end{tabular}} & \multicolumn{4}{|c|}{\begin{tabular}{c} 
Maximum Through/Turn Lanes Crossed \\
per Direction
\end{tabular}} \\
\cline { 2 - 5 } & \multicolumn{3}{|c|}{ 3 Lanes } & 4+ Lanes \\
\cline { 2 - 5 } & \(<\mathbf{8 , 0 0 0} \mathbf{~ v p d}\) & \(\mathbf{8 , 0 0 0 - 1 2 , 0 0 0}\) vpd \(^{4}\) & \begin{tabular}{c}
\(>\mathbf{1 2 , 0 0 0}\) \\
vpd
\end{tabular} & Any \\
\hline\(\leq 25\) & PLTS 1 \(^{3}\) & PLTS 2 & PLTS 3 & PLTS 4 \\
\hline 30 & PLTS 2 & PLTS 2 & PLTS 3 & PLTS 4 \\
\hline 35 & PLTS 3 & PLTS 3 & PLTS 4 & PLTS 4 \\
\hline\(\geq 40\) & PLTS 4 & PLTS 4 & PLTS 4 & PLTS 4 \\
\hline
\end{tabular}
\({ }^{1}\) For street being crossed.
\({ }^{2}\) Minimum PLTS 3 when crossing lacks standard ramps.
\({ }^{3}\) Refuge should be at least 10 feet for PLTS 1, otherwise use PLTS 2 for refuges 6 to \(<10\) feet.
\({ }^{4}\) Use these columns when ADT volumes are not available.
The PLTS to cross the major street is applied to the minor street in the direction of travel along the route. If the crossing PLTS has a higher stress level than the minor street segment PLTS, the crossing PLTS applies (controls) to that minor street segment.

Signalized crossings usually provide a protected way across the roadway and are typically rated at PLTS 1 (i.e. midblock crossings with regular or HAWK-type signals). The PLTS will be higher in areas if the following are evident:
- Permissive left or right turns. Pedestrians will need to be more wary about the potential for increased conflicts, so PLTS 2 is typically given in these cases.
- Missing basic features such as lighting or countdown pedestrian signal heads will increase the PLTS to PLTS 2.
- Presence of complex elements will increase the PLTS to PLTS 3:
- Multiple or narrow (less than six feet) refuge islands,
- No standard ramps,
- More than six total lanes crossed at once,
- Non-standard geometry (more than four legs, or highly skewed approaches),
- Closed or limited crosswalks available; Free-flow or yield-controlled channelized right turns

If the distance between crossing opportunities (i.e. signalized or a low-stress unsignalized) is greater than approximately 0.10 mile, then the resulting out-ofdirection travel incurred by a pedestrian may be too great. This may deter or impede travel along a segment if the desired route includes a major street crossing.

\subsection*{14.5.10Results}

Mapping the PLTS for a community is a typical result from the analysis and can be easily done using GIS. The map shows the gaps and barriers in the system which can be used to inform stakeholders when creating a list of prioritized projects. The maps can also be included in planning documents and used to help inventory the pedestrian facilities.

\subsection*{14.5.11 Solutions to Decrease PLTS Level}

There are several ways reduce PLTS and reach the chosen target for a roadway. Several publications including the Oregon Bicycle and Pedestrian Design Guide, the ODOT Traffic Manual, and the ODOT Highway Design Manual, includes design considerations for pedestrian facilities. A few examples of actions that can reduce PLTS:
- Installing pedestrian facilities, or expanding facilities where pedestrian routes exist
- Create paved surfaces where there are trails or worn paths are evident
- Improving the condition of the sidewalk, including limiting vertical change and smoothing the surface
- Infilling gaps in sidewalk to create connectivity
- Redesigning roadway to include wider or buffered sidewalks
- Creating a multi-use path on high speed roadway
- Significantly changing the roadway character and reducing speed limit
- Installing additional crossing enhancements at unsignalized crossings (beacons, lighting, curb extensions, etc.), r
- removing barriers to connectivity
- Redesigning buffer to include trees, large vegetation, and/or street furniture
- Land use changes over time to encourage more pedestrian-scale developments

\section*{Example 14-4 Pedestrian Level of Traffic Stress}

The following section shows examples of corridor sections for each PLTS. All of the examples are pedestrian facilities within the Salem city limits. The purpose of the example is to illustrate different PLTSs.
Center Street at High Street


Center Street at High Street is located on a major roadway in downtown Salem. This segment is within the Salem Center Mall District with storefronts along the street. The segment contains a large 12 foot sidewalk with an effective width at least six feet and a solid surface buffer with street trees which leads to PLTS 1 ratings in the sidewalk and buffer type criteria. The total buffering width is just large enough to counteract the effect of the four-lane roadway so the PLTS is 1 . This location is within a central business district so the general land use PLTS is 1. All of the categories are PLTS 1 so the overall PLTS is 1 .
\begin{tabular}{|l|l|}
\hline Street Name & Center St at High St \\
\hline Sidewalk Condition & PLTS 1 \\
\hline Physical Buffer Type & PLTS 1 \\
\hline Total Buffering Width & PLTS 1 \\
\hline General Land Use & PLTS 1 \\
\hline Final PLTS & PLTS 1 \\
\hline
\end{tabular}

If a mid-block crossing of Center Street was to be analyzed, then the functional class of the roadway would need to be obtained. In this case, Center Street is an arterial. This is a one-way four-lane section so ADT is not needed in the methodology. One-way sections need to use the tables for arterial streets with median refuges as the total lanes crossed are all in a single direction. The resulting PLTS would be 4 for a midblock crossing. This compares to the PLTS of 2 for the adjacent signalized intersections with permissive turns.

Chemeketa Street between Capitol Street and \(12{ }^{\text {th }}\) Street

\begin{tabular}{|l|l|l|}
\hline \multicolumn{2}{|l|}{ Street Name } & \begin{tabular}{l} 
Chemeketa St. between \\
Capitol St \& 12 \\
\\
th \\
St
\end{tabular} \\
\hline \multirow{2}{*}{ Sidewalk } & Condition & Good \\
\cline { 2 - 3 } & Width (ft) & 5 \\
\hline \multirow{2}{*}{ Buffer } & Width (ft) & 10 \\
\cline { 2 - 3 } & Buffer Type & Landscaped with trees \\
\hline Bike Lane & Width (ft) & 0 \\
\hline Parking & Width (ft) & 15 \\
\hline Roadway & Number of Lanes & 2 \\
\cline { 2 - 3 } & Posted Speed (mph) & 25 \\
\hline Land Use & Type & Office/Residential \\
\hline Total Buffering Width (ft) & 25 \\
\hline
\end{tabular}

Chemeketa Street serves as a low volume street connecting \(12^{\text {th }}\) Street to parking areas
around the Capitol mall area. The sidewalk condition is rated as good as it is of newer construction and has an actual width of five feet. This makes the facility a PLTS 2 under the sidewalk condition. The physical buffer type is landscaped with trees and the roadway has a 25 mph posted speed which makes the buffer PLTS 1. The total buffering width on this side of the roadway is 25 feet and there are two lanes on the roadway. This leads to the PLTS 1 for the total buffering width category. The general land use on this segment is offices and high density residential so the PLTS is 1 . The sidewalk condition controls so the overall PLTS for this segment is 2 .
\begin{tabular}{|l|l|}
\hline Street Name & \begin{tabular}{l} 
Chemeketa St. between \\
Capitol \& 12 \\
th \\
St
\end{tabular} \\
\hline Sidewalk Condition & PLTS 2 \\
\hline Physical Buffer Type & PLTS 1 \\
\hline Total Buffering Width & PLTS 1 \\
\hline General Land Use & PLTS 1 \\
\hline Final PLTS & PLTS 2 \\
\hline
\end{tabular}

If the adjacent intersection at \(12^{\text {th }}\) and Chemeketa were added to the segment, as would be done if a route was being investigated, the intersection's PLTS would not control over the segment's PLTS 2. This signalized intersection has permissive left turns, but is free of complex elements, so the PLTS is 2, which is equal to the final segment PLTS.

