

October 13, 2022

Joshua Wayland

Office of Environmental Analysis, Surface Transportation Board

Environmental Filing, Docket No. FD 36500

c/o VHB

940 Main Campus Drive, Suite 500

Raleigh, NC 27606

RE: STB Docket No. FD 36500 - Draft EIS of Canadian Pacific-Kansas City Southern Merger

Dear Members of the Board,

I write to you as President of the Eastwood Civic Association, which represents over 2,400 homes in 19 subdivisions in the East End of Houston, to express our community's opposition to the Canadian Pacific (CP) and Kansas City Southern (KCS) merger bringing additional freight traffic through the Houston complex. As you consider this merger we wish to highlight the current reality in our community, specific concerns we have with the draft EIS findings, and mitigation considerations should the project go through.

Eastwood's Current Reality

Our community is surrounded by two main lines and a heavily trafficked branch line - Houston East Belt Subdivision, Houston West Belt Subdivision and the Galveston Subdivision. We are frequently referenced as being in a "Train Triangle" because these three lines intersect to block in our community (see attached Exhibit A for a map of our community and the rail crossings). You'll note only two grade-separated crossings on non-interstate roadways. This severely hampers our community's ability to navigate around blocked crossings, especially those road users who walk, bike or roll.

For years, our community has faced unrelenting mobility challenges and quality of life concerns as trains park on these three lines daily, for hours at a time. To highlight the frequency and length of these blockages, our neighbor set up a camera on her property and began meticulously documenting every train that passed through the at-grade crossing on the Galveston Subdivision at Eastwood Street (#859522Y).

Monthly Summary: Train Throughput & Blockages												
Crossing: Eastwood & Rusk (859522Y - GALVESTON SUB)												
Month	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Nov 21 - Sept 22
# of Trains	148	152	160	166	188	161	168	157	141	166	165	1772
# of Trains w/ Blockage >10 Minutes	59	63	41	48	63	60	62	58	54	69	57	634
% of Trains w/ Blockage >10 Minutes	40%	41%	26%	29%	34%	37%	37%	37%	38%	42%	35%	36%
Total Duration of Blockages (hrs)	87.82	51.50	35.23	45.23	72.85	45.32	48.83	87.43	75.97	73.95	62.25	686.38
% of month w/ a Blockage	12%	7%	5%	7%	10%	6%	7%	12%	10%	10%	9%	9%
Longest Single Blockage (Hours)	8.63	3.80	2.63	4.38	4.70	5.70	3.68	6.50	6.02	6.80	4.10	8.63
Avg. Length of Blockage (Minutes)	87.82	48.28	49.16	71.54	68.30	45.32	58.45	90.45	84.41	74.42	65.53	67.61
# of days in month	30	31	31	28	31	30	31	30	31	31	30	334





This data shows that over a period of 11 months, this crossing saw an average of 161 trains per month, with an average of 58 trains coming to a complete stop and blocking the crossing for >10 minutes (36% of all trains). Of those that stop, the average length of stoppage is 68 minutes. A monthly summary of this data is provided above and Exhibit B offers the complete set of data documenting 11-months of train throughput and blockages.

As a volunteer organization, we don't have the capacity to place cameras and monitor blockages at every intersection in our neighborhood. However, we can unequivocally state that when a train is blocking this intersection it is blocking several of the 10 at-grade crossings on the approximately 10,000' of track on this line (see Exhibit A for crossing numbers) in our neighborhood. Train length evaluated in the EIS shows a length between 8,800' and 9,000' through the Houston complex, which would easily result in simultaneous blockage of 9 of these 10 crossings.

The City of Houston, through its Smart Railroad Crossing Monitor Pilot is currently installing sensors to measure the frequency and duration of blockage at several key intersections in our community but at this time they have not released the blockage data. We fully expect that data to paint a similar picture for a broader swath of the community. Anecdotally, the neighborhood's experience is that stoppage frequency and length of stoppage is higher on the East Belt near intersections at Telephone Road (288051H), Lawndale Street (288050B) and Polk Street (288048A) where the track is doubled. Similarly, on the West Belt we believe volumes to be more, stoppage frequency to be higher but shorter in duration at Cullen Boulevard (288221A), Leeland Street (288224V), Sampson Street (288227R) and York Street (288228X). We also experience simultaneous blockages of multiple lines, creating even fewer ways to navigate through the area. You'll note that this level of blockage is significantly higher than what is reported through the FRA Blocked Crossing summaries. This is because of a fundamental flaw with how regulators evaluate blocked crossings - they rely on residents or business owners to self-report when a blockage occurs, resulting in chronic under-reporting and clearly incomplete data that fails to encompass the scope of the problems we observe firsthand.

Overall, our neighborhood is disillusioned by the reality that our streets are used as parking lots by rail operators. After years of our concerns going unanswered, our community lacks faith that their efforts to document the chronic blockages will yield any change. We are deeply concerned about the impact these blockages alongside a lack of grade-separated infrastructure has on our community's mobility, while also frustrated by the impact on our quality of life in terms of noise and air quality.

Concerns about the Environmental Impact Study

We share this information to highlight a blind spot in the OEA's approach to measuring the impact of additional train volume. Since OEA calculates blocked crossing time as a factor of average train length and average train speed, the methodology does not take into consideration that trains often come to a complete stop for several hours. Given that our data and experience suggests that 36% of trains are coming to a complete stop for an average of 68 minutes, this



gap in the methodology results in a significant undercount of the impact on grade crossing delays. We would urge the OEA to identify a way to adequately measure the impact of additional volumes taking into account the current use case within the Houston Complex which is producing a substantial number of idling and stopped trains in our residential neighborhoods. We expect these changes would increase the environmental impacts noted in the sections on grade crossing delays, noise, air quality, environmental justice and cumulative impacts.

In addition, we've noted that when the Applicants speak about their planned route through Houston they highlight a route coming through on either the Beaumont Subdivision or Houston Subdivision to the east, and exiting the Houston Complex on the Glidden Subdivision to the west. As such, this is the route and crossings that were considered by the OEA within the scope of the EIS. However, in an area as complicated as Houston, where Union Pacific would be directing any CP-KCS trains through the complex, evaluating a single pathway is insufficient to reflect the totality of the impacts within an already strained complex. We urge the OEA to review additional routes through the Houston Complex that could be used and the associated impact.

We recognize that the threshold for environmental analysis is 8 cars per day and the expected impact on the segment that includes Houston (Segment #149 - U-BEAU-01) does not meet that threshold at 7.57 trains per day. However, we question how this number was identified and what scrutiny it faced. If it was presented by the Applicants, we fear that it has been understated to avoid a more comprehensive review of the impacts in this area.

Overall, as you move to the next stage of the environmental assessment we would request and urge the OEA to complete a supplementary EIS for the entirety of the Houston Complex and update your methodology to consider the impact of a high rate of stopped trains.

Mitigation Considerations

Should this merger be approved the applicants should be required to support significant mitigation efforts in the Houston Complex. As it relates to our neighborhood the following conditions could help to mitigate the impacts:

1. Canadian Pacific funds and constructs three long awaited Quiet Zones (including necessary FRA and railroad work sign offs) in the east end. These include East End 2 (Sampson to Cullen on West Belt), East End 3 (Sampson to Hughes on Galveston Sub) and East End 1- Part 2 (Hughes to Navigation on East Belt).
2. Canadian Pacific provides a letter of support and commits at least 5% of the project costs to support the City of Houston's application to the FRA's Railroad Crossing Elimination Grant for projects at Sampson/York (288229E, 288228X, 859516V and 859517C) on the West Belt/Galveston Sub and West Belt at Commerce (288129A).





3. Canadian Pacific provides a portion of the project funding an underpassed required to create the grade separation necessary for a upcoming METRO Bus Rapid Transit (BRT) project to create grade-separation at Lockwood Drive and the Galveston Sub (#859523F).
4. As a condition of the trackage use through the Houston Complex, no trains longer than the minimum length accommodated in Englewood yard should be allowed to enter Houston to avoid the need to break trains within the complex.
5. Canadian Pacific should provide funding to a local entity, such as the Gulf Coast Rail District, to complete a study of the East Belt with the goal of eliminating at-grade crossings and associated blockages along the East Belt between I-45 and Tower 87. As part of the study, a review of the area where the East Belt and Galveston Sub meet should identify solutions that eliminate the excessive blockages occurring where both these lines meet.
6. Canadian Pacific provides a portion of the project funding required for the grade separations identified as a part of the West Belt Improvement Study completed by the Gulf Coast Rail District in 2012 (see Exhibit C).

These six projects reflect what our volunteer group can identify as mitigation efforts for our segment of the Houston complex. We recognize that communities such as Fifth Ward and South Union may have additional requests that are merited. We'd urge regulators to bring all the local stakeholders together to identify a comprehensive list of mitigation conditions for the entirety of Houston. Our community is happy to participate further in the development of such a list with any entity, local or federal.

To conclude, the Eastwood Civic Association implores federal regulators to reconsider this proposal and to push CP and KCS railroads to seek an alternative path and engage with local stakeholders to develop adequate mitigation plans and agreements before any further action is taken. Beyond this merger, we beseech that regulators perform a comprehensive investigation of the state of rail operators in the Houston complex - the reality of current operations is deplorable and no one is being held accountable.

Sincerely,

A handwritten signature in black ink, appearing to read "Laperriere", with a stylized flourish at the end.

Danielle Laperriere
President, Eastwood Civic Association

Eastwood Civic Association Transportation Corridors & Union Pacific Rail Crossings



- Yellow circle: Crossing at Grade
- Blue circle: Crossing not at Grade
- Red line: Union Pacific Rail Line
- Train icon: Transit Station
- Blue circle with 'B': Bicycle Station
- Fire icon: Fire Station
- School icon: School
- Pink dashed line: Bikeway
- Green line: METRO Rail Green
- Purple line: METRO Rail Purple
- Orange line: METRO University BRT
- Yellow line: METRO Bus
- Green square: City Park
- Blue rectangle: Eastwood Civic Association

0 1,000 2,000 3,000
Feet
EastwoodCivicAssociation.org 4/27/2022

Monthly Summary: Train Throughput & Blockages

Crossing: Eastwood & Rusk (859522Y - GALVESTON SUB)

MTD

Month	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Nov 21 - Sept 22	Average	Oct 2022
# of Trains	148	152	160	166	188	161	168	157	141	166	165	1772	161	29
# of Trains w/ Blockage >10 Minutes	59	63	41	48	63	60	62	58	54	69	57	634	58	8
% of Trains w/ Blockage >10 Minute	40%	41%	26%	29%	34%	37%	37%	37%	38%	42%	35%	36%	36%	28%
Total Duration of Blockages (hrs)	87.82	51.50	35.23	45.23	72.85	45.32	48.83	87.43	75.97	73.95	62.25	686.38	62.40	6.58
% of month w/ a Blockage	12%	7%	5%	7%	10%	6%	7%	12%	10%	10%	9%	9%	9%	5%
Longest Single Blockage (Hours)	8.63	3.80	2.63	4.38	4.70	5.70	3.68	6.50	6.02	6.80	4.10	8.63	5.18	2.15
Avg. Length of Blockage (Minutes)	87.82	48.28	49.16	71.54	68.30	45.32	58.45	90.45	84.41	74.42	65.53	67.61	67.61	49.37
# of days in month	30	31	31	28	31	30	31	30	31	31	30	334	30	6

