Appendix 4.1.3-B2

Navigation Discipline Report (2015)

Memo

Date:	January 21, 2015
To:	All Aboard Florida
From:	Keith Quan, Senior Operations Analyst, Amec Foster Wheeler
Project No.:	6063120212
Re:	Rail/Marine Traffic Simulation Using Summer Boat Traffic Data for the AAF Passenger Rail Project from Orlando to Miami, Florida

1.0 Introduction

1.1 Scope

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) developed a discrete-event simulation model, using Rockwell Software's Arena Professional 14, of scheduled train arrivals at a bridge crossing and their corresponding effect on marine traffic. The model includes the following unit operations:

- Scheduled movements of freight and passenger trains along the Florida East Coast Railway (FECR) ROW and their interaction with the operable bascule bridges at river crossings. The data for scheduled train movements was provided by AAF/HNTB.
- Marine vessel traffic arrivals at the operable bascule bridges in both directions along the rivers at each of the bridge locations. Data for volumes and frequencies of marine vessel traffic was provided by AAF/HNTB.
- Bascule operable bridges included in the model were:
  - Loxahatchee River Bridge in Jupiter/Tequesta
  - St. Lucie River Bridge in Stuart
  - New River Bridge in Fort Lauderdale

The arrival of rail traffic at each bridge requires that the bridge be deployed into the level position, which prevents marine traffic from passing. The arrival of marine traffic requires that the bridge be deployed into the up position, which prevents rail traffic from passing.

The model was used to estimate the effect of train movements on the FEC line to marine traffic at each of the operable bascule bridge locations. Three scenarios were examined utilizing the following operational/system conditions:

- Case 1: 2013 Freight Traffic with 2013 Infrastructure
- Case 2: 2016 Freight Traffic with 2016 Infrastructure
- Case 3: 2016 Freight and Passenger Traffic with 2016 Infrastructure

Correspondence:
Amec Foster Wheeler
404 SW 140th Terrace
Newberry, Florida
USA 32669-3000
Tel + 1 352 332 3318
Fax + 1 352 333 6622

The model was originally developed and used in spring 2014 to support the Navigation Discipline Report[1]. The modeling done at the time used boat count data from winter 2014 (since this was the most recently available data at the time).

Boat count data from summer 2014 for two of the crossings (St. Lucie and Loxahatchee) has since been obtained. Since summer boat counts were higher than those in winter, the model was re-configured with the new data and used to produce new results.

The simulation modeling results using the winter boat count data are detailed in the Navigation Discipline Report included with the Draft Environmental Impact Statement[2]. This report describes the simulation modeling results using the summer data only and is an update to the results provided in the Navigation Discipline Report.

2.0 Inputs and Assumptions

Model-specific notes and assumptions are provided in Appendix A. Key assumptions are described in the sections below.

2.1 Rail Traffic

Rail traffic arrivals for each of the three bridges were provided by AAF/HNTB. These were generated using RTC (Rail Traffic Controller), which is a rail traffic simulation tool developed by Berkeley Simulation Software. Specific to the three movable bridges, RTC was used to determine the times that trains would occupy the span over the waterway. This includes time that the bridge is in the process of closing before a train's arrival. Additionally, the bridge must be closed several minutes prior to the train's arrival to allow the signaling system to permit the efficient passage of the train.

The train occupancy data from the RTC model was used as the basis for generating train arrivals at the bridges in the discrete-event model. Freight train arrivals were grouped by day-of-week and time-of-day. For example, Table 2-1 below shows the expected arrival times of Train 202 at New River Bridge for one week.

Table 2-1. Sample of Expected Freight Train Arrivals by Day-of-Week

Freight Train Schedule for Model (C1_2013F_NoBuild)								
Train		Mon	Tue	Wed	Thu	Fri	Sat	Sun
202	Intermodal North (RTC Data)	14:40	13:31	14:19	13:31	14:58	14:40	15:23

In examining the train arrival data above, we see some variability in the arrival times of the train from day to day. This is due to variation in departure times and delays en route and is part of the RTC model. To maintain some variability in the discrete-event model, the discrete-event model generates train arrivals at the bridge using the arrival times produced by the RTC model with a variance of ±10 minutes to maintain some variability in the train arrivals at the bridges. For example, on Mondays, the train will arrive at the bridge at 14:40 ± 10 minutes, etc.

[1] Amec Foster Wheeler (formerly AMEC Environment & Infrastructure, Inc.), *Navigation Discipline Report for the AAF Passenger Rail Project from Orlando to Miami, Florida*, Amec Foster Wheeler Project No.: 6063120212, July 2014.
[2] All Aboard Florida Operations LLC, *All Aboard Florida Intercity Passenger Rail Project, Draft Environmental Impact Statement and Section 4(f) Evaluation*, September 2014.

Passenger train arrivals provided by the RTC model are at regular intervals, approximately once per hour in each direction. The RTC data show no variability in passenger train arrival times. Thus, a minimal variance of ±2 minutes is applied to the passenger train arrivals.

Trains traveling in opposite directions arriving at bridges concurrently are assigned delay times to account for one of the trains slowing down to allow the oncoming train to pass. Delays are as shown in Table 2-2.

Table 2-2. Delays for Trains Stopping for Oncoming Traffic (minutes)

	New River		Loxahatchee		St. Lucie	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
2013 Freight	n/a	n/a	20[3]	6	8	9
2016 Freight	n/a	n/a	20	6	8	9
2016 Passenger	n/a	n/a	n/a	n/a	1.5	1.5

n/a = not applicable because bridge is double-tracked

More model-specific assumptions are provided in Appendix A.

2.2 Marine Traffic

2.2.1 Traffic Counts

Data for marine traffic was provided for the three crossings over the following periods:

- WINTER
  - Loxahatchee: December 31, 2013 – January 20, 2014
  - St. Lucie: January 3–16, 2014.
  - New River: January 14–26, 2014.
- SUMMER
  - Loxahatchee: May 14, 2014 – August 12, 2014
  - St. Lucie: June 12 – August 31, 2014.
  - New River: No data collected (winter data is extrapolated to account for summer volumes).

Traffic counts were sorted by direction of travel.

Summer boat count data was not available for the New River Bridge. To approximate summer traffic at New River, the winter boat counts were escalated based on the increases observed at the other two bridges. Table 2-3 shows the boat count increase by day-of-week at Loxahatchee and St. Lucie.

Table 2-3. Boat Count Volume Increases (Winter to Summer 2014)

Crossing	Weekdays (Mon-Fri)	Saturdays	Sundays
Loxahatchee	**58%**	**151%**	**84%**
St. Lucie	**28%**	**62%**	**64%**

The increases at Loxahatchee were greater than at St. Lucie. For this reason, the New River winter boat counts were escalated using the figures from Loxahatchee, i.e., weekday counts were increased by 58%, Saturdays by 151% and Sundays by 84%. This is the more-conservative approach.

[3] This delay of 20 minutes is long enough that the bridge can be raised after the oncoming train has cleared the crossing for approximately 13 minutes before being lowered again.

2.2.2 Navigational Characteristics

2.2.2.1 Observed Behaviors

The following observations were made on the characteristics of boat traffic from video footage taken at New River and St. Lucie crossings:

- Boats take between 1.5 to 7 seconds to cross under the bridge, depending on size and speed.
- Most small boats take approximately 2 seconds to cross.
- Medium boats like the water taxi take about 3.5 seconds to cross.
- Larger boats like the Jungle Queen (commercial ferry) and sun cruises will take on average 5 to 6 seconds to cross.
- Two small boats can cross at the same time in the same or opposite direction.
- Medium and small boats were observed crossing at the same time heading opposite directions (as shown in **Figure 2-4**).
- A small boat will cross the bridge just behind a large boat, reducing the amount of time it to cross by about 1 second.
- When a large boat like the Jungle Queen crosses, no other boat can cross the opposite direction at the same time, so they will queue at the side. Once the Jungle Queen crosses it takes them a couple of seconds to cross.
- Many small boats can cross when the bridge is down.
- Small boats will cross when the bridge is going down and will cross before the bridge goes up completely.

Figure 2-4. Boats crossing simultaneously in opposite directions (St. Lucie Bridge)

2.2.2.2 Gap Time (time between boats crossing in the same direction)

An analysis of video-taped footage taken at each of the three crossings on peak boat traffic days was done to determine the minimum gap time between boats crossing in each direction.

Using video segments showing boats crossing, the duration of each video segment was divided by the number of boats counted in that segment. From this data, the gap time between boats was calculated assuming they proceeded uniformly through the crossing.

For example, if the video started at 2:30:15 and ended at 2:32:45 (150 seconds) and there were 8 boats observed in that period, the gap time was calculated to be (150 seconds) / (7 gaps) = 21.4 seconds between boats. (Note that if boats proceeded non-uniformly, the minimum gap would be less than this.)

Using this method, the minimum gap between boats at each bridge was between 3 and 28 seconds as shown in Table 2-4. Short gap durations between boats in both directions indicates boats crossing simultaneously (double-wide through the opening).

Table 2-4. Minimum Gap Times Between Boats by Direction

Crossing	Date of Observation	Eastbound	Westbound	Both Directions
St. Lucie	January 11, 2014	5 seconds	28 seconds	3 seconds
Loxahatchee	January 12, 2014	28 seconds	16 seconds	10 seconds
New River	January 26, 2014	28 seconds	28 seconds	20 seconds

The model uses a conservative value of 40 seconds as the minimum gap time between all boats approaching the crossing.

2.2.2.3 Passing

As described in Section 2.2.2.1, small and medium-sized boats have been observed travelling through the crossings simultaneously in opposite directions – only larger boats, such as commercial vessels, require one-way passage. For this reason, the model is run using two scenarios – with and without boats passing – to test the sensitivity of the system to this rule.

2.3 Infrastructure and Operational Changes (with Build)

Infrastructure changes associated with the proposed Project will include extending the double-tracked mainline over the Loxahatchee river bridge and extending double track to both the north and south approaches of the St. Lucie bridge, which will remain single-tracked. The result will be reduced delays for trains that operate today, which must slow or stop to yield to oncoming trains. The assumptions used in the model for trains encountering oncoming traffic are delays of 10 minutes for the existing case (2013 No Build) and 5 minutes for the future case (2016 Build).

The bridge at New River will continue to be double-tracked .

Currently, the bridges are controlled from a central dispatching facility in Jacksonville. On average, the controller deploys the bridge approximately 12 minutes before the arrival of a train and may or may not raise the bridge after the train has cleared it, depending on the expected arrival of the next train. With future operational improvements and procedural changes, this bridge will be deployed 7 minutes prior to the arrival of a train and it will be raised if the next train is not expected to arrive within the next seven minutes. This is the operating scenario that was used in the simulation model.

3.0 Model Results

3.1 Scenarios Examined

The simulation model was used to estimate the effect of train movements on the FEC line to marine traffic at each of the trestle bridge locations. Four scenarios were examined:

- Case 1: 2013 Freight Traffic with 2013 Infrastructure (No Build)
- Case 2a: 2016 Freight Traffic with 2013 Infrastructure (No Build)
- Case 2b: 2016 Freight Traffic with 2016 Infrastructure (Build)
- Case 3: 2016 Freight and Passenger Traffic with 2016 Infrastructure (Build)
- Case 3_P80: 2016 Freight and Passenger Traffic with 2016 Infrastructure (Build) on a Single Peak Volume Day

Case 2b was added to separate the effect of adding the 2016 Infrastructure and the 2016 Passenger Traffic.

Case 3_P80 was added to examine the results of a single day with an 80% level of service[4] in isolation.

Following is a summary of the model results presenting the impact to marine vessel traffic. Detailed model results are provided in Appendix B.

3.2 New River Bridge

Table 3-1 shows the model results for marine traffic wait times at New River crossing for the four cases.

Table 3-1. Model Results for New River Crossing (40 second gap, No Passing)

Case No Train Traffic Infrastructure		1 2013 F No-Build	2a 2016 F No-Build	2b 2016 F Build	3 2016 F+P Build	3_P80 2016 F+P Build
Boat Wait Times (all days)						
Boat Arrivals	(#/day)	varies	varies	varies	varies	656
% Boats With Non-Zero Wait Time	(%)	65%	71%	68%	78%	92%
Avg. Wait Time (all)	(min)	21.1	28.6	22.8	49.0	73.5
Non- Zero Wait Time						
Avg. Non-Zero Wait Time	(min)	32.4	40.1	33.6	62.4	80.1
P50	(min)	21.3	16.6	12.8	20.0	73.1
P80	(min)	62.7	84.0	69.4	142.4	144.1
P90	(min)	84.5	110.4	92.5	181.1	167.4
P99	(min)	120.8	153.2	132.7	239.3	218.2
Max. Non-Zero Wait Time	(min)	159.1	217.5	172.2	301.5	319.3

The results show the following when comparing Case 1 (2013 Freight with No Build) to Case 3 (2016 Freight and Passenger with Build) for boat traffic:

- The proportion of marine traffic being delayed at the crossing increases from 65% to 78% (% of boats with non-zero wait time).
- The average wait time of *all* boats (those that wait and those that don't) increases from 21 minutes to 49 minutes (average wait time all).
- The average wait time of boats that are delayed increases from 32 minutes to 62 minutes.

[4] The 80% level of service is the 80th percentile volume of boat arrivals, i.e., the P80 boat count exceeds the boat count observed on 80% of the days in the data set. This could be described as "a typical high volume day".

These numbers are not realistic because the base assumption is that no boats can pass through the crossing while travelling in opposite directions, which is not what was observed. A second set of runs was performed that allowed boats to pass while heading in opposite directions, which is the navigational behavior that was observed on the video footage at each crossing. The results are shown in Table 3-2.

Table 3-2. Model Results for New River Crossing (40 second gap, Passing Allowed)

Case No Train Traffic Infrastructure		1 2013 F No-Build	2a 2016 F No-Build	2b 2016 F Build	3 2016 F+P Build	3_P80 2016 F+P Build
Boat Wait Times (all days)						
Boat Arrivals	(#/day)	varies	varies	varies	varies	656
% Boats With Non-Zero Wait Time	(%)	42%	51%	46%	63%	75%
Avg. Wait Time (all)	(min)	1.7	3.5	1.8	4.6	6.6
Non- Zero Wait Time						
Avg. Non-Zero Wait Time	(min)	4.1	6.8	3.8	7.3	8.8
P50	(min)	0.9	3.8	1.4	6.0	7.1
P80	(min)	9.2	14.0	8.3	11.7	14.2
P90	(min)	13.9	16.9	10.9	15.9	19.9
P99	(min)	19.0	28.1	16.2	32.2	36.3
Max. Non-Zero Wait Time	(min)	31.1	52.4	35.8	58.8	63.3

The results in Table 3-2 show that the assumption that boats are allowed to pass reduces the wait times of boats significantly from the values shown in Table 3-1, which did not allow passing. Since observations at the bridge crossings show that all but only the largest boats can and will pass each other going through the crossings, the model results with passing are more representative than those with no passing allowed.

However, the model uses a conservative value of 40 seconds as the minimum gap time between all boats approaching the crossing and the observed time is almost half that time. If these gap times were used as an assumption in the model the wait times for the boating community would be further reduced and would show less overall impact.

The “P” values (P50, P80, etc.) in the tables are the cumulative probability values of the data set. The P50 value for wait time is the length of time that exceeds 50% of the wait times of all boats, the P80 value is the value that exceeds 80% of the wait times of all boats, etc. For example, if the P80 wait time of all boats was 11.7 minutes, this means that 80% of boats waited 11.7 minutes or less, and 20% waited longer than 11.7 minutes.

The maximum non-zero wait time was the longest wait experienced by any boat (also called the P100 value).

The Case 3_P80 results show the wait times for a typical high volume day. As described above, the results with and without passing differ greatly. If we look at the results with passing, we see that the average wait time for boats that wait is 8.8 minutes, with the P90 value indicating that 90% of all boats that wait do so for 19.9 minutes or less.

Table 3-3 shows the results for New River Bridge for winter boat counts, and summer boat counts with and without passing. This shows the incremental change resulting from the use of summer traffic data and from assuming that boats cannot pass.

Table 3-3. New River - Comparison of Results (Winter, Summer, With and Without Passing)

Case No		Winter, w/ Passing		Summer, w/ Passing		Summer, No Passing	
		1	3	1	3	1	3
Train Traffic		2013 F	2016 F+P	2013 F	2016 F+P	2013 F	2016 F+P
Infrastructure		No-Build	Build	No-Build	Build	No-Build	Build
Boat Wait Times (all days)							
Boat Arrivals	(#/day)	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	14%	36%	42%	63%	65%	78%
Avg. Wait Time (all)	(min)	0.8	2.2	1.7	4.6	21.1	49.0
Non- Zero Wait Time							
Avg. Non-Zero Wait Time	(min)	5.9	6.3	4.1	7.3	32.4	62.4
P50	(min)	3.8	5.6	0.9	6.0	21.3	20.0
P80	(min)	12.2	10.1	9.2	11.7	62.7	142.4
P90	(min)	15.0	12.2	13.9	15.9	84.5	181.1
P99	(min)	18.2	23.1	19.0	32.2	120.8	239.3
Max. Non-Zero Wait Time	(min)	32.6	41.6	31.1	58.8	159.1	301.5

The model output shows that the use of summer boat count data increases boat wait times compared to the winter data. In Case 3, the number of boats that wait increase from 36% to 63%. The average wait time of all boats increases from 2.2 minutes to 4.6 minutes. The P90 level for wait times increases from 12.2 minutes to 15.9 minutes.

With no passing allowed, the wait times increase. However, a system with no boats passing is not representative of observed conditions.

3.3 Loxahatchee Bridge

Table 3-4 shows the model results for marine traffic wait times at Loxahatchee crossing for the four cases.

Table 3-4. Model Results for Loxahatchee Crossing (40 second gap, No Passing)

Case No		1	2a	2b	3	3_P80
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P
Infrastructure		No-Build	No-Build	Build	Build	Build
Boat Wait Times (all days)						
Boat Arrivals	(#/day)	varies	varies	varies	varies	513
% Boats With Non-Zero Wait Time	(%)	47%	53%	49%	75%	87%
Avg. Wait Time (all)	(min)	1.6	3.2	1.7	18.9	25.4
Non- Zero Wait Time						
Avg. Non-Zero Wait Time	(min)	3.4	6.0	3.4	25.1	29.3
P50	(min)	0.9	1.9	1.1	12.8	21.3
P80	(min)	5.5	12.3	6.6	46.2	50.8
P90	(min)	12.4	16.5	10.4	66.4	70.1
P99	(min)	19.7	33.0	20.5	112.6	111.9
Max. Non-Zero Wait Time	(min)	35.6	56.2	38.5	169.7	167.8

The results show the following when comparing Case 1 (2013 Freight with No Build) to Case 3 (2016 Freight and Passenger with Build) for all boat traffic:

- The proportion of marine traffic being delayed at the crossing increases from 47% to 75% (% of boats with non-zero wait time).
- The average wait time of *all* boats (those that wait and those that don't) increases from 1.6 minutes to 18.9 minutes (average wait time all).
- The average wait time of boats that are delayed increases from 3.4 minutes to 25.1 minutes.

As with the New River results, these wait times are artificially significant because the base assumption is that no boats can pass through the crossing while travelling in opposite directions. The more realistic results where boats are allowed to pass while heading in opposite directions are shown in Table 3-5.