\section*{\(13^{\text {th }}\) Street at Chemeketa Street}

\begin{tabular}{|l|l|l|}
\hline \multicolumn{2}{|l|}{ Street Name } & \(\mathbf{1 3}^{\text {th }}\) St at Chemeketa St \\
\hline \multirow{3}{*}{ Sidewalk } & Condition & Good \\
\cline { 2 - 3 } & Width (ft) & 5 \\
\hline \multirow{3}{*}{ Buffer } & Width (ft) & 4 \\
\cline { 2 - 3 } & Buffer Type & Landscaped with trees \\
\hline Bike Lane & Width (ft) & 0 \\
\hline Parking & Width (ft) & 0 \\
\hline Roadway & Number of Lanes & 2 \\
\cline { 2 - 3 } & Posted Speed (mph) & 25 \\
\hline Land Use & Type & Office/Residential \\
\hline Total Buffering Width (ft) & 4 \\
\hline
\end{tabular}
\(13^{\text {th }}\) Street at Chemeketa Street is located in the transition between downtown Salem and residential areas. With a sidewalk condition of good as it is of newer construction and a width of five feet the sidewalk condition PLTS is rated at 2. The buffer type is trees with a posted speed of 25 MPH which categories the facility at a PLTS 1. The total buffering width category is a PLTS 2. This is because the total buffering width is less than five feet and there are two travel lanes. This is in a mainly residential/office location so the general land use PLTS is 1 . The final PLTS for this facility is PLTS 2.
\begin{tabular}{|l|l|}
\hline Street Name & \(\mathbf{1 3}^{\text {th }}\) St at Chemeketa St \\
\hline Sidewalk Condition & PLTS 2 \\
\hline Physical Buffer Type & PLTS 1 \\
\hline Total Buffering Width & PLTS 2 \\
\hline General Land Use & PLTS 1 \\
\hline Final PLTS & PLTS 2 \\
\hline
\end{tabular}

D Street between Summer Street and Capitol Street (near Parrish Middle School)

\begin{tabular}{|l|l|l|}
\hline \multicolumn{2}{|l|}{ Street Name } & \begin{tabular}{l} 
D St between Summer St \\
\& Capitol St
\end{tabular} \\
\hline \multirow{3}{*}{ Sidewalk } & Condition & Fair \\
\cline { 2 - 3 } & Width (ft) & 5 \\
\hline \multirow{2}{*}{ Buffer } & Width (ft) & 0 \\
\cline { 2 - 3 } & Buffer Type & \(\mathrm{n} / \mathrm{a}\) \\
\hline Bike Lane & Width (ft) & 0 \\
\hline Parking & Width (ft) & 0 \\
\hline Roadway & Number of Lanes & 2 \\
\cline { 2 - 3 } & Posted Speed (mph) & 30 \\
\hline Land Use & Type & Residential \\
\hline Total Buffering Width (ft) & 0 \\
\hline
\end{tabular}

D Street between Summer Street and Capitol Street is located on the edge of downtown Salem and Parrish Middle School in a residential area. The sidewalk is in fair condition. There is no buffer between the sidewalk and the roadway. This, combined with the posted speed of 30 mph , categorizes this facility at a PLTS 3 and is the controlling PLTS.
\begin{tabular}{|l|l|}
\hline Street Name & \begin{tabular}{l} 
D St between \\
Summer \& Capitol St
\end{tabular} \\
\hline Sidewalk Condition & PLTS 2 \\
\hline Physical Buffer Type & PLTS 3 \\
\hline Total Buffering Width & PLTS 2 \\
\hline General Land Use & PLTS 1 \\
\hline Final PLTS & PLTS 3 \\
\hline
\end{tabular}

If a crossing of D Street was to be analyzed, then the following additional information would be gathered:
- Functional Class \(=\) Collector
- \(\mathrm{ADT}=1600\) vehicles per day
- Median refuge \(=\) Not present

Since D Street is a collector, ADT is not needed other than as a check to see that it is under the \(5000 \mathrm{veh} /\) day limit (typically it can be assumed that collectors and lower are under the limit without needing an ADT count to verify). Since there is no pedestrian median refuge, both lanes are crossed at once on this 30 mph roadway which is a PLTS 1.

\section*{Chemeketa Street at \(14^{\text {th }}\) Street}

\begin{tabular}{|l|l|l|}
\hline \multicolumn{2}{|l|}{ Street Name } & Chemeketa St at \(^{\mathbf{1 4}} \mathbf{4}^{\text {th }} \mathbf{S t}\) \\
\hline \multirow{2}{*}{ Sidewalk } & Condition & Very Poor \\
\cline { 2 - 3 } & Width (ft) & 5 \\
\hline \multirow{3}{*}{ Buffer } & Width (ft) & 8 \\
\cline { 2 - 3 } & Buffer Type & Landscaped with trees \\
\hline Bike Lane & Width (ft) & 0 \\
\hline Parking & Width (ft) & 7 \\
\hline \multirow{3}{*}{ Roadway } & Number of Lanes & 2 \\
\cline { 2 - 3 } & \begin{tabular}{l} 
Posted Speed \\
(mph)
\end{tabular} & 25 \\
\hline Land Use & Type & Residential \\
\hline Total Buffering Width (ft) & 15 \\
\hline
\end{tabular}

Chemeketa Street at \(14^{\text {th }}\) Street is an old residential street with poor sidewalk condition. The sidewalk condition is very poor with several areas of substantial uplift and large cracks. This leads to the PLTS rating of 4 for sidewalk condition as it will make it impassable for disabled pedestrians and even difficult in spots for non-impaired individuals. The posted speed is 25 mph and the buffer is a treed planter zone, so the buffer type is rated as PLTS 1. The general land use is residential so this is a PLTS 1. The total buffer width is 15 feet and the number of travel lanes is 2 for the roadway and because of these attributes the total buffer distance PLTS is 2. The overall PLTS for this
segment is PLTS 4.
\begin{tabular}{|l|l|}
\hline Street Name & Chemeketa St at \(\mathbf{1 4}^{\text {th }}\) St \\
\hline Sidewalk Condition & PLTS 4 \\
\hline Physical Buffer Type & PLTS 1 \\
\hline Total Buffering Width & PLTS 2 \\
\hline General Land Use & PLTS 1 \\
\hline Final PLTS & PLTS 4 \\
\hline
\end{tabular}

\section*{12th Street between Marion Street and Center Street}

\begin{tabular}{|l|l|l|}
\hline \multicolumn{2}{|l|}{ Street Name } & \(\mathbf{1 2}^{\text {th }}\) St at Center St \\
\hline \multirow{3}{*}{ Sidewalk } & Condition & Poor \\
\cline { 2 - 3 } & Width (ft) & 3 \\
\hline \multirow{3}{*}{ Buffer } & Width (ft) & 0 \\
\cline { 2 - 3 } & Buffer Type & \(\mathrm{N} / \mathrm{A}\) \\
\hline Bike Lane & Width (ft) & 0 \\
\hline Parking & Width (ft) & 0 \\
\hline Roadway & Number of Lanes & 4 \\
\cline { 2 - 3 } & Posted Speed (mph) & 30 \\
\hline Land Use & Type & Mixed employment \\
\hline Total Buffering Width (ft) & 0 \\
\hline
\end{tabular}