October 2022			# days in	6									
	Note: if start and end time is the same; this indicates a train that did not stop.												
Count	Start Blockage	End Blockage	Direction	Operator	Duration (hours)	Duration (minutes)							
1	10/1/2022 0:03:00	10/1/2022 1:14:00			1.18	71.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)					
2	10/1/2022 9:12:00	10/1/2022 9:25:00			0.22	13.00	Date Range:	Oct 1, 2022 to Oct 3, 2022					
3	10/1/2022 11:34:00	10/1/2022 11:34:00			0.00	0.00	# of Trains	29					
4	10/1/2022 21:19:00	10/1/2022 21:47:00			0.47	28.00	# of Trains w/ Blockage >10 Minutes	8					
5	10/2/2022 0:49:00	10/2/2022 1:06:00			0.28	17.00	% of Trains w/ Blockage >10 Minutes	28%					
6	10/2/2022 2:12:00	10/2/2022 2:12:00			0.00	0.00	Total Duration of Blockages (hrs)	6.58					
7	10/2/2022 4:13:00	10/2/2022 4:13:00			0.00	0.00	% of month w/ a Blockage	5%					
8	10/2/2022 4:40:00	10/2/2022 4:40:00			0.00	0.00	Longest Single Blockage (Hours)	2.15					
9	10/2/2022 14:11:00	10/2/2022 14:11:00			0.00	0.00	Avg. Length of Blockage (Minutes)	49.37					
10	10/3/2022 2:17:00	10/3/2022 2:17:00			0.00	0.00							
11	10/3/2022 3:38:00	10/3/2022 3:38:00			0.00	0.00							
12	10/3/2022 4:15:00	10/3/2022 5:30:00			1.25	75.00							
13	10/3/2022 6:48:00	10/3/2022 6:48:00			0.00	0.00							
14	10/3/2022 14:57:00	10/3/2022 14:57:00			0.00	0.00							
15	10/3/2022 19:32:00	10/3/2022 19:45:00			0.22	13.00							
16	10/4/2022 0:50:00	10/4/2022 0:50:00			0.00	0.00							
17	10/4/2022 1:55:00	10/4/2022 2:44:00			0.82	49.00							
18	10/4/2022 3:16:00	10/4/2022 3:16:00			0.00	0.00							
19	10/4/2022 4:19:00	10/4/2022 4:19:00			0.00	0.00							
20	10/4/2022 7:43:00	10/4/2022 7:43:00			0.00	0.00							
21	10/4/2022 21:35:00	10/4/2022 21:35:00			0.00	0.00							
22	10/5/2022 1:17:00	10/5/2022 1:17:00			0.00	0.00							
23	10/5/2022 2:01:00	10/5/2022 4:10:00			2.15	129.00							
24	10/5/2022 4:52:00	10/5/2022 4:52:00			0.00	0.00							
25	10/5/2022 5:58:00	10/5/2022 5:58:00			0.00	0.00							
26	10/5/2022 10:10:00	10/5/2022 10:10:00			0.00	0.00							
27	10/6/2022 5:17:00	10/6/2022 5:17:00			0.00	0.00							
28	10/6/2022 6:15:00	10/6/2022 6:15:00			0.00	0.00							
29	10/6/2022 10:01:00	10/6/2022 10:01:00			0.00	0.00							
30					0.00	0.00							
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61					0.00	0.00					
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165					0.00	0.00					
166					0.00	0.00					

September 2022			# days in	30							
	Note: if start and end time is the same; this indicates a train that did not stop.										
Count	Start Blockage	End Blockage	Direction	Operator	Duration (hours)	Duration (minutes)					
1	9/1/2022 3:44:00	9/1/2022 3:44:00			0.00	0.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	9/1/2022 4:25:00	9/1/2022 4:25:00			0.00	0.00	Date Range:	Sept 1, 2022 to Sept 22, 2022			
3	9/1/2022 7:49:00	9/1/2022 8:00:00			0.18	11.00	# of Trains	165			
4	9/2/2022 8:38:00	9/2/2022 8:38:00			0.00	0.00	# of Trains w/ Blockage >10 Minutes	57			
5	9/3/2022 0:56:00	9/3/2022 0:56:00			0.00	0.00	% of Trains w/ Blockage >10 Minute	35%			
6	9/3/2022 2:39:00	9/3/2022 2:39:00			0.00	0.00	Total Duration of Blockages (hrs)	62.25			
7	9/3/2022 2:56:00	9/3/2022 2:56:00			0.00	0.00	% of month w/ a Blockage	9%			
8	9/3/2022 8:09:00	9/3/2022 8:53:00			0.73	44.00	Longest Single Blockage (Hours)	4.10			
9	9/3/2022 10:27:00	9/3/2022 10:27:00			0.00	0.00	Avg. Length of Blockage (Minutes)	65.53			
10	9/4/2022 2:18:00	9/4/2022 2:18:00			0.00	0.00					
11	9/4/2022 3:32:00	9/4/2022 3:32:00			0.00	0.00					
12	9/4/2022 9:53:00	9/4/2022 9:53:00			0.00	0.00					
13	9/4/2022 11:18:00	9/4/2022 11:18:00			0.00	0.00					
14	9/4/2022 13:41:00	9/4/2022 13:41:00			0.00	0.00					
15	9/4/2022 14:12:00	9/4/2022 14:12:00			0.00	0.00					
16	9/5/2022 1:00:00	9/5/2022 1:16:00			0.27	16.00					
17	9/5/2022 2:36:00	9/5/2022 2:36:00			0.00	0.00					
18	9/5/2022 4:25:00	9/5/2022 4:25:00			0.00	0.00					
19	9/5/2022 7:46:00	9/5/2022 7:59:00			0.22	13.00					
20	9/5/2022 9:16:00	9/5/2022 9:16:00			0.00	0.00					
21	9/6/2022 0:52:00	9/6/2022 0:52:00			0.00	0.00					
22	9/6/2022 1:43:00	9/6/2022 3:14:00			1.52	91.00					
23	9/6/2022 6:03:00	9/6/2022 6:20:00			0.28	17.00					
24	9/6/2022 10:27:00	9/6/2022 10:38:00			0.18	11.00					
25	9/6/2022 11:58:00	9/6/2022 11:58:00			0.00	0.00					
26	9/6/2022 23:39:00	9/7/2022 0:10:00			0.52	31.00					
27	9/7/2022 1:43:00	9/7/2022 1:43:00			0.00	0.00					
28	9/7/2022 2:38:00	9/7/2022 2:38:00			0.00	0.00					
29	9/7/2022 6:09:00	9/7/2022 6:09:00			0.00	0.00					
30	9/7/2022 13:53:00	9/7/2022 14:07:00			0.23	14.00					
31	9/8/2022 0:55:00	9/8/2022 0:55:00			0.00	0.00					
32	9/8/2022 1:37:00	9/8/2022 1:37:00			0.00	0.00					
33	9/8/2022 3:18:00	9/8/2022 3:33:00			0.25	15.00					
34	9/8/2022 6:19:00	9/8/2022 7:32:00			1.22	73.00					
35	9/8/2022 7:57:00	9/8/2022 7:57:00			0.00	0.00					
36	9/9/2022 1:34:00	9/9/2022 2:59:00			1.42	85.00					
37	9/9/2022 4:40:00	9/9/2022 4:40:00			0.00	0.00					
38	9/9/2022 5:42:00	9/9/2022 5:42:00			0.00	0.00					
39	9/9/2022 7:43:00	9/9/2022 7:43:00			0.00	0.00					
40	9/9/2022 21:29:00	9/9/2022 22:02:00			0.55	33.00					
41	9/9/2022 23:08:00	9/9/2022 23:08:00			0.00	0.00					
42	9/9/2022 23:51:00	9/10/2022 0:22:00			0.52	31.00					
43	9/10/2022 3:10:00	9/10/2022 3:10:00			0.00	0.00					
44	9/10/2022 5:54:00	9/10/2022 5:54:00			0.00	0.00					
45	9/10/2022 6:20:00	9/10/2022 6:45:00			0.42	25.00					
46	9/10/2022 12:17:00	9/10/2022 12:17:00			0.00	0.00					

47	9/11/2022 2:09:00	9/11/2022 2:09:00			0.00	0.00				
48	9/11/2022 3:14:00	9/11/2022 7:20:00			4.10	246.00				
49	9/11/2022 8:36:00	9/11/2022 8:36:00			0.00	0.00				
50	9/11/2022 9:40:00	9/11/2022 9:52:00			0.20	12.00				
51	9/11/2022 7:47:00	9/11/2022 7:47:00			0.00	0.00				
52	9/11/2022 22:09:00	9/11/2022 22:09:00			0.00	0.00				
53	9/12/2022 1:54:00	9/12/2022 4:01:00			2.12	127.00				
54	9/12/2022 5:17:00	9/12/2022 6:43:00			1.43	86.00				
55	9/12/2022 8:48:00	9/12/2022 8:48:00			0.00	0.00				
56	9/12/2022 13:03:00	9/12/2022 13:03:00			0.00	0.00				
57	9/12/2022 13:27:00	9/12/2022 15:31:00			2.07	124.00				
58	9/12/2022 16:13:00	9/12/2022 17:05:00			0.87	52.00				
59	9/12/2022 18:39:00	9/12/2022 18:39:00			0.00	0.00				
60	9/12/2022 20:43:00	9/12/2022 22:58:00			2.25	135.00				
61	9/13/2022 0:54:00	9/13/2022 1:31:00			0.62	37.00				
62	9/13/2022 3:54:00	9/13/2022 3:54:00			0.00	0.00				
63	9/13/2022 9:12:00	9/13/2022 9:45:00			0.55	33.00				
64	9/13/2022 11:16:00	9/13/2022 11:27:00			0.18	11.00				
65	9/13/2022 14:48:00	9/13/2022 14:48:00			0.00	0.00				
66	9/13/2022 21:10:00	9/13/2022 21:21:00			0.18	11.00				
67	9/13/2022 22:04:00	9/13/2022 22:18:00			0.23	14.00				
68	9/14/2022 1:21:00	9/14/2022 1:21:00			0.00	0.00				
69	9/14/2022 2:01:00	9/14/2022 2:01:00			0.00	0.00				
70	9/14/2022 2:58:00	9/14/2022 2:58:00			0.00	0.00				
71	9/14/2022 5:59:00	9/14/2022 5:59:00			0.00	0.00				
72	9/14/2022 6:27:00	9/14/2022 6:27:00			0.00	0.00				
73	9/15/2022 1:21:00	9/15/2022 1:21:00			0.00	0.00				
74	9/15/2022 2:01:00	9/15/2022 2:01:00			0.00	0.00				
75	9/15/2022 2:58:00	9/15/2022 2:58:00			0.00	0.00				
76	9/15/2022 5:59:00	9/15/2022 5:59:00			0.00	0.00				
77	9/15/2022 6:27:00	9/15/2022 6:27:00			0.00	0.00				
78	9/16/2022 0:43:00	9/16/2022 3:48:00			3.08	185.00				
79	9/16/2022 4:47:00	9/16/2022 4:47:00			0.00	0.00				
80	9/16/2022 5:18:00	9/16/2022 5:41:00			0.38	23.00				
81	9/16/2022 6:02:00	9/16/2022 9:00:00			2.97	178.00				
82	9/16/2022 9:17:00	9/16/2022 9:53:00			0.60	36.00				
83	9/16/2022 19:49:00	9/16/2022 19:49:00			0.00	0.00				
84	9/16/2022 23:16:00	9/16/2022 23:16:00			0.00	0.00				
85	9/17/2022 2:27:00	9/17/2022 2:27:00			0.00	0.00				
86	9/17/2022 3:26:00	9/17/2022 3:26:00			0.00	0.00				
87	9/17/2022 5:15:00	9/17/2022 5:28:00			0.22	13.00				
88	9/17/2022 7:08:00	9/17/2022 7:08:00			0.00	0.00				
89	9/17/2022 7:39:00	9/17/2022 7:39:00			0.00	0.00				
90	9/17/2022 9:30:00	9/17/2022 9:30:00			0.00	0.00				
91	9/17/2022 2:40:00	9/17/2022 2:40:00			0.00	0.00				
92	9/17/2022 18:50:00	9/17/2022 19:27:00			0.62	37.00				
93	9/18/2022 1:05:00	9/18/2022 1:05:00			0.00	0.00				
94	9/18/2022 2:51:00	9/18/2022 2:51:00			0.00	0.00				
95	9/18/2022 3:10:00	9/18/2022 3:10:00			0.00	0.00				