Table 3-5. Model Results for Loxahatchee Crossing (40 second gap, Passing Allowed)

Case No Train Traffic Infrastructure		1 2013 F No-Build	2a 2016 F No-Build	2b 2016 F Build	3 2016 F+P Build	3_P80 2016 F+P Build
Boat Wait Times (all days)						
Boat Arrivals	(#/day)	varies	varies	varies	varies	513
% Boats With Non-Zero Wait Time	(%)	28%	34%	29%	58%	66%
Avg. Wait Time (all)	(min)	1.0	1.9	0.9	3.3	3.6
Non- Zero Wait Time						
Avg. Non-Zero Wait Time	(min)	3.6	5.5	3.1	5.6	5.5
P50	(min)	0.6	1.4	0.7	5.0	5.0
P80	(min)	8.0	12.0	6.9	8.8	8.9
P90	(min)	13.0	15.4	9.9	10.9	10.9
P99	(min)	18.3	26.4	17.6	21.4	20.2
Max. Non-Zero Wait Time	(min)	35.6	48.4	26.9	69.2	67.8

With passing allowed, the wait times for boats in Case 3 average 5.6 minutes, with the P90 value at 10.9 minutes (of boats that wait, 90% wait less than 10.9 minutes).

Again, the model uses a conservative value of 40 seconds as the minimum gap time between all boats approaching the crossing and the observed time is almost half that time. If these gap times were used as an assumption in the model, the wait times for the boating community would be further reduced and would show less overall impact.

Table 3-6 shows the incremental change resulting from the use of summer traffic data and from assuming that boats cannot pass.

Table 3-6. Loxahatchee - Comparison of Results (Winter, Summer, With and Without Passing)

Case No Train Traffic Infrastructure		Winter, w/ Passing 1 2013 F No-Build	 3 2016 F+P Build	Summer, w/ Passing 1 2013 F No-Build	 3 2016 F+P Build	Summer, No Passing 1 2013 F No-Build	 3 2016 F+P Build
Boat Wait Times (all days)							
Boat Arrivals	(#/day)	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	7%	39%	28%	58%	47%	75%
Avg. Wait Time (all)	(min)	0.6	2.2	1.0	3.3	1.6	18.9
Non- Zero Wait Time							
Avg. Non-Zero Wait Time	(min)	8.3	5.7	3.6	5.6	3.4	25.1
P50	(min)	8.2	5.3	0.6	5.0	0.9	12.8
P80	(min)	13.8	8.5	8.0	8.8	5.5	46.2
P90	(min)	15.9	9.8	13.0	10.9	12.4	66.4
P99	(min)	18.1	20.2	18.3	21.4	19.7	112.6
Max. Non-Zero Wait Time	(min)	19.1	36.8	35.6	69.2	35.6	169.7

The model output shows that the use of summer boat count data increases boat wait times compared to the winter data. In Case 3, the number of boats that wait increase from 39% to 58%.

The average wait time of all boats increases from 2.2 minutes to 3.3 minutes. The P90 level for wait times actually increases from 9.8 minutes to 10.9 minutes.

With no passing allowed, the wait times increase. However, a system with no boats passing is not representative of observed conditions.

3.4 St. Lucie Bridge

Table 3-7 shows the model results for marine traffic wait times at St. Lucie crossing for the four cases.

Table 3-7. Model Results for St. Lucie Crossing (40 second gap, No Passing)

Case No Train Traffic Infrastructure		1 2013 F No-Build	2a 2016 F No-Build	2b 2016 F Build	3 2016 F+P Build	3_P80 2016 F+P Build
Boat Wait Times (all days)						
Boat Arrivals	(#/day)	varies	varies	varies	varies	441
% Boats With Non-Zero Wait Time	(%)	41%	48%	44%	74%	86%
Avg. Wait Time (all)	(min)	1.2	3.2	1.8	13.1	15.4
Non- Zero Wait Time						
Avg. Non-Zero Wait Time	(min)	3.0	6.6	4.0	17.6	17.9
P50	(min)	0.7	1.9	1.1	12.4	15.3
P80	(min)	4.2	14.0	8.5	27.9	29.0
P90	(min)	11.7	18.1	12.1	40.3	37.1
P99	(min)	19.4	35.3	22.2	83.5	61.1
Max. Non-Zero Wait Time	(min)	46.9	66.8	41.0	167.6	101.9

The results show the following when comparing Case 1 (2013 Freight with No Build) to Case 3 (2016 Freight and Passenger with Build) for recreational and commercial boat traffic:

- The proportion of marine traffic being delayed at the crossing increases from 41% to 74% (% of boats with non-zero wait time).
- The average wait time of *all* boats (those that wait and those that don't) increases from 1.2 minutes to 13.1 minutes (average wait time all).
- The average wait time of boats that are delayed increases from 3.0 minutes to 17.6 minutes.

As with both the New River and Loxahatchee River results, these wait times are artificially significant because the base assumption is that no boats can pass through the crossing while travelling in opposite directions. The more realistic results where boats are allowed to pass while heading in opposite directions are shown in

Table 3-8.

Table 3-8. Model Results for St. Lucie Crossing (40 second gap, Passing Allowed)

Case No Train Traffic Infrastructure		1 2013 F No-Build	2a 2016 F No-Build	2b 2016 F Build	3 2016 F+P Build	3_P80 2016 F+P Build
Boat Wait Times (all days)						
Boat Arrivals	(#/day)	varies	varies	varies	varies	441
% Boats With Non-Zero Wait Time	(%)	24%	32%	28%	59%	66%
Avg. Wait Time (all)	(min)	0.9	2.2	1.2	5.1	5.9
Non- Zero Wait Time						
Avg. Non-Zero Wait Time	(min)	3.8	6.9	4.2	8.6	8.9
P50	(min)	0.6	3.3	1.0	7.1	7.5
P80	(min)	8.7	14.0	8.9	14.1	14.8
P90	(min)	13.9	17.6	12.0	19.1	19.5
P99	(min)	19.3	33.1	22.2	31.4	32.6
Max. Non-Zero Wait Time	(min)	46.9	65.5	41.0	78.3	76.0

With passing allowed, the wait times for boats in Case 3 average 8.6 minutes, with the P90 value at 19.1 minutes (of boats that wait, 90% wait less than 19.1 minutes).

Again, the model uses a conservative value of 40 seconds as the minimum gap time between all boats approaching the crossing and the observed time is almost half that time. If these gap times were used as an assumption in the model, the wait times for the boating community would be further reduced and would show less overall impact.

Table 3-9 shows the incremental change resulting from the use of summer traffic data and from assuming that boats cannot pass.

Table 3-9. St. Lucie - Comparison of Results (Winter, Summer, With and Without Passing)

Case No Train Traffic Infrastructure		Winter, w/ Passing 1 2013 F No-Build	 3 2016 F+P Build	Summer, w/ Passing 1 2013 F No-Build	 3 2016 F+P Build	Summer, No Passing 1 2013 F No-Build	 3 2016 F+P Build
Boat Wait Times (all days)							
Boat Arrivals	(#/day)	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	7%	43%	24%	59%	41%	74%
Avg. Wait Time (all)	(min)	0.6	3.4	0.9	5.1	1.2	13.1
Non- Zero Wait Time							
Avg. Non-Zero Wait Time	(min)	8.2	8.1	3.8	8.6	3.0	17.6
P50	(min)	7.6	6.8	0.6	7.1	0.7	12.4
P80	(min)	14.2	12.1	8.7	14.1	4.2	27.9
P90	(min)	16.5	17.6	13.9	19.1	11.7	40.3
P99	(min)	22.9	30.0	19.3	31.4	19.4	83.5
Max. Non-Zero Wait Time	(min)	41.4	47.9	46.9	78.3	46.9	167.6

The model output shows that the use of summer boat count data increases boat wait times compared to the winter data. In Case 3, the number of boats that wait increase from 43% to 59%. The average wait time of all boats increases from 3.4 minutes to 5.1 minutes. The P90 level for wait times increases from 17.6 minutes to 19.1 minutes.

With no passing allowed, the wait times increase. However, a system with no boats passing is not representative of observed conditions.

4.0 Conclusions

The model results using the summer boat count data provided updated boat wait times for higher boat traffic volumes associated with the summer months.
A second set of model results estimated the impact of not allowing boats to pass each other while crossing simultaneously in opposite directions. These results over-estimate the wait times that will be experienced by boats since it has been observed at all of the crossings that boats can pass simultaneously through the openings and preventing any boats from doing this would not be realistic.

Further, as discussed, the model uses a conservative value of 40 seconds as the minimum gap time between all boats approaching the crossing and the observed time is almost half that time. If these gap times were used as an assumption in the model the wait times for the boating community would be further reduced and would show less overall impact.

4.1 Effect of Additional Freight with No Infrastructure Improvements

The addition freight train traffic in 2016 will increase the wait times experienced by marine traffic at each crossing. The percentage of boats that will experience a delay will increase and the average length of time that boats experiencing a delay will have to wait will increase by as much as 80%. This is shown in Table 4-1.

Table 4-1. Boat Delays at Crossings - 2013 Freight vs. 2016 Freight (No Build)

Crossing		New River		Loxahatchee		St. Lucie	
Case No		1	2a	1	2a	1	2a
Train Traffic		2013 F	2016 F	2013 F	2016 F	2013 F	2016 F
Infrastructure		No Build	No Build	No Build	No Build	No Build	No Build
Boat Wait Times (all days)							
% Boats With Non-Zero Wait Time	(%)	24%	32%	28%	34%	42%	51%
Avg. Wait Time (all)	(min)	0.9	2.2	1.0	1.9	1.7	3.5
Non- Zero Wait Time							
Avg. Non-Zero Wait Time	(min)	3.8	6.9	3.6	5.5	4.1	6.8
P50	(min)	0.6	3.3	0.6	1.4	0.9	3.8
P80	(min)	8.7	14.0	8.0	12.0	9.2	14.0
P90	(min)	13.9	17.6	13.0	15.4	13.9	16.9
P99	(min)	19.3	33.1	18.3	26.4	19.0	28.1
Max. Non-Zero Wait Time	(min)	46.9	65.5	35.6	48.4	31.1	52.4

4.2 Additional of Infrastructure Improvements

Table 4-2 presents the effect on wait times due to freight trains of proposed Infrastructure and Operational Improvements associated with the Project. As shown, these improvements will reduce the percentage of boats experiencing a wait and the average length of time that boats have to wait.

Table 4-2. Boat Delays at Crossings - 2016 Freight No Build vs. 2016 Freight Build

Crossing		New River		Loxahatchee		St. Lucie	
Case No		2a	2b	2a	2b	2a	2b
Train Traffic		2016 F	2016 F	2016 F	2016 F	2016 F	2016 F
Infrastructure		No Build	Build	No Build	Build	No Build	Build
Boat Wait Times (all days)							
% Boats With Non-Zero Wait Time	(%)	32%	28%	34%	29%	51%	46%
Avg. Wait Time (all)	(min)	2.2	1.2	1.9	0.9	3.5	1.8
Non- Zero Wait Time							
Avg. Non-Zero Wait Time	(min)	6.9	4.2	5.5	3.1	6.8	3.8
P50	(min)	3.3	1.0	1.4	0.7	3.8	1.4
P80	(min)	14.0	8.9	12.0	6.9	14.0	8.3
P90	(min)	17.6	12.0	15.4	9.9	16.9	10.9
P99	(min)	33.1	22.2	26.4	17.6	28.1	16.2
Max. Non-Zero Wait Time	(min)	65.5	41.0	48.4	26.9	52.4	35.8

4.3 Addition of Passenger Trains

The addition of the 2016 Passenger Traffic will increase the percentage of boats experiencing a delay and the average length of time that boats experiencing a delay will have to wait will increase. This is shown in Table 4-3.

Table 4-3. Boat Delays at Crossings - 2016 Freight vs. 2016 Freight + Passenger

Crossing		New River		Loxahatchee		St. Lucie	
Case No		2b	3	2b	3	2b	3
Train Traffic		2016 F	2016 F+P	2016 F	2016 F+P	2016 F	2016 F+P
Infrastructure		Build	Build	Build	Build	Build	Build
Boat Wait Times (all days)							
% Boats With Non-Zero Wait Time	(%)	28%	59%	29%	58%	46%	63%
Avg. Wait Time (all)	(min)	1.2	5.1	0.9	3.3	1.8	4.6
Non- Zero Wait Time							
Avg. Non-Zero Wait Time	(min)	4.2	8.6	3.1	5.6	3.8	7.3
P50	(min)	1.0	7.1	0.7	5.0	1.4	6.0
P80	(min)	8.9	14.1	6.9	8.8	8.3	11.7
P90	(min)	12.0	19.1	9.9	10.9	10.9	15.9
P99	(min)	22.2	31.4	17.6	21.4	16.2	32.2
Max. Non-Zero Wait Time	(min)	41.0	78.3	26.9	69.2	35.8	58.8

However, it is important to note that the Build Case only occurs if the passenger train traffic is added, i.e., there are no infrastructure improvements in 2016 if the All Aboard Florida project does not proceed. Thus, if we compare the 2016 Freight No Build Case with the 2016 Freight + Passenger Case, the magnitude of the wait time increases is less than those shown in Table 4-3. This is shown in Table 4-4.

Table 4-4. Boat Delays at Crossings - 2016 Freight No Build vs. 2016 Freight + Passenger Build

Crossing		New River		Loxahatchee		St. Lucie	
Case No		2a	3	2a	3	2a	3
Train Traffic		2016 F	2016 F+P	2016 F	2016 F+P	2016 F	2016 F+P
Infrastructure		No Build	Build	No Build	Build	No Build	Build
Boat Wait Times (all days)							
% Boats With Non-Zero Wait Time	(%)	32%	59%	34%	58%	51%	63%
Avg. Wait Time (all)	(min)	2.2	5.1	1.9	3.3	3.5	4.6
Non- Zero Wait Time							
Avg. Non-Zero Wait Time	(min)	6.9	8.6	5.5	5.6	6.8	7.3
P50	(min)	3.3	7.1	1.4	5.0	3.8	6.0
P80	(min)	14.0	14.1	12.0	8.8	14.0	11.7
P90	(min)	17.6	19.1	15.4	10.9	16.9	15.9
P99	(min)	33.1	31.4	26.4	21.4	28.1	32.2
Max. Non-Zero Wait Time	(min)	65.5	78.3	48.4	69.2	52.4	58.8

4.4 Mitigation

All of the data analyzed does not take into consideration any of the mitigation strategies that AAF has stated it will implement to provide boaters, both recreational and commercial, with the ability to predict when each of the operable bascule bridges will be open and for how long. If these strategies are used by the boating community, the non-zero wait times will decrease and any potential impact to the industry can be significantly avoided.

It should also be noted that these mitigation measures as well as the significant investment in upgrading the signaling systems and the bascule bridge mechanics systems will only be implemented due to AAF becoming operational.

5.0 Appendices

Appendix A - Model Inputs and Assumptions
Appendix B - Detailed Model Results

Appendix A - Model Inputs and Assumptions

Rail/Marine Traffic Simulation Model Inputs and Assumptions

Train Operations and Bridge Closures

- Train arrivals at the bridge crossings are modeled; Train transit on the rail line between the bridges was not modeled
- Weekly train schedules for each of the three bridges were provided by AAF/HNTB
- The schedules provided the expected time of arrival of each train at the crossing
- The train schedule included the type of train (intermodal/UPS/rock/local) and direction (north/south)
- An early/late factor was applied to the scheduled arrival time
    - Freight trains arrived within a 20 minute window (+/- 10 minutes from their scheduled time)
    - Passenger trains arrive within a 4 minute window (+/- 2 minutes from their scheduled time)
- Train crossing times (time to clear the bridge) by train type for each crossing (mm:ss) are show in the tables below.

NEW RIVER						
	2013F_NoBuild		**2016F_NoBuild**		**2016F+P_Build**	
Train Type	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Passenger	00:00	00:00	00:00	00:00	00:24	00:27
Intermodal	03:28	03:13	03:08	03:04	03:14	03:03
UPS	03:48	04:54	03:25	03:05	03:25	03:02
Rock	02:49	02:45	02:47	02:33	02:47	02:33
Local	00:44	00:44	01:36	01:36	01:37	01:37
JUPITER/LOXAHATCHE						
	2013F_NoBuild		**2016F_NoBuild**		**2016F+P_Build**	
Train Type	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Passenger	00:00	00:00	00:00	00:00	00:17	00:17
Intermodal	03:39	03:47	02:20	02:21	02:20	02:27
UPS	04:02	04:42	02:22	02:16	02:22	02:24
Rock	03:31	02:47	01:26	01:57	01:26	01:20
Local	01:43	01:43	01:11	01:11	01:10	01:10
SAINT LUCIE						
	2013F_NoBuild		**2016F_NoBuild**		**2016F+P_Build**	
Train Type	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Passenger	00:00	00:00	00:00	00:00	01:36	01:17
Intermodal	04:45	04:22	04:36	04:44	04:47	05:03
UPS	04:48	05:36	04:38	05:04	04:38	04:56
Rock	03:43	03:40	03:14	03:18	03:13	03:15
Local	02:07	02:07	03:02	03:02	03:06	03:06

Infrastructure (Build and No-Build Cases)

- Three train schedules:
    1. Freight trains only with No Build
    2. Freight trains only with Build
    3. Freight and passenger trains only with Build
- With no build, bridge is lowered 12 minutes before the train arrives to the crossing. With build, this time decreases to 7 minutes. These times include the 2 minutes it takes for the bridge to be fully lowered into the level position.
- Distribution were used on the time to lower the bridge into position before the train arrives:
    1. No-Build: minimum = 11min, maximum = 13.3 min, mean = 12 min.
    2. Build: minimum = 6.5 min, maximum = 8.5 min, mean = 7 min
- It takes a total of 3 minutes for the bridge to come up after a train finishes crossing. The bridge begins to rise 1.5 minutes after the train has crossed, and it takes an additional 1.5 minutes for it to be fully raised.
- Track differences between no build and build:

Crossing	No-Build	Build
New River	Double track	Double track
Jupiter	Single track	Double track
Saint Lucie	Single track	Single track

- For the single track cases, when the arrival of two trains transiting in opposite directions coincided, the second train scheduled would have to wait at the nearest siding. If the siding was located nearby, the bridge was not raised between train crossings. However, if the siding was further away, the bridge was raised. The decision of whether to raise the bridge or not depends on the transit time from the siding to the crossing, taking into account that the train had stopped and had to accelerate.
- For Saint Lucie, the transit times from the south and north siding were 8 and 9 minutes, respectively, with a minimum of 7 and 8 minutes and maximum of 10 and 11 minutes, respectively.
- For Jupiter, the transit time from the south siding was 20 minutes. Since the transit time from the south siding is significant, if a train has to wait there, the bridge would be raised between train crossings to allow for marine traffic to cross. The transit time from the north siding was 6 minutes, with a minimum of 5 minutes and maximum of 8 minutes

Marine Traffic

- Three boat arrival distributions were used to differentiate between weekdays, Saturdays and Sundays, which had distinct arrival patterns.
- Boat arrivals at the bridges use a Poisson distribution. Boat arrivals are generated by the model according to the actual boat counts observed at each bridge crossing for each hour of day and for weekdays, Saturdays, and Sundays. Thus, peak volumes associated with weekends are included in the model.
- Boat arrivals are from 5:00 am to 10:00 pm. No boat count data exists outside of these times.
- The base assumption is that only one boat can cross in any given direction. Other boats remain in a queue to the side. Boats travelling in the same direction cannot begin crossing until the boat ahead has cleared the crossing.
- A second assumption tested by the model assumes that boats can travel through the crossings simultaneously in opposite directions, which is observed to happen with small to medium-sized boats. Only the largest boats prevent oncoming boat traffic from crossing at the same time.
- Boats arrive and wait to cross if either the bridge is down, a boat is currently crossing (in either direction), or if the queue is not empty. Otherwise, the boat will arrive and cross immediately without queuing.
- When boats are lined up in both directions, boat crossings alternate between directions. The direction that has the right of way is determined by looking at the time that the first boat in the queue became the first in line (like a two way stop). Priority is not given to boats that may have arrived earlier but had to wait longer in the queue before they became first in line.
- Boats arrivals are created at the bridge were they would begin crossing. Transit times to the bridge or other navigational behaviours were not modeled. Similarly, the model disposes of boats once they cross the bridge and clear the way for other boats.
- Crossing time is constant for all boats regardless of size. Crossing time is assumed to account for acceleration and maneuvering. Crossing time includes the time required for the boat to clear the crossing as well as the gap to the next boat.