The \(12^{\text {th }}\) Street corridor is a moderate speed and volume facility in a mixed commercial/office area. The sidewalks along the west side of the roadway are narrow at three feet and in poor condition. This leads to a PLTS of 4 for sidewalk condition. There is no buffer and speed of 30 mph on the roadway which leads to a PLTS 3 for the buffer type. The total buffer distance is zero feet and the total number of travel lanes is four, which is a PLTS 4 in the total buffer distance category. The general land use is a mix between commercial uses, offices and large employee parking lots, so this would be
generally PLTS 2. With one or more categories at PLTS 4, the segment of roadway is a PLTS 4.
\begin{tabular}{|l|l|}
\hline Street Name & \(\mathbf{1 2}^{\text {th }}\) St at Center St \\
\hline Sidewalk Condition & PLTS 4 \\
\hline Physical Buffer Type & PLTS 3 \\
\hline Total Buffering Width & PLTS 4 \\
\hline General Land Use & PLTS 2 \\
\hline Final PLTS & PLTS 4 \\
\hline
\end{tabular}

If the adjacent intersections at \(12^{\text {th }} /\) Center and \(12^{\text {th }} /\) Marion were added to the segment as would be done if a route was being investigated, neither intersection's PLTS would control the overall segment. Both signalized intersections have permissive turns, but are free of complex elements and would have a PLTS of 2, but these are still lower than the PLTS 4 for the segment.

\subsection*{14.6 Multimodal Level of Service}

The Level of Service (LOS)-based methods presented in this section are intended for use when a detailed analysis is desired such as in facility plans or projects when a no-build alternative is compared to one or more build alternatives. These methods are not meant for defining overall needs or making prioritization decisions, so those sorts of applications should use the Qualitative Multimodal Assessment or Level of Traffic Stress methodologies instead (see sections 14.2 to 14.4).

The Auto mode is not included as analysis at this level of detail would typically be done at intersections with applications such as Synchro, Highway Capacity Software, or Vistro. Application of the methodologies is via Excel-based calculators available on the Transportation Development - Planning Technical Tools webpage.

\subsection*{14.6.1 Re-estimated Pedestrian \& Bicycle Methodology Application}

The pedestrian and bicycle procedures in this section are re-estimated versions of the link-level full Highway Capacity Manual (HCM) 2010 Multimodal Level of Service (MMLOS) methodologies. The use of probabilistic methodologies with the original research data allowed the number of variables to be significantly reduced while maintaining or improving accuracy of the results. These simplified procedures will still produce a Level of Service (LOS) letter grade, will indicate the current "state of the system, and can be done in a fraction of the time that the full MMLOS methodology requires".

\section*{Appendix}

\section*{Concept Design: Plan Layout and Typical Section}

\title{
New Orleans East Industrial Canal Crossing \\ Safety and Access Planning
}

\section*{Stage 0 Feasibility Study}

June 2022




\section*{Appendix J}

\section*{Concept Design: Cost Estimate}

\title{
New Orleans East Industrial Canal Crossing \\ Safety and Access Planning
}

\section*{Stage 0 Feasibility Study}

June 2022


Conceptual Cost Estimate
\begin{tabular}{|c|c|c|c|c|}
\hline ITEM DESCRIPTION & UNIT QTY & UNIT & UNIT PRICE & EXTENDED PRICE \\
\hline \multicolumn{5}{|l|}{Construction} \\
\hline Mobilization & 1 & LS & & \$133,881.05 \\
\hline Construction Layout & 1 & LS & & \$33,470.26 \\
\hline \multicolumn{5}{|l|}{Removal of Existing Markings} \\
\hline White-Solid Line (4" width) & 0.612 & MILE & \$6,500.00 & \$3,978.00 \\
\hline White-Broken Line (4" width) & 0.612 & MILE & \$6,500.00 & \$3,978.00 \\
\hline Yellow-Solid Line (4" width) & 0.612 & MILE & \$6,500.00 & \$3,978.00 \\
\hline Removal of Existing Metal Bridge Handrail & 2,080.000 & LNFT & \$6.70 & \$13,936.00 \\
\hline Ped/Bike Rail & 3,231.000 & LNFT & \$210.00 & \$678,510.00 \\
\hline Concrete Roadway Barrier (Standard) & 3,061 & LNFT & \$100.00 & \$306,100.00 \\
\hline Steel Roadway Barrier (Pinned to Deck) & 170 & LNFT & \$350.00 & \$59,500.00 \\
\hline \multicolumn{5}{|l|}{Plastic Pavement Striping (Roadway)} \\
\hline White-Solid Line (4" width) & 3,231 & LNFT & \$1.40 & \$4,523.40 \\
\hline Yellow-Solid Line (4" width) & 3,231 & LNFT & \$1.40 & \$4,523.40 \\
\hline Reflectorized Raised Pavement Markers & 162 & EACH & \$8.65 & \$1,401.30 \\
\hline Thin Steel Surface Plate (Lift Section) & 8,730 & LB & \$5.00 & \$43,650.00 \\
\hline Plastic Pavement Legends \& Symbols (Shared Lane) & 29 & EACH & \$415.00 & \$12,035.00 \\
\hline Bike Path Signage & 1 & LS & & \$4,000.00 \\
\hline Flashing Crosswalk Warning Light System & 5 & EACH & \$3,500.00 & \$17,500.00 \\
\hline Crosswalk Pavement Markings & 1 & LS & & \$2,000.00 \\
\hline Handicapped Curb Ramps (Type 1) & 6 & EACH & \$2,000.00 & \$12,000.00 \\
\hline Concrete Side Path (6" Thick) & 2,915 & SQYD & \$80.00 & \$233,200.00 \\
\hline Small Gate Boom & 1 & EACH & \$2,000.00 & \$2,000.00 \\
\hline \multirow[t]{3}{*}{Small Gate Boom-Mechanical \& Electrical} & 1 & LS & & \$25,000.00 \\
\hline & & & & \\
\hline & & & Construction Subtotal & \$1,599,164.41 \\
\hline \multicolumn{5}{|l|}{Right of Way and Relocation} \\
\hline \multirow[t]{3}{*}{None Expected} & 0.00 & & \$0.00 & \$0.00 \\
\hline & & & & \\
\hline & & & Right of Way Subtotal & \$0.00 \\
\hline \multicolumn{5}{|l|}{Utility Relocation} \\
\hline \multirow[t]{6}{*}{None Expected} & 0.00 & & \$0.00 & \$0.00 \\
\hline & & & & \\
\hline & & & Utility Relocation Subtotal & \$0.00 \\
\hline & & & SUBTOTAL: & \$1,599,164.41 \\
\hline & & & 30\% CONTINGENCY: & \$479,749.32 \\
\hline & & & TOTAL COST: & \$2,078,913.73 \\
\hline
\end{tabular}

Prepared by Burk-Kleinpeter, Inc., 2021
Estimate does not include Engineering, Construction Administration, Geotechnical Investigations, Survey or Material Testing.

\section*{Appendix K}

\section*{Stage 0 Checklists}

New Orleans East Industrial Canal Crossing
Safety and Access Planning

\section*{Stage 0 Feasibility Study}

June 2022


Route Leon C. Simon Drive
C.S. \(\qquad\) Begin Log mile 0.577 \(\qquad\)
Parish: Orleans

ADJACENT LAND USE: Colleges and Universities (EC), Maritime Industrial (MI), Neighborhood Open Space (OS-N), Open Space (OS-R). Pedestrian and bicycle and pedestrian improvements are compatible with adjacent land use and zoning.