96	9/18/2022 7:36:00	9/18/2022 7:36:00			0.00	0.00				
97	9/18/2022 14:25:00	9/18/2022 14:25:00			0.00	0.00				
98	9/18/2022 22:39:00	9/18/2022 22:39:00			0.00	0.00				
99	9/19/2022 2:22:00	9/19/2022 2:38:00			0.27	16.00				
100	9/19/2022 4:53:00	9/19/2022 6:38:00			1.75	105.00				
101	9/19/2022 14:02:00	9/19/2022 14:02:00			0.00	0.00				
102	9/19/2022 23:43:00	9/19/2022 23:43:00			0.00	0.00				
103	9/20/2022 4:02:00	9/20/2022 5:41:00			1.65	99.00				
104	9/20/2022 6:17:00	9/20/2022 6:17:00			0.00	0.00				
105	9/20/2022 6:34:00	9/20/2022 6:34:00			0.00	0.00				
106	9/20/2022 20:08:00	9/20/2022 20:08:00			0.00	0.00				
107	9/21/2022 3:10:00	9/21/2022 3:10:00			0.00	0.00				
108	9/21/2022 3:50:00	9/21/2022 4:37:00			0.78	47.00				
109	9/21/2022 4:56:00	9/21/2022 4:56:00			0.00	0.00				
110	9/21/2022 6:10:00	9/21/2022 7:45:00			1.58	95.00				
111	9/21/2022 8:35:00	9/21/2022 8:47:00			0.20	12.00				
112	9/21/2022 9:41:00	9/21/2022 10:03:00			0.37	22.00				
113	9/21/2022 17:54:00	9/21/2022 17:54:00			0.00	0.00				
114	9/22/2022 2:06:00	9/22/2022 2:06:00			0.00	0.00				
115	9/22/2022 2:37:00	9/22/2022 2:37:00			0.00	0.00				
116	9/22/2022 3:24:00	9/22/2022 3:24:00			0.00	0.00				
117	9/22/2022 3:47:00	9/22/2022 3:47:00			0.00	0.00				
118	9/22/2022 6:23:00	9/22/2022 9:23:00			3.00	180.00				
119	9/22/2022 16:31:00	9/22/2022 16:31:00			0.00	0.00				
120	9/23/2022 2:20:00	9/23/2022 2:20:00			0.00	0.00				
121	9/23/2022 3:35:00	9/23/2022 3:35:00			0.00	0.00				
122	9/23/2022 4:58:00	9/23/2022 6:45:00			1.78	107.00				
123	9/23/2022 22:59:00	9/23/2022 22:59:00			0.00	0.00				
124	9/24/2022 1:21:00	9/24/2022 1:21:00			0.00	0.00				
125	9/24/2022 3:16:00	9/24/2022 3:16:00			0.00	0.00				
126	9/24/2022 4:03:00	9/24/2022 4:03:00			0.00	0.00				
127	9/24/2022 8:01:00	9/24/2022 8:01:00			0.00	0.00				
128	9/24/2022 8:27:00	9/24/2022 8:27:00			0.00	0.00				
129	9/24/2022 8:58:00	9/24/2022 8:58:00			0.00	0.00				
130	9/25/2022 0:02:00	9/25/2022 0:15:00			0.22	13.00				
131	9/25/2022 0:52:00	9/25/2022 2:19:00			1.45	87.00				
132	9/25/2022 3:06:00	9/25/2022 4:05:00			0.98	59.00				
133	9/25/2022 9:30:00	9/25/2022 9:52:00			0.37	22.00				
134	9/25/2022 10:09:00	9/25/2022 11:25:00			1.27	76.00				
135	9/25/2022 14:33:00	9/25/2022 14:33:00			0.00	0.00				
136	9/25/2022 17:51:00	9/25/2022 17:51:00			0.00	0.00				
137	9/26/2022 2:06:00	9/26/2022 2:06:00			0.00	0.00				
138	9/26/2022 3:58:00	9/26/2022 3:58:00			0.00	0.00				
139	9/26/2022 9:17:00	9/26/2022 11:23:00			2.10	126.00				
140	9/26/2022 19:49:00	9/26/2022 20:31:00			0.70	42.00				
141	9/26/2022 23:10:00	9/26/2022 23:10:00			0.00	0.00				
142	9/27/2022 1:41:00	9/27/2022 2:57:00			1.27	76.00				
143	9/27/2022 3:41:00	9/27/2022 3:41:00			0.00	0.00				
144	9/27/2022 4:31:00	9/27/2022 4:31:00			0.00	0.00				

145	9/27/2022 7:33:00	9/27/2022 9:02:00			1.48	89.00				
146	9/27/2022 19:09:00	9/27/2022 19:09:00			0.00	0.00				
147	9/27/2022 20:04:00	9/27/2022 20:24:00			0.33	20.00				
148	9/28/2022 2:02:00	9/28/2022 2:02:00			0.00	0.00				
149	9/28/2022 2:34:00	9/28/2022 2:34:00			0.00	0.00				
150	9/28/2022 5:13:00	9/28/2022 5:13:00			0.00	0.00				
151	9/28/2022 5:37:00	9/28/2022 6:34:00			0.95	57.00				
152	9/28/2022 6:56:00	9/28/2022 6:56:00			0.00	0.00				
153	9/28/2022 11:08:00	9/28/2022 11:08:00			0.00	0.00				
154	9/28/2022 13:47:00	9/28/2022 13:47:00			0.00	0.00				
155	9/28/2022 15:18:00	9/28/2022 15:18:00			0.00	0.00				
156	9/29/2022 2:24:00	9/29/2022 2:24:00			0.00	0.00				
157	9/29/2022 2:56:00	9/29/2022 3:11:00			0.25	15.00				
158	9/29/2022 3:41:00	9/29/2022 3:41:00			0.00	0.00				
159	9/29/2022 7:58:00	9/29/2022 10:44:00			2.77	166.00				
160	9/29/2022 23:51:00	9/30/2022 3:47:00			3.93	236.00				
161	9/30/2022 4:20:00	9/30/2022 4:20:00			0.00	0.00				
162	9/30/2022 7:39:00	9/30/2022 7:39:00			0.00	0.00				
163	9/30/2022 8:28:00	9/30/2022 8:28:00			0.00	0.00				
164	9/30/2022 9:01:00	9/30/2022 9:01:00			0.00	0.00				
165	9/30/2022 21:59:00	9/30/2022 23:37:00			1.63	98.00				
					0.00	0.00				

August 2022				# days in	31									
	Note: if start and end time is the same; this indicates a train that did not stop.													
Count	Start Blockage	End Blockage	Direction	Operator	Duration (hours)	Duration (minutes)								
1	8/1/2022 3:41:00	8/1/2022 3:41:00	E	UP	0.00	0.00	Crossing:		Eastwood & Rusk (859522Y - GALVESTON SUB)					
2	8/1/2022 5:22:00	8/1/2022 5:22:00	E	BNSF	0.00	0.00	Date Range:		August 1, 2022 to August 31, 2022					
3	8/1/2022 7:43:00	8/1/2022 8:45:00	E	UP	1.03	62.00	# of Trains		166					
4	8/1/2022 9:14:00	8/1/2022 9:14:00	E	BNSF	0.00	0.00	# of Trains w/ Blockage >10 Minute		69					
5	8/1/2022 16:45:00	8/1/2022 17:19:00	E	BNSF	0.57	34.00	% of Trains w/ Blockage >10 Minute		42%					
6	8/2/2022 2:26:00	8/2/2022 2:38:00	E	UP	0.20	12.00	Total Duration of Blockages (hrs)		73.95					
7	8/2/2022 3:16:00	8/2/2022 3:16:00	E	BNSF	0.00	0.00	% of month w/ a Blockage		10%					
8	8/2/2022 7:10:00	8/2/2022 7:43:00	E	BNSF	0.55	33.00	Longest Single Blockage (Hours)		6.80					
9	8/2/2022 7:59:00	8/2/2022 8:24:00	E	UP	0.42	25.00	Avg. Length of Blockage (Minutes)		74.42					
10	8/2/2022 16:34:00	8/2/2022 16:34:00	E	UP	0.00	0.00								
11	8/2/2022 17:41:00	8/2/2022 17:41:00	E	UP	0.00	0.00								
12	8/3/2022 0:55:00	8/3/2022 3:36:00	E	BNSF	2.68	161.00								
13	8/3/2022 5:44:00	8/3/2022 7:12:00	E	BNSF	1.47	88.00								
14	8/3/2022 8:52:00	8/3/2022 9:04:00	E	BNSF	0.20	12.00								
15	8/3/2022 9:25:00	8/3/2022 10:22:00	E	UP	0.95	57.00								
16	8/4/2022 2:16:00	8/4/2022 2:16:00	W	UP	0.00	0.00								
17	8/4/2022 3:00:00	8/4/2022 3:44:00	E	UP	0.73	44.00								
18	8/4/2022 7:47:00	8/4/2022 8:02:00	E	BNSF	0.25	15.00								
19	8/5/2022 1:14:00	8/5/2022 1:14:00			0.00	0.00								
20	8/5/2022 1:45:00	8/5/2022 3:11:00			1.43	86.00								
21	8/5/2022 4:17:00	8/5/2022 4:57:00			0.67	40.00								
22	8/5/2022 9:13:00	8/5/2022 9:13:00			0.00	0.00								
23	8/5/2022 10:18:00	8/5/2022 10:39:00			0.35	21.00								
24	8/5/2022 14:48:00	8/5/2022 3:10:00			-11.63	-698.00								
25	8/5/2022 21:54:00	8/5/2022 23:07:00			1.22	73.00								
26	8/6/2022 1:45:00	8/6/2022 1:45:00			0.00	0.00								
27	8/6/2022 2:34:00	8/6/2022 2:34:00			0.00	0.00								
28	8/6/2022 3:04:00	8/6/2022 3:04:00			0.00	0.00								
29	8/6/2022 10:04:00	8/6/2022 10:04:00			0.00	0.00								
30	8/6/2022 13:20:00	8/6/2022 13:39:00			0.32	19.00								
31	8/6/2022 19:11:00	8/6/2022 19:30:00			0.32	19.00								
32	8/7/2022 2:24:00	8/7/2022 4:27:00			2.05	123.00								
33	8/7/2022 6:47:00	8/7/2022 6:59:00			0.20	12.00								
34	8/7/2022 9:18:00	8/7/2022 9:53:00			0.58	35.00								
35	8/8/2022 0:21:00	8/8/2022 2:06:00			1.75	105.00								
36	8/8/2022 2:31:00	8/8/2022 6:38:00			4.12	247.00								
37	8/8/2022 8:00:00	8/8/2022 8:11:00			0.18	11.00								
38	8/8/2022 19:55:00	8/8/2022 19:55:00			0.00	0.00								
39	8/8/2022 20:36:00	8/8/2022 20:36:00			0.00	0.00								
40	8/9/2022 1:04:00	8/9/2022 1:04:00			0.00	0.00								
41	8/9/2022 3:33:00	8/9/2022 3:33:00			0.00	0.00								
42	8/9/2022 4:10:00	8/9/2022 4:10:00			0.00	0.00								
43	8/9/2022 6:37:00	8/9/2022 7:32:00			0.92	55.00								
44	8/9/2022 10:05:00	8/9/2022 16:53:00			6.80	408.00								
45	8/10/2022 0:07:00	8/10/2022 3:50:00			3.72	223.00								
46	8/10/2022 4:33:00	8/10/2022 9:54:00			5.35	321.00								

47	8/10/2022 12:22:00	8/10/2022 12:22:00			0.00	0.00				
48	8/10/2022 15:53:00	8/10/2022 15:53:00			0.00	0.00				
49	8/11/2022 3:43:00	8/11/2022 3:43:00			0.00	0.00				
50	8/11/2022 6:17:00	8/11/2022 6:17:00			0.00	0.00				
51	8/11/2022 9:35:00	8/11/2022 9:35:00			0.00	0.00				
52	8/11/2022 10:59:00	8/11/2022 11:35:00			0.60	36.00				
53	8/11/2022 23:03:00	8/11/2022 23:03:00			0.00	0.00				
54	8/12/2022 0:52:00	8/12/2022 3:10:00			2.30	138.00				
55	8/12/2022 4:07:00	8/12/2022 4:07:00			0.00	0.00				
56	8/12/2022 7:03:00	8/12/2022 7:16:00			0.22	13.00				
57	8/12/2022 7:38:00	8/12/2022 9:48:00			2.17	130.00				
58	8/12/2022 15:42:00	8/12/2022 15:42:00			0.00	0.00				
59	8/12/2022 16:07:00	8/12/2022 16:07:00			0.00	0.00				
60	8/13/2022 1:46:00	8/13/2022 1:46:00			0.00	0.00				
61	8/13/2022 2:17:00	8/13/2022 2:17:00			0.00	0.00				
62	8/13/2022 4:23:00	8/13/2022 5:55:00			1.53	92.00				
63	8/13/2022 6:10:00	8/13/2022 6:10:00			0.00	0.00				
64	8/13/2022 7:41:00	8/13/2022 7:41:00			0.00	0.00				
65	8/13/2022 9:55:00	8/13/2022 10:06:00			0.18	11.00				
66	8/13/2022 17:43:00	8/13/2022 17:43:00			0.00	0.00				
67	8/14/2022 1:22:00	8/14/2022 1:51:00			0.48	29.00				
68	8/14/2022 2:36:00	8/14/2022 2:36:00			0.00	0.00				
69	8/14/2022 3:56:00	8/14/2022 3:56:00			0.00	0.00				
70	8/14/2022 8:54:00	8/14/2022 9:07:00			0.22	13.00				
71	8/14/2022 9:50:00	8/14/2022 10:03:00			0.22	13.00				
72	8/15/2022 2:06:00	8/15/2022 2:29:00			0.38	23.00				
73	8/15/2022 8:28:00	8/15/2022 8:28:00			0.00	0.00				
74	8/15/2022 8:47:00	8/15/2022 8:47:00			0.00	0.00				
75	8/15/2022 9:24:00	8/15/2022 9:36:00			0.20	12.00				
76	8/15/2022 14:09:00	8/15/2022 14:09:00			0.00	0.00				
77	8/16/2022 0:18:00	8/16/2022 0:18:00			0.00	0.00				
78	8/16/2022 3:52:00	8/16/2022 3:52:00			0.00	0.00				
79	8/16/2022 6:03:00	8/16/2022 6:15:00			0.20	12.00				
80	8/16/2022 8:26:00	8/16/2022 8:26:00			0.00	0.00				
81	8/16/2022 9:46:00	8/16/2022 9:46:00			0.00	0.00				
82	8/17/2022 0:59:00	8/17/2022 5:28:00			4.48	269.00				
83	8/17/2022 5:50:00	8/17/2022 6:26:00			0.60	36.00				
84	8/17/2022 12:03:00	8/17/2022 12:36:00			0.55	33.00				
85	8/17/2022 15:56:00	8/17/2022 15:56:00			0.00	0.00				
86	8/17/2022 17:00:00	8/17/2022 17:00:00			0.00	0.00				
87	8/18/2022 0:58:00	8/18/2022 0:58:00			0.00	0.00				
88	8/18/2022 4:03:00	8/18/2022 4:03:00			0.00	0.00				
89	8/18/2022 9:05:00	8/18/2022 9:05:00			0.00	0.00				
90	8/19/2022 0:52:00	8/19/2022 1:46:00			0.90	54.00				
91	8/19/2022 2:54:00	8/19/2022 2:54:00			0.00	0.00				
92	8/19/2022 3:56:00	8/19/2022 7:39:00			3.72	223.00				
93	8/19/2022 8:58:00	8/19/2022 8:58:00			0.00	0.00				
94	8/19/2022 10:37:00	8/19/2022 10:37:00			0.00	0.00				
95	8/19/2022 14:20:00	8/19/2022 14:32:00			0.20	12.00				