Appendix B - Detailed Model Results

		Jupiter, 40 sec interval					Jupiter, 40 sec interval, Passing Allowed					Jupiter, 30 sec interval (sensitivity)				Jupiter, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Average Boat Wait Times (all days)																			
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	47%	53%	49%	75%	87%	28%	34%	29%	58%	66%	37%	43%	39%	68%	56%	62%	58%	78%
Avg. Wait Time (all)	(min)	1.6	3.2	1.7	18.9	25.4	1.0	1.9	0.9	3.3	3.6	1.1	2.2	1.1	5.1	3.6	7.8	4.8	46.6
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.4	6.0	3.4	25.1	29.3	3.6	5.5	3.1	5.6	5.5	3.1	5.2	2.8	7.4	6.5	12.6	8.2	59.5
P50	(min)	0.9	1.9	1.1	12.8	21.3	0.6	1.4	0.7	5.0	5.0	0.5	0.9	0.6	6.3	2.7	8.5	4.5	27.7
P80	**(min)**	**5.5**	**12.3**	**6.6**	**46.2**	**50.8**	**8.0**	**12.0**	**6.9**	**8.8**	**8.9**	**5.8**	**11.5**	**6.0**	**11.5**	**12.0**	**21.0**	**14.0**	**121.8**
P90	(min)	12.4	16.5	10.4	66.4	70.1	13.0	15.4	9.9	10.9	10.9	12.3	15.5	9.7	16.7	17.8	31.3	21.7	162.5
P99	(min)	19.7	33.0	20.5	112.6	111.9	18.3	26.4	17.6	21.4	20.2	18.4	28.3	18.4	29.0	37.5	62.4	44.5	236.4
Max. Non-Zero Wait Time	(min)	35.6	56.2	38.5	169.7	167.8	35.6	48.4	26.9	69.2	67.8	35.6	48.4	31.0	69.2	63.1	99.1	76.3	306.1
Average Boat Wait Times - Monday to Friday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	28%	33%	28%	56%	87%	20%	25%	20%	48%	66%	24%	29%	24%	52%	32%	37%	32%	60%
Avg. Wait Time (all)	(min)	1.5	2.1	1.0	3.1	26.1	1.3	1.9	0.9	2.7	3.7	1.4	2.0	0.9	2.9	1.6	2.3	1.1	3.4
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	5.1	6.4	3.6	5.5	30.1	6.3	7.4	4.4	5.6	5.6	5.6	6.8	3.8	5.5	4.9	6.2	3.4	5.6
P50	(min)	1.1	3.7	0.9	4.8	21.7	4.7	6.3	3.0	5.0	5.0	2.5	4.8	1.5	4.8	1.0	2.7	0.9	4.8
P80	**(min)**	**11.4**	**13.0**	**7.8**	**8.7**	**52.6**	**12.6**	**13.6**	**8.7**	**8.6**	**8.9**	**12.0**	**13.3**	**8.2**	**8.6**	**11.0**	**12.7**	**7.4**	**8.9**
P90	(min)	14.8	15.8	10.2	10.8	72.3	15.3	16.0	10.6	10.5	11.1	15.1	15.9	10.4	10.5	14.7	15.9	10.1	11.2
P99	(min)	21.6	29.0	17.3	22.8	115.2	22.6	28.7	17.8	22.2	20.6	21.7	28.8	17.5	22.3	21.4	29.2	17.3	23.5
Max. Non-Zero Wait Time	(min)	35.6	48.4	31.0	69.2	167.8	35.6	48.4	26.9	69.2	67.8	35.6	48.4	31.0	69.2	44.2	48.4	31.0	69.2
Average Boat Wait Times - Weekend (Sat & Sun)		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	62%	69%	65%	90%	86%	33%	40%	37%	66%	65%	47%	55%	51%	81%	75%	82%	79%	93%
Avg. Wait Time (all)	(min)	1.7	4.0	2.2	31.4	23.6	0.7	1.9	1.0	3.7	3.4	1.0	2.4	1.3	6.8	5.3	12.2	7.7	80.9
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.8	5.8	3.4	34.7	27.4	2.2	4.6	2.6	5.6	5.2	2.1	4.5	2.5	8.4	7.0	14.8	9.8	86.8
P50	(min)	0.9	1.7	1.2	28.1	20.4	0.5	0.8	0.6	4.9	4.7	0.5	0.7	0.6	7.2	3.1	10.9	6.0	79.1
P80	**(min)**	**3.2**	**11.9**	**5.9**	**58.5**	**46.8**	**1.5**	**10.5**	**5.0**	**8.9**	**8.6**	**1.4**	**9.9**	**3.9**	**13.8**	**12.5**	**24.8**	**16.9**	**148.3**
P90	(min)	9.3	17.0	10.6	76.3	64.1	9.3	14.8	9.3	11.1	10.2	8.0	15.2	9.2	18.6	19.7	35.7	24.6	180.3
P99	(min)	19.5	34.5	21.4	119.3	102.0	17.5	25.4	17.5	21.1	19.0	17.9	28.2	18.6	30.4	40.3	66.9	47.2	244.8
Max. Non-Zero Wait Time	(min)	34.8	56.2	38.5	169.7	149.7	34.8	40.7	24.2	37.4	37.8	34.8	44.5	29.8	48.9	63.1	99.1	76.3	306.1
Average Boat Wait Times - Saturday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	514	varies	varies	varies	varies	514	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	59%	66%	62%	88%	86%	32%	39%	35%	65%	65%	46%	53%	49%	78%	72%	79%	75%	92%
Avg. Wait Time (all)	(min)	1.8	4.0	2.1	25.4	25.5	0.8	1.9	1.0	3.7	3.6	1.1	2.5	1.2	6.4	4.6	10.1	6.0	68.6
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.0	6.1	3.4	28.8	29.7	2.5	4.8	2.7	5.7	5.6	2.3	4.7	2.5	8.1	6.4	12.8	8.0	74.7
P50	(min)	0.9	1.6	1.1	22.4	23.0	0.6	0.8	0.6	5.1	5.0	0.5	0.7	0.5	7.0	2.4	8.0	4.3	67.5
P80	**(min)**	**3.4**	**12.2**	**5.7**	**49.2**	**51.9**	**2.4**	**10.9**	**5.3**	**9.1**	**8.9**	**1.5**	**10.5**	**4.4**	**13.5**	**10.9**	**20.5**	**13.0**	**129.2**
P90	(min)	11.0	17.3	10.5	66.2	68.1	10.9	15.0	9.5	11.8	11.1	9.9	15.5	9.3	18.4	19.5	33.0	20.0	155.4
P99	(min)	20.2	39.7	22.6	101.2	107.0	17.7	25.8	17.5	21.6	20.5	18.1	30.1	18.7	28.9	40.5	65.4	46.5	208.6
Max. Non-Zero Wait Time	(min)	34.8	56.2	38.5	140.7	149.7	34.8	40.7	24.0	30.4	29.8	34.8	44.5	29.8	48.9	61.6	96.3	76.3	258.6
Average Boat Wait Times - Sunday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	64%	72%	68%	92%	86%	34%	42%	38%	68%	64%	49%	57%	53%	83%	78%	85%	82%	94%
Avg. Wait Time (all)	(min)	1.7	4.0	2.3	37.1	21.7	0.7	1.8	1.0	3.7	3.2	0.9	2.4	1.3	7.2	5.9	14.2	9.4	92.7
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.6	5.6	3.4	40.2	25.1	2.0	4.4	2.5	5.4	4.9	1.8	4.3	2.4	8.7	7.5	16.7	11.4	98.3
P50	(min)	1.0	1.8	1.2	35.1	18.4	0.5	0.7	0.6	4.8	4.5	0.5	0.7	0.6	7.4	4.0	13.8	8.1	89.1
P80	**(min)**	**3.1**	**11.6**	**6.0**	**65.7**	**41.8**	**1.3**	**10.0**	**4.7**	**8.7**	**8.3**	**1.3**	**9.4**	**3.5**	**14.1**	**13.4**	**27.6**	**20.0**	**167.7**
P90	(min)	7.7	16.6	10.6	85.5	58.8	7.3	14.7	9.1	10.6	9.7	5.9	15.0	9.1	18.8	19.8	37.3	27.2	197.3
P99	(min)	18.6	28.7	20.3	128.5	96.8	17.3	24.9	17.5	20.4	16.6	17.5	26.5	18.6	31.4	40.1	68.5	47.6	257.1
Max. Non-Zero Wait Time	(min)	26.1	37.5	28.7	169.7	148.4	19.4	34.9	24.2	37.4	37.8	21.7	36.0	25.3	44.0	63.1	99.1	74.8	306.1
		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter
Bridge Closures		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Total Closures	(#/week)	72.3	99.8	105.5	291.0	291.0	72.3	99.8	105.5	291.0	291.0	72.3	99.8	105.5	291.0	72.3	99.8	105.5	291.0
Avg. Duration	(min)	19.4	19.4	13.1	12.0	12.0	19.4	19.4	13.1	12.0	12.0	19.4	19.4	13.1	12.0	19.4	19.4	13.1	12.0
Min. Duration	(min)	15.8	15.2	10.7	9.8	9.8	15.8	15.2	10.7	9.8	9.8	15.8	15.2	10.7	9.8	15.8	15.2	10.7	9.8
Max. Duration	(min)	39.1	56.4	34.0	70.0	70.0	39.1	56.4	34.0	70.0	70.0	39.1	56.4	34.0	70.0	39.1	56.4	34.0	70.0
Total Duration	(h/week)	23.4	32.3	23.1	58.2	58.2	23.4	32.3	23.1	58.2	58.2	23.4	32.3	23.1	58.2	23.4	32.3	23.1	58.2
Total Open Duration	(h/week)	144.6	135.7	144.9	109.8	109.8	144.6	135.7	144.9	109.8	109.8	144.6	135.7	144.9	109.8	144.6	135.7	144.9	109.8
Closure Durations																			
P10	(min)	17.2	16.7	11.9	10.0	10.0	17.2	16.7	11.9	10.0	10.0	17.2	16.7	11.9	10.0	17.2	16.7	11.9	10.0
P50	(min)	18.9	17.6	12.3	10.6	10.6	18.9	17.6	12.3	10.6	10.6	18.9	17.6	12.3	10.6	18.9	17.6	12.3	10.6

		Jupiter, 40 sec interval					Jupiter, 40 sec interval, Passing Allowed					Jupiter, 30 sec interval (sensitivity)				Jupiter, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
P80	(min)	**19.6**	**18.5**	**12.9**	**12.5**	**12.5**	**19.6**	**18.5**	**12.9**	**12.5**	**12.5**	**19.6**	**18.5**	**12.9**	**12.5**	**19.6**	**18.5**	**12.9**	**12.5**
P90	(min)	20.1	26.8	15.9	15.7	15.7	20.1	26.8	15.9	15.7	15.7	20.1	26.8	15.9	15.7	20.1	26.8	15.9	15.7
Train Traffic		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Time Between Trains	(h)	2.2	1.4	1.4	0.5	0.5	2.2	1.4	1.4	0.5	0.5	2.2	1.4	1.4	0.5	2.2	1.4	1.4	0.5
Number of Train Crossings																			
Mon	(#/day)	12	19	19	51	51	12	19	19	51	51	12	19	19	51	12	19	19	51
Tue	(#/day)	11	22	22	52	52	11	22	22	52	52	11	22	22	52	11	22	22	52
Wed	(#/day)	13	19	19	54	54	13	19	19	54	54	13	19	19	54	13	19	19	54
Thu	(#/day)	12	21	21	53	53	12	21	21	53	53	12	21	21	53	12	21	21	53
Fri	(#/day)	13	17	17	48	48	13	17	17	48	48	13	17	17	48	13	17	17	48
Sat	(#/day)	9	11	11	44	44	9	11	11	44	44	9	11	11	44	9	11	11	44
Sun	(#/day)	6	13	13	44	44	6	13	13	44	44	6	13	13	44	6	13	13	44
Total per Week	(#/week)	76	122	122	346	346	76	122	122	346	346	76	122	122	346	76	122	122	346
Train Meets																			
Avg. Northbound Trains that Stop	(#/week)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Southbound Trains that Stop	(#/week)	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.3	1.4	0.0	0.0
Avg. Trains that Stop	**(#/week)**	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.3	1.4	0.0	0.0
Avg. Wait of Northbound Trains	(min)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Wait of Southbound Trains	(min)	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	1.3	1.2	0.0	0.0
Avg. Wait of All Trains (non-zero)	**(min)**	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	1.3	1.2	0.0	0.0
Average Boat Traffic by Time of Day		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
5:00 to 6:00	(boats)	0.2	0.2	0.2	0.2	3.1	0.2	0.2	0.2	0.2	3.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
6:00 to 7:00	(boats)	4.2	4.2	4.2	4.2	9.9	4.2	4.2	4.2	4.2	9.9	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
7:00 to 8:00	(boats)	6.8	6.8	6.8	6.8	14.2	6.8	6.8	6.8	6.8	14.2	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
8:00 to 9:00	(boats)	9.0	9.0	9.0	9.0	13.0	9.0	9.0	9.0	9.0	13.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
9:00 to 10:00	(boats)	11.7	11.7	11.7	11.7	15.5	11.7	11.7	11.7	11.7	15.5	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
10:00 to 11:00	(boats)	16.9	16.9	16.9	16.9	35.9	16.9	16.9	16.9	16.9	35.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9
11:00 to 12:00	(boats)	23.2	23.2	23.2	23.2	25.4	23.2	23.2	23.2	23.2	25.4	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
12:00 to 13:00	(boats)	28.2	28.2	28.2	28.2	47.6	28.2	28.2	28.2	28.2	47.6	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
13:00 to 14:00	(boats)	32.6	32.6	32.6	32.6	66.6	32.6	32.6	32.6	32.6	66.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6
14:00 to 15:00	(boats)	34.0	34.0	34.0	34.0	76.6	34.0	34.0	34.0	34.0	76.6	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
15:00 to 16:00	(boats)	33.0	33.0	33.0	33.0	65.6	33.0	33.0	33.0	33.0	65.6	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
16:00 to 17:00	(boats)	28.2	28.2	28.2	28.2	67.7	28.2	28.2	28.2	28.2	67.7	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
17:00 to 18:00	(boats)	23.8	23.8	23.8	23.8	18.9	23.8	23.8	23.8	23.8	18.9	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
18:00 to 19:00	(boats)	19.5	19.5	19.5	19.5	17.2	19.5	19.5	19.5	19.5	17.2	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
19:00 to 20:00	(boats)	15.3	15.3	15.3	15.3	24.0	15.3	15.3	15.3	15.3	24.0	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
20:00 to 21:00	(boats)	7.2	7.2	7.2	7.2	11.7	7.2	7.2	7.2	7.2	11.7	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
21:00 to 22:00	(boats)	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histogram Data																			
Mon-Fri																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		62%	54%	69%	52%	18%	51%	45%	61%	50%	50%	58%	51%	66%	51%	65%	57%	71%	51%
5< t ≤10		14%	16%	20%	36%	14%	19%	20%	26%	39%	37%	16%	18%	23%	37%	13%	15%	18%	35%
10< t ≤15		15%	17%	9%	7%	8%	19%	21%	11%	7%	9%	16%	19%	10%	7%	13%	16%	9%	8%
15< t ≤20		8%	9%	1%	3%	7%	10%	10%	2%	3%	3%	9%	9%	1%	3%	8%	9%	1%	3%
20< t ≤25		1%	2%	0%	1%	7%	1%	2%	0%	1%	1%	1%	2%	0%	1%	1%	2%	0%	1%
25< t ≤30		0%	1%	0%	0%	6%	1%	1%	0%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%
30< t ≤35		0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
35< t ≤40		0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
40< t ≤45		0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
45< t ≤50		0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
50< t ≤55		0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
55< t ≤60		0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
60< t		0%	0%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sat & Sun																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		85%	67%	78%	13%	18%	86%	69%	80%	51%	52%	87%	72%	82%	37%	60%	34%	46%	8%
5< t ≤10		5%	10%	11%	11%	14%	5%	10%	12%	36%	37%	4%	8%	10%	30%	15%	14%	18%	6%
10< t ≤15		4%	9%	8%	8%	9%	6%	11%	6%	8%	8%	5%	9%	6%	15%	9%	13%	13%	4%
15< t ≤20		4%	7%	2%	7%	8%	4%	6%	2%	3%	2%	4%	6%	2%	9%	7%	12%	8%	3%
20< t ≤25		1%	3%	1%	7%	8%	0%	2%	0%	1%	1%	0%	2%	1%	5%	4%	8%	6%	3%
25< t ≤30		0%	2%	0%	7%	7%	0%	1%	0%	0%	0%	0%	1%	0%	2%	2%	5%	4%	3%
30< t ≤35		0%	1%	0%	6%	6%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	4%	2%	2%
35< t ≤40		0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	1%	2%

	Jupiter, 40 sec interval					Jupiter, 40 sec interval, Passing Allowed					Jupiter, 30 sec interval (sensitivity)				Jupiter, 50 sec interval (sensitivity)			
Case No	1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
40< t ≤45	0%	0%	0%	5%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	1%	2%
45< t ≤50	0%	0%	0%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	3%
50< t ≤55	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
55< t ≤60	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
60< t	0%	0%	0%	19%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	59%
All Week																		
t = 0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5	79%	63%	75%	26%	18%	74%	61%	74%	50%	50%	79%	66%	78%	42%	61%	40%	52%	23%
5< t ≤10	8%	12%	13%	19%	14%	10%	13%	16%	37%	37%	8%	11%	13%	33%	15%	14%	18%	16%
10< t ≤15	7%	11%	8%	7%	9%	10%	14%	8%	8%	9%	8%	12%	7%	12%	10%	13%	12%	5%
15< t ≤20	5%	8%	2%	6%	8%	6%	7%	2%	3%	3%	5%	7%	2%	7%	7%	11%	7%	3%
20< t ≤25	1%	3%	1%	5%	7%	0%	2%	0%	1%	1%	0%	2%	1%	3%	3%	6%	4%	2%
25< t ≤30	0%	1%	0%	5%	6%	0%	1%	0%	0%	0%	0%	1%	0%	2%	2%	4%	3%	2%
30< t ≤35	0%	1%	0%	4%	5%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	3%	2%	2%
35< t ≤40	0%	0%	0%	4%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	1%	2%
40< t ≤45	0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	2%
45< t ≤50	0%	0%	0%	3%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
50< t ≤55	0%	0%	0%	3%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
55< t ≤60	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
60< t	0%	0%	0%	13%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	39%