Any property owned by a Native American Tribe?
(Y or N or Unknown) If so, which Tribe? No.
Any property enrolled into the Wetland Reserve Program?
(Y or N or Unknown) If so, give the location No.

Are there any other known wetlands in the area?
( Y or N ) If so, give the location Bridge crosses over estuarine and marine deepwater (E1UBL5). Pedestrian and bicycle improvements on the surface roadway of the bridge will not impact wetlands.

Community Elements: Is the project impacting or adjacent to any (if the answer is yes, list names and locations):
(Y or N) Cemeteries No.
( Y or N ) Churches No.
(Y or N) Schools No.
(Y or N) Public Facilities (i.e., fire station, library, etc.) No.
(Y or N) Community water well/supply _No.
Section 4(f) issue: Is the project impacting or adjacent to any (if the answer is yes, list names and locations):
( Y or N ) Public recreation areas _No.
(Y or N) Public parks _ No.
( Y or N ) Wildlife Refuges No.
(Y or N) Historic Sites No.
Is the project impacting, or adjacent to, a property listed on the National Register of Historic Places? ( Y or N ) Is the project within a historic district or a national landmark district? (Y or N ) If the answer is yes to either question, list names and locations below:

No.
Do you know of any threatened or endangered species in the area? ( Y or N )
If so, list species and location. Endangered - Manatee, West Indian. Threatened - Gulf sturgeon in Lake Pontchartrain. Pedestrian and bicycle improvements on the surface roadway do not impact Threatened or Endangered species or habitat.

Does the project impact or adjacent to a stream protected by the Louisiana Scenic Rivers Act? (Y or N) If yes, name the stream. No.

Are there any Significant Trees as defined by EDSM I.1.1.21 within proposed ROW? (Y or N) If so, where? No.

What year was the existing bridge built? 1975.
Are any waterways impacted by the project considered navigable? (Y or N) If unknown, state so, list the waterways: There are no impacts to the Inner Harbor Navigation Canal or Lake Pontchartrain. Pedestrian and bicycle improvements on the surface roadway do not impact navigability of the IHNC.

\section*{Environmental Checklist}

Hazardous Material: Have you checked the following DEQ and EPA databases for potential problems? (If the answer is yes, list names and locations.)
( Y or N ) Leaking Underground Storage Tanks No.
( Y or N ) CERCLIS _No.
( Y or N ) ERNS _No.
(Y or N) Enforcement and Compliance History __ No.
Underground Storage Tanks (UST): Are there any Gasoline Stations or other facilities that may have UST on or adjacent to the project? (Y or N) No. The New Orleans Lakefront Airport is adjacent to the bridge and has jet fueling facilities within approximately 150 ft . There are above ground storage tanks for jet fuel present with a retainer system to contain any leaks or spills. The planned pedestrian and bicycle improvements do not impact the facilities and the project does not require land acquisition.
If so, give the name and location: New Orleans Lakefront Airport, 6001 Stars \& Stripes Blvd., Suite 219 New Orleans, LA 70126.

Any chemical plants, refineries or landfills adjacent to the project? ( Y or N ) Any large manufacturing facilities adjacent to the project? (Y or N) Dry Cleaners? (Y or N) If yes to any, give names and locations: No.

Oil/Gas wells: Have you checked DNR database for registered oil and gas wells? ( Y or N ) List the type and location of wells being impacted by the project. \(\qquad\) Yes. There are no wells impacted by the project.
Are there any possible residential or commercial relocations/displacements? (Y or N) How many? \(\qquad\)
Do you know of any sensitive community or cultural issues related to the project? (Y or N ) If so, explain \(\qquad\) No.

Is the project area population minority or low income? (Y or N) Yes
What type of detour/closures could be used on the job? Work should be able to proceed without closing the roadway entirely, but if necessary, detour would involve crossing Danziger Bridge (Chef Menteur Hwy) via Downman Rd and Press Dr

Did you notice anything of environmental concern during your site/windshield survey of the area? If so, explain below.
\(\qquad\)
Karen Parsons

\section*{Point of Contact}

504-483-8511
Phone Number
6-30-2022

\section*{Date}

\section*{STAGE 0}

\section*{Environmental Checklist}

\section*{General Explanation:}

To adequately consider projects in Stage 0 , some consideration must be given to the human and natural environment which will be impacted by the project. The Environmental Checklist was designed knowing that some environmental issues may surface later in the process. This checklist was designed to obtain basic information, which is readily accessible by reviewing public databases and by visiting the site. It is recognized that some information may be more accessible than other information. Some items on the checklist may be more important than others depending on the type of project. It is recommended that the individual completing the checklist do their best to answer the questions accurately. Feel free to comment or write any explanatory comments at the end of the checklist.

\section*{The Databases:}

To assist in gathering public information, the previous sheet includes web addresses for some of the databases that need to be consulted to complete the checklist. As of February 2011, these addresses were accurate.

Note that you will not have access to the location of any threatened or endangered (T\&E) species. The web address lists only the threatened or endangered species in Louisiana by Parish. It will generally describe their habitat and other information. If you know of any species in the project area, please state so, but you will not be able to confirm it yourself. If you feel this may be an issue, please contact the Environmental Section. We have biologist on staff who can confirm the presence of a species.

\section*{Why is this information important?}

Land Use? Indicator of biological issues such as T\&E species or wetlands.
Tribal Land Ownership? Tells us whether coordination with tribal nations will be required.
WRP properties? Farmland that is converted back into wetlands. The Federal government has a permanent easement which cannot be expropriated by the State. Program is operated through the Natural Resources Conservation Service (formerly the Soil Conservation Service).

Community Elements? DOTD would like to limit adverse impacts to communities. Also, public facilities may be costly to relocate.
Section \(4(\mathrm{f})\) issues? USDOT agencies are required by law to avoid certain properties, unless a prudent or feasible alternative is not available.

Historic Properties? Tells us if we have a Section 106 issue on the project. (Section 106 of the National Historic Preservation Act) See http://www.achp.gov/work106.html for more details.

Scenic Streams? Scenic streams require a permit and may require restricted construction activities.
Significant Trees? Need coordination and can be important to community.
Age of Bridge? Section 106 may apply. Bridges over 50 years old are evaluated to determine if they are eligible for the National Register of Historic Places.

Navigability? If navigable, will require an assessment of present and future navigation needs and US Coast Guard permit.
Hazardous Material? Don't want to purchase property if contaminated. Also, a safety issue for construction workers if right-of-way is contaminated.

Oil and Gas Wells? Expensive if project hits a well.
Relocations? Important to community. Real Estate costs can be substantial depending on location of project. Can result in organized opposition to a project.

Sensitive Issues? Identification of sensitive issues early greatly assists project team in designing public involvement plan.
Minority/Low Income Populations? Executive Order requires Federal Agencies to identify and address disproportionately high and adverse human health and environmental effects on minority or low income populations. (Often referred to as Environmental Justice)

Detours? The detour route may have as many or more impacts. Should be looked at with project. May be unacceptable to the public.