96	8/19/2022 17:15:00	8/19/2022 17:15:00			0.00	0.00				
97	8/20/2022 2:26:00	8/20/2022 2:26:00			0.00	0.00				
98	8/20/2022 10:25:00	8/20/2022 10:25:00			0.00	0.00				
99	8/20/2022 11:45:00	8/20/2022 11:45:00			0.00	0.00				
100	8/20/2022 12:14:00	8/20/2022 12:14:00			0.00	0.00				
101	8/21/2022 2:11:00	8/21/2022 4:46:00			2.58	155.00				
102	8/21/2022 5:10:00	8/21/2022 5:10:00			0.00	0.00				
103	8/21/2022 5:30:00	8/21/2022 9:19:00			3.82	229.00				
104	8/21/2022 14:00:00	8/21/2022 14:00:00			0.00	0.00				
105	8/21/2022 19:12:00	8/21/2022 19:12:00			0.00	0.00				
106	8/22/2022 3:31:00	8/22/2022 3:31:00			0.00	0.00				
107	8/22/2022 5:21:00	8/22/2022 6:55:00			1.57	94.00				
108	8/22/2022 7:23:00	8/22/2022 7:43:00			0.33	20.00				
109	8/22/2022 8:03:00	8/22/2022 8:03:00			0.00	0.00				
110	8/22/2022 14:57:00	8/22/2022 15:10:00			0.22	13.00				
111	8/23/2022 0:33:00	8/23/2022 3:20:00			2.78	167.00				
112	8/23/2022 4:42:00	8/23/2022 4:42:00			0.00	0.00				
113	8/23/2022 7:04:00	8/23/2022 7:04:00			0.00	0.00				
114	8/23/2022 16:49:00	8/23/2022 16:49:00			0.00	0.00				
115	8/23/2022 22:34:00	8/23/2022 22:47:00			0.22	13.00				
116	8/24/2022 3:15:00	8/24/2022 3:15:00			0.00	0.00				
117	8/24/2022 7:09:00	8/24/2022 7:09:00			0.00	0.00				
118	8/24/2022 7:57:00	8/24/2022 7:57:00			0.00	0.00				
119	8/24/2022 16:16:00	8/24/2022 16:16:00			0.00	0.00				
120	8/25/2022 0:18:00	8/25/2022 0:18:00			0.00	0.00				
121	8/25/2022 1:39:00	8/25/2022 1:39:00			0.00	0.00				
122	8/25/2022 2:07:00	8/25/2022 3:16:00			1.15	69.00				
123	8/25/2022 3:31:00	8/25/2022 3:31:00			0.00	0.00				
124	8/25/2022 8:54:00	8/25/2022 8:54:00			0.00	0.00				
125	8/25/2022 9:24:00	8/25/2022 9:42:00			0.30	18.00				
126	8/25/2022 20:47:00	8/25/2022 20:47:00			0.00	0.00				
127	8/26/2022 0:35:00	8/26/2022 0:35:00			0.00	0.00				
128	8/26/2022 1:43:00	8/26/2022 1:43:00			0.00	0.00				
129	8/26/2022 2:17:00	8/26/2022 3:23:00			1.10	66.00				
130	8/26/2022 3:43:00	8/26/2022 3:43:00			0.00	0.00				
131	8/26/2022 9:27:00	8/26/2022 10:00:00			0.55	33.00				
132	8/26/2022 20:28:00	8/26/2022 20:28:00			0.00	0.00				
133	8/27/2022 0:38:00	8/27/2022 0:38:00			0.00	0.00				
134	8/27/2022 2:33:00	8/27/2022 2:33:00			0.00	0.00				
135	8/27/2022 4:03:00	8/27/2022 4:03:00			0.00	0.00				
136	8/27/2022 4:58:00	8/27/2022 4:58:00			0.00	0.00				
137	8/27/2022 6:07:00	8/27/2022 6:22:00			0.25	15.00				
138	8/27/2022 9:19:00	8/27/2022 9:19:00			0.00	0.00				
139	8/27/2022 16:13:00	8/27/2022 16:13:00			0.00	0.00				
140	8/27/2022 21:22:00	8/27/2022 21:22:00			0.00	0.00				
141	8/27/2022 23:46:00	8/27/2022 23:46:00			0.00	0.00				
142	8/28/2022 1:46:00	8/28/2022 1:46:00			0.00	0.00				
143	8/28/2022 4:30:00	8/28/2022 4:42:00			0.20	12.00				
144	8/28/2022 8:13:00	8/28/2022 8:13:00			0.00	0.00				

145	8/28/2022 13:34:00	8/28/2022 13:34:00			0.00	0.00				
146	8/28/2022 23:02:00	8/28/2022 23:24:00			0.37	22.00				
147	8/29/2022 0:24:00	8/29/2022 1:12:00			0.80	48.00				
148	8/29/2022 1:35:00	8/29/2022 3:15:00			1.67	100.00				
149	8/29/2022 3:52:00	8/29/2022 4:13:00			0.35	21.00				
150	8/29/2022 4:26:00	8/29/2022 6:17:00			1.85	111.00				
151	8/29/2022 8:24:00	8/29/2022 8:24:00			0.00	0.00				
152	8/29/2022 10:39:00	8/29/2022 10:39:00			0.00	0.00				
153	8/29/2022 11:19:00	8/29/2022 11:19:00			0.00	0.00				
154	8/29/2022 13:14:00	8/29/2022 13:14:00			0.00	0.00				
155	8/29/2022 17:52:00	8/29/2022 18:17:00			0.42	25.00				
156	8/29/2022 20:29:00	8/29/2022 20:29:00			0.00	0.00				
157	8/30/2022 1:05:00	8/30/2022 3:42:00			2.62	157.00				
158	8/30/2022 5:56:00	8/30/2022 5:56:00			0.00	0.00				
159	8/30/2022 9:11:00	8/30/2022 9:11:00			0.00	0.00				
160	8/30/2022 9:52:00	8/30/2022 9:52:00			0.00	0.00				
161	8/30/2022 22:25:00	8/30/2022 22:25:00			0.00	0.00				
162	8/30/2022 22:57:00	8/30/2022 23:27:00			0.50	30.00				
163	8/31/2022 3:20:00	8/31/2022 3:20:00			0.00	0.00				
164	8/31/2022 4:25:00	8/31/2022 4:55:00			0.50	30.00				
165	8/31/2022 9:06:00	8/31/2022 11:59:00			2.88	173.00				
166	8/31/2022 12:21:00	8/31/2022 12:45:00			0.40	24.00				

July 2022			# days in	31								
	Note: if start and end time is the same; this indicates a train that did not stop.											
Count	Start Blockage	End Blockage	Direction	Operato	Duration (hours)	Duration (minutes)						
1	7/1/2022 4:12:00	7/1/2022 4:12:00	W	UP	0.00	0.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)				
2	7/1/2022 9:11:00	7/1/2022 9:11:00	E	UP	0.00	0.00	Date Range:	July 1, 2022 to July 31, 2022				
3	7/1/2022 10:24:00	7/1/2022 10:24:00	E	BNSF	0.00	0.00	# of Trains	141				
4	7/2/2022 3:44:00	7/2/2022 3:44:00	W	UP	0.00	0.00	# of Trains w/ Blockage >10 Minutes	54				
5	7/2/2022 7:22:00	7/2/2022 8:13:00	E	UP	0.85	51.00	% of Trains w/ Blockage >10 Minute	38%				
6	7/2/2022 9:14:00	7/2/2022 9:34:00	E	UP	0.33	20.00	Total Duration of Blockages (hrs)	75.97				
7	7/2/2022 10:05:00	7/2/2022 11:21:00	E	UP	1.27	76.00	% of month w/ a Blockage	10%				
8	7/3/2022 0:13:00	7/3/2022 0:13:00	W	BNSF	0.00	0.00	Longest Single Blockage (Hours)	6.02				
9	7/3/2022 0:59:00	7/3/2022 1:19:00	E	UP	0.33	20.00	Avg. Length of Blockage (Minutes)	84.41				
10	7/3/2022 4:22:00	7/3/2022 4:22:00	E	UP	0.00	0.00						
11	7/3/2022 8:56:00	7/3/2022 8:56:00	E	BNSF	0.00	0.00						
12	7/3/2022 12:03:00	7/3/2022 12:18:00	E	BNSF	0.25	15.00						
13	7/3/2022 20:40:00	7/3/2022 22:22:00	E	UP	1.70	102.00						
14	7/4/2022 0:51:00	7/4/2022 2:35:00	E	BNSF	1.73	104.00						
15	7/4/2022 7:29:00	7/4/2022 7:29:00	E	UP/CSX	0.00	0.00						
16	7/4/2022 7:59:00	7/4/2022 7:59:00	E	UP	0.00	0.00						
17	7/4/2022 9:29:00	7/4/2022 9:29:00	E	BNSF	0.00	0.00						
18	7/4/2022 15:41:00	7/4/2022 15:41:00	E	UP	0.00	0.00						
19	7/5/2022 2:19:00	7/5/2022 2:19:00	E	UP	0.00	0.00						
20	7/5/2022 3:26:00	7/5/2022 3:26:00	E	UP	0.00	0.00						
21	7/5/2022 7:31:00	7/5/2022 7:50:00	E	UP	0.32	19.00						
22	7/5/2022 8:08:00	7/5/2022 8:23:00	E	UP	0.25	15.00						
23	7/5/2022 14:27:00	7/5/2022 14:27:00	E	UP	0.00	0.00						
24	7/5/2022 20:55:00	7/5/2022 20:55:00	E	BNSF	0.00	0.00						
25	7/6/2022 0:25:00	7/6/2022 0:25:00	W	UP	0.00	0.00						
26	7/6/2022 2:13:00	7/6/2022 2:13:00	E	UP	0.00	0.00						
27	7/6/2022 6:39:00	7/6/2022 6:51:00	E	UP	0.20	12.00						
28	7/7/2022 0:31:00	7/7/2022 0:31:00	E	UP	0.00	0.00						
29	7/7/2022 1:09:00	7/7/2022 3:03:00	E	UP	1.90	114.00						
30	7/7/2022 5:30:00	7/7/2022 9:53:00	E	UP	4.38	263.00						
31	7/8/2022 1:37:00	7/8/2022 2:04:00	E	UP	0.45	27.00						
32	7/8/2022 3:55:00	7/8/2022 3:55:00	E	BNSF	0.00	0.00						
33	7/8/2022 6:13:00	7/8/2022 6:13:00	E	UP	0.00	0.00						
34	7/8/2022 8:28:00	7/8/2022 8:44:00	E	UP	0.27	16.00						
35	7/8/2022 9:22:00	7/8/2022 10:40:00	E	UP	1.30	78.00						
36	7/8/2022 23:29:00	7/9/2022 0:42:00	E	UP	1.22	73.00						
37	7/9/2022 0:45:00	7/9/2022 2:15:00	E	UP	1.50	90.00						
38	7/9/2022 3:01:00	7/9/2022 3:01:00	E	BNSF	0.00	0.00						
39	7/9/2022 8:36:00	7/9/2022 9:34:00	E	UP	0.97	58.00						
40	7/10/2022 0:00:00	7/10/2022 4:38:00	E	UP	4.63	278.00						
41	7/10/2022 7:45:00	7/10/2022 8:51:00	E	BNSF	1.10	66.00						
42	7/10/2022 10:54:00	7/10/2022 10:54:00	E	UP	0.00	0.00						
43	7/10/2022 17:41:00	7/10/2022 17:41:00	E	UP	0.00	0.00						
44	7/11/2022 0:44:00	7/11/2022 0:44:00	E	UP	0.00	0.00						
45	7/11/2022 3:47:00	7/11/2022 5:18:00	E	BNSF	1.52	91.00						
46	7/11/2022 7:00:00	7/11/2022 7:00:00	E	UP	0.00	0.00						