		St Lucie, 40 sec interval					St Lucie, 40 sec interval, Passing Allowed					St Lucie, 30 sec interval (sensitivity)				St Lucie, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Average Boat Wait Times (all days)																			
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	41%	48%	44%	74%	86%	24%	32%	28%	59%	66%	33%	40%	36%	67%	49%	56%	52%	78%
Avg. Wait Time (all)	(min)	1.2	3.2	1.8	13.1	15.4	0.9	2.2	1.2	5.1	5.9	1.0	2.5	1.3	6.4	1.8	4.8	2.8	37.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.0	6.6	4.0	17.6	17.9	3.8	6.9	4.2	8.6	8.9	3.1	6.3	3.7	9.6	3.7	8.6	5.4	47.5
P50	(min)	0.7	1.9	1.1	12.4	15.3	0.6	3.3	1.0	7.1	7.5	0.5	1.3	0.7	8.1	1.3	4.2	2.3	23.9
P80	**(min)**	**4.2**	**14.0**	**8.5**	**27.9**	**29.0**	**8.7**	**14.0**	**8.9**	**14.1**	**14.8**	**5.8**	**13.4**	**8.2**	**16.3**	**6.0**	**16.6**	**10.7**	**87.1**
P90	(min)	11.7	18.1	12.1	40.3	37.1	13.9	17.6	12.0	19.1	19.5	12.6	17.6	11.8	20.9	12.1	21.6	14.4	130.7
P99	(min)	19.4	35.3	22.2	83.5	61.1	19.3	33.1	22.2	31.4	32.6	19.2	33.6	21.7	32.7	21.2	41.8	26.8	232.4
Max. Non-Zero Wait Time	(min)	46.9	66.8	41.0	167.6	101.9	46.9	65.5	41.0	78.3	76.0	46.9	66.8	41.0	78.3	46.9	70.2	50.4	331.8
Average Boat Wait Times - Monday to Friday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	24%	29%	25%	55%	87%	18%	23%	19%	50%	66%	21%	26%	22%	53%	27%	32%	27%	58%
Avg. Wait Time (all)	(min)	1.4	2.5	1.3	4.8	15.8	1.3	2.3	1.2	4.3	6.0	1.4	2.4	1.2	4.5	1.5	2.6	1.3	5.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	5.9	8.4	5.1	8.7	18.3	7.2	9.7	6.2	8.7	9.1	6.4	8.9	5.5	8.6	5.6	8.1	4.9	8.8
P50	(min)	2.9	5.9	2.6	7.0	15.7	6.2	8.3	5.0	7.1	7.6	4.3	7.0	3.8	6.9	1.8	4.9	1.6	7.1
P80	**(min)**	**12.6**	**15.8**	**10.3**	**13.8**	**29.6**	**13.7**	**16.6**	**11.1**	**13.4**	**15.1**	**13.1**	**16.1**	**10.7**	**13.5**	**12.2**	**15.5**	**10.0**	**14.2**
P90	(min)	15.6	19.2	12.9	19.2	38.0	16.1	20.4	13.3	18.9	19.8	15.8	19.5	13.1	19.0	15.5	19.1	12.8	19.6
P99	(min)	23.2	36.6	24.3	36.1	62.4	24.4	37.0	24.5	35.7	33.7	23.8	36.4	24.4	35.7	22.7	36.7	24.2	36.5
Max. Non-Zero Wait Time	(min)	46.9	66.8	40.5	78.3	101.9	46.9	65.5	40.5	78.3	76.0	46.9	66.8	40.5	78.3	46.9	70.2	40.5	78.3
Average Boat Wait Times - Weekend (Sat & Sun)		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	52%	62%	58%	87%	85%	28%	38%	34%	65%	64%	40%	50%	46%	77%	64%	73%	70%	92%
Avg. Wait Time (all)	(min)	1.1	3.7	2.1	18.8	14.3	0.7	2.1	1.2	5.6	5.4	0.8	2.7	1.4	7.7	2.0	6.4	3.9	59.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.1	6.1	3.6	21.5	16.9	2.3	5.7	3.4	8.5	8.5	1.9	5.3	3.1	10.0	3.1	8.7	5.5	64.2
P50	(min)	0.7	1.4	1.0	17.0	14.5	0.5	1.1	0.7	7.2	7.3	0.4	0.8	0.6	8.7	1.2	4.0	2.3	45.1
P80	**(min)**	**1.9**	**13.1**	**7.5**	**33.2**	**27.4**	**1.3**	**12.4**	**7.5**	**14.4**	**14.2**	**1.0**	**11.9**	**6.8**	**17.2**	**4.3**	**17.0**	**10.9**	**110.3**
P90	(min)	5.9	17.7	11.8	47.3	34.8	9.8	16.6	11.2	19.1	18.7	7.1	16.7	11.1	21.6	9.1	22.0	14.9	150.2
P99	(min)	18.9	34.4	21.0	88.3	57.8	18.5	30.6	19.5	29.9	30.0	18.5	32.1	19.3	32.0	20.9	42.9	27.8	243.4
Max. Non-Zero Wait Time	(min)	28.2	56.1	41.0	167.6	97.2	22.9	50.8	41.0	48.2	47.3	24.6	52.1	41.0	54.0	33.4	60.4	50.4	331.8
Average Boat Wait Times - Saturday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	442	varies	varies	varies	varies	442	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	46%	54%	51%	83%	86%	26%	34%	31%	63%	66%	36%	45%	41%	73%	56%	64%	61%	90%
Avg. Wait Time (all)	(min)	1.1	3.5	1.9	10.5	17.0	0.8	2.2	1.2	5.1	5.6	0.9	2.7	1.4	6.8	1.5	4.8	2.7	27.7
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.4	6.5	3.7	12.7	19.7	3.0	6.5	3.9	8.1	8.5	2.4	6.1	3.5	9.3	2.7	7.5	4.4	30.7
P50	(min)	0.6	1.1	0.8	11.0	17.7	0.5	1.5	0.7	6.9	7.4	0.4	0.8	0.5	8.1	0.9	1.8	1.3	24.4
P80	**(min)**	**1.9**	**13.8**	**7.8**	**21.1**	**31.4**	**5.3**	**13.9**	**8.5**	**13.4**	**13.9**	**1.7**	**13.4**	**7.8**	**15.7**	**2.8**	**15.2**	**8.8**	**49.6**
P90	(min)	9.5	19.0	12.3	27.0	39.4	12.3	17.9	12.0	18.0	18.3	10.6	18.2	11.9	20.4	9.1	21.2	13.4	68.1
P99	(min)	19.1	38.8	23.8	40.5	61.3	18.8	32.2	21.7	29.0	29.8	18.8	34.6	22.1	30.9	19.6	44.9	26.6	111.6
Max. Non-Zero Wait Time	(min)	23.4	56.1	37.1	61.3	97.2	20.7	40.3	28.3	38.9	38.7	21.2	52.1	28.8	47.4	28.1	60.4	45.6	155.2
Average Boat Wait Times - Sunday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	57%	67%	64%	91%	83%	30%	41%	37%	67%	62%	44%	54%	50%	80%	71%	80%	77%	94%
Avg. Wait Time (all)	(min)	1.1	3.9	2.3	25.5	11.6	0.6	2.1	1.2	5.9	5.2	0.7	2.6	1.5	8.4	2.4	7.6	4.8	84.5
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	1.9	5.7	3.6	28.0	13.9	1.9	5.1	3.1	8.8	8.5	1.6	4.8	2.9	10.6	3.4	9.5	6.3	90.3
P50	(min)	0.7	1.7	1.1	23.3	11.9	0.5	1.0	0.6	7.4	7.1	0.4	0.8	0.6	9.3	1.5	5.8	3.4	83.3
P80	**(min)**	**1.9**	**12.7**	**7.4**	**44.3**	**22.4**	**1.0**	**11.3**	**6.7**	**15.3**	**14.6**	**0.9**	**10.9**	**6.1**	**18.1**	**4.9**	**17.9**	**12.0**	**144.1**
P90	(min)	4.0	17.0	11.5	58.2	29.1	6.6	15.6	10.5	19.9	19.2	2.5	15.6	10.5	22.5	9.1	22.3	15.7	178.8
P99	(min)	18.8	27.0	16.9	98.0	51.0	18.2	22.9	14.5	30.5	30.3	18.4	21.3	14.8	32.8	22.1	41.5	28.9	256.6
Max. Non-Zero Wait Time	(min)	28.2	51.7	41.0	167.6	73.5	22.9	50.8	41.0	48.2	47.3	24.6	51.2	41.0	54.0	33.4	56.2	50.4	331.8
		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter
Bridge Closures		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Total Closures	(#/week)	73.8	95.4	103.7	255.2	255.2	73.8	95.4	103.7	255.2	255.2	73.8	95.4	103.7	255.2	73.8	95.4	103.7	255.2
Avg. Duration	(min)	20.5	23.0	16.1	15.5	15.5	20.5	23.0	16.1	15.5	15.5	20.5	23.0	16.1	15.5	20.5	23.0	16.1	15.5
Min. Duration	(min)	16.2	17.1	12.4	10.6	10.6	16.2	17.1	12.4	10.6	10.6	16.2	17.1	12.4	10.6	16.2	17.1	12.4	10.6
Max. Duration	(min)	57.5	68.9	43.1	80.9	80.9	57.5	68.9	43.1	80.9	80.9	57.5	68.9	43.1	80.9	57.5	68.9	43.1	80.9
Total Duration	(h/week)	25.2	36.5	27.8	66.0	66.0	25.2	36.5	27.8	66.0	66.0	25.2	36.5	27.8	66.0	25.2	36.5	27.8	66.0
Total Open Duration	(h/week)	142.8	131.5	140.2	102.0	102.0	142.8	131.5	140.2	102.0	102.0	142.8	131.5	140.2	102.0	142.8	131.5	140.2	102.0
Closure Durations																			
P10	(min)	17.3	18.8	13.3	11.0	11.0	17.3	18.8	13.3	11.0	11.0	17.3	18.8	13.3	11.0	17.3	18.8	13.3	11.0
P50	(min)	19.8	19.9	14.5	12.4	12.4	19.8	19.9	14.5	12.4	12.4	19.8	19.9	14.5	12.4	19.8	19.9	14.5	12.4

		St Lucie, 40 sec interval				
Case No		1	2a	2b	3	3_P80
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer
P80	(min)	**20.6**	**27.0**	**15.2**	**20.5**	**20.5**
P90	(min)	21.2	34.1	24.0	24.2	24.2
Train Traffic		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80
Time Between Trains	(h)	2.1	1.4	1.4	0.5	0.5
Number of Train Crossings						
Mon	(#/day)	11	20	20	51	51
Tue	(#/day)	13	22	22	51	51
Wed	(#/day)	13	19	19	54	54
Thu	(#/day)	14	20	20	53	53
Fri	(#/day)	13	19	19	51	51
Sat	(#/day)	9	12	12	43	43
Sun	(#/day)	7	10	10	43	43
Total per Week	(#/week)	80	122	122	346	346
Train Meets						
Avg. Northbound Trains that Stop	(#/week)	**0.1**	**2.3**	**2.3**	**7.7**	**7.7**
Avg. Southbound Trains that Stop	(#/week)	0.3	2.3	2.3	6.6	6.6
Avg. Trains that Stop	**(#/week)**	0.4	4.6	4.6	14.3	14.3
Avg. Wait of Northbound Trains	(min)	**2.0**	**2.2**	**2.2**	**2.7**	**2.7**
Avg. Wait of Southbound Trains	(min)	2.2	2.3	2.3	2.2	2.2
Avg. Wait of All Trains (non-zero)	**(min)**	2.1	2.2	2.2	2.5	2.5
Average Boat Traffic by Time of Day		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80
5:00 to 6:00	(boats)	1.7	1.7	1.7	1.7	2.1
6:00 to 7:00	(boats)	5.6	5.6	5.6	5.6	8.9
7:00 to 8:00	(boats)	10.1	10.1	10.1	10.1	14.0
8:00 to 9:00	(boats)	9.9	9.9	9.9	9.9	6.2
9:00 to 10:00	(boats)	12.5	12.5	12.5	12.5	21.6
10:00 to 11:00	(boats)	21.0	21.0	21.0	21.0	45.5
11:00 to 12:00	(boats)	25.8	25.8	25.8	25.8	68.8
12:00 to 13:00	(boats)	25.0	25.0	25.0	25.0	53.1
13:00 to 14:00	(boats)	24.4	24.4	24.4	24.4	39.7
14:00 to 15:00	(boats)	23.0	23.0	23.0	23.0	41.7
15:00 to 16:00	(boats)	22.6	22.6	22.6	22.6	35.4
16:00 to 17:00	(boats)	20.6	20.6	20.6	20.6	40.5
17:00 to 18:00	(boats)	15.3	15.3	15.3	15.3	27.9
18:00 to 19:00	(boats)	12.3	12.3	12.3	12.3	19.9
19:00 to 20:00	(boats)	10.0	10.0	10.0	10.0	10.1
20:00 to 21:00	(boats)	5.3	5.3	5.3	5.3	5.9
21:00 to 22:00	(boats)	-	-	-	-	-

		St Lucie, 40 sec interval, Passing Allowed				
		1	2a	2b	3	3_PassP80
		2013 F	2016 F	2016 F	2016 F+P	2016 F+P
		No Build	No Build	Build	Build	Build
		Summer	Summer	Summer	Summer	Summer
	(min)	**20.6**	**27.0**	**15.2**	**20.5**	**20.5**
	(min)	21.2	34.1	24.0	24.2	24.2
		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80
	(h)	2.1	1.4	1.4	0.5	0.5
	(#/day)	11	20	20	51	51
	(#/day)	13	22	22	51	51
	(#/day)	13	19	19	54	54
	(#/day)	14	20	20	53	53
	(#/day)	13	19	19	51	51
	(#/day)	9	12	12	43	43
	(#/day)	7	10	10	43	43
	(#/week)	80	122	122	346	346
	(#/week)	**0.1**	**2.3**	**2.3**	**7.7**	**7.7**
	(#/week)	0.3	2.3	2.3	6.6	6.6
	(#/week)	0.4	4.6	4.6	14.3	14.3
	(min)	**2.0**	**2.2**	**2.2**	**2.7**	**2.7**
	(min)	2.2	2.3	2.3	2.2	2.2
	(min)	2.1	2.2	2.2	2.5	2.5
		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80
	(boats)	1.7	1.7	1.7	1.7	2.1
	(boats)	5.6	5.6	5.6	5.6	8.9
	(boats)	10.1	10.1	10.1	10.1	14.0
	(boats)	9.9	9.9	9.9	9.9	6.2
	(boats)	12.5	12.5	12.5	12.5	21.6
	(boats)	21.0	21.0	21.0	21.0	45.5
	(boats)	25.8	25.8	25.8	25.8	68.8
	(boats)	25.0	25.0	25.0	25.0	53.1
	(boats)	24.4	24.4	24.4	24.4	39.7
	(boats)	23.0	23.0	23.0	23.0	41.7
	(boats)	22.6	22.6	22.6	22.6	35.4
	(boats)	20.6	20.6	20.6	20.6	40.5
	(boats)	15.3	15.3	15.3	15.3	27.9
	(boats)	12.3	12.3	12.3	12.3	19.9
	(boats)	10.0	10.0	10.0	10.0	10.1
	(boats)	5.3	5.3	5.3	5.3	5.9
	(boats)	-	-	-	-	-

		St Lucie, 30 sec interval (sensitivity)			
		1	2a	2b	3
		2013 F	2016 F	2016 F	2016 F+P
		No Build	No Build	Build	Build
		Summer	Summer	Summer	Summer
	(min)	**20.6**	**27.0**	**15.2**	**20.5**
	(min)	21.2	34.1	24.0	24.2
		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
	(h)	2.1	1.4	1.4	0.5
	(#/day)	11	20	20	51
	(#/day)	13	22	22	51
	(#/day)	13	19	19	54
	(#/day)	14	20	20	53
	(#/day)	13	19	19	51
	(#/day)	9	12	12	43
	(#/day)	7	10	10	43
	(#/week)	80	122	122	346
	(#/week)	**0.1**	**2.3**	**2.3**	**7.7**
	(#/week)	0.3	2.3	2.3	6.6
	(#/week)	0.4	4.6	4.6	14.3
	(min)	**2.0**	**2.2**	**2.2**	**2.7**
	(min)	2.2	2.3	2.3	2.2
	(min)	2.1	2.2	2.2	2.5
		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
	(boats)	1.7	1.7	1.7	1.7
	(boats)	5.6	5.6	5.6	5.6
	(boats)	10.1	10.1	10.1	10.1
	(boats)	9.9	9.9	9.9	9.9
	(boats)	12.5	12.5	12.5	12.5
	(boats)	21.0	21.0	21.0	21.0
	(boats)	25.8	25.8	25.8	25.8
	(boats)	25.0	25.0	25.0	25.0
	(boats)	24.4	24.4	24.4	24.4
	(boats)	23.0	23.0	23.0	23.0
	(boats)	22.6	22.6	22.6	22.6
	(boats)	20.6	20.6	20.6	20.6
	(boats)	15.3	15.3	15.3	15.3
	(boats)	12.3	12.3	12.3	12.3
	(boats)	10.0	10.0	10.0	10.0
	(boats)	5.3	5.3	5.3	5.3
	(boats)	-	-	-	-

		St Lucie, 50 sec interval (sensitivity)			
		1	2a	2b	3
		2013 F	2016 F	2016 F	2016 F+P
		No Build	No Build	Build	Build
		Summer	Summer	Summer	Summer
	(min)	**20.6**	**27.0**	**15.2**	**20.5**
	(min)	21.2	34.1	24.0	24.2
		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
	(h)	2.1	1.4	1.4	0.5
	(#/day)	11	20	20	51
	(#/day)	13	22	22	51
	(#/day)	13	19	19	54
	(#/day)	14	20	20	53
	(#/day)	13	19	19	51
	(#/day)	9	12	12	43
	(#/day)	7	10	10	43
	(#/week)	80	122	122	346
	(#/week)	**0.1**	**2.3**	**2.3**	**7.7**
	(#/week)	0.3	2.3	2.3	6.6
	(#/week)	0.4	4.6	4.6	14.3
	(min)	**2.0**	**2.2**	**2.2**	**2.7**
	(min)	2.2	2.3	2.3	2.2
	(min)	2.1	2.2	2.2	2.5
		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
	(boats)	1.7	1.7	1.7	1.7
	(boats)	5.6	5.6	5.6	5.6
	(boats)	10.1	10.1	10.1	10.1
	(boats)	9.9	9.9	9.9	9.9
	(boats)	12.5	12.5	12.5	12.5
	(boats)	21.0	21.0	21.0	21.0
	(boats)	25.8	25.8	25.8	25.8
	(boats)	25.0	25.0	25.0	25.0
	(boats)	24.4	24.4	24.4	24.4
	(boats)	23.0	23.0	23.0	23.0
	(boats)	22.6	22.6	22.6	22.6
	(boats)	20.6	20.6	20.6	20.6
	(boats)	15.3	15.3	15.3	15.3
	(boats)	12.3	12.3	12.3	12.3
	(boats)	10.0	10.0	10.0	10.0
	(boats)	5.3	5.3	5.3	5.3
	(boats)	-	-	-	-

Histogram Data						
Mon-Fri						
t = 0		0%	0%	0%	0%	0%
0< t ≤5		57%	47%	59%	39%	20%
5< t ≤10		15%	15%	20%	29%	15%
10< t ≤15		16%	15%	16%	15%	14%
15< t ≤20		11%	13%	3%	9%	13%
20< t ≤25		1%	3%	2%	4%	11%
25< t ≤30		0%	3%	1%	2%	9%
30< t ≤35		0%	2%	0%	1%	7%
35< t ≤40		0%	1%	0%	1%	4%
40< t ≤45		0%	0%	0%	0%	3%
45< t ≤50		0%	0%	0%	0%	2%
50< t ≤55		0%	0%	0%	0%	1%
55< t ≤60		0%	0%	0%	0%	1%
60< t		0%	0%	0%	0%	1%
Sat & Sun						
t = 0		0%	0%	0%	0%	0%
0< t ≤5		89%	64%	74%	19%	22%
5< t ≤10		4%	10%	11%	13%	15%
10< t ≤15		3%	10%	11%	13%	15%
15< t ≤20		3%	10%	2%	12%	13%
20< t ≤25		0%	3%	1%	10%	11%
25< t ≤30		0%	1%	0%	8%	8%
30< t ≤35		0%	1%	0%	6%	6%
35< t ≤40		0%	0%	0%	4%	4%

		0%	0%	0%	0%	0%
		46%	38%	50%	37%	36%
		19%	19%	25%	32%	27%
		20%	18%	19%	14%	16%
		13%	15%	3%	8%	10%
		1%	4%	2%	4%	5%
		1%	3%	1%	2%	2%
		0%	2%	0%	1%	1%
		0%	1%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		85%	62%	73%	38%	38%
		5%	12%	14%	27%	27%
		5%	12%	11%	16%	17%
		5%	10%	1%	10%	10%
		0%	1%	1%	5%	5%
		0%	1%	0%	3%	2%
		0%	1%	0%	1%	1%
		0%	0%	0%	0%	0%