STAGE 0

\section*{Environmental Checklist}

Louisiana Governor's Office of Indian Affairs:
https://gov.louisiana.gov/page/indian-affairs
Louisiana Wetlands Reserve Program:
https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/
Community Water Well/Supply
https://www.sonris.com/
Louisiana Department of Wildlife and Fisheries - Wildlife Refuges
https://www.wlf.louisiana.gov/page/state-wildlife-refuge
http://www.fws.gov/refuges/profiles/ByState.cfm?state=LA
https://www.fws.gov/refuge/Delta/map.html
U.S. Fish \& Wildlife Service - National Wetlands Inventory:
http://www.fws.gov/wetlands/
Louisiana State Historic Sites:
https://www.louisianatravel.com/state-historic-sites
National Register of Historic Places (Louisiana):
https://www.crt.state.la.us/cultural-development/historic-preservation/nationalregister/database/index

National Historic Landmarks Program:
https://www.nps.gov/orgs/1582/index.htm
Threatened and Endangered Species Databases:
https://www.fws.gov/refuges/databases/tes.html
Louisiana Scenic Rivers:
https://www.wlf.louisiana.gov/page/scenic-rivers
Significant Tree Policy (EDSM I.1.1.21)
http://wwwsp.dotd.la.gov/Inside LaDOTD/Divisions/Engineering/EDSM/EDSM/EDSM I 11121 .pdf (Live Oak, Red Oak, White Oak, Magnolia or Cypress that is considered aesthetically important, 18" or greater in diameter at breast height (4'-6" above the ground), and having a form that separates it from the surrounding vegetation or is considered historic.)

CERCLIS (Superfund Sites):
https://cumulis.epa.gov/supercpad/cursites/srchsites.cfm
http://www.epa.gov/enviro/html/cerclis/cerclis_query.html
ERNS - Emergency Response Notification System - Database of oil and hazardous substances spill reports:
https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=\&dirEntryId=2874\#:~:text=Description\% 3A,discharges\%20and\%20hazardous\%20substances\%20releases.\&text=ERNS\%20provides\%20the \%20most\%20comprehensive,releases\%20in\%20the \%20United\%20States

Enforcement \& Compliance History (ECHO)
https://echo.epa.gov/

\section*{STAGE 0}

\section*{Environmental Checklist}

DEQ - Underground Storage Tank Program Information:
http://deq.louisiana.gov/page/underground-storage-tank
Leaking Underground Storage Tanks:
https://www.epa.gov/ust/leaking-underground-storage-tanks-corrective-action-resources
SONRIS - Oil and Gas Well Information \& Water Well Information
http://sonris.com/default.htm
Environmental Justice (minority \& low income)
https://www.fhwa.dot.gov/environment/environmental_justice/overview/index.cfm
Demographics
http://www.census.gov/
FHWA's Environmental Website
https://www.fhwa.dot.gov/environment/index.cfm
Additional Databases Checked
https://enviroatlas.epa.gov/enviroatlas/interactivemap/

Other Comments:

\section*{STAGE 0 \\ Preliminary Scope and Budget Checklist}

\section*{A. Project Background}

District \(\qquad\) Parish Orleans

Route LA1264 (Leon C. Simon Drive) Control Section
Begin Log Mile 0.577 End Log Mile 0.009
Project Category (Safety, Capacity, etc.): Safety and Access
Date Study Completed: June 30, 2022
Describe the existing facility:
Functional classification: Minor Arterial Number and width of lanes: \(4,12 \mathrm{ft}\). lanes
Shoulder width and type: 2 ft . inside and outside shoulders Mode: Highway
Access control: Median and on/off-ramps \(\qquad\) ADT: 9,433 Posted Speed: 35 mph Describe any existing pedestrian facilities (ADA compliance should be considered for all improvements that include pedestrian facilities): None
Describe the adjacent land use: Colleges and Universities (EC), Maritime Industrial (MI), Neighborhood Open Space (OS-N), Open Space (OS-R).
Who is the sponsor of the study? New Orleans Regional Planning Commission \& City of New Orleans
List study team members: Burk-Kleinpeter, Inc. and ITS Regional
Will this project be adding miles to the state highway system (new alignment, new facility)? If yes, has a transfer of ownership been initiated with the appropriate entity? No
Are there recent, current or near future planning studies or projects in the vicinity? Yes
If yes, please describe the relationship of this project to those studies/projects. A TIP project (H.011969) has identified the Seabrook (Sen. Ted Hickey) Bridge for a bridge rehab improvement with NHPP funding of \(\$ 21,950,000\) ( \(\$ 19,160,000\) of which is Federal).
Provide a brief chronology of these planning study activities: This study was completed in June 2022 with the above TIP project slated for 2025.

\section*{B. Purpose and Need}

State the Purpose (reason for proposing the project) and Need (problem or issue)/Corridor Vision and a brief scope of the project. Also, identify any additional goals and objectives for the project.
The purpose of this proposed project is to provide a safe crossing over the IHNC for people walking and bicycling. This project is necessary because there is no adequate crossing currently available, and this is inhibiting access to services and opportunities on either side of the canal. The IHNC is a particular barrier to residents surrounding the canal, who are more likely to live in low-income households or households without a car. Furthermore, the IHNC completely separates New Orleans East from the remainder of the city. The project would connect New Orleans to the citywide bicycle network in the short-term, and in the long-term, it would help fulfill the recommendations of the New Orleans Bikeway Blueprint, which includes crossings on three of the four bridges in this study's purview.

\section*{C. Agency Coordination}

Provide a brief synopsis of coordination with federal, tribal, state and local environmental, regulatory and resource agencies.
Coordination consisted of a Project Management Committee of relevant stakeholders that reviewed and guided existing conditions analysis and Stage 0 checklist development for project area to determine potential impacts

What transportation agencies were included in the agency coordination effort?
New Orleans Regional Planning Commission (NORPC), LADOTD, New Orleans Regional Transit Authority (RTA), Port of New Orleans, and City of New Orleans.

Describe the level of participation of other agencies and how the coordination effort was implemented.
A Project Management Committee (PMC) was formed to guide and review Stage 0 Feasibility Study. The stakeholders discussed the pros and cons of the existing bridge facility alternatives and selected the most feasible bridge to explore what a potential crossing could look like and what improvements are required to the bridge and its approaches. Thee PMC met a total of 3 times during project development and records of meetings were kept (summary of discussions, sign-in list and presentations). This information has been included in Appendix A of the project report.

What steps will need to be taken with each agency during NEPA scoping?
The project includes items which can be completed in the existing right-of-way with no impacts to adjacent properties identified. The anticipated NEPA Class of Action is a Categorical Exclusion (CE). The owner/agency, LADOTD, will need to prepare CE documentation.

\section*{D. Public Coordination}

Provide a synopsis of the coordination effort with the public and stakeholders; include specific timelines, meeting details, agendas, sign-in sheets, etc. (if applicable).
The Project Management Committee included representatives of NORPC, City of New Orleans (Mayor’s Office of Transportation, DPW, Community Outreach, and Roadwork NOLA), LADOTD, RTA, Bike Easy, and Port of New Orleans. Records of these meetings are provided as an appendix within the Stage 0 report. Additionally, briefing presentations/calls were provided to the offices of City Council Districts D \& E as they surround the project area.

\section*{E. Range of Alternatives - Evaluation and Screening}

Give a description of the project concept for each alternative studied.
What are the major design features of the proposed facility (attach aerial photo with concept layout, if applicable).
See Stage 0 Feasibility Study report.
Will design exceptions be required? Yes. To be determined in final design.
What impact would this project have on freight movements? The project has the potential to remove a lane or lanes of automotive travel on Seabrook Bridge; there is a low percentage of truck traffic on the roadway. The drawbridge opens for marine traffic on the IHNC.

Does this project cross or is it near a railroad crossing? The project is adjacent to an existing Class 1 railroad but does not cross or enter the railroad ROW.