47	7/11/2022 8:06:00	7/11/2022 8:06:00	E	UP	0.00	0.00				
48	7/11/2022 9:36:00	7/11/2022 9:36:00	E	UP	0.00	0.00				
49	7/11/2022 17:06:00	7/11/2022 17:06:00	E	UP	0.00	0.00				
50	7/11/2022 18:15:00	7/11/2022 18:15:00	E	UP	0.00	0.00				
51	7/12/2022 1:29:00	7/12/2022 1:29:00	E	UP	0.00	0.00				
52	7/12/2022 2:49:00	7/12/2022 3:11:00	E	BNSF	0.37	22.00				
53	7/12/2022 8:00:00	7/12/2022 8:00:00	E	UP	0.00	0.00				
54	7/12/2022 8:25:00	7/12/2022 8:38:00	E	UP	0.22	13.00				
55	7/12/2022 23:49:00	7/13/2022 2:25:00	E	UP	2.60	156.00				
56	7/13/2022 3:40:00	7/13/2022 3:40:00	E	BNSF	0.00	0.00				
57	7/13/2022 6:10:00	7/13/2022 6:10:00	E	UP	0.00	0.00				
58	7/13/2022 6:58:00	7/13/2022 6:58:00	E	UP	0.00	0.00				
59	7/13/2022 8:47:00	7/13/2022 8:47:00	E	UP	0.00	0.00				
60	7/13/2022 23:48:00	7/14/2022 1:58:00	E	BNSF	2.17	130.00				
61	7/14/2022 6:18:00	7/14/2022 7:50:00	E	UP	1.53	92.00				
62	7/14/2022 8:33:00	7/14/2022 8:33:00	E	UP	0.00	0.00				
63	7/14/2022 13:38:00	7/14/2022 13:38:00	E	BNSF	0.00	0.00				
64	7/14/2022 15:42:00	7/14/2022 15:42:00	E	UP	0.00	0.00				
65	7/15/2022 0:28:00	7/15/2022 2:14:00	E	UP	1.77	106.00				
66	7/15/2022 3:51:00	7/15/2022 3:51:00	W	?	0.00	0.00				
67	7/15/2022 6:37:00	7/15/2022 7:39:00	E	UP	1.03	62.00				
68	7/15/2022 8:18:00	7/15/2022 8:18:00	E	UP	0.00	0.00				
69	7/15/2022 14:57:00	7/15/2022 14:57:00	E	UP	0.00	0.00				
70	7/15/2022 17:32:00	7/15/2022 17:32:00	E	BNSF	0.00	0.00				
71	7/15/2022 23:56:00	7/15/2022 23:56:00	E	UP	0.00	0.00				
72	7/16/2022 0:43:00	7/16/2022 2:06:00	E	NS	1.38	83.00				
73	7/16/2022 6:43:00	7/16/2022 6:43:00	E	UP	0.00	0.00				
74	7/16/2022 14:44:00	7/16/2022 15:16:00	E	UP	0.53	32.00				
75	7/16/2022 20:02:00	7/17/2022 1:29:00	E	UP	5.45	327.00				
76	7/17/2022 3:34:00	7/17/2022 3:34:00	W	UP	0.00	0.00				
77	7/17/2022 7:23:00	7/17/2022 7:23:00	E	UP	0.00	0.00				
78	7/17/2022 16:09:00	7/17/2022 16:09:00	E	UP	0.00	0.00				
79	7/18/2022 4:36:00	7/18/2022 4:36:00	E	UP	0.00	0.00				
80	7/18/2022 7:10:00	7/18/2022 9:00:00	E	UP	1.83	110.00				
81	7/18/2022 11:13:00	7/18/2022 11:47:00	E	UP	0.57	34.00				
82	7/19/2022 0:53:00	7/19/2022 0:53:00	E	UP	0.00	0.00				
83	7/19/2022 2:00:00	7/19/2022 2:00:00	E	UP	0.00	0.00				
84	7/19/2022 7:18:00	7/19/2022 7:18:00	E	UP	0.00	0.00				
85	7/19/2022 8:52:00	7/19/2022 8:52:00	E	UP	0.00	0.00				
86	7/20/2022 0:17:00	7/20/2022 0:50:00	E	UP	0.55	33.00				
87	7/20/2022 1:35:00	7/20/2022 1:35:00	E	UP	0.00	0.00				
88	7/20/2022 7:40:00	7/20/2022 7:40:00	E	UP	0.00	0.00				
89	7/20/2022 9:19:00	7/20/2022 9:19:00	E	UP	0.00	0.00				
90	7/21/2022 0:37:00	7/21/2022 0:37:00	W	UP	0.00	0.00				
91	7/21/2022 1:16:00	7/21/2022 1:16:00	E	UP	0.00	0.00				
92	7/21/2022 7:24:00	7/21/2022 7:24:00	E	UP	0.00	0.00				
93	7/21/2022 9:35:00	7/21/2022 9:48:00	E	UP	0.22	13.00				
94	7/21/2022 10:41:00	7/21/2022 10:41:00	E	UP	0.00	0.00				
95	7/22/2022 3:36:00	7/22/2022 4:10:00	E	UP	0.57	34.00				

96	7/22/2022 5:18:00	7/22/2022 5:18:00	E	UP	0.00	0.00				
97	7/22/2022 8:54:00	7/22/2022 8:54:00	E	UP	0.00	0.00				
98	7/22/2022 9:59:00	7/22/2022 9:59:00	E	UP	0.00	0.00				
99	7/23/2022 0:01:00	7/23/2022 0:01:00	E	UP	0.00	0.00				
100	7/23/2022 0:34:00	7/23/2022 0:34:00	E	UP	0.00	0.00				
101	7/23/2022 2:06:00	7/23/2022 8:07:00	E	UP	6.02	361.00				
102	7/23/2022 8:21:00	7/23/2022 9:26:00	E	UP	1.08	65.00				
103	7/23/2022 10:43:00	7/23/2022 11:03:00	E	BNSF	0.33	20.00				
104	7/23/2022 12:18:00	7/23/2022 12:43:00	E	UP	0.42	25.00				
105	7/23/2022 22:16:00	7/23/2022 22:16:00	E	UP	0.00	0.00				
106	7/24/2022 0:36:00	7/24/2022 0:36:00	W	UP	0.00	0.00				
107	7/24/2022 1:30:00	7/24/2022 2:15:00	E	BNSF	0.75	45.00				
108	7/24/2022 9:13:00	7/24/2022 9:13:00	E	UP	0.00	0.00				
109	7/24/2022 9:43:00	7/24/2022 9:43:00	E	UP	0.00	0.00				
110	7/24/2022 21:47:00	7/25/2022 3:42:00	E	UP	5.92	355.00				
111	7/25/2022 23:33:00	7/25/2022 23:33:00	W	UP	0.00	0.00				
112	7/26/2022 1:02:00	7/26/2022 4:12:00	E	UP	3.17	190.00				
113	7/26/2022 5:14:00	7/26/2022 5:38:00	E	UP	0.40	24.00				
114	7/26/2022 7:39:00	7/26/2022 7:39:00	E	UP	0.00	0.00				
115	7/26/2022 8:06:00	7/26/2022 8:06:00	E	BNSF	0.00	0.00				
116	7/26/2022 10:03:00	7/26/2022 11:08:00	E	UP	1.08	65.00				
117	7/27/2022 1:17:00	7/27/2022 3:27:00	E	UP	2.17	130.00				
118	7/27/2022 3:52:00	7/27/2022 4:33:00	E	BNSF	0.68	41.00				
119	7/27/2022 7:17:00	7/27/2022 9:03:00	E	UP	1.77	106.00				
120	7/27/2022 9:23:00	7/27/2022 10:07:00	E	UP	0.73	44.00				
121	7/27/2022 13:35:00	7/27/2022 13:35:00	E	UP	0.00	0.00				
122	7/28/2022 0:01:00	7/28/2022 1:21:00	E	UP	1.33	80.00				
123	7/28/2022 5:46:00	7/28/2022 6:59:00	E	BNSF	1.22	73.00				
124	7/28/2022 12:13:00	7/28/2022 13:24:00	E	UP	1.18	71.00				
125	7/29/2022 1:06:00	7/29/2022 1:06:00	W	UP	0.00	0.00				
126	7/29/2022 1:54:00	7/29/2022 1:54:00	E	UP	0.00	0.00				
127	7/29/2022 4:56:00	7/29/2022 5:10:00	E	UP	0.23	14.00				
128	7/29/2022 7:57:00	7/29/2022 7:57:00	E	BNSF	0.00	0.00				
129	7/29/2022 8:34:00	7/29/2022 8:48:00	E	UP	0.23	14.00				
130	7/30/2022 1:14:00	7/30/2022 1:14:00	W	UP	0.00	0.00				
131	7/30/2022 1:39:00	7/30/2022 1:39:00	E	UP	0.00	0.00				
132	7/30/2022 3:59:00	7/30/2022 3:59:00	E	BNSF	0.00	0.00				
133	7/30/2022 7:02:00	7/30/2022 7:02:00	E	UP	0.00	0.00				
134	7/30/2022 7:23:00	7/30/2022 7:23:00	E	UP	0.00	0.00				
135	7/31/2022 3:08:00	7/31/2022 3:08:00	W	UP	0.00	0.00				
136	7/31/2022 3:41:00	7/31/2022 3:41:00	E	UP	0.00	0.00				
137	7/31/2022 9:27:00	7/31/2022 9:27:00	E	UP	0.00	0.00				
138	7/31/2022 9:49:00	7/31/2022 9:49:00	E	UP	0.00	0.00				
139	7/31/2022 13:12:00	7/31/2022 13:12:00	E	BNSF	0.00	0.00				
140	7/31/2022 17:18:00	7/31/2022 17:18:00	E	BNSF	0.00	0.00				
141	7/31/2022 21:44:00	7/31/2022 21:44:00	W	BNSF	0.00	0.00				