		0%	0%	0%	0%	0%
		52%	43%	55%	38%	38%
		17%	17%	22%	31%	28%
		18%	16%	17%	14%	15%
		11%	14%	3%	8%	9%
		1%	3%	2%	4%	4%
		0%	3%	1%	2%	2%
		0%	2%	0%	1%	1%
		0%	1%	0%	0%	1%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		89%	66%	76%	34%	9%
		4%	10%	12%	23%	6%
		4%	10%	11%	18%	6%
		4%	10%	1%	13%	6%
		0%	1%	1%	7%	6%
		0%	1%	0%	4%	5%
		0%	1%	0%	2%	5%
		0%	0%	0%	0%	4%

		0%	0%	0%	0%	0%
		60%	50%	62%	39%	39%
		14%	14%	18%	28%	28%
		15%	14%	15%	15%	15%
		10%	13%	3%	9%	9%
		1%	3%	2%	4%	4%
		0%	3%	1%	2%	2%
		0%	2%	0%	1%	1%
		0%	1%	0%	0%	1%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%
		82%	53%	63%	9%	9%
		9%	12%	14%	6%	6%
		4%	11%	13%	6%	6%
		3%	11%	6%	6%	6%
		1%	6%	2%	6%	6%
		0%	3%	1%	5%	5%
		0%	2%	0%	5%	5%
		0%	1%	0%	4%	4%

	St Lucie, 40 sec interval					St Lucie, 40 sec interval, Passing Allowed					St Lucie, 30 sec interval (sensitivity)				St Lucie, 50 sec interval (sensitivity)			
Case No	1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
40< t ≤45	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%
45< t ≤50	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
50< t ≤55	0%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
55< t ≤60	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
60< t	0%	0%	0%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	41%
All Week																		
t = 0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5	81%	60%	71%	25%	20%	73%	55%	67%	38%	37%	79%	60%	71%	35%	77%	53%	63%	18%
5< t ≤10	6%	11%	13%	18%	15%	9%	14%	17%	29%	27%	7%	12%	14%	25%	10%	12%	15%	13%
10< t ≤15	6%	12%	12%	14%	14%	10%	14%	13%	15%	16%	8%	12%	12%	17%	7%	11%	13%	9%
15< t ≤20	5%	11%	2%	11%	13%	7%	12%	2%	9%	10%	6%	11%	2%	11%	5%	12%	5%	7%
20< t ≤25	0%	3%	1%	9%	11%	0%	2%	1%	5%	5%	0%	2%	1%	6%	1%	5%	2%	5%
25< t ≤30	0%	2%	0%	6%	9%	0%	2%	0%	2%	2%	0%	2%	0%	3%	0%	3%	1%	4%
30< t ≤35	0%	1%	0%	5%	6%	0%	1%	0%	1%	1%	0%	1%	0%	2%	0%	2%	0%	4%
35< t ≤40	0%	0%	0%	3%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
40< t ≤45	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
45< t ≤50	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
50< t ≤55	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
55< t ≤60	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
60< t	0%	0%	0%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%

		New River, 40 sec interval					New River, 40 sec interval, Passing Allowed					New River, 30 sec interval (sensitivity)				New River, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Average Boat Wait Times (all days)																			
Boat Arrivals	(#/day)	varies	varies	varies	varies	656	varies	varies	varies	varies	656	varies	varies	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	65%	71%	68%	78%	92%	42%	51%	46%	63%	75%	57%	65%	61%	74%	70%	76%	73%	82%
Avg. Wait Time (all)	(min)	21.1	28.6	22.8	49.0	73.5	1.7	3.5	1.8	4.6	6.6	4.9	9.9	5.6	19.4	42.7	53.5	45.4	83.6
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	32.4	40.1	33.6	62.4	80.1	4.1	6.8	3.8	7.3	8.8	8.6	15.3	9.2	26.3	61.1	70.5	62.5	101.6
P50	(min)	21.3	16.6	12.8	20.0	73.1	0.9	3.8	1.4	6.0	7.1	3.2	10.2	5.1	12.8	32.9	22.1	19.5	28.0
P80	**(min)**	**62.7**	**84.0**	**69.4**	**142.4**	**144.1**	**9.2**	**14.0**	**8.3**	**11.7**	**14.2**	**17.3**	**28.4**	**16.8**	**50.1**	**132.7**	**157.7**	**139.2**	**234.6**
P90	(min)	84.5	110.4	92.5	181.1	167.4	13.9	16.9	10.9	15.9	19.9	24.1	38.6	25.0	72.8	163.7	195.3	172.2	301.0
P99	(min)	120.8	153.2	132.7	239.3	218.2	19.0	28.1	16.2	32.2	36.3	42.6	70.1	47.1	116.1	209.6	268.7	234.9	368.8
Max. Non-Zero Wait Time	(min)	159.1	217.5	172.2	301.5	319.3	31.1	52.4	35.8	58.8	63.3	67.6	105.0	75.8	146.7	258.1	334.9	304.6	431.1
Average Boat Wait Times - Monday to Friday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	656	varies	varies	varies	varies	656	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	39%	49%	42%	60%	92%	25%	35%	29%	47%	77%	32%	42%	36%	54%	46%	55%	49%	69%
Avg. Wait Time (all)	(min)	1.5	3.5	1.7	3.9	78.0	1.2	2.7	1.3	3.0	7.1	1.3	3.0	1.4	3.3	1.8	4.6	2.0	23.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.9	7.2	4.0	6.4	84.9	4.8	7.7	4.5	6.3	9.3	4.1	7.2	4.0	6.2	3.9	8.4	4.1	33.6
P50	(min)	0.7	4.2	1.1	5.2	81.0	1.4	6.2	2.9	5.5	7.7	0.6	4.9	1.3	5.2	0.9	4.0	1.3	6.5
P80	**(min)**	**9.0**	**14.1**	**8.5**	**10.8**	**151.2**	**10.8**	**14.2**	**9.0**	**10.3**	**15.2**	**9.7**	**14.0**	**8.6**	**10.4**	**8.5**	**14.7**	**8.7**	**13.8**
P90	(min)	13.3	17.4	11.1	14.2	173.5	14.0	16.9	11.0	12.8	21.0	13.6	17.0	11.0	13.2	13.2	18.3	11.5	23.8
P99	(min)	17.7	31.7	19.3	25.7	224.7	17.6	30.2	18.7	23.9	36.9	17.6	30.6	18.8	24.6	18.1	35.2	20.2	382.5
Max. Non-Zero Wait Time	(min)	31.1	52.9	39.8	43.2	319.3	31.1	52.4	35.8	42.0	63.3	31.1	52.4	37.8	42.0	31.1	334.9	42.5	431.1
Average Boat Wait Times - Weekend (Sat & Sun)		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	658	varies	varies	varies	varies	658	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	87%	90%	89%	93%	92%	55%	64%	60%	76%	72%	77%	83%	81%	90%	90%	93%	92%	95%
Avg. Wait Time (all)	(min)	37.1	49.1	40.1	85.8	62.2	2.1	4.1	2.1	5.9	5.2	7.9	15.5	9.0	32.5	76.2	93.6	80.9	138.4
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	42.8	54.6	45.2	92.1	67.9	3.8	6.5	3.6	7.8	7.3	10.2	18.7	11.1	36.1	84.8	100.8	87.9	146.4
P50	(min)	40.9	52.4	42.7	82.4	57.8	0.9	2.5	1.2	6.4	5.7	4.7	15.1	7.1	28.1	81.8	94.0	83.4	133.4
P80	**(min)**	**73.0**	**99.2**	**81.3**	**169.1**	**124.2**	**8.0**	**13.9**	**7.9**	**12.5**	**11.9**	**20.3**	**33.6**	**20.6**	**63.5**	**151.5**	**181.2**	**159.0**	**266.7**
P90	(min)	91.2	121.4	100.6	196.0	146.3	13.9	17.0	10.9	17.3	16.5	26.7	43.4	28.0	83.2	174.3	211.1	184.0	307.6
P99	(min)	124.0	157.4	136.3	246.0	192.0	19.4	26.9	15.3	34.7	34.3	44.8	74.0	49.9	120.1	215.0	275.0	242.3	353.9
Max. Non-Zero Wait Time	(min)	159.1	217.5	172.2	301.5	238.5	26.6	37.3	24.0	58.8	62.7	67.6	105.0	75.8	146.7	258.1	332.0	304.6	393.6
Average Boat Wait Times - Saturday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	658	761	varies	varies	varies	varies	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	87%	90%	89%	93%	92%	52%	61%	57%	75%	72%	75%	82%	79%	91%	90%	93%	92%	94%
Avg. Wait Time (all)	(min)	29.7	41.8	33.5	85.6	65.5	1.4	3.8	1.9	5.0	4.4	4.4	12.8	6.9	28.1	70.5	87.2	74.2	135.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	34.0	46.3	37.6	91.7	71.3	2.7	6.1	3.4	6.6	6.1	5.9	15.6	8.8	31.1	78.0	93.6	80.4	143.0
P50	(min)	33.8	50.3	38.6	83.9	65.5	0.7	2.0	1.1	5.8	5.3	1.8	14.3	5.4	27.1	74.0	93.4	80.7	132.7
P80	**(min)**	**55.9**	**82.7**	**67.4**	**161.8**	**122.2**	**2.9**	**13.3**	**7.4**	**11.2**	**10.6**	**13.1**	**29.6**	**16.7**	**53.6**	**136.6**	**162.3**	**142.4**	**263.3**
P90	(min)	67.9	95.6	80.2	197.1	148.7	10.3	16.7	10.6	14.1	13.0	17.8	35.7	23.0	66.6	164.7	192.4	165.5	302.2
P99	(min)	98.4	118.1	103.2	247.8	199.2	18.1	26.8	15.2	22.5	21.0	25.2	47.5	33.5	92.7	209.7	244.2	212.4	337.9
Max. Non-Zero Wait Time	(min)	129.3	161.1	130.7	281.3	238.5	22.4	36.1	23.4	29.1	26.9	38.8	67.2	45.8	122.1	253.8	287.0	258.7	374.9
Average Boat Wait Times - Sunday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	657	varies	varies	varies	varies	657	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	86%	89%	88%	93%	91%	58%	67%	62%	77%	72%	80%	84%	83%	89%	89%	92%	92%	95%
Avg. Wait Time (all)	(min)	44.6	56.4	46.8	86.1	58.9	2.8	4.5	2.3	6.9	6.1	11.3	18.3	11.0	36.9	81.9	100.1	87.6	141.7
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	51.7	63.2	53.0	92.6	64.4	4.8	6.7	3.8	9.0	8.5	14.2	21.7	13.4	41.3	91.7	108.3	95.6	149.7
P50	(min)	53.5	55.9	49.5	80.9	50.1	1.2	3.0	1.4	7.1	6.3	11.8	16.6	9.0	30.2	93.4	96.2	88.2	135.1
P80	**(min)**	**88.9**	**120.8**	**99.1**	**174.2**	**126.0**	**11.2**	**14.2**	**8.3**	**14.6**	**14.4**	**26.2**	**40.5**	**24.7**	**79.0**	**160.2**	**195.9**	**173.7**	**269.7**
P90	(min)	103.2	136.0	114.4	195.3	144.4	15.6	17.1	11.0	20.9	20.3	32.6	53.8	33.2	98.6	180.0	226.6	197.5	315.9
P99	(min)	131.3	164.6	144.2	243.7	179.7	20.1	27.0	15.3	39.0	38.4	48.5	82.0	57.7	124.8	219.8	286.1	254.6	362.5
Max. Non-Zero Wait Time	(min)	159.1	217.5	172.2	301.5	218.5	26.6	37.3	24.0	58.8	62.7	67.6	105.0	75.8	146.7	258.1	332.0	304.6	393.6
		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter
Bridge Closures		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Total Closures	(#/week)	70.0	99.6	104.6	205.1	205.1	70.0	99.6	104.6	205.1	205.1	70.0	99.6	104.6	205.1	70.0	99.6	104.6	205.1
Avg. Duration	(min)	19.1	19.5	13.6	13.5	13.5	19.1	19.5	13.6	13.5	13.5	19.1	19.5	13.6	13.5	19.1	19.5	13.6	13.5
Min. Duration	(min)	14.8	15.7	11.1	9.9	9.9	14.8	15.7	11.1	9.9	9.9	14.8	15.7	11.1	9.9	14.8	15.7	11.1	9.9
Max. Duration	(min)	39.3	54.0	36.5	44.8	44.8	39.3	54.0	36.5	44.8	44.8	39.3	54.0	36.5	44.8	39.3	54.0	36.5	44.8
Total Duration	(h/week)	22.3	32.4	23.7	46.3	46.3	22.3	32.4	23.7	46.3	46.3	22.3	32.4	23.7	46.3	22.3	32.4	23.7	46.3
Total Open Duration	(h/week)	145.7	135.6	144.3	121.7	121.7	145.7	135.6	144.3	121.7	121.7	145.7	135.6	144.3	121.7	145.7	135.6	144.3	121.7
Closure Durations																			
P10	(min)	16.8	17.4	12.6	10.8	10.8	16.8	17.4	12.6	10.8	10.8	16.8	17.4	12.6	10.8	16.8	17.4	12.6	10.8
P50	(min)	18.7	18.3	13.1	12.8	12.8	18.7	18.3	13.1	12.8	12.8	18.7	18.3	13.1	12.8	18.7	18.3	13.1	12.8

		New River, 40 sec interval					New River, 40 sec interval, Passing Allowed					New River, 30 sec interval (sensitivity)				New River, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
P80	**(min)**	**19.7**	**18.9**	**13.5**	**13.8**	**13.8**	**19.7**	**18.9**	**13.5**	**13.8**	**13.8**	**19.7**	**18.9**	**13.5**	**13.8**	**19.7**	**18.9**	**13.5**	**13.8**
P90	(min)	20.3	23.6	13.9	17.8	17.8	20.3	23.6	13.9	17.8	17.8	20.3	23.6	13.9	17.8	20.3	23.6	13.9	17.8
Train Traffic		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Time Between Trains	(h)	2.3	1.5	1.5	0.5	0.5	2.3	1.5	1.5	0.5	0.5	2.3	1.5	1.5	0.5	2.3	1.5	1.5	0.5
Number of Train Crossings																			
Mon	(#/day)	12	17	17	50	50	12	17	17	50	50	12	17	17	50	12	17	17	50
Tue	(#/day)	11	20	20	52	52	11	20	20	52	52	11	20	20	52	11	20	20	52
Wed	(#/day)	13	21	21	52	52	13	21	21	52	52	13	21	21	52	13	21	21	52
Thu	(#/day)	10	18	18	49	49	10	18	18	49	49	10	18	18	49	10	18	18	49
Fri	(#/day)	13	17	17	49	49	13	17	17	49	49	13	17	17	49	13	17	17	49
Sat	(#/day)	8	11	11	44	44	8	11	11	44	44	8	11	11	44	8	11	11	44
Sun	(#/day)	7	10	10	42	42	7	10	10	42	42	7	10	10	42	7	10	10	42
Total per Week	(#/week)	74	114	114	338	338	74	114	114	338	338	74	114	114	338	74	114	114	338
Train Meets																			
Avg. Northbound Trains that Stop	(#/week)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Southbound Trains that Stop	(#/week)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg. Trains that Stop	**(#/week)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg. Wait of Northbound Trains	(min)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Wait of Southbound Trains	(min)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg. Wait of All Trains (non-zero)	**(min)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Boat Traffic by Time of Day		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
5:00 to 6:00	(boats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:00 to 7:00	(boats)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7:00 to 8:00	(boats)	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
8:00 to 9:00	(boats)	5.3	5.3	5.3	5.3	12.6	5.3	5.3	5.3	5.3	12.6	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
9:00 to 10:00	(boats)	9.1	9.1	9.1	9.1	15.2	9.1	9.1	9.1	9.1	15.2	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
10:00 to 11:00	(boats)	20.5	20.5	20.5	20.5	30.3	20.5	20.5	20.5	20.5	30.3	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
11:00 to 12:00	(boats)	24.6	24.6	24.6	24.6	17.8	24.6	24.6	24.6	24.6	17.8	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
12:00 to 13:00	(boats)	35.0	35.0	35.0	35.0	38.4	35.0	35.0	35.0	35.0	38.4	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
13:00 to 14:00	(boats)	40.6	40.6	40.6	40.6	78.4	40.6	40.6	40.6	40.6	78.4	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
14:00 to 15:00	(boats)	53.7	53.7	53.7	53.7	93.0	53.7	53.7	53.7	53.7	93.0	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
15:00 to 16:00	(boats)	55.8	55.8	55.8	55.8	109.4	55.8	55.8	55.8	55.8	109.4	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
16:00 to 17:00	(boats)	47.9	47.9	47.9	47.9	82.6	47.9	47.9	47.9	47.9	82.6	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9
17:00 to 18:00	(boats)	48.5	48.5	48.5	48.5	95.0	48.5	48.5	48.5	48.5	95.0	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.5
18:00 to 19:00	(boats)	36.5	36.5	36.5	36.5	78.6	36.5	36.5	36.5	36.5	78.6	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.4
19:00 to 20:00	(boats)	12.8	12.8	12.8	12.8	2.5	12.8	12.8	12.8	12.8	2.5	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
20:00 to 21:00	(boats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21:00 to 22:00	(boats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Histogram Data																			
Mon-Fri																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		71%	52%	67%	49%	10%	62%	46%	61%	47%	37%	68%	50%	65%	49%	73%	53%	68%	43%
5< t ≤10		11%	15%	19%	27%	6%	16%	19%	25%	31%	25%	13%	16%	21%	29%	11%	14%	17%	23%
10< t ≤15		12%	16%	12%	15%	6%	16%	19%	13%	15%	17%	13%	17%	12%	15%	11%	15%	12%	15%
15< t ≤20		6%	11%	2%	5%	4%	7%	11%	2%	4%	9%	6%	11%	2%	4%	6%	11%	2%	5%
20< t ≤25		0%	3%	1%	3%	3%	0%	3%	1%	2%	6%	0%	3%	1%	2%	0%	3%	1%	3%
25< t ≤30		0%	2%	0%	1%	2%	0%	2%	0%	1%	3%	0%	2%	0%	1%	0%	3%	0%	1%
30< t ≤35		0%	1%	0%	0%	2%	0%	1%	0%	0%	2%	0%	1%	0%	0%	0%	1%	0%	0%
35< t ≤40		0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
40< t ≤45		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
45< t ≤50		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
50< t ≤55		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
55< t ≤60		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
60< t		0%	0%	0%	0%	57%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%
Sat & Sun																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		22%	21%	22%	10%	11%	75%	57%	71%	43%	46%	51%	34%	44%	17%	18%	12%	15%	7%
5< t ≤10		4%	7%	7%	7%	7%	8%	12%	16%	25%	25%	9%	8%	13%	9%	4%	6%	6%	4%
10< t ≤15		2%	5%	5%	5%	7%	9%	15%	12%	17%	16%	9%	7%	13%	9%	3%	5%	5%	4%
15< t ≤20		3%	4%	3%	4%	4%	7%	12%	1%	7%	6%	10%	9%	10%	6%	2%	5%	3%	3%
20< t ≤25		3%	2%	3%	3%	3%	1%	3%	0%	3%	3%	9%	8%	7%	6%	1%	3%	2%	3%
25< t ≤30		4%	2%	3%	2%	3%	0%	1%	0%	1%	1%	5%	7%	6%	6%	1%	2%	2%	2%
30< t ≤35		5%	2%	2%	2%	3%	0%	0%	0%	1%	1%	3%	7%	4%	5%	1%	2%	2%	2%
35< t ≤40		5%	2%	3%	2%	3%	0%	0%	0%	1%	1%	2%	6%	2%	4%	1%	1%	1%	2%