DOTD's "Complete Streets" policy should be taken into consideration. Per the policy, any exception for not accommodating bicyclists, pedestrians and transit users will require the approval of the DOTD chief engineer. For exceptions on Federal-aid highway projects, concurrence from FHWA must also be obtained. In addition any exception in an urbanized area, concurrence from the MPO must also be obtained.
- Describe how the project will implement the policy or include a brief explanation of why implementing the policy would not be feasible.
- The project is an implementation of Complete Streets policy with the purpose to accommodate people walking and bicycling where there are currently no accommodations to access or cross Seabrook Bridge and very little on any bridge crossing the IHNC to New Orleans East.

How are Context Sensitive Solutions being incorporated into the project? The bridge was constructed in 1975, prior to the Americans with Disabilities Act (ADA) and prior to the establishment of the City of New Orleans New Orleans Bikeway Blueprint. The bridge does not have adequate pedestrian and bicycle access. The PMC consisted of a diverse group of individuals and representatives that specifically looked at safe access and connections across all modes. Additional CSS will occur in the project development process.

Was the DOTD's "Access Management" policy taken into consideration? If so, describe how. Not applicable Were any safety analyses performed? If so describe results.

Yes, a review of accidents on the bridge and its approaches has been prepared and included in the Stage 0 Feasibility Study Report. It covered 2016-2020 and documented a 49 total crashes on or near Seabrook Bridge, including two involving non-motorized users, one of which was fatal.

Are there any abnormal crash locations or overrepresented crashes within the project limits? Unknown

What future traffic analyses are anticipated? _ A traffic study in accordance with EDSM V1.1.1.2
Intersection Control Evaluation is required prior to final design.
Will fiber optics be required? If so, are there existing lines to tie into? _ No.
Are there any future ITS/traffic considerations? _ Unknown
What is the required Transportation Management Plan (TMP) level as defined by EDSM No. VI.1.1.8? TMP Level 1. No analysis is required.
Please attach documentation required for Stage 0 for this level TMP.
Was Construction Transportation Management/Property Access taken into consideration? Not applicable.
Were alternative construction methods considered to mitigate work zone impacts? Will be considered in final design.

Describe screening criteria used to compare alternatives and from what agency the criteria were defined.
The four existing bridge alternatives were screened based on their structural characteristics, characteristics of the roadways they carry (such as number of lanes, ADT, and speeds), and characteristics of the surrounding neighborhoods, including land use, demographics, and potential transportation connections, particularly for people walking, bicycling, or taking transit.

Give an explanation for any alternative that was eliminated based on the screening criteria.
The only bridge facility alternative eliminated in this preliminary screening was the I-10 High Rise Bridge due to the prohibition of pedestrian or bicycle use.

Which alternatives should be brought forward into NEPA and why? The I-10 High Rise Bridge alternative was determined unfeasible as detailed above while three (Seabrook, Danziger, and Almonaster) were deemed feasible facilities. The PMC recommended to proceed with Seabrook to explore a potential conceptual design at this time as the most feasible crossing alternative for several reasons, including but not limited to the fact that Almonaster's owner (Port of New Orleans) is already engaging in bridge rehabilitation plans that accommodate people walking and biking. The RTA is undergoing a Bus Rapid Transit (BRT) study for a project that would do the same on Danziger and has made a commitment to include accommodations for walking and biking.

Did the public, stakeholders and agencies have an opportunity to comment during the alternative screening process? The PMC had the opportunity to make comments on the screening and refinement of the alternatives and inform the public based on their participation in and knowledge of the project.
Describe any unresolved issues with the public, stakeholders and/or agencies.
Stakeholders expressed a need to fully engage the public via community meetings and outreach in future stages of the project development process.

\section*{F. Planning Assumptions and Analytical Methods}

What is the forecast year used in the study? Not applicable. The study only collected existing traffic counts.
What method was used for forecasting traffic volumes? _ Not applicable.
Are the planning assumptions and the corridor vision/purpose and need statement consistent with the long range transportation plan? Yes.

What future year policy and/or data assumptions were used in the transportation planning process as they are related to land use, economic development, transportation costs and network expansion?

A \(30 \%\) contingency was included in the cost estimate.

\section*{G. Potential Environmental Impacts}

See the Stage 0 Environmental Checklist included in the appendix to the report.

\section*{H. Cost Estimate}

Provide a cost estimate for each feasible alternative:
- Engineering Design:
\(\$ 200,000\)
- Additional Traffic Analyses:
- Environmental Processing:
- Mitigation:
- R/W Acquisition: (C of A if applicable)
- Utility Relocations:
- Construction (including const. traffic management):
TOTAL PROJECT COST
I. Expected Funding Source(s) (Highway Priority Program, CMAQ, Urban Systems, Fed/State earmarks, etc.) Federal/State.

ATTACH ANY ADDITIONAL DOCUMENTATION
Disposition (circle one): (1) Advance to Stage 1 (2) Hold for Reconsideration (3) Shelve

Route LA 1264 (Leon C. Simon Drive)
Parish: Orleans
C.S. \(\qquad\) Begin Log mile 0.577
End Log mile 0.009
ADJACENT LAND USE: Colleges and Universities (EC), Maritime Industrial (MI), Neighborhood Open Space (OS-N) , Open Space (OS-R). Pedestrian and bicycle and pedestrian improvements are compatible with adjacent land use and zoning.

Any property owned by a Native American Tribe?
( Y or N or Unknown) If so, which Tribe? No.
Any property enrolled into the Wetland Reserve Program?
( Y or N or Unknown) If so, give the location No.

Are there any other known wetlands in the area?
( Y or N ) If so, give the location Bridge crosses over estuarine and marine deepwater (E1UBL5). Pedestrian and bicycle improvements on the surface roadway of the bridge will not impact wetlands.

Community Elements: Is the project impacting or adjacent to any (if the answer is yes, list names and locations):
( Y or N ) Cemeteries No.
(Y or N) Churches No.
(Y or N) Schools No.
( Y or N ) Public Facilities (i.e., fire station, library, etc.) No.
(Y or N) Community water well/supply No.
Section 4(f) issue: Is the project impacting or adjacent to any (if the answer is yes, list names and locations):
( Y or N ) Public recreation areas No.
(Y or N) Public parks No.
( Y or N) Wildlife Refuges No.
( Y or N ) Historic Sites No.
Is the project impacting, or adjacent to, a property listed on the National Register of Historic Places? ( Y or N ) Is the project within a historic district or a national landmark district? ( Y or N ) If the answer is yes to either question, list names and locations below:

No.
Do you know of any threatened or endangered species in the area? (Y or N )
If so, list species and location. Endangered - Manatee, West Indian. Threatened - Gulf sturgeon in Lake Pontchartrain. Pedestrian and bicycle improvements on the surface roadway do not impact Threatened or Endangered species or habitat.

Does the project impact or adjacent to a stream protected by the Louisiana Scenic Rivers Act? (Y or N) If yes, name the stream. No.

Are there any Significant Trees as defined by EDSM I.1.1.21 within proposed ROW? (Y or N) If so, where? No.

What year was the existing bridge built? 1975.
Are any waterways impacted by the project considered navigable? (Y or N) If unknown, state so, list the waterways: There are no impacts to the Inner Harbor Navigation Canal or Lake Pontchartrain. Pedestrian and bicycle improvements on the surface roadway do not impact navigability of the IHNC.