June 2022				# days in	30							
	Note: if start and end time is the same; this indicates a train that did not stop.											
Count	Start Blockage	End Blockage	Direction	Operator	Duration (hours)	Duration (minutes)						
1	6/1/2022 2:13:00	6/1/2022 2:13:00			0.00	0.00	Crossing:		Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	6/1/2022 3:54:00	6/1/2022 3:54:00			0.00	0.00	Date Range:		June 1, 2022 to June 30, 2022			
3	6/1/2022 5:43:00	6/1/2022 5:56:00			0.22	13.00	# of Trains		157			
4	6/1/2022 7:32:00	6/1/2022 8:07:00			0.58	35.00	# of Trains w/ Blockage >10 Minutes		58			
5	6/1/2022 9:51:00	6/1/2022 10:03:00			0.20	12.00	% of Trains w/ Blockage >10 Minutes		37%			
6	6/1/2022 13:07:00	6/1/2022 13:19:00			0.20	12.00	Total Duration of Blockages (hrs)		87.43			
7	6/1/2022 23:43:00	6/1/2022 23:55:00			0.20	12.00	% of month w/ a Blockage		12%			
8	6/2/2022 0:26:00	6/2/2022 0:26:00			0.00	0.00	Longest Single Blockage (Hours)		6.50			
9	6/2/2022 1:33:00	6/2/2022 2:12:00			0.65	39.00	Avg. Length of Blockage (Minutes)		90.45			
10	6/2/2022 2:46:00	6/2/2022 2:46:00			0.00	0.00						
11	6/2/2022 6:10:00	6/2/2022 6:10:00			0.00	0.00						
12	6/2/2022 8:56:00	6/2/2022 8:56:00			0.00	0.00						
13	6/2/2022 10:24:00	6/2/2022 10:24:00			0.00	0.00						
14	6/3/2022 0:46:00	6/3/2022 0:46:00			0.00	0.00						
15	6/3/2022 1:33:00	6/3/2022 1:53:00			0.33	20.00						
16	6/3/2022 5:18:00	6/3/2022 6:04:00			0.77	46.00						
17	6/3/2022 7:28:00	6/3/2022 8:03:00			0.58	35.00						
18	6/3/2022 23:30:00	6/4/2022 1:05:00			1.58	95.00						
19	6/4/2022 1:23:00	6/4/2022 4:05:00			2.70	162.00						
20	6/4/2022 9:08:00	6/4/2022 9:08:00			0.00	0.00						
21	6/4/2022 10:20:00	6/4/2022 10:20:00			0.00	0.00						
22	6/4/2022 12:45:00	6/4/2022 12:59:00			0.23	14.00						
23	6/4/2022 23:04:00	6/4/2022 23:04:00			0.00	0.00						
24	6/5/2022 0:11:00	6/5/2022 0:11:00			0.00	0.00						
25	6/5/2022 0:55:00	6/5/2022 0:55:00			0.00	0.00						
26	6/5/2022 3:07:00	6/5/2022 3:07:00			0.00	0.00						
27	6/5/2022 4:06:00	6/5/2022 6:29:00			2.38	143.00						
28	6/5/2022 7:44:00	6/5/2022 7:44:00			0.00	0.00						
29	6/5/2022 8:27:00	6/5/2022 8:27:00			0.00	0.00						
30	6/5/2022 8:49:00	6/5/2022 9:24:00			0.58	35.00						
31	6/5/2022 9:45:00	6/5/2022 9:45:00			0.00	0.00						
32	6/5/2022 15:57:00	6/5/2022 15:57:00			0.00	0.00						
33	6/5/2022 21:54:00	6/5/2022 21:54:00			0.00	0.00						
34	6/6/2022 2:50:00	6/6/2022 3:02:00	E		0.20	12.00						
35	6/6/2022 4:54:00	6/6/2022 4:54:00	E		0.00	0.00						
36	6/6/2022 5:38:00	6/6/2022 5:38:00	E		0.00	0.00						
37	6/6/2022 9:23:00	6/6/2022 9:23:00	E		0.00	0.00						
38	6/6/2022 11:57:00	6/6/2022 11:57:00	E		0.00	0.00						
39	6/6/2022 15:55:00	6/6/2022 15:55:00	E		0.00	0.00						
40	6/6/2022 20:59:00	6/6/2022 20:59:00	E		0.00	0.00						
41	6/6/2022 23:22:00	6/6/2022 23:22:00	W		0.00	0.00						
42	6/7/2022 1:29:00	6/7/2022 1:29:00	E		0.00	0.00						
43	6/7/2022 2:57:00	6/7/2022 4:42:00	E		1.75	105.00						
44	6/7/2022 6:32:00	6/7/2022 6:45:00	E		0.22	13.00						
45	6/7/2022 11:23:00	6/7/2022 11:23:00	E		0.00	0.00						
46	6/7/2022 12:11:00	6/7/2022 13:15:00	E		1.07	64.00						

47	6/8/2022 0:43:00	6/8/2022 2:42:00	E		1.98	119.00				
48	6/8/2022 3:02:00	6/8/2022 6:55:00	E		3.88	233.00				
49	6/8/2022 9:05:00	6/8/2022 9:05:00	E		0.00	0.00				
50	6/8/2022 11:15:00	6/8/2022 12:00:00	E		0.75	45.00				
51	6/8/2022 14:31:00	6/8/2022 14:31:00	E		0.00	0.00				
52	6/8/2022 17:06:00	6/8/2022 18:00:00	E		0.90	54.00				
53	6/9/2022 0:01:00	6/9/2022 0:13:00	E		0.20	12.00				
54	6/9/2022 3:52:00	6/9/2022 3:52:00	W		0.00	0.00				
55	6/9/2022 5:02:00	6/9/2022 5:02:00	E		0.00	0.00				
56	6/9/2022 8:05:00	6/9/2022 8:05:00	E		0.00	0.00				
57	6/9/2022 8:59:00	6/9/2022 8:59:00	E		0.00	0.00				
58	6/9/2022 9:39:00	6/9/2022 9:52:00	E		0.22	13.00				
59	6/9/2022 21:08:00	6/9/2022 21:22:00	E		0.23	14.00				
60	6/10/2022 0:45:00	6/10/2022 6:07:00	E	UP	5.37	322.00				
61	6/10/2022 6:23:00	6/10/2022 6:23:00	E	BNSF	0.00	0.00				
62	6/10/3033 9:04:00	6/10/3033 9:04:00	E	UP	0.00	0.00				
63	6/10/2022 14:09:00	6/10/2022 15:12:00	E	UP	1.05	63.00				
64	6/10/2022 21:23:00	6/11/2022 3:53:00	E	UP	6.50	390.00				
65	6/11/2022 4:33:00	6/11/2022 4:33:00	E	BNSF	0.00	0.00				
66	6/11/2022 7:53:00	6/11/2022 7:53:00	E	UP	0.00	0.00				
67	6/11/2022 8:14:00	6/11/2022 8:14:00	E	UP	0.00	0.00				
68	6/11/2022 22:02:00	6/12/2022 4:27:00	E	UP	6.42	385.00				
69	6/12/2022 9:05:00	6/12/2022 9:05:00	E	UP	0.00	0.00				
70	6/12/2022 22:01:00	6/12/2022 22:01:00	W	BNSF	0.00	0.00				
71	6/13/2022 1:58:00	6/13/2022 1:58:00	E	UP	0.00	0.00				
72	6/13/2022 2:37:00	6/13/2022 4:53:00	E	UP	2.27	136.00				
73	6/13/2022 9:57:00	6/13/2022 9:57:00	E	UP	0.00	0.00				
74	6/13/2022 23:28:00	6/13/2022 23:28:00	E	UP	0.00	0.00				
75	6/14/2022 1:23:00	6/14/2022 1:23:00	E	UP	0.00	0.00				
76	6/14/2022 1:50:00	6/14/2022 1:50:00	E	UP	0.00	0.00				
77	6/14/2022 5:39:00	6/14/2022 5:39:00	E	BNSF	0.00	0.00				
78	6/14/2022 12:06:00	6/14/2022 12:06:00	E	UP	0.00	0.00				
79	6/15/2022 0:54:00	6/15/2022 0:54:00	W	UP	0.00	0.00				
80	6/15/2022 1:29:00	6/15/2022 3:26:00	E	UP	1.95	117.00				
81	6/15/2022 5:38:00	6/15/2022 5:38:00	E	UP	0.00	0.00				
82	6/15/2022 5:56:00	6/15/2022 5:56:00	E	BNSF	0.00	0.00				
83	6/15/2022 6:42:00	6/15/2022 6:42:00	E	UP	0.00	0.00				
84	6/15/2022 10:03:00	6/15/2022 11:03:00	E	UP	1.00	60.00				
85	6/15/2022 20:49:00	6/15/2022 20:49:00	W	UP	0.00	0.00				
86	6/16/2022 1:16:00	6/16/2022 1:16:00	W	UP	0.00	0.00				
87	6/16/2022 1:47:00	6/16/2022 1:47:00	E	UP	0.00	0.00				
88	6/16/2022 4:17:00	6/16/2022 5:32:00	E	UP	1.25	75.00				
89	6/16/2022 5:46:00	6/16/2022 5:46:00	E	UP	0.00	0.00				
90	6/16/2022 8:18:00	6/16/2022 8:18:00	W	UP	0.00	0.00				
91	6/16/2022 10:17:00	6/16/2022 10:17:00	W	UP	0.00	0.00				
92	6/16/2022 21:57:00	6/17/2022 0:31:00	E	UP	2.57	154.00				
93	6/17/2022 0:56:00	6/17/2022 0:56:00	E	UP	0.00	0.00				
94	6/17/2022 1:47:00	6/17/2022 5:12:00	E	BNSF	3.42	205.00				
95	6/17/2022 6:13:00	6/17/2022 6:13:00	E	UP	0.00	0.00				

96	6/17/2022 8:53:00	6/17/2022 8:53:00	E	UP	0.00	0.00				
97	6/17/2022 12:28:00	6/17/2022 12:28:00	E	UP	0.00	0.00				
98	6/17/2022 22:54:00	6/17/2022 22:54:00	W	BNSF	0.00	0.00				
99	6/18/2022 0:22:00	6/18/2022 0:22:00	W	UP	0.00	0.00				
100	6/18/2022 1:46:00	6/18/2022 2:16:00	E	KCS	0.50	30.00				
101	6/18/2022 5:01:00	6/18/2022 5:01:00	E	BNSF	0.00	0.00				
102	6/18/2022 8:09:00	6/18/2022 8:21:00	E	KCS	0.20	12.00				
103	6/18/2022 9:23:00	6/18/2022 11:43:00	E	UP	2.33	140.00				
104	6/18/2022 21:43:00	6/18/2022 21:43:00	W	UP	0.00	0.00				
105	6/18/2022 22:30:00	6/18/2022 22:30:00	W	BNSF	0.00	0.00				
106	6/18/2022 23:46:00	6/18/2022 23:46:00	E	UP	0.00	0.00				
107	6/19/2022 5:22:00	6/19/2022 5:22:00	E	BNSF	0.00	0.00				
108	6/19/2022 8:09:00	6/19/2022 8:21:00	E	UP	0.20	12.00				
109	6/19/2022 8:35:00	6/19/2022 8:35:00	E	KCS	0.00	0.00				
110	6/19/2022 23:04:00	6/19/2022 23:04:00	E	BNSF	0.00	0.00				
111	6/19/2022 23:45:00	6/19/2022 23:45:00	E	UP	0.00	0.00				
112	6/20/2022 6:54:00	6/20/2022 6:54:00	E	UP	0.00	0.00				
113	6/20/2022 7:35:00	6/20/2022 7:35:00	E	KCS	0.00	0.00				
114	6/20/2022 22:44:00	6/20/2022 22:44:00	E	KCS	0.00	0.00				
115	6/21/2022 1:46:00	6/21/2022 1:46:00	E	BNSF	0.00	0.00				
116	6/21/2022 8:04:00	6/21/2022 8:04:00	E	BNSF	0.00	0.00				
117	6/21/2022 10:14:00	6/21/2022 11:17:00	E	UP	1.05	63.00				
118	6/22/2022 0:36:00	6/22/2022 3:29:00	E	UP	2.88	173.00				
119	6/22/2022 7:39:00	6/22/2022 7:39:00	E	UP	0.00	0.00				
120	6/23/2022 1:04:00	6/23/2022 1:04:00	E	UP	0.00	0.00				
121	6/23/2022 1:32:00	6/23/2022 1:32:00	E	UP	0.00	0.00				
122	6/23/2022 9:35:00	6/23/2022 9:35:00	E	CN	0.00	0.00				
123	6/23/2022 17:03:00	6/23/2022 17:03:00	W	?	0.00	0.00				
124	6/24/2022 1:16:00	6/24/2022 1:16:00	W	UP	0.00	0.00				
125	6/24/2022 1:45:00	6/24/2022 1:45:00	E	UP	0.00	0.00				
126	6/24/2022 2:45:00	6/24/2022 2:45:00	E	BNSF	0.00	0.00				
127	6/24/2022 7:39:00	6/24/2022 8:54:00	E	UP	1.25	75.00				
128	6/24/2022 13:51:00	6/24/2022 13:51:00	E	UP	0.00	0.00				
129	6/24/2022 16:26:00	6/24/2022 16:26:00	E	UP	0.00	0.00				
130	6/24/2022 21:26:00	6/25/2022 2:56:00	E	UP	5.50	330.00				
131	6/25/2022 8:54:00	6/25/2022 9:46:00	E	UP	0.87	52.00				
132	6/25/2022 10:08:00	6/25/2022 10:22:00	E	BNSF	0.23	14.00				
133	6/25/2022 10:43:00	6/25/2022 10:43:00	E	UP	0.00	0.00				
134	6/25/2022 20:51:00	6/25/2022 21:45:00	E	UP	0.90	54.00				
135	6/26/2022 0:37:00	6/26/2022 0:37:00	W	BNSF	0.00	0.00				
136	6/26/2022 1:08:00	6/26/2022 4:14:00	E	UP	3.10	186.00				
137	6/26/2022 7:33:00	6/26/2022 7:33:00	E	UP	0.00	0.00				
138	6/26/2022 9:45:00	6/26/2022 10:00:00	E	UP	0.25	15.00				
139	6/26/2022 18:41:00	6/26/2022 18:41:00	E	UP	0.00	0.00				
140	6/26/2022 23:20:00	6/26/2022 23:38:00	E	UP	0.30	18.00				
141	6/27/2022 1:37:00	6/27/2022 1:37:00	E	UP	0.00	0.00				
142	6/27/2022 9:58:00	6/27/2022 9:58:00	E	UP	0.00	0.00				
143	6/27/2022 14:35:00	6/27/2022 14:52:00	E	BNSF	0.28	17.00				
144	6/27/2022 22:20:00	6/28/2022 2:08:00	E	UP	3.80	228.00				