	New River, 40 sec interval					New River, 40 sec interval, Passing Allowed					New River, 30 sec interval (sensitivity)				New River, 50 sec interval (sensitivity)			
Case No	1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
40< t ≤45	6%	2%	4%	2%	3%	0%	0%	0%	0%	0%	1%	4%	1%	4%	2%	1%	1%	2%
45< t ≤50	6%	3%	4%	2%	2%	0%	0%	0%	0%	0%	1%	2%	1%	4%	2%	1%	1%	1%
50< t ≤55	5%	4%	4%	2%	2%	0%	0%	0%	0%	0%	0%	2%	0%	4%	2%	1%	1%	1%
55< t ≤60	5%	4%	4%	2%	2%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	1%	1%	1%
60< t	30%	44%	35%	57%	49%	0%	0%	0%	0%	0%	0%	3%	0%	22%	61%	61%	59%	67%
All Week																		
t = 0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5	35%	30%	35%	23%	10%	71%	53%	68%	45%	40%	55%	39%	50%	27%	34%	25%	31%	22%
5< t ≤10	6%	9%	10%	14%	6%	10%	14%	18%	27%	25%	10%	10%	15%	15%	6%	8%	9%	12%
10< t ≤15	5%	8%	7%	9%	6%	11%	16%	12%	17%	17%	10%	10%	12%	11%	5%	8%	7%	9%
15< t ≤20	3%	6%	3%	4%	4%	7%	12%	1%	6%	8%	9%	10%	7%	5%	3%	7%	3%	4%
20< t ≤25	3%	3%	2%	3%	3%	0%	3%	0%	3%	5%	6%	6%	6%	5%	1%	3%	2%	3%
25< t ≤30	3%	2%	2%	2%	3%	0%	1%	0%	1%	2%	4%	6%	4%	4%	1%	2%	1%	2%
30< t ≤35	4%	1%	2%	1%	2%	0%	0%	0%	1%	1%	2%	5%	3%	4%	1%	2%	1%	1%
35< t ≤40	4%	1%	2%	1%	2%	0%	0%	0%	0%	1%	2%	4%	1%	3%	1%	1%	1%	1%
40< t ≤45	4%	2%	3%	1%	2%	0%	0%	0%	0%	0%	1%	3%	1%	3%	1%	1%	1%	1%
45< t ≤50	4%	2%	3%	1%	2%	0%	0%	0%	0%	0%	0%	2%	0%	3%	1%	1%	1%	1%
50< t ≤55	4%	3%	3%	1%	2%	0%	0%	0%	0%	0%	0%	1%	0%	3%	2%	0%	1%	1%
55< t ≤60	4%	3%	3%	1%	2%	0%	0%	0%	0%	0%	0%	1%	0%	3%	2%	1%	1%	1%
60< t	22%	31%	25%	37%	55%	0%	0%	0%	0%	0%	0%	2%	0%	15%	43%	41%	41%	44%

		Jupiter, 40 sec interval					Jupiter, 40 sec interval, Passing Allowed					Jupiter, 30 sec interval (sensitivity)				Jupiter, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Average Boat Wait Times (all days)																			
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	47%	53%	49%	75%	87%	28%	34%	29%	58%	66%	37%	43%	39%	68%	56%	62%	58%	78%
Avg. Wait Time (all)	(min)	1.6	3.2	1.7	18.9	25.4	1.0	1.9	0.9	3.3	3.6	1.1	2.2	1.1	5.1	3.6	7.8	4.8	46.6
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.4	6.0	3.4	25.1	29.3	3.6	5.5	3.1	5.6	5.5	3.1	5.2	2.8	7.4	6.5	12.6	8.2	59.5
P50	(min)	0.9	1.9	1.1	12.8	21.3	0.6	1.4	0.7	5.0	5.0	0.5	0.9	0.6	6.3	2.7	8.5	4.5	27.7
P80	(min)	5.5	12.3	6.6	46.2	50.8	8.0	12.0	6.9	8.8	8.9	5.8	11.5	6.0	11.5	12.0	21.0	14.0	121.8
P90	(min)	12.4	16.5	10.4	66.4	70.1	13.0	15.4	9.9	10.9	10.9	12.3	15.5	9.7	16.7	17.8	31.3	21.7	162.5
P99	(min)	19.7	33.0	20.5	112.6	111.9	18.3	26.4	17.6	21.4	20.2	18.4	28.3	18.4	29.0	37.5	62.4	44.5	236.4
Max. Non-Zero Wait Time	(min)	35.6	56.2	38.5	169.7	167.8	35.6	48.4	26.9	69.2	67.8	35.6	48.4	31.0	69.2	63.1	99.1	76.3	306.1
Average Boat Wait Times - Monday to Friday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	28%	33%	28%	56%	87%	20%	25%	20%	48%	66%	24%	29%	24%	52%	32%	37%	32%	60%
Avg. Wait Time (all)	(min)	1.5	2.1	1.0	3.1	26.1	1.3	1.9	0.9	2.7	3.7	1.4	2.0	0.9	2.9	1.6	2.3	1.1	3.4
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	5.1	6.4	3.6	5.5	30.1	6.3	7.4	4.4	5.6	5.6	5.6	6.8	3.8	5.5	4.9	6.2	3.4	5.6
P50	(min)	1.1	3.7	0.9	4.8	21.7	4.7	6.3	3.0	5.0	5.0	2.5	4.8	1.5	4.8	1.0	2.7	0.9	4.8
P80	(min)	11.4	13.0	7.8	8.7	52.6	12.6	13.6	8.7	8.6	8.9	12.0	13.3	8.2	8.6	11.0	12.7	7.4	8.9
P90	(min)	14.8	15.8	10.2	10.8	72.3	15.3	16.0	10.6	10.5	11.1	15.1	15.9	10.4	10.5	14.7	15.9	10.1	11.2
P99	(min)	21.6	29.0	17.3	22.8	115.2	22.6	28.7	17.8	22.2	20.6	21.7	28.8	17.5	22.3	21.4	29.2	17.3	23.5
Max. Non-Zero Wait Time	(min)	35.6	48.4	31.0	69.2	167.8	35.6	48.4	26.9	69.2	67.8	35.6	48.4	31.0	69.2	44.2	48.4	31.0	69.2
Average Boat Wait Times - Weekend (Sat & Sun)		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	62%	69%	65%	90%	86%	33%	40%	37%	66%	65%	47%	55%	51%	81%	75%	82%	79%	93%
Avg. Wait Time (all)	(min)	1.7	4.0	2.2	31.4	23.6	0.7	1.9	1.0	3.7	3.4	1.0	2.4	1.3	6.8	5.3	12.2	7.7	80.9
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.8	5.8	3.4	34.7	27.4	2.2	4.6	2.6	5.6	5.2	2.1	4.5	2.5	8.4	7.0	14.8	9.8	86.8
P50	(min)	0.9	1.7	1.2	28.1	20.4	0.5	0.8	0.6	4.9	4.7	0.5	0.7	0.6	7.2	3.1	10.9	6.0	79.1
P80	(min)	3.2	11.9	5.9	58.5	46.8	1.5	10.5	5.0	8.9	8.6	1.4	9.9	3.9	13.8	12.5	24.8	16.9	148.3
P90	(min)	9.3	17.0	10.6	76.3	64.1	9.3	14.8	9.3	11.1	10.2	8.0	15.2	9.2	18.6	19.7	35.7	24.6	180.3
P99	(min)	19.5	34.5	21.4	119.3	102.0	17.5	25.4	17.5	21.1	19.0	17.9	28.2	18.6	30.4	40.3	66.9	47.2	244.8
Max. Non-Zero Wait Time	(min)	34.8	56.2	38.5	169.7	149.7	34.8	40.7	24.2	37.4	37.8	34.8	44.5	29.8	48.9	63.1	99.1	76.3	306.1
Average Boat Wait Times - Saturday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	514	varies	varies	varies	varies	514	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	59%	66%	62%	88%	86%	32%	39%	35%	65%	65%	46%	53%	49%	78%	72%	79%	75%	92%
Avg. Wait Time (all)	(min)	1.8	4.0	2.1	25.4	25.5	0.8	1.9	1.0	3.7	3.6	1.1	2.5	1.2	6.4	4.6	10.1	6.0	68.6
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.0	6.1	3.4	28.8	29.7	2.5	4.8	2.7	5.7	5.6	2.3	4.7	2.5	8.1	6.4	12.8	8.0	74.7
P50	(min)	0.9	1.6	1.1	22.4	23.0	0.6	0.8	0.6	5.1	5.0	0.5	0.7	0.5	7.0	2.4	8.0	4.3	67.5
P80	(min)	3.4	12.2	5.7	49.2	51.9	2.4	10.9	5.3	9.1	8.9	1.5	10.5	4.4	13.5	10.9	20.5	13.0	129.2
P90	(min)	11.0	17.3	10.5	66.2	68.1	10.9	15.0	9.5	11.8	11.1	9.9	15.5	9.3	18.4	19.5	33.0	20.0	155.4
P99	(min)	20.2	39.7	22.6	101.2	107.0	17.7	25.8	17.5	21.6	20.5	18.1	30.1	18.7	28.9	40.5	65.4	46.5	208.6
Max. Non-Zero Wait Time	(min)	34.8	56.2	38.5	140.7	149.7	34.8	40.7	24.0	30.4	29.8	34.8	44.5	29.8	48.9	61.6	96.3	76.3	258.6
Average Boat Wait Times - Sunday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	513	varies	varies	varies	varies	513	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	64%	72%	68%	92%	86%	34%	42%	38%	68%	64%	49%	57%	53%	83%	78%	85%	82%	94%
Avg. Wait Time (all)	(min)	1.7	4.0	2.3	37.1	21.7	0.7	1.8	1.0	3.7	3.2	0.9	2.4	1.3	7.2	5.9	14.2	9.4	92.7
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.6	5.6	3.4	40.2	25.1	2.0	4.4	2.5	5.4	4.9	1.8	4.3	2.4	8.7	7.5	16.7	11.4	98.3
P50	(min)	1.0	1.8	1.2	35.1	18.4	0.5	0.7	0.6	4.8	4.5	0.5	0.7	0.6	7.4	4.0	13.8	8.1	89.1
P80	(min)	3.1	11.6	6.0	65.7	41.8	1.3	10.0	4.7	8.7	8.3	1.3	9.4	3.5	14.1	13.4	27.6	20.0	167.7
P90	(min)	7.7	16.6	10.6	85.5	58.8	7.3	14.7	9.1	10.6	9.7	5.9	15.0	9.1	18.8	19.8	37.3	27.2	197.3
P99	(min)	18.6	28.7	20.3	128.5	96.8	17.3	24.9	17.5	20.4	16.6	17.5	26.5	18.6	31.4	40.1	68.5	47.6	257.1
Max. Non-Zero Wait Time	(min)	26.1	37.5	28.7	169.7	148.4	19.4	34.9	24.2	37.4	37.8	21.7	36.0	25.3	44.0	63.1	99.1	74.8	306.1
		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter
Bridge Closures		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Total Closures	(#/week)	72.3	99.8	105.5	291.0	291.0	72.3	99.8	105.5	291.0	291.0	72.3	99.8	105.5	291.0	72.3	99.8	105.5	291.0
Avg. Duration	(min)	19.4	19.4	13.1	12.0	12.0	19.4	19.4	13.1	12.0	12.0	19.4	19.4	13.1	12.0	19.4	19.4	13.1	12.0
Min. Duration	(min)	15.8	15.2	10.7	9.8	9.8	15.8	15.2	10.7	9.8	9.8	15.8	15.2	10.7	9.8	15.8	15.2	10.7	9.8
Max. Duration	(min)	39.1	56.4	34.0	70.0	70.0	39.1	56.4	34.0	70.0	70.0	39.1	56.4	34.0	70.0	39.1	56.4	34.0	70.0
Total Duration	(h/week)	23.4	32.3	23.1	58.2	58.2	23.4	32.3	23.1	58.2	58.2	23.4	32.3	23.1	58.2	23.4	32.3	23.1	58.2
Total Open Duration	(h/week)	144.6	135.7	144.9	109.8	109.8	144.6	135.7	144.9	109.8	109.8	144.6	135.7	144.9	109.8	144.6	135.7	144.9	109.8
Closure Durations																			
P10	(min)	17.2	16.7	11.9	10.0	10.0	17.2	16.7	11.9	10.0	10.0	17.2	16.7	11.9	10.0	17.2	16.7	11.9	10.0
P50	(min)	18.9	17.6	12.3	10.6	10.6	18.9	17.6	12.3	10.6	10.6	18.9	17.6	12.3	10.6	18.9	17.6	12.3	10.6

		Jupiter, 40 sec interval					Jupiter, 40 sec interval, Passing Allowed					Jupiter, 30 sec interval (sensitivity)				Jupiter, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
P80	(min)	19.6	18.5	12.9	12.5	12.5	19.6	18.5	12.9	12.5	12.5	19.6	18.5	12.9	12.5	19.6	18.5	12.9	12.5
P90	(min)	20.1	26.8	15.9	15.7	15.7	20.1	26.8	15.9	15.7	15.7	20.1	26.8	15.9	15.7	20.1	26.8	15.9	15.7
Train Traffic		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Time Between Trains	(h)	2.2	1.4	1.4	0.5	0.5	2.2	1.4	1.4	0.5	0.5	2.2	1.4	1.4	0.5	2.2	1.4	1.4	0.5
Number of Train Crossings																			
Mon	(#/day)	12	19	19	51	51	12	19	19	51	51	12	19	19	51	12	19	19	51
Tue	(#/day)	11	22	22	52	52	11	22	22	52	52	11	22	22	52	11	22	22	52
Wed	(#/day)	13	19	19	54	54	13	19	19	54	54	13	19	19	54	13	19	19	54
Thu	(#/day)	12	21	21	53	53	12	21	21	53	53	12	21	21	53	12	21	21	53
Fri	(#/day)	13	17	17	48	48	13	17	17	48	48	13	17	17	48	13	17	17	48
Sat	(#/day)	9	11	11	44	44	9	11	11	44	44	9	11	11	44	9	11	11	44
Sun	(#/day)	6	13	13	44	44	6	13	13	44	44	6	13	13	44	6	13	13	44
Total per Week	(#/week)	76	122	122	346	346	76	122	122	346	346	76	122	122	346	76	122	122	346
Train Meets																			
Avg. Northbound Trains that Stop	(#/week)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Southbound Trains that Stop	(#/week)	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.3	1.4	0.0	0.0
Avg. Trains that Stop	**(#/week)**	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.3	1.4	0.0	0.0
Avg. Wait of Northbound Trains	(min)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Wait of Southbound Trains	(min)	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	1.3	1.2	0.0	0.0
Avg. Wait of All Trains (non-zero)	**(min)**	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	0.0	1.3	1.2	0.0	0.0	1.3	1.2	0.0	0.0
Average Boat Traffic by Time of Day		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
5:00 to 6:00	(boats)	0.2	0.2	0.2	0.2	3.1	0.2	0.2	0.2	0.2	3.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
6:00 to 7:00	(boats)	4.2	4.2	4.2	4.2	9.9	4.2	4.2	4.2	4.2	9.9	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
7:00 to 8:00	(boats)	6.8	6.8	6.8	6.8	14.2	6.8	6.8	6.8	6.8	14.2	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
8:00 to 9:00	(boats)	9.0	9.0	9.0	9.0	13.0	9.0	9.0	9.0	9.0	13.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
9:00 to 10:00	(boats)	11.7	11.7	11.7	11.7	15.5	11.7	11.7	11.7	11.7	15.5	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
10:00 to 11:00	(boats)	16.9	16.9	16.9	16.9	35.9	16.9	16.9	16.9	16.9	35.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9
11:00 to 12:00	(boats)	23.2	23.2	23.2	23.2	25.4	23.2	23.2	23.2	23.2	25.4	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
12:00 to 13:00	(boats)	28.2	28.2	28.2	28.2	47.6	28.2	28.2	28.2	28.2	47.6	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
13:00 to 14:00	(boats)	32.6	32.6	32.6	32.6	66.6	32.6	32.6	32.6	32.6	66.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6
14:00 to 15:00	(boats)	34.0	34.0	34.0	34.0	76.6	34.0	34.0	34.0	34.0	76.6	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
15:00 to 16:00	(boats)	33.0	33.0	33.0	33.0	65.6	33.0	33.0	33.0	33.0	65.6	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
16:00 to 17:00	(boats)	28.2	28.2	28.2	28.2	67.7	28.2	28.2	28.2	28.2	67.7	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
17:00 to 18:00	(boats)	23.8	23.8	23.8	23.8	18.9	23.8	23.8	23.8	23.8	18.9	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
18:00 to 19:00	(boats)	19.5	19.5	19.5	19.5	17.2	19.5	19.5	19.5	19.5	17.2	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
19:00 to 20:00	(boats)	15.3	15.3	15.3	15.3	24.0	15.3	15.3	15.3	15.3	24.0	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
20:00 to 21:00	(boats)	7.2	7.2	7.2	7.2	11.7	7.2	7.2	7.2	7.2	11.7	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
21:00 to 22:00	(boats)	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histogram Data																			
Mon-Fri																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		62%	54%	69%	52%	18%	51%	45%	61%	50%	50%	58%	51%	66%	51%	65%	57%	71%	51%
5< t ≤10		14%	16%	20%	36%	14%	19%	20%	26%	39%	37%	16%	18%	23%	37%	13%	15%	18%	35%
10< t ≤15		15%	17%	9%	7%	8%	19%	21%	11%	7%	9%	16%	19%	10%	7%	13%	16%	9%	8%
15< t ≤20		8%	9%	1%	3%	7%	10%	10%	2%	3%	3%	9%	9%	1%	3%	8%	9%	1%	3%
20< t ≤25		1%	2%	0%	1%	7%	1%	2%	0%	1%	1%	1%	2%	0%	1%	1%	2%	0%	1%
25< t ≤30		0%	1%	0%	0%	6%	1%	1%	0%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%
30< t ≤35		0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
35< t ≤40		0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
40< t ≤45		0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
45< t ≤50		0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
50< t ≤55		0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
55< t ≤60		0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
60< t		0%	0%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sat & Sun																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		85%	67%	78%	13%	18%	86%	69%	80%	51%	52%	87%	72%	82%	37%	60%	34%	46%	8%
5< t ≤10		5%	10%	11%	11%	14%	5%	10%	12%	36%	37%	4%	8%	10%	30%	15%	14%	18%	6%
10< t ≤15		4%	9%	8%	8%	9%	6%	11%	6%	8%	8%	5%	9%	6%	15%	9%	13%	13%	4%
15< t ≤20		4%	7%	2%	7%	8%	4%	6%	2%	3%	2%	4%	6%	2%	9%	7%	12%	8%	3%
20< t ≤25		1%	3%	1%	7%	8%	0%	2%	0%	1%	1%	0%	2%	1%	5%	4%	8%	6%	3%
25< t ≤30		0%	2%	0%	7%	7%	0%	1%	0%	0%	0%	0%	1%	0%	2%	2%	5%	4%	3%
30< t ≤35		0%	1%	0%	6%	6%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	4%	2%	2%
35< t ≤40		0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	1%	2%

	Jupiter, 40 sec interval					Jupiter, 40 sec interval, Passing Allowed					Jupiter, 30 sec interval (sensitivity)				Jupiter, 50 sec interval (sensitivity)			
Case No	1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
40< t ≤45	0%	0%	0%	5%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	1%	2%
45< t ≤50	0%	0%	0%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	3%
50< t ≤55	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
55< t ≤60	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
60< t	0%	0%	0%	19%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	59%
All Week																		
t = 0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5	79%	63%	75%	26%	18%	74%	61%	74%	50%	50%	79%	66%	78%	42%	61%	40%	52%	23%
5< t ≤10	8%	12%	13%	19%	14%	10%	13%	16%	37%	37%	8%	11%	13%	33%	15%	14%	18%	16%
10< t ≤15	7%	11%	8%	7%	9%	10%	14%	8%	8%	9%	8%	12%	7%	12%	10%	13%	12%	5%
15< t ≤20	5%	8%	2%	6%	8%	6%	7%	2%	3%	3%	5%	7%	2%	7%	7%	11%	7%	3%
20< t ≤25	1%	3%	1%	5%	7%	0%	2%	0%	1%	1%	0%	2%	1%	3%	3%	6%	4%	2%
25< t ≤30	0%	1%	0%	5%	6%	0%	1%	0%	0%	0%	0%	1%	0%	2%	2%	4%	3%	2%
30< t ≤35	0%	1%	0%	4%	5%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	3%	2%	2%
35< t ≤40	0%	0%	0%	4%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	1%	2%
40< t ≤45	0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	2%
45< t ≤50	0%	0%	0%	3%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
50< t ≤55	0%	0%	0%	3%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
55< t ≤60	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
60< t	0%	0%	0%	13%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	39%