\section*{Environmental Checklist}

Hazardous Material: Have you checked the following DEQ and EPA databases for potential problems? (If the answer is yes, list names and locations.)
( Y or N ) Leaking Underground Storage Tanks No.
( Y or N ) CERCLIS No.
( Y or N ) ERNS No.
(Y or N) Enforcement and Compliance History No.
Underground Storage Tanks (UST): Are there any Gasoline Stations or other facilities that may have UST on or adjacent to the project? (Y or N) No. The New Orleans Lakefront Airport is adjacent to the bridge and has jet fueling facilities within approximately 150 ft . There are above ground storage tanks for jet fuel present with a retainer system to contain any leaks or spills. The planned pedestrian and bicycle improvements do not impact the airport facilities and the project does not require land acquisition.
If so, give the name and location: New Orleans Lakefront Airport, 6001 Stars \& Stripes Blvd., Suite 219 New Orleans, LA 70126.

Any chemical plants, refineries or landfills adjacent to the project? ( Y or N ) Any large manufacturing facilities adjacent to the project? (Y or N) Dry Cleaners? (Y or N) If yes to any, give names and locations: No.

Oil/Gas wells: Have you checked DNR database for registered oil and gas wells? (Y or N) List the type and location of wells being impacted by the project. \(\qquad\) Yes. There are no wells impacted by the project.
Are there any possible residential or commercial relocations/displacements? (Y or N) How many? \(\qquad\)
Do you know of any sensitive community or cultural issues related to the project? (Y or N ) If so, explain No.

Is the project area population minority or low income? (Y or N) Yes
What type of detour/closures could be used on the job? Work should be able to proceed without closing the roadway entirely, but if necessary, detour would involve crossing Danziger Bridge (Chef Menteur Hwy) via Downman Rd and Press Dr

Did you notice anything of environmental concern during your site/windshield survey of the area? If so, explain below.
\(\qquad\)
No.

Karen Parsons

\section*{Point of Contact}

504-483-8511

\section*{Phone Number}

6-30-2022

\section*{Date}

\section*{STAGE 0 \\ Environmental Checklist}

\section*{General Explanation:}

To adequately consider projects in Stage 0 , some consideration must be given to the human and natural environment which will be impacted by the project. The Environmental Checklist was designed knowing that some environmental issues may surface later in the process. This checklist was designed to obtain basic information, which is readily accessible by reviewing public databases and by visiting the site. It is recognized that some information may be more accessible than other information. Some items on the checklist may be more important than others depending on the type of project. It is recommended that the individual completing the checklist do their best to answer the questions accurately. Feel free to comment or write any explanatory comments at the end of the checklist.

\section*{The Databases:}

To assist in gathering public information, the previous sheet includes web addresses for some of the databases that need to be consulted to complete the checklist. As of February 2011, these addresses were accurate.

Note that you will not have access to the location of any threatened or endangered (T\&E) species. The web address lists only the threatened or endangered species in Louisiana by Parish. It will generally describe their habitat and other information. If you know of any species in the project area, please state so, but you will not be able to confirm it yourself. If you feel this may be an issue, please contact the Environmental Section. We have biologist on staff who can confirm the presence of a species.

\section*{Why is this information important?}

Land Use? Indicator of biological issues such as T\&E species or wetlands.
Tribal Land Ownership? Tells us whether coordination with tribal nations will be required.
WRP properties? Farmland that is converted back into wetlands. The Federal government has a permanent easement which cannot be expropriated by the State. Program is operated through the Natural Resources Conservation Service (formerly the Soil Conservation Service).

Community Elements? DOTD would like to limit adverse impacts to communities. Also, public facilities may be costly to relocate.
Section 4(f) issues? USDOT agencies are required by law to avoid certain properties, unless a prudent or feasible alternative is not available.

Historic Properties? Tells us if we have a Section 106 issue on the project. (Section 106 of the National Historic Preservation Act) See http://www.achp.gov/work106.html for more details.

Scenic Streams? Scenic streams require a permit and may require restricted construction activities.
Significant Trees? Need coordination and can be important to community.
Age of Bridge? Section 106 may apply. Bridges over 50 years old are evaluated to determine if they are eligible for the National Register of Historic Places.

Navigability? If navigable, will require an assessment of present and future navigation needs and US Coast Guard permit.
Hazardous Material? Don't want to purchase property if contaminated. Also, a safety issue for construction workers if right-of-way is contaminated.

Oil and Gas Wells? Expensive if project hits a well.
Relocations? Important to community. Real Estate costs can be substantial depending on location of project. Can result in organized opposition to a project.

Sensitive Issues? Identification of sensitive issues early greatly assists project team in designing public involvement plan.
Minority/Low Income Populations? Executive Order requires Federal Agencies to identify and address disproportionately high and adverse human health and environmental effects on minority or low income populations. (Often referred to as Environmental Justice)

Detours? The detour route may have as many or more impacts. Should be looked at with project. May be unacceptable to the public.

STAGE 0

\section*{Environmental Checklist}

Louisiana Governor's Office of Indian Affairs:
https://gov.louisiana.gov/page/indian-affairs
Louisiana Wetlands Reserve Program:
https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/
Community Water Well/Supply
https://www.sonris.com/
Louisiana Department of Wildlife and Fisheries - Wildlife Refuges
https://www.wlf.louisiana.gov/page/state-wildlife-refuge
http://www.fws.gov/refuges/profiles/ByState.cfm?state=LA
https://www.fws.gov/refuge/Delta/map.html
U.S. Fish \& Wildlife Service - National Wetlands Inventory:
http://www.fws.gov/wetlands/
Louisiana State Historic Sites:
https://www.louisianatravel.com/state-historic-sites
National Register of Historic Places (Louisiana):
https://www.crt.state.la.us/cultural-development/historic-preservation/nationalregister/database/index

National Historic Landmarks Program:
https://www.nps.gov/orgs/1582/index.htm
Threatened and Endangered Species Databases:
https://www.fws.gov/refuges/databases/tes.html
Louisiana Scenic Rivers:
https://www.wlf.louisiana.gov/page/scenic-rivers
Significant Tree Policy (EDSM I.1.1.21)
http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/EDSM/EDSM/EDSM_I_1_1_21.pdf (Live Oak, Red Oak, White Oak, Magnolia or Cypress that is considered aesthetically important, 18" or greater in diameter at breast height ( 4 '-6" above the ground), and having a form that separates it from the surrounding vegetation or is considered historic.)

CERCLIS (Superfund Sites):
https://cumulis.epa.gov/supercpad/cursites/srchsites.cfm
http://www.epa.gov/enviro/html/cerclis/cerclis_query.html
ERNS - Emergency Response Notification System - Database of oil and hazardous substances spill reports:
https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=\&dirEntryId=2874\#:~:text=Description\%
3A,discharges \% 20and \% 20hazardous\% 20substances\% 20releases.\&text=ERNS \% 20provides\% 20the
\%20most\%20comprehensive,releases \% 20in \% 20the\% 20United\% 20States
Enforcement \& Compliance History (ECHO)
https://echo.epa.gov/

STAGE 0

\section*{Environmental Checklist}

DEQ - Underground Storage Tank Program Information:
http://deq.louisiana.gov/page/underground-storage-tank
Leaking Underground Storage Tanks:
https://www.epa.gov/ust/leaking-underground-storage-tanks-corrective-action-resources
SONRIS - Oil and Gas Well Information \& Water Well Information
http://sonris.com/default.htm
Environmental Justice (minority \& low income)
https://www.fhwa.dot.gov/environment/environmental_justice/overview/index.cfm
Demographics
http://www.census.gov/
FHWA's Environmental Website
https://www.fhwa.dot.gov/environment/index.cfm
Additional Databases Checked
https://enviroatlas.epa.gov/enviroatlas/interactivemap/
\(\qquad\)

Other Comments:
\(\qquad\)
\(\qquad\)
\(\qquad\)```


[^0]:    Source: Google Maps

[^1]:    Meetings
    Work in Progress
    Field Work / Data Collection (weekday Mardi Gras parades start Friday 2/18, MLK 1/17)
    Client Review

[^2]:    ${ }^{1}$ Furth (2017). Level of Traffic Stress. Available at: www.northeastern.edu/peter.furth/criteria-for-level-of-traffic-stress

[^3]:    ${ }^{2}$ This does not include the following facilities that only have signage: shared lanes, neighborhood bikeways, bicycle boulevards, and bus/bike lanes.