145	6/28/2022 4:46:00	6/28/2022 4:46:00	E	BNSF	0.00	0.00				
146	6/28/2022 6:50:00	6/28/2022 6:50:00	E	UP	0.00	0.00				
147	6/28/2022 8:21:00	6/28/2022 8:47:00	E	?	0.43	26.00				
148	6/28/2022 22:40:00	6/29/2022 1:46:00	E	UP	3.10	186.00				
149	6/29/2022 2:57:00	6/29/2022 2:57:00	E	UP	0.00	0.00				
150	6/29/2022 7:32:00	6/29/2022 7:32:00	E	?	0.00	0.00				
151	6/30/2022 0:20:00	6/30/2022 0:20:00	E	UP	0.00	0.00				
152	6/30/2022 1:58:00	6/30/2022 3:44:00	E	UP	1.77	106.00				
153	6/30/2022 4:08:00	6/30/2022 4:08:00	E	BNSF	0.00	0.00				
154	6/30/2022 4:34:00	6/30/2022 4:49:00	E	UP	0.25	15.00				
155	6/30/2022 12:53:00	6/30/2022 13:16:00	E	UP	0.38	23.00				
156	6/30/2022 14:57:00	6/30/2022 15:09:00	E	UP	0.20	12.00				
157	6/30/2022 22:50:00	7/1/2022 2:05:00	E	UP	3.25	195.00				

May 2022			# days in month	31					
	Note: if start and end time is the same; this indicates a train that did not stop.								
Count	Start Blockage	End Blockage	Duration (hours)	Duration (minutes)					
1	5/1/2022 0:00:00	5/1/2022 2:50:00	2.83	170.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	5/1/2022 4:04:00	5/1/2022 5:02:00	0.97	58.00	Date Range:	May 1, 2022 to May 31, 2022			
3	5/1/2022 7:59:00	5/1/2022 7:59:00	0.00	0.00	# of Trains	168			
4	5/1/2022 20:08:00	5/1/2022 21:08:00	1.00	60.00	# of Trains w/ Blockage >10 Minute	62			
5	5/1/2022 22:51:00	5/1/2022 22:51:00	0.00	0.00	% of Trains w/ Blockage >10 Minute	37%			
6	5/2/2022 2:02:00	5/2/2022 2:02:00	0.00	0.00	Total Duration of Blockages (hrs)	48.83			
7	5/2/2022 5:24:00	5/2/2022 5:24:00	0.00	0.00	% of month w/ a Blockage	7%			
8	5/2/2022 11:59:00	5/2/2022 11:59:00	0.00	0.00	Longest Single Blockage (Hours)	3.68			
9	5/2/2022 22:59:00	5/2/2022 22:59:00	0.00	0.00	Avg. Length of Blockage (Minutes)	58.45			
10	5/3/2022 3:13:00	5/3/2022 4:00:00	0.78	47.00					
11	5/3/2022 5:43:00	5/3/2022 5:43:00	0.00	0.00					
12	5/3/2022 6:36:00	5/3/2022 6:36:00	0.00	0.00					
13	5/3/2022 8:20:00	5/3/2022 8:34:00	0.23	14.00					
14	5/3/2022 19:56:00	5/3/2022 20:30:00	0.57	34.00					
15	5/4/2022 3:27:00	5/4/2022 3:27:00	0.00	0.00					
16	5/4/2022 3:59:00	5/4/2022 3:59:00	0.00	0.00					
17	5/4/2022 5:09:00	5/4/2022 5:22:00	0.22	13.00					
18	5/4/2022 5:59:00	5/4/2022 7:55:00	1.93	116.00					
19	5/5/2022 1:37:00	5/5/2022 1:49:00	0.20	12.00					
20	5/5/2022 4:14:00	5/5/2022 4:14:00	0.00	0.00					
21	5/5/2022 7:47:00	5/5/2022 8:45:00	0.97	58.00					
22	5/5/2022 10:50:00	5/5/2022 11:09:00	0.32	19.00					
23	5/5/2022 12:15:00	5/5/2022 12:15:00	0.00	0.00					
24	5/5/2022 18:22:00	5/5/2022 18:22:00	0.00	0.00					
25	5/6/2022 3:24:00	5/6/2022 3:24:00	0.00	0.00					
26	5/6/2022 4:55:00	5/6/2022 4:55:00	0.00	0.00					
27	5/6/2022 5:22:00	5/6/2022 5:22:00	0.00	0.00					
28	5/6/2022 7:22:00	5/6/2022 7:22:00	0.00	0.00					
29	5/6/2022 12:02:00	5/6/2022 12:02:00	0.00	0.00					
30	5/6/2022 13:11:00	5/6/2022 13:11:00	0.00	0.00					
31	5/7/2022 0:22:00	5/7/2022 3:05:00	2.72	163.00					
32	5/7/2022 7:19:00	5/7/2022 7:19:00	0.00	0.00					
33	5/7/2022 14:04:00	5/7/2022 16:50:00	2.77	166.00					
34	5/7/2022 18:43:00	5/7/2022 19:30:00	0.78	47.00					
35	5/8/2022 1:09:00	5/8/2022 1:27:00	0.30	18.00					
36	5/8/2022 3:50:00	5/8/2022 3:50:00	0.00	0.00					
37	5/8/2022 7:12:00	5/8/2022 7:12:00	0.00	0.00					
38	5/8/2022 8:49:00	5/8/2022 9:03:00	0.23	14.00					
39	5/9/2022 1:16:00	5/9/2022 1:28:00	0.20	12.00					
40	5/9/2022 6:59:00	5/9/2022 6:59:00	0.00	0.00					
41	5/9/2022 17:22:00	5/9/2022 17:38:00	0.27	16.00					

42	5/9/2022 23:08:00	5/9/2022 23:08:00	0.00	0.00					
43	5/10/2022 1:12:00	5/10/2022 1:12:00	0.00	0.00					
44	5/10/2022 5:01:00	5/10/2022 6:30:00	1.48	89.00					
45	5/10/2022 7:27:00	5/10/2022 7:27:00	0.00	0.00					
46	5/10/2022 7:54:00	5/10/2022 8:19:00	0.42	25.00					
47	5/11/2022 0:28:00	5/11/2022 1:45:00	1.28	77.00					
48	5/11/2022 2:12:00	5/11/2022 3:41:00	1.48	89.00					
49	5/11/2022 6:45:00	5/11/2022 6:45:00	0.00	0.00					
50	5/11/2022 7:13:00	5/11/2022 7:13:00	0.00	0.00					
51	5/11/2022 18:12:00	5/11/2022 18:58:00	0.77	46.00					
52	5/12/2022 1:20:00	5/12/2022 2:57:00	1.62	97.00					
53	5/12/2022 7:52:00	5/12/2022 7:52:00	0.00	0.00					
54	5/12/2022 8:27:00	5/12/2022 8:27:00	0.00	0.00					
55	5/12/2022 8:59:00	5/12/2022 8:59:00	0.00	0.00					
56	5/12/2022 15:54:00	5/12/2022 15:54:00	0.00	0.00					
57	5/12/2022 19:02:00	5/12/2022 19:13:00	0.18	11.00					
58	5/13/2022 1:21:00	5/13/2022 1:21:00	0.00	0.00					
59	5/13/2022 1:54:00	5/13/2022 4:05:00	2.18	131.00					
60	5/13/2022 4:44 AM	5/13/2022 4:44 AM	0.00	0.00					
61	5/13/2022 5:31:00	5/13/2022 5:31:00	0.00	0.00					
62	5/13/2022 10:11:00	5/13/2022 10:11:00	0.00	0.00					
63	5/14/2022 0:58:00	5/14/2022 1:35:00	0.62	37.00					
64	5/14/2022 5:19:00	5/14/2022 5:19:00	0.00	0.00					
65	5/14/2022 6:06:00	5/14/2022 7:17:00	1.18	71.00					
66	5/14/2022 9:58:00	5/14/2022 9:58:00	0.00	0.00					
67	5/14/2022 20:21:00	5/14/2022 20:21:00	0.00	0.00					
68	5/14/2022 21:43:00	5/14/2022 10:09:00	-11.57	-694.00					
69	5/15/2022 0:30:00	5/15/2022 0:30:00	0.00	0.00					
70	5/15/2022 1:01:00	5/15/2022 1:01:00	0.00	0.00					
71	5/15/2022 5:04:00	5/15/2022 5:04:00	0.00	0.00					
72	5/15/2022 7:59:00	5/15/2022 7:59:00	0.00	0.00					
73	5/15/2022 10:02:00	5/15/2022 10:26:00	0.40	24.00					
74	5/15/2022 16:15:00	5/15/2022 16:27:00	0.20	12.00					
75	5/16/2022 0:36:00	5/16/2022 0:36:00	0.00	0.00					
76	5/16/2022 2:00:00	5/16/2022 2:11:00	0.18	11.00					
77	5/16/2022 2:24:00	5/16/2022 2:24:00	0.00	0.00					
78	5/16/2022 7:30:00	5/16/2022 8:50:00	1.33	80.00					
79	5/16/2022 9:14:00	5/16/2022 9:14:00	0.00	0.00					
80	5/16/2022 5:28:00	5/16/2022 5:28:00	0.00	0.00					
81	5/17/2022 1:35:00	5/17/2022 1:35:00	0.00	0.00					
82	5/17/2022 2:10:00	5/17/2022 2:10:00	0.00	0.00					
83	5/17/2022 9:08:00	5/17/2022 9:20:00	0.20	12.00					
84	5/17/2022 12:07:00	5/17/2022 12:07:00	0.00	0.00					
85	5/17/2022 14:33:00	5/17/2022 14:59:00	0.43	26.00					

86	5/17/2022 21:30:00	5/17/2022 21:30:00	0.00	0.00				
87	5/18/2022 0:59:00	5/18/2022 1:12:00	0.22	13.00				
88	5/18/2022 2:09:00	5/18/2022 2:34:00	0.42	25.00				
89	5/18/2022 5:08:00	5/18/2022 5:08:00	0.00	0.00				
90	5/18/2022 5:44:00	5/18/2022 5:44:00	0.00	0.00				
91	5/18/2022 6:04:00	5/18/2022 6:04:00	0.00	0.00				
92	5/18/2022 6:35:00	5/18/2022 8:10:00	1.58	95.00				
93	5/18/2022 8:32:00	5/18/2022 8:48:00	0.27	16.00				
94	5/18/2022 9:10:00	5/18/2022 9:10:00	0.00	0.00				
95	5/18/2022 23:52:00	5/19/2022 0:48:00	0.93	56.00				
96	5/19/2022 7:03:00	5/19/2022 8:44:00	1.68	101.00				
97	5/19/2022 14:53:00	5/19/2022 14:53:00	0.00	0.00				
98	5/19/2022 19:14:00	5/19/2022 19:14:00	0.00	0.00				
99	5/19/2022 22:47:00	5/19/2022 22:47:00	0.00	0.00				
100	5/20/2022 1:56:00	5/20/2022 2:39:00	0.72	43.00				
101	5/20/2022 4:03:00	5/20/2022 4:16:00	0.22	13.00				
102	5/20/2022 5:12:00	5/20/2022 7:18:00	2.10	126.00				
103	5/20/2022 7:39:00	5/20/2022 10:17:00	2.63	158.00				
104	5/20/2022 11:49:00	5/20/2022 12:16:00	0.45	27.00				
105	5/20/2022 12:33:00	5/20/2022 12:33:00	0.00	0.00				
106	5/20/2022 19:43:00	5/20/2022 20:00:00	0.28	17.00				
107	5/21/2022 0:13:00	5/21/2022 0:13:00	0.00	0.00				
108	5/21/2022 0:53:00	5/21/2022 0:53:00	0.00	0.00				
109	5/21/2022 7:57:00	5/21/2022 7:57:00	0.00	0.00				
110	5/21/2022 20:58:00	5/21/2022 20:58:00	0.00	0.00				
111	5/22/2022 0:03:00	5/22/2022 2:50:00	2.78	167.00				
112	5/22/2022 8:14:00	5/22/2022 8:14:00	0.00	0.00				
113	5/22/2022 9:29:00	5/22/2022 10:38:00	1.15	69.00				
114	5/22/2022 10:56:00	5/22/2022 10:56:00	0.00	0.00				
115	5/23/2022 1:50:00	5/23/2022 1:50:00	0.00	0.00				
116	5/23/2022 7:25:00	5/23/2022 7:43:00	0.30	18.00				
117	5/23/2022 8:09:00	5/23/2022 8:09:00	0.00	0.00				
118	5/23/2022 9:52:00	5/23/2022 9:52:00	0.00	0.00				
119	5/23/2022 18:40:00	5/23/2022 18:40:00	0.00	0.00				
120	5/24/2022 0:09:00	5/24/2022 0:09:00	0.00	0.00				
121	5/24/2022 2:46:00	5/24/2022 2:46:00	0.00	0.00				
122	5/24/2022 4:15:00	5/24/2022 4:41:00	0.43	26.00				
123	5/24/2022 5:19:00	5/24/2022 5:19:00	0.00	0.00				
124	5/24/2022 5:38:00	5/24/2022 5:38:00	0.00	0.00				
125	5/24/2022 6:48:00	5/24/2022 6:48:00	0.00	0.00				
126	5/24/2022 9:42:00	5/24/2022 9:42:00	0.00	0.00				
127	5/24/2022 21:00:00	5/24/2022 21:23:00	0.38	23.00				
128	5/24/2022 22:55:00	5/25/2022 1:19:00	2.40	144.00				
129	5/25/2022 5:37:00	5/25/2022 6:35:00	0.97	58.00				