		St Lucie, 40 sec interval					St Lucie, 40 sec interval, Passing Allowed					St Lucie, 30 sec interval (sensitivity)				St Lucie, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Average Boat Wait Times (all days)																			
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	41%	48%	44%	74%	86%	24%	32%	28%	59%	66%	33%	40%	36%	67%	49%	56%	52%	78%
Avg. Wait Time (all)	(min)	1.2	3.2	1.8	13.1	15.4	0.9	2.2	1.2	5.1	5.9	1.0	2.5	1.3	6.4	1.8	4.8	2.8	37.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.0	6.6	4.0	17.6	17.9	3.8	6.9	4.2	8.6	8.9	3.1	6.3	3.7	9.6	3.7	8.6	5.4	47.5
P50	(min)	0.7	1.9	1.1	12.4	15.3	0.6	3.3	1.0	7.1	7.5	0.5	1.3	0.7	8.1	1.3	4.2	2.3	23.9
P80	(min)	4.2	14.0	8.5	27.9	29.0	8.7	14.0	8.9	14.1	14.8	5.8	13.4	8.2	16.3	6.0	16.6	10.7	87.1
P90	(min)	11.7	18.1	12.1	40.3	37.1	13.9	17.6	12.0	19.1	19.5	12.6	17.6	11.8	20.9	12.1	21.6	14.4	130.7
P99	(min)	19.4	35.3	22.2	83.5	61.1	19.3	33.1	22.2	31.4	32.6	19.2	33.6	21.7	32.7	21.2	41.8	26.8	232.4
Max. Non-Zero Wait Time	(min)	46.9	66.8	41.0	167.6	101.9	46.9	65.5	41.0	78.3	76.0	46.9	66.8	41.0	78.3	46.9	70.2	50.4	331.8
Average Boat Wait Times - Monday to Friday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	24%	29%	25%	55%	87%	18%	23%	19%	50%	66%	21%	26%	22%	53%	27%	32%	27%	58%
Avg. Wait Time (all)	(min)	1.4	2.5	1.3	4.8	15.8	1.3	2.3	1.2	4.3	6.0	1.4	2.4	1.2	4.5	1.5	2.6	1.3	5.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	5.9	8.4	5.1	8.7	18.3	7.2	9.7	6.2	8.7	9.1	6.4	8.9	5.5	8.6	5.6	8.1	4.9	8.8
P50	(min)	2.9	5.9	2.6	7.0	15.7	6.2	8.3	5.0	7.1	7.6	4.3	7.0	3.8	6.9	1.8	4.9	1.6	7.1
P80	(min)	12.6	15.8	10.3	13.8	29.6	13.7	16.6	11.1	13.4	15.1	13.1	16.1	10.7	13.5	12.2	15.5	10.0	14.2
P90	(min)	15.6	19.2	12.9	19.2	38.0	16.1	20.4	13.3	18.9	19.8	15.8	19.5	13.1	19.0	15.5	19.1	12.8	19.6
P99	(min)	23.2	36.6	24.3	36.1	62.4	24.4	37.0	24.5	35.7	33.7	23.8	36.4	24.4	35.7	22.7	36.7	24.2	36.5
Max. Non-Zero Wait Time	(min)	46.9	66.8	40.5	78.3	101.9	46.9	65.5	40.5	78.3	76.0	46.9	66.8	40.5	78.3	46.9	70.2	40.5	78.3
Average Boat Wait Times - Weekend (Sat & Sun)		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	52%	62%	58%	87%	85%	28%	38%	34%	65%	64%	40%	50%	46%	77%	64%	73%	70%	92%
Avg. Wait Time (all)	(min)	1.1	3.7	2.1	18.8	14.3	0.7	2.1	1.2	5.6	5.4	0.8	2.7	1.4	7.7	2.0	6.4	3.9	59.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.1	6.1	3.6	21.5	16.9	2.3	5.7	3.4	8.5	8.5	1.9	5.3	3.1	10.0	3.1	8.7	5.5	64.2
P50	(min)	0.7	1.4	1.0	17.0	14.5	0.5	1.1	0.7	7.2	7.3	0.4	0.8	0.6	8.7	1.2	4.0	2.3	45.1
P80	(min)	1.9	13.1	7.5	33.2	27.4	1.3	12.4	7.5	14.4	14.2	1.0	11.9	6.8	17.2	4.3	17.0	10.9	110.3
P90	(min)	5.9	17.7	11.8	47.3	34.8	9.8	16.6	11.2	19.1	18.7	7.1	16.7	11.1	21.6	9.1	22.0	14.9	150.2
P99	(min)	18.9	34.4	21.0	88.3	57.8	18.5	30.6	19.5	29.9	30.0	18.5	32.1	19.3	32.0	20.9	42.9	27.8	243.4
Max. Non-Zero Wait Time	(min)	28.2	56.1	41.0	167.6	97.2	22.9	50.8	41.0	48.2	47.3	24.6	52.1	41.0	54.0	33.4	60.4	50.4	331.8
Average Boat Wait Times - Saturday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	442	varies	varies	varies	varies	442	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	46%	54%	51%	83%	86%	26%	34%	31%	63%	66%	36%	45%	41%	73%	56%	64%	61%	90%
Avg. Wait Time (all)	(min)	1.1	3.5	1.9	10.5	17.0	0.8	2.2	1.2	5.1	5.6	0.9	2.7	1.4	6.8	1.5	4.8	2.7	27.7
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	2.4	6.5	3.7	12.7	19.7	3.0	6.5	3.9	8.1	8.5	2.4	6.1	3.5	9.3	2.7	7.5	4.4	30.7
P50	(min)	0.6	1.1	0.8	11.0	17.7	0.5	1.5	0.7	6.9	7.4	0.4	0.8	0.5	8.1	0.9	1.8	1.3	24.4
P80	(min)	1.9	13.8	7.8	21.1	31.4	5.3	13.9	8.5	13.4	13.9	1.7	13.4	7.8	15.7	2.8	15.2	8.8	49.6
P90	(min)	9.5	19.0	12.3	27.0	39.4	12.3	17.9	12.0	18.0	18.3	10.6	18.2	11.9	20.4	9.1	21.2	13.4	68.1
P99	(min)	19.1	38.8	23.8	40.5	61.3	18.8	32.2	21.7	29.0	29.8	18.8	34.6	22.1	30.9	19.6	44.9	26.6	111.6
Max. Non-Zero Wait Time	(min)	23.4	56.1	37.1	61.3	97.2	20.7	40.3	28.3	38.9	38.7	21.2	52.1	28.8	47.4	28.1	60.4	45.6	155.2
Average Boat Wait Times - Sunday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	441	varies	varies	varies	varies	441	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	57%	67%	64%	91%	83%	30%	41%	37%	67%	62%	44%	54%	50%	80%	71%	80%	77%	94%
Avg. Wait Time (all)	(min)	1.1	3.9	2.3	25.5	11.6	0.6	2.1	1.2	5.9	5.2	0.7	2.6	1.5	8.4	2.4	7.6	4.8	84.5
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	1.9	5.7	3.6	28.0	13.9	1.9	5.1	3.1	8.8	8.5	1.6	4.8	2.9	10.6	3.4	9.5	6.3	90.3
P50	(min)	0.7	1.7	1.1	23.3	11.9	0.5	1.0	0.6	7.4	7.1	0.4	0.8	0.6	9.3	1.5	5.8	3.4	83.3
P80	(min)	1.9	12.7	7.4	44.3	22.4	1.0	11.3	6.7	15.3	14.6	0.9	10.9	6.1	18.1	4.9	17.9	12.0	144.1
P90	(min)	4.0	17.0	11.5	58.2	29.1	6.6	15.6	10.5	19.9	19.2	2.5	15.6	10.5	22.5	9.1	22.3	15.7	178.8
P99	(min)	18.8	27.0	16.9	98.0	51.0	18.2	22.9	14.5	30.5	30.3	18.4	21.3	14.8	32.8	22.1	41.5	28.9	256.6
Max. Non-Zero Wait Time	(min)	28.2	51.7	41.0	167.6	73.5	22.9	50.8	41.0	48.2	47.3	24.6	51.2	41.0	54.0	33.4	56.2	50.4	331.8
		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter
Bridge Closures		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Total Closures	(#/week)	73.8	95.4	103.7	255.2	255.2	73.8	95.4	103.7	255.2	255.2	73.8	95.4	103.7	255.2	73.8	95.4	103.7	255.2
Avg. Duration	(min)	20.5	23.0	16.1	15.5	15.5	20.5	23.0	16.1	15.5	15.5	20.5	23.0	16.1	15.5	20.5	23.0	16.1	15.5
Min. Duration	(min)	16.2	17.1	12.4	10.6	10.6	16.2	17.1	12.4	10.6	10.6	16.2	17.1	12.4	10.6	16.2	17.1	12.4	10.6
Max. Duration	(min)	57.5	68.9	43.1	80.9	80.9	57.5	68.9	43.1	80.9	80.9	57.5	68.9	43.1	80.9	57.5	68.9	43.1	80.9
Total Duration	(h/week)	25.2	36.5	27.8	66.0	66.0	25.2	36.5	27.8	66.0	66.0	25.2	36.5	27.8	66.0	25.2	36.5	27.8	66.0
Total Open Duration	(h/week)	142.8	131.5	140.2	102.0	102.0	142.8	131.5	140.2	102.0	102.0	142.8	131.5	140.2	102.0	142.8	131.5	140.2	102.0
Closure Durations																			
P10	(min)	17.3	18.8	13.3	11.0	11.0	17.3	18.8	13.3	11.0	11.0	17.3	18.8	13.3	11.0	17.3	18.8	13.3	11.0
P50	(min)	19.8	19.9	14.5	12.4	12.4	19.8	19.9	14.5	12.4	12.4	19.8	19.9	14.5	12.4	19.8	19.9	14.5	12.4

		St Lucie, 40 sec interval					St Lucie, 40 sec interval, Passing Allowed					St Lucie, 30 sec interval (sensitivity)				St Lucie, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
P80	(min)	20.6	27.0	15.2	20.5	20.5	20.6	27.0	15.2	20.5	20.5	20.6	27.0	15.2	20.5	20.6	27.0	15.2	20.5
P90	(min)	21.2	34.1	24.0	24.2	24.2	21.2	34.1	24.0	24.2	24.2	21.2	34.1	24.0	24.2	21.2	34.1	24.0	24.2
Train Traffic		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Time Between Trains	(h)	2.1	1.4	1.4	0.5	0.5	2.1	1.4	1.4	0.5	0.5	2.1	1.4	1.4	0.5	2.1	1.4	1.4	0.5
Number of Train Crossings																			
Mon	(#/day)	11	20	20	51	51	11	20	20	51	51	11	20	20	51	11	20	20	51
Tue	(#/day)	13	22	22	51	51	13	22	22	51	51	13	22	22	51	13	22	22	51
Wed	(#/day)	13	19	19	54	54	13	19	19	54	54	13	19	19	54	13	19	19	54
Thu	(#/day)	14	20	20	53	53	14	20	20	53	53	14	20	20	53	14	20	20	53
Fri	(#/day)	13	19	19	51	51	13	19	19	51	51	13	19	19	51	13	19	19	51
Sat	(#/day)	9	12	12	43	43	9	12	12	43	43	9	12	12	43	9	12	12	43
Sun	(#/day)	7	10	10	43	43	7	10	10	43	43	7	10	10	43	7	10	10	43
Total per Week	(#/week)	80	122	122	346	346	80	122	122	346	346	80	122	122	346	80	122	122	346
Train Meets																			
Avg. Northbound Trains that Stop	(#/week)	**0.1**	**2.3**	**2.3**	**7.7**	**7.7**	**0.1**	**2.3**	**2.3**	**7.7**	**7.7**	**0.1**	**2.3**	**2.3**	**7.7**	**0.1**	**2.3**	**2.3**	**7.7**
Avg. Southbound Trains that Stop	(#/week)	0.3	2.3	2.3	6.6	6.6	0.3	2.3	2.3	6.6	6.6	0.3	2.3	2.3	6.6	0.3	2.3	2.3	6.6
Avg. Trains that Stop	**(#/week)**	0.4	4.6	4.6	14.3	14.3	0.4	4.6	4.6	14.3	14.3	0.4	4.6	4.6	14.3	0.4	4.6	4.6	14.3
Avg. Wait of Northbound Trains	(min)	**2.0**	**2.2**	**2.2**	**2.7**	**2.7**	**2.0**	**2.2**	**2.2**	**2.7**	**2.7**	**2.0**	**2.2**	**2.2**	**2.7**	**2.0**	**2.2**	**2.2**	**2.7**
Avg. Wait of Southbound Trains	(min)	2.2	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.3	2.2
Avg. Wait of All Trains (non-zero)	**(min)**	2.1	2.2	2.2	2.5	2.5	2.1	2.2	2.2	2.5	2.5	2.1	2.2	2.2	2.5	2.1	2.2	2.2	2.5
Average Boat Traffic by Time of Day		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
5:00 to 6:00	(boats)	1.7	1.7	1.7	1.7	2.1	1.7	1.7	1.7	1.7	2.1	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
6:00 to 7:00	(boats)	5.6	5.6	5.6	5.6	8.9	5.6	5.6	5.6	5.6	8.9	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
7:00 to 8:00	(boats)	10.1	10.1	10.1	10.1	14.0	10.1	10.1	10.1	10.1	14.0	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
8:00 to 9:00	(boats)	9.9	9.9	9.9	9.9	6.2	9.9	9.9	9.9	9.9	6.2	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
9:00 to 10:00	(boats)	12.5	12.5	12.5	12.5	21.6	12.5	12.5	12.5	12.5	21.6	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
10:00 to 11:00	(boats)	21.0	21.0	21.0	21.0	45.5	21.0	21.0	21.0	21.0	45.5	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
11:00 to 12:00	(boats)	25.8	25.8	25.8	25.8	68.8	25.8	25.8	25.8	25.8	68.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
12:00 to 13:00	(boats)	25.0	25.0	25.0	25.0	53.1	25.0	25.0	25.0	25.0	53.1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
13:00 to 14:00	(boats)	24.4	24.4	24.4	24.4	39.7	24.4	24.4	24.4	24.4	39.7	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
14:00 to 15:00	(boats)	23.0	23.0	23.0	23.0	41.7	23.0	23.0	23.0	23.0	41.7	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
15:00 to 16:00	(boats)	22.6	22.6	22.6	22.6	35.4	22.6	22.6	22.6	22.6	35.4	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
16:00 to 17:00	(boats)	20.6	20.6	20.6	20.6	40.5	20.6	20.6	20.6	20.6	40.5	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6
17:00 to 18:00	(boats)	15.3	15.3	15.3	15.3	27.9	15.3	15.3	15.3	15.3	27.9	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
18:00 to 19:00	(boats)	12.3	12.3	12.3	12.3	19.9	12.3	12.3	12.3	12.3	19.9	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
19:00 to 20:00	(boats)	10.0	10.0	10.0	10.0	10.1	10.0	10.0	10.0	10.0	10.1	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
20:00 to 21:00	(boats)	5.3	5.3	5.3	5.3	5.9	5.3	5.3	5.3	5.3	5.9	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
21:00 to 22:00	(boats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Histogram Data																			
Mon-Fri																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		57%	47%	59%	39%	20%	46%	38%	50%	37%	36%	52%	43%	55%	38%	60%	50%	62%	39%
5< t ≤10		15%	15%	20%	29%	15%	19%	19%	25%	32%	27%	17%	17%	22%	31%	14%	14%	18%	28%
10< t ≤15		16%	15%	16%	15%	14%	20%	18%	19%	14%	16%	18%	16%	17%	14%	15%	14%	15%	15%
15< t ≤20		11%	13%	3%	9%	13%	13%	15%	3%	8%	10%	11%	14%	3%	8%	10%	13%	3%	9%
20< t ≤25		1%	3%	2%	4%	11%	1%	4%	2%	4%	5%	1%	3%	2%	4%	1%	3%	2%	4%
25< t ≤30		0%	3%	1%	2%	9%	1%	3%	1%	2%	2%	0%	3%	1%	2%	0%	3%	1%	2%
30< t ≤35		0%	2%	0%	1%	7%	0%	2%	0%	1%	1%	0%	2%	0%	1%	0%	2%	0%	1%
35< t ≤40		0%	1%	0%	1%	4%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%	1%	0%	1%
40< t ≤45		0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
45< t ≤50		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
50< t ≤55		0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
55< t ≤60		0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
60< t		0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sat & Sun																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		89%	64%	74%	19%	22%	85%	62%	73%	38%	38%	89%	66%	76%	34%	82%	53%	63%	9%
5< t ≤10		4%	10%	11%	13%	15%	5%	12%	14%	27%	27%	4%	10%	12%	23%	9%	12%	14%	6%
10< t ≤15		3%	10%	11%	13%	15%	5%	12%	11%	16%	17%	4%	10%	11%	18%	4%	11%	13%	6%
15< t ≤20		3%	10%	2%	12%	13%	5%	10%	1%	10%	10%	4%	10%	1%	13%	3%	11%	6%	6%
20< t ≤25		0%	3%	1%	10%	11%	0%	1%	1%	5%	5%	0%	1%	1%	7%	1%	6%	2%	6%
25< t ≤30		0%	1%	0%	8%	8%	0%	1%	0%	3%	2%	0%	1%	0%	4%	0%	3%	1%	5%
30< t ≤35		0%	1%	0%	6%	6%	0%	1%	0%	1%	1%	0%	1%	0%	2%	0%	2%	0%	5%
35< t ≤40		0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%

	St Lucie, 40 sec interval					St Lucie, 40 sec interval, Passing Allowed					St Lucie, 30 sec interval (sensitivity)				St Lucie, 50 sec interval (sensitivity)			
Case No	1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
40< t ≤45	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%
45< t ≤50	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
50< t ≤55	0%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
55< t ≤60	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
60< t	0%	0%	0%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	41%
All Week																		
t = 0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5	81%	60%	71%	25%	20%	73%	55%	67%	38%	37%	79%	60%	71%	35%	77%	53%	63%	18%
5< t ≤10	6%	11%	13%	18%	15%	9%	14%	17%	29%	27%	7%	12%	14%	25%	10%	12%	15%	13%
10< t ≤15	6%	12%	12%	14%	14%	10%	14%	13%	15%	16%	8%	12%	12%	17%	7%	11%	13%	9%
15< t ≤20	5%	11%	2%	11%	13%	7%	12%	2%	9%	10%	6%	11%	2%	11%	5%	12%	5%	7%
20< t ≤25	0%	3%	1%	9%	11%	0%	2%	1%	5%	5%	0%	2%	1%	6%	1%	5%	2%	5%
25< t ≤30	0%	2%	0%	6%	9%	0%	2%	0%	2%	2%	0%	2%	0%	3%	0%	3%	1%	4%
30< t ≤35	0%	1%	0%	5%	6%	0%	1%	0%	1%	1%	0%	1%	0%	2%	0%	2%	0%	4%
35< t ≤40	0%	0%	0%	3%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
40< t ≤45	0%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
45< t ≤50	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
50< t ≤55	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
55< t ≤60	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
60< t	0%	0%	0%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%