[^4]:    ${ }^{3}$ Built Environment Influences on Healthy Transportation Choices: Bicycling Versus Driving. M Winters, M Brauer, E Setton, K Teschke - Journal of Urban Health, 2010.
    ${ }^{4}$ Travel and the Built Environment: a Meta-Analysis. R Ewing, R Cervero - Journal of the American Planning Association, 2010.
    ${ }^{5}$ Predicting Transit Ridership at the Stop Level: The Role of Service and Urban Form. J Dill, M Schlossberg, L Ma, C Meyer - 92nd Annual Meeting of the Transportation Research Board, 2013

[^5]:    ${ }^{6}$ Note that Figure 16 (Density of Households Below the Poverty Line) displays similar information to Figure 12 (Density of Population Below Poverty Line). However, the maps look slightly different. This is because Figure 12 is based on a calculation of actual population (inferred from average household size) and is at the larger Census Block Group level, whereas Figure 16 is actual households and is shown at the smaller Census Block level.

[^6]:    $0 \quad 0.51 \mathrm{mi}$
    $\bigcirc 1$

[^7]:    $0 \quad 0.51 \mathrm{mi}$
    $\bigcirc 1$

[^8]:    ${ }^{7}$ Furth (2017). Level of Traffic Stress. Available at: www.northeastern.edu/peter.furth/criteria-for-level-of-traffic-stress

[^9]:     disadvantaged populations.

[^10]:    ${ }^{9}$ Z-scores are based on standard deviations and help to highlight census block groups that are significantly above or below the mean. This helps to identify areas with higher concentrations of disadvantaged populations. The calculation is $\mathrm{Z}=$ (measurement - measurement average) / measurement standard deviation

[^11]:    ${ }^{10}$ Built Environment Influences on Healthy Transportation Choices: Bicycling Versus Driving. M Winters, M Brauer, E Setton, K Teschke - Journal of Urban Health, 2010.
    ${ }^{11}$ Travel and the built environment: a meta-analysis. R Ewing, R Cervero - Journal of the American planning association, 2010.

[^12]:    ${ }^{12}$ Predicting Transit Ridership at the Stop Level: The Role of Service and Urban Form. J Dill, M Schlossberg, L Ma, C Meyer - 92nd Annual Meeting of the Transportation Research Board, 2013

[^13]:    Inspection
    Inspection Date (90): August 2019
    Designated Inspection Frequency (91): 24
    Fracture Critical Details (92A): Y24
    Underwater Inspection (92B): Y60
    Other Special Inspection (92C): N
    Fracture Critical Detail Date (93A): August 2019
    Underwater Inspection Date (93B): September 2019
    Other Special Inspection Date (93C):

[^14]:    Inspection
    Inspection Date (90): January 2018
    Designated Inspection Frequency (91): 24
    Fracture Critical Details (92A): Y24
    Underwater Inspection (92B): Y60
    Other Special Inspection (92C): N
    Fracture Critical Detail Date (93A): January 2018
    Underwater Inspection Date (93B): November 2017
    Other Special Inspection Date (93C):

[^15]:    Inspection
    Inspection Date (90): August 2019
    Designated Inspection Frequency (91): 12
    Fracture Critical Details (92A): N Not needed
    Underwater Inspection (92B): Y60
    Other Special Inspection (92C): N
    Fracture Critical Detail Date (93A):
    Underwater Inspection Date (93B): November 2017
    Other Special Inspection Date (93C);

[^16]:    ${ }^{1}$ The Latent Demand and BNA analyses use census blocks while the BEI analysis uses block groups. For this reason, the catchment areas and population numbers are slightly different.

    Burk-Kleinpeter, Inc
    Project No. NO.21.033

[^17]:    

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[^21]:    | Toul Comus | 8spersped | 10 MrH pae | \%sinpae | \# spectese=-35) | \%spedes | Classes 12 | Classs 2 |
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    | ${ }^{15}$ | ${ }_{4}^{4.0}$ |  | ${ }_{\text {c/ }}^{168}$ | 11 | ( | , | 15 |
    | 25 | 4.0 | ${ }^{24,0.34}$ | 4.0 | 12 | $48.0 \%$ | ${ }_{4}^{4}$ | 16 |
    | ${ }_{\substack{48 \\ 88}}$ | ${ }_{4}^{4.0}$ | $\underset{\substack{291039 \\ 306040}}{\text { and }}$ |  | ${ }_{22}^{24}$ | Sill | , | - ${ }_{30}^{26}$ |
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    | ${ }_{176}^{129}$ | ${ }_{420}^{44.0}$ | ${ }_{\substack{2617036 \\ 27037}}^{27005}$ | 335 483 | ${ }_{5}$ | ${ }_{\substack{3 \\ 3.9 .9 \% \%}}^{\substack{\text { a }}}$ | 15 <br> 39 | ${ }_{101}^{101}$ |
    | ${ }_{216}^{216}$ | $\underset{\substack{420 \\ 370}}{ }$ | ${ }_{\substack{27 \\ 270.037 \\ 25035}}$ | ${ }_{\substack{51.4 \\ 586}}^{515}$ | (75 |  | ${ }_{52}^{40}$ | - |
    | 224 | ${ }_{\substack{3 \\ 360}}$ |  | ${ }_{429}$ | 40 | 11.35 | 7 | ${ }_{138}$ |
    | ${ }^{27}$ | 360 <br> 330 <br> 3 | $\underbrace{}_{\substack{211031 \\ 6010}}$ | $\underset{\substack{39.4 \\ 502}}{ }$ |  |  | ${ }^{126}$ | ¢ ${ }_{6}^{98}$ |
    | ${ }_{24}^{24}$ | 30, | ${ }_{6} 61016$ | ${ }_{4}^{54}$ | 17 | 6,9\% | ${ }_{130}$ | ${ }_{5}$ |
    |  | cis | ${ }_{\substack{191029 \\ 27037}}^{\text {a }}$ | ( ${ }_{529}^{429}$ | ${ }_{65}^{52}$ | $\substack{21.10 \% \\ 31.00_{0}}$ | 78 4 4 | ${ }_{128}^{132}$ |
    | ${ }^{176}$ | 440 | 28.088 | 489 | ${ }^{69}$ | 392\% | 23 | 12 |
    | ${ }_{123}^{120}$ | ${ }_{420}^{430}$ |  | ${ }_{626}^{538}$ | ${ }_{51}$ | 5i.1. | ${ }_{12}$ | ${ }_{98}$ |
    | ${ }_{61}$ | $\underset{4}{43.0}$ | $\underset{\substack{271.37 \\ 34044}}{2}$ | $\underset{\substack{553 \\ 459}}{58}$ | 40 30 |  | ${ }_{11}^{14}$ | ${ }_{40}^{63}$ |
    | ${ }_{311}$ | 40.0 | ${ }_{27}$ | ${ }_{409}^{489}$ | ${ }_{884}$ | 27, | ${ }_{861}$ | ${ }_{1703}$ |

    

[^22]:    

[^23]:    

[^24]:    
    