		New River, 40 sec interval					New River, 40 sec interval, Passing Allowed					New River, 30 sec interval (sensitivity)				New River, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Average Boat Wait Times (all days)																			
Boat Arrivals	(#/day)	varies	varies	varies	varies	656	varies	varies	varies	varies	656	varies	varies	varies	varies	varies	varies	varies	varies
% Boats With Non-Zero Wait Time	(%)	65%	71%	68%	78%	92%	42%	51%	46%	63%	75%	57%	65%	61%	74%	70%	76%	73%	82%
Avg. Wait Time (all)	(min)	21.1	28.6	22.8	49.0	73.5	1.7	3.5	1.8	4.6	6.6	4.9	9.9	5.6	19.4	42.7	53.5	45.4	83.6
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	32.4	40.1	33.6	62.4	80.1	4.1	6.8	3.8	7.3	8.8	8.6	15.3	9.2	26.3	61.1	70.5	62.5	101.6
P50	(min)	21.3	16.6	12.8	20.0	73.1	0.9	3.8	1.4	6.0	7.1	3.2	10.2	5.1	12.8	32.9	22.1	19.5	28.0
P80	(min)	62.7	84.0	69.4	142.4	144.1	9.2	14.0	8.3	11.7	14.2	17.3	28.4	16.8	50.1	132.7	157.7	139.2	234.6
P90	(min)	84.5	110.4	92.5	181.1	167.4	13.9	16.9	10.9	15.9	19.9	24.1	38.6	25.0	72.8	163.7	195.3	172.2	301.0
P99	(min)	120.8	153.2	132.7	239.3	218.2	19.0	28.1	16.2	32.2	36.3	42.6	70.1	47.1	116.1	209.6	268.7	234.9	368.8
Max. Non-Zero Wait Time	(min)	159.1	217.5	172.2	301.5	319.3	31.1	52.4	35.8	58.8	63.3	67.6	105.0	75.8	146.7	258.1	334.9	304.6	431.1
Average Boat Wait Times - Monday to Friday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	656	varies	varies	varies	varies	656	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	39%	49%	42%	60%	92%	25%	35%	29%	47%	77%	32%	42%	36%	54%	46%	55%	49%	69%
Avg. Wait Time (all)	(min)	1.5	3.5	1.7	3.9	78.0	1.2	2.7	1.3	3.0	7.1	1.3	3.0	1.4	3.3	1.8	4.6	2.0	23.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	3.9	7.2	4.0	6.4	84.9	4.8	7.7	4.5	6.3	9.3	4.1	7.2	4.0	6.2	3.9	8.4	4.1	33.6
P50	(min)	0.7	4.2	1.1	5.2	81.0	1.4	6.2	2.9	5.5	7.7	0.6	4.9	1.3	5.2	0.9	4.0	1.3	6.5
P80	(min)	9.0	14.1	8.5	10.8	151.2	10.8	14.2	9.0	10.3	15.2	9.7	14.0	8.6	10.4	8.5	14.7	8.7	13.8
P90	(min)	13.3	17.4	11.1	14.2	173.5	14.0	16.9	11.0	12.8	21.0	13.6	17.0	11.0	13.2	13.2	18.3	11.5	23.8
P99	(min)	17.7	31.7	19.3	25.7	224.7	17.6	30.2	18.7	23.9	36.9	17.6	30.6	18.8	24.6	18.1	35.2	20.2	382.5
Max. Non-Zero Wait Time	(min)	31.1	52.9	39.8	43.2	319.3	31.1	52.4	35.8	42.0	63.3	31.1	52.4	37.8	42.0	31.1	334.9	42.5	431.1
Average Boat Wait Times - Weekend (Sat & Sun)		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	658	varies	varies	varies	varies	658	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	87%	90%	89%	93%	92%	55%	64%	60%	76%	72%	77%	83%	81%	90%	90%	93%	92%	95%
Avg. Wait Time (all)	(min)	37.1	49.1	40.1	85.8	62.2	2.1	4.1	2.1	5.9	5.2	7.9	15.5	9.0	32.5	76.2	93.6	80.9	138.4
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	42.8	54.6	45.2	92.1	67.9	3.8	6.5	3.6	7.8	7.3	10.2	18.7	11.1	36.1	84.8	100.8	87.9	146.4
P50	(min)	40.9	52.4	42.7	82.4	57.8	0.9	2.5	1.2	6.4	5.7	4.7	15.1	7.1	28.1	81.8	94.0	83.4	133.4
P80	(min)	73.0	99.2	81.3	169.1	124.2	8.0	13.9	7.9	12.5	11.9	20.3	33.6	20.6	63.5	151.5	181.2	159.0	266.7
P90	(min)	91.2	121.4	100.6	196.0	146.3	13.9	17.0	10.9	17.3	16.5	26.7	43.4	28.0	83.2	174.3	211.1	184.0	307.6
P99	(min)	124.0	157.4	136.3	246.0	192.0	19.4	26.9	15.3	34.7	34.3	44.8	74.0	49.9	120.1	215.0	275.0	242.3	353.9
Max. Non-Zero Wait Time	(min)	159.1	217.5	172.2	301.5	238.5	26.6	37.3	24.0	58.8	62.7	67.6	105.0	75.8	146.7	258.1	332.0	304.6	393.6
Average Boat Wait Times - Saturday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	658	761	varies	varies	varies	varies	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	87%	90%	89%	93%	92%	52%	61%	57%	75%	72%	75%	82%	79%	91%	90%	93%	92%	94%
Avg. Wait Time (all)	(min)	29.7	41.8	33.5	85.6	65.5	1.4	3.8	1.9	5.0	4.4	4.4	12.8	6.9	28.1	70.5	87.2	74.2	135.1
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	34.0	46.3	37.6	91.7	71.3	2.7	6.1	3.4	6.6	6.1	5.9	15.6	8.8	31.1	78.0	93.6	80.4	143.0
P50	(min)	33.8	50.3	38.6	83.9	65.5	0.7	2.0	1.1	5.8	5.3	1.8	14.3	5.4	27.1	74.0	93.4	80.7	132.7
P80	(min)	55.9	82.7	67.4	161.8	122.2	2.9	13.3	7.4	11.2	10.6	13.1	29.6	16.7	53.6	136.6	162.3	142.4	263.3
P90	(min)	67.9	95.6	80.2	197.1	148.7	10.3	16.7	10.6	14.1	13.0	17.8	35.7	23.0	66.6	164.7	192.4	165.5	302.2
P99	(min)	98.4	118.1	103.2	247.8	199.2	18.1	26.8	15.2	22.5	21.0	25.2	47.5	33.5	92.7	209.7	244.2	212.4	337.9
Max. Non-Zero Wait Time	(min)	129.3	161.1	130.7	281.3	238.5	22.4	36.1	23.4	29.1	26.9	38.8	67.2	45.8	122.1	253.8	287.0	258.7	374.9
Average Boat Wait Times - Sunday		**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2016 F+P B P80**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**	**2013 F NoB**	**2016 F NoB**	**2016 F B**	**2016 F+P B**
Boat Arrivals	(#/day)	varies	varies	varies	varies	657	varies	varies	varies	varies	657	varies	varies	varies	varies	varies	varies	varies	varies
% Boats Wait Non-Zero Wait Time	(%)	86%	89%	88%	93%	91%	58%	67%	62%	77%	72%	80%	84%	83%	89%	89%	92%	92%	95%
Avg. Wait Time (all)	(min)	44.6	56.4	46.8	86.1	58.9	2.8	4.5	2.3	6.9	6.1	11.3	18.3	11.0	36.9	81.9	100.1	87.6	141.7
Non- Zero Wait Time																			
Avg. Non-Zero Wait Time	(min)	51.7	63.2	53.0	92.6	64.4	4.8	6.7	3.8	9.0	8.5	14.2	21.7	13.4	41.3	91.7	108.3	95.6	149.7
P50	(min)	53.5	55.9	49.5	80.9	50.1	1.2	3.0	1.4	7.1	6.3	11.8	16.6	9.0	30.2	93.4	96.2	88.2	135.1
P80	(min)	88.9	120.8	99.1	174.2	126.0	11.2	14.2	8.3	14.6	14.4	26.2	40.5	24.7	79.0	160.2	195.9	173.7	269.7
P90	(min)	103.2	136.0	114.4	195.3	144.4	15.6	17.1	11.0	20.9	20.3	32.6	53.8	33.2	98.6	180.0	226.6	197.5	315.9
P99	(min)	131.3	164.6	144.2	243.7	179.7	20.1	27.0	15.3	39.0	38.4	48.5	82.0	57.7	124.8	219.8	286.1	254.6	362.5
Max. Non-Zero Wait Time	(min)	159.1	217.5	172.2	301.5	218.5	26.6	37.3	24.0	58.8	62.7	67.6	105.0	75.8	146.7	258.1	332.0	304.6	393.6
		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter		Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter	Jupiter
Bridge Closures		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Total Closures	(#/week)	70.0	99.6	104.6	205.1	205.1	70.0	99.6	104.6	205.1	205.1	70.0	99.6	104.6	205.1	70.0	99.6	104.6	205.1
Avg. Duration	(min)	19.1	19.5	13.6	13.5	13.5	19.1	19.5	13.6	13.5	13.5	19.1	19.5	13.6	13.5	19.1	19.5	13.6	13.5
Min. Duration	(min)	14.8	15.7	11.1	9.9	9.9	14.8	15.7	11.1	9.9	9.9	14.8	15.7	11.1	9.9	14.8	15.7	11.1	9.9
Max. Duration	(min)	39.3	54.0	36.5	44.8	44.8	39.3	54.0	36.5	44.8	44.8	39.3	54.0	36.5	44.8	39.3	54.0	36.5	44.8
Total Duration	(h/week)	22.3	32.4	23.7	46.3	46.3	22.3	32.4	23.7	46.3	46.3	22.3	32.4	23.7	46.3	22.3	32.4	23.7	46.3
Total Open Duration	(h/week)	145.7	135.6	144.3	121.7	121.7	145.7	135.6	144.3	121.7	121.7	145.7	135.6	144.3	121.7	145.7	135.6	144.3	121.7
Closure Durations																			
P10	(min)	16.8	17.4	12.6	10.8	10.8	16.8	17.4	12.6	10.8	10.8	16.8	17.4	12.6	10.8	16.8	17.4	12.6	10.8
P50	(min)	18.7	18.3	13.1	12.8	12.8	18.7	18.3	13.1	12.8	12.8	18.7	18.3	13.1	12.8	18.7	18.3	13.1	12.8

		New River, 40 sec interval					New River, 40 sec interval, Passing Allowed					New River, 30 sec interval (sensitivity)				New River, 50 sec interval (sensitivity)			
Case No		1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic		2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure		No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic		Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
P80	(min)	19.7	18.9	13.5	13.8	13.8	19.7	18.9	13.5	13.8	13.8	19.7	18.9	13.5	13.8	19.7	18.9	13.5	13.8
P90	(min)	20.3	23.6	13.9	17.8	17.8	20.3	23.6	13.9	17.8	17.8	20.3	23.6	13.9	17.8	20.3	23.6	13.9	17.8
Train Traffic		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
Time Between Trains	(h)	2.3	1.5	1.5	0.5	0.5	2.3	1.5	1.5	0.5	0.5	2.3	1.5	1.5	0.5	2.3	1.5	1.5	0.5
Number of Train Crossings																			
Mon	(#/day)	12	17	17	50	50	12	17	17	50	50	12	17	17	50	12	17	17	50
Tue	(#/day)	11	20	20	52	52	11	20	20	52	52	11	20	20	52	11	20	20	52
Wed	(#/day)	13	21	21	52	52	13	21	21	52	52	13	21	21	52	13	21	21	52
Thu	(#/day)	10	18	18	49	49	10	18	18	49	49	10	18	18	49	10	18	18	49
Fri	(#/day)	13	17	17	49	49	13	17	17	49	49	13	17	17	49	13	17	17	49
Sat	(#/day)	8	11	11	44	44	8	11	11	44	44	8	11	11	44	8	11	11	44
Sun	(#/day)	7	10	10	42	42	7	10	10	42	42	7	10	10	42	7	10	10	42
Total per Week	(#/week)	74	114	114	338	338	74	114	114	338	338	74	114	114	338	74	114	114	338
Train Meets																			
Avg. Northbound Trains that Stop	(#/week)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Southbound Trains that Stop	(#/week)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg. Trains that Stop	**(#/week)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg. Wait of Northbound Trains	(min)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Avg. Wait of Southbound Trains	(min)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg. Wait of All Trains (non-zero)	**(min)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Boat Traffic by Time of Day		2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2016 F+P B P80	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B	2013 F NoB	2016 F NoB	2016 F B	2016 F+P B
5:00 to 6:00	(boats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:00 to 7:00	(boats)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7:00 to 8:00	(boats)	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
8:00 to 9:00	(boats)	5.3	5.3	5.3	5.3	12.6	5.3	5.3	5.3	5.3	12.6	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
9:00 to 10:00	(boats)	9.1	9.1	9.1	9.1	15.2	9.1	9.1	9.1	9.1	15.2	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
10:00 to 11:00	(boats)	20.5	20.5	20.5	20.5	30.3	20.5	20.5	20.5	20.5	30.3	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
11:00 to 12:00	(boats)	24.6	24.6	24.6	24.6	17.8	24.6	24.6	24.6	24.6	17.8	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
12:00 to 13:00	(boats)	35.0	35.0	35.0	35.0	38.4	35.0	35.0	35.0	35.0	38.4	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
13:00 to 14:00	(boats)	40.6	40.6	40.6	40.6	78.4	40.6	40.6	40.6	40.6	78.4	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
14:00 to 15:00	(boats)	53.7	53.7	53.7	53.7	93.0	53.7	53.7	53.7	53.7	93.0	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
15:00 to 16:00	(boats)	55.8	55.8	55.8	55.8	109.4	55.8	55.8	55.8	55.8	109.4	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
16:00 to 17:00	(boats)	47.9	47.9	47.9	47.9	82.6	47.9	47.9	47.9	47.9	82.6	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9
17:00 to 18:00	(boats)	48.5	48.5	48.5	48.5	95.0	48.5	48.5	48.5	48.5	95.0	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.5
18:00 to 19:00	(boats)	36.5	36.5	36.5	36.5	78.6	36.5	36.5	36.5	36.5	78.6	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.4
19:00 to 20:00	(boats)	12.8	12.8	12.8	12.8	2.5	12.8	12.8	12.8	12.8	2.5	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
20:00 to 21:00	(boats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21:00 to 22:00	(boats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Histogram Data																			
Mon-Fri																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		71%	52%	67%	49%	10%	62%	46%	61%	47%	37%	68%	50%	65%	49%	73%	53%	68%	43%
5< t ≤10		11%	15%	19%	27%	6%	16%	19%	25%	31%	25%	13%	16%	21%	29%	11%	14%	17%	23%
10< t ≤15		12%	16%	12%	15%	6%	16%	19%	13%	15%	17%	13%	17%	12%	15%	11%	15%	12%	15%
15< t ≤20		6%	11%	2%	5%	4%	7%	11%	2%	4%	9%	6%	11%	2%	4%	6%	11%	2%	5%
20< t ≤25		0%	3%	1%	3%	3%	0%	3%	1%	2%	6%	0%	3%	1%	2%	0%	3%	1%	3%
25< t ≤30		0%	2%	0%	1%	2%	0%	2%	0%	1%	3%	0%	2%	0%	1%	0%	3%	0%	1%
30< t ≤35		0%	1%	0%	0%	2%	0%	1%	0%	0%	2%	0%	1%	0%	0%	0%	1%	0%	0%
35< t ≤40		0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
40< t ≤45		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
45< t ≤50		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
50< t ≤55		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
55< t ≤60		0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
60< t		0%	0%	0%	0%	57%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%
Sat & Sun																			
t = 0		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5		22%	21%	22%	10%	11%	75%	57%	71%	43%	46%	51%	34%	44%	17%	18%	12%	15%	7%
5< t ≤10		4%	7%	7%	7%	7%	8%	12%	16%	25%	25%	9%	8%	13%	9%	4%	6%	6%	4%
10< t ≤15		2%	5%	5%	5%	7%	9%	15%	12%	17%	16%	9%	7%	13%	9%	3%	5%	5%	4%
15< t ≤20		3%	4%	3%	4%	4%	7%	12%	1%	7%	6%	10%	9%	10%	6%	2%	5%	3%	3%
20< t ≤25		3%	2%	3%	3%	3%	1%	3%	0%	3%	3%	9%	8%	7%	6%	1%	3%	2%	3%
25< t ≤30		4%	2%	3%	2%	3%	0%	1%	0%	1%	1%	5%	7%	6%	6%	1%	2%	2%	2%
30< t ≤35		5%	2%	2%	2%	3%	0%	0%	0%	1%	1%	3%	7%	4%	5%	1%	2%	2%	2%
35< t ≤40		5%	2%	3%	2%	3%	0%	0%	0%	1%	1%	2%	6%	2%	4%	1%	1%	1%	2%

	New River, 40 sec interval					New River, 40 sec interval, Passing Allowed					New River, 30 sec interval (sensitivity)				New River, 50 sec interval (sensitivity)			
Case No	1	2a	2b	3	3_P80	1	2a	2b	3	3_PassP80	1	2a	2b	3	1	2a	2b	3
Train Traffic	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2016 F+P	2013 F	2016 F	2016 F	2016 F+P	2013 F	2016 F	2016 F	2016 F+P
Infrastructure	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	Build	No Build	No Build	Build	Build	No Build	No Build	Build	Build
Marine Traffic	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
40< t ≤45	6%	2%	4%	2%	3%	0%	0%	0%	0%	0%	1%	4%	1%	4%	2%	1%	1%	2%
45< t ≤50	6%	3%	4%	2%	2%	0%	0%	0%	0%	0%	1%	2%	1%	4%	2%	1%	1%	1%
50< t ≤55	5%	4%	4%	2%	2%	0%	0%	0%	0%	0%	0%	2%	0%	4%	2%	1%	1%	1%
55< t ≤60	5%	4%	4%	2%	2%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	1%	1%	1%
60< t	30%	44%	35%	57%	49%	0%	0%	0%	0%	0%	0%	3%	0%	22%	61%	61%	59%	67%
All Week																		
t = 0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0< t ≤5	35%	30%	35%	23%	10%	71%	53%	68%	45%	40%	55%	39%	50%	27%	34%	25%	31%	22%
5< t ≤10	6%	9%	10%	14%	6%	10%	14%	18%	27%	25%	10%	10%	15%	15%	6%	8%	9%	12%
10< t ≤15	5%	8%	7%	9%	6%	11%	16%	12%	17%	17%	10%	10%	12%	11%	5%	8%	7%	9%
15< t ≤20	3%	6%	3%	4%	4%	7%	12%	1%	6%	8%	9%	10%	7%	5%	3%	7%	3%	4%
20< t ≤25	3%	3%	2%	3%	3%	0%	3%	0%	3%	5%	6%	6%	6%	5%	1%	3%	2%	3%
25< t ≤30	3%	2%	2%	2%	3%	0%	1%	0%	1%	2%	4%	6%	4%	4%	1%	2%	1%	2%
30< t ≤35	4%	1%	2%	1%	2%	0%	0%	0%	1%	1%	2%	5%	3%	4%	1%	2%	1%	1%
35< t ≤40	4%	1%	2%	1%	2%	0%	0%	0%	0%	1%	2%	4%	1%	3%	1%	1%	1%	1%
40< t ≤45	4%	2%	3%	1%	2%	0%	0%	0%	0%	0%	1%	3%	1%	3%	1%	1%	1%	1%
45< t ≤50	4%	2%	3%	1%	2%	0%	0%	0%	0%	0%	0%	2%	0%	3%	1%	1%	1%	1%
50< t ≤55	4%	3%	3%	1%	2%	0%	0%	0%	0%	0%	0%	1%	0%	3%	2%	0%	1%	1%
55< t ≤60	4%	3%	3%	1%	2%	0%	0%	0%	0%	0%	0%	1%	0%	3%	2%	1%	1%	1%
60< t	22%	31%	25%	37%	55%	0%	0%	0%	0%	0%	0%	2%	0%	15%	43%	41%	41%	44%