130	5/25/2022 8:39:00	5/25/2022 8:39:00	0.00	0.00					
131	5/25/2022 8:57:00	5/25/2022 8:57:00	0.00	0.00					
132	5/25/2022 21:17:00	5/25/2022 21:17:00	0.00	0.00					
133	5/26/2022 0:24:00	5/26/2022 0:24:00	0.00	0.00					
134	5/26/2022 0:57:00	5/26/2022 0:57:00	0.00	0.00					
135	5/26/2022 7:10:00	5/26/2022 7:10:00	0.00	0.00					
136	5/26/2022 10:03:00	5/26/2022 11:10:00	1.12	67.00					
137	5/27/2022 0:11:00	5/27/2022 0:11:00	0.00	0.00					
138	5/27/2022 0:50:00	5/27/2022 1:05:00	0.25	15.00					
139	5/27/2022 5:47:00	5/27/2022 5:47:00	0.00	0.00					
140	5/27/2022 7:28:00	5/27/2022 7:28:00	0.00	0.00					
141	5/27/2022 8:10:00	5/27/2022 8:10:00	0.00	0.00					
142	5/27/2022 9:00:00	5/27/2022 9:00:00	0.00	0.00					
143	5/27/2022 15:58:00	5/27/2022 16:10:00	0.20	12.00					
144	5/27/2022 20:46:00	5/28/2022 0:27:00	3.68	221.00					
145	5/28/2022 2:45:00	5/28/2022 2:45:00	0.00	0.00					
146	5/28/2022 3:13:00	5/28/2022 4:42:00	1.48	89.00					
147	5/28/2022 8:18:00	5/28/2022 8:18:00	0.00	0.00					
148	5/28/2022 11:30:00	5/28/2022 11:30:00	0.00	0.00					
149	5/28/2022 14:50:00	5/28/2022 14:50:00	0.00	0.00					
150	5/28/2022 22:36:00	5/28/2022 22:36:00	0.00	0.00					
151	5/29/2022 0:27:00	5/29/2022 0:58:00	0.52	31.00					
152	5/29/2022 5:38:00	5/29/2022 5:38:00	0.00	0.00					
153	5/29/2022 7:32:00	5/29/2022 7:32:00	0.00	0.00					
154	5/29/2022 8:03:00	5/29/2022 8:03:00	0.00	0.00					
155	5/29/2022 10:27:00	5/29/2022 12:02:00	1.58	95.00					
156	5/29/2022 14:27:00	5/29/2022 14:27:00	0.00	0.00					
157	5/29/2022 19:52:00	5/29/2022 19:52:00	0.00	0.00					
158	5/30/2022 2:02:00	5/30/2022 2:02:00	0.00	0.00					
159	5/30/2022 2:58:00	5/30/2022 3:10:00	0.20	12.00					
160	5/30/2022 6:29:00	5/30/2022 6:29:00	0.00	0.00					
161	5/30/2022 7:09:00	5/30/2022 7:09:00	0.00	0.00					
162	5/31/2022 1:05:00	5/31/2022 1:05:00	0.00	0.00					
163	5/31/2022 1:54:00	5/31/2022 1:54:00	0.00	0.00					
164	5/31/2022 6:54:00	5/31/2022 6:54:00	0.00	0.00					
165	5/31/2022 8:46:00	5/31/2022 8:46:00	0.00	0.00					
166	5/31/2022 12:31:00	5/31/2022 12:31:00	0.00	0.00					
167	5/31/2022 13:09:00	5/31/2022 13:21:00	0.20	12.00					
168	5/31/2022 22:46:00	5/31/2022 22:46:00	0.00	0.00					

April 2022			# days in month	30					
	Note: if start and end time is the same; this indicates a train that did not stop.								
Count	Start Blockage	End Blockage	Duration (hours)	Duration (minutes)					
1	4/1/2022 5:45:00	4/1/2022 6:35:00	0.83	50.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	4/1/2022 7:04:00	4/1/2022 7:48:00	0.73	44.00	Date Range:	Apr 1, 2022 to Apr 30, 2022			
3	4/1/2022 8:18:00	4/1/2022 8:18:00	0.00	0.00	# of Trains	161			
4	4/1/2022 14:07:00	4/1/2022 14:07:00	0.00	0.00	# of Trains w/ Blockage >10 Minute	60			
5	4/1/2022 20:46:00	4/1/2022 20:46:00	0.00	0.00	% of Trains w/ Blockage >10 Minute	37%			
6	4/2/2022 0:13:00	4/2/2022 0:13:00	0.00	0.00	Total Duration of Blockages (hrs)	45.32			
7	4/2/2022 4:12:00	4/2/2022 5:04:00	0.87	52.00	% of month w/ a Blockage	6%			
8	4/2/2022 5:24:00	4/2/2022 5:45:00	0.35	21.00	Longest Single Blockage (Hours)	5.70			
9	4/2/2022 9:36:00	4/2/2022 9:36:00	0.00	0.00	Avg. Length of Blockage (Minutes)	45.32			
10	4/2/2022 12:04:00	4/2/2022 12:24:00	0.33	20.00					
11	4/2/2022 23:21:00	4/2/2022 23:35:00	0.23	14.00					
12	4/2/2022 23:51:00	4/3/2022 1:10:00	1.32	79.00					
13	4/3/2022 3:18:00	4/3/2022 3:18:00	0.00	0.00					
14	4/3/2022 3:47:00	4/3/2022 3:47:00	0.00	0.00					
15	4/4/2022 1:13:00	4/4/2022 1:55:00	0.70	42.00					
16	4/4/2022 8:31:00	4/4/2022 8:31:00	0.00	0.00					
17	4/4/2022 14:10:00	4/4/2022 14:10:00	0.00	0.00					
18	4/5/2022 2:26:00	4/5/2022 2:26:00	0.00	0.00					
19	4/5/2022 4:09:00	4/5/2022 4:09:00	0.00	0.00					
20	4/5/2022 8:24:00	4/5/2022 8:46:00	0.37	22.00					
21	4/5/2022 9:06:00	4/5/2022 9:06:00	0.00	0.00					
22	4/5/2022 9:27:00	4/5/2022 9:27:00	0.00	0.00					
23	4/5/2022 11:39:00	4/5/2022 11:39:00	0.00	0.00					
24	4/6/2022 0:35:00	4/6/2022 0:35:00	0.00	0.00					
25	4/6/2022 1:14:00	4/6/2022 1:14:00	0.00	0.00					
26	4/6/2022 6:35:00	4/6/2022 6:51:00	0.27	16.00					
27	4/6/2022 8:50:00	4/6/2022 9:05:00	0.25	15.00					
28	4/6/2022 18:20:00	4/6/2022 18:20:00	0.00	0.00					
29	4/6/2022 23:20:00	4/6/2022 23:33:00	0.22	13.00					
30	4/7/2022 0:58:00	4/7/2022 0:58:00	0.00	0.00					
31	4/7/2022 1:38:00	4/7/2022 3:27:00	1.82	109.00					
32	4/7/2022 5:40:00	4/7/2022 5:40:00	0.00	0.00					
33	4/7/2022 7:27:00	4/7/2022 7:27:00	0.00	0.00					
34	4/7/2022 10:43:00	4/7/2022 11:52:00	1.15	69.00					
35	4/8/2022 1:16:00	4/8/2022 1:28:00	0.20	12.00					
36	4/8/2022 4:13:00	4/8/2022 4:13:00	0.00	0.00					
37	4/8/2022 7:16:00	4/8/2022 7:28:00	0.20	12.00					
38	4/8/2022 9:18:00	4/8/2022 9:29:00	0.18	11.00					
39	4/8/2022 14:24:00	4/8/2022 14:24:00	0.00	0.00					
40	4/8/2022 15:00:00	4/8/2022 15:00:00	0.00	0.00					
41	4/8/2022 18:32:00	4/8/2022 19:15:00	0.72	43.00					
42	4/9/2022 0:06:00	4/9/2022 0:06:00	0.00	0.00					

43	4/9/2022 2:06:00	4/9/2022 3:33:00	1.45	87.00				
44	4/9/2022 7:39:00	4/9/2022 7:39:00	0.00	0.00				
45	4/9/2022 8:35:00	4/9/2022 8:57:00	0.37	22.00				
46	4/9/2022 14:18:00	4/9/2022 14:18:00	0.00	0.00				
47	4/9/2022 15:46:00	4/9/2022 15:46:00	0.00	0.00				
48	4/9/2022 23:55:00	4/10/2022 0:28:00	0.55	33.00				
49	4/10/2022 2:58:00	4/10/2022 3:33:00	0.58	35.00				
50	4/10/2022 3:49:00	4/10/2022 3:49:00	0.00	0.00				
51	4/10/2022 9:38:00	4/10/2022 9:38:00	0.00	0.00				
52	4/10/2022 10:05:00	4/10/2022 10:05:00	0.00	0.00				
53	4/10/2022 11:17:00	4/10/2022 11:17:00	0.00	0.00				
54	4/10/2022 11:55:00	4/10/2022 11:55:00	0.00	0.00				
55	4/10/2022 19:20:00	4/10/2022 19:20:00	0.00	0.00				
56	4/11/2022 0:05:00	4/11/2022 0:05:00	0.00	0.00				
57	4/11/2022 7:47:00	4/11/2022 7:47:00	0.00	0.00				
58	4/11/2022 8:11:00	4/11/2022 8:22:00	0.18	11.00				
59	4/11/2022 11:35:00	4/11/2022 11:35:00	0.00	0.00				
60	4/11/2022 2:59 PM	4/11/2022 2:59 PM	0.00	0.00				
61	4/11/2022 22:41:00	4/11/2022 22:41:00	0.00	0.00				
62	4/12/2022 0:55:00	4/12/2022 1:10:00	0.25	15.00				
63	4/12/2022 3:05:00	4/12/2022 3:05:00	0.00	0.00				
64	4/12/2022 6:50:00	4/12/2022 6:50:00	0.00	0.00				
65	4/12/2022 7:30:00	4/12/2022 7:30:00	0.00	0.00				
66	4/12/2022 8:15:00	4/12/2022 8:28:00	0.22	13.00				
67	4/12/2022 9:08:00	4/12/2022 10:08:00	1.00	60.00				
68	4/12/2022 10:37:00	4/12/2022 10:56:00	0.32	19.00				
69	4/12/2022 11:18:00	4/12/2022 11:18:00	0.00	0.00				
70	4/13/2022 1:26:00	4/13/2022 2:27:00	1.02	61.00				
71	4/13/2022 7:28:00	4/13/2022 7:28:00	0.00	0.00				
72	4/13/2022 9:00:00	4/13/2022 9:40:00	0.67	40.00				
73	4/13/2022 17:22:00	4/13/2022 18:10:00	0.80	48.00				
74	4/14/2022 0:02:00	4/14/2022 0:02:00	0.00	0.00				
75	4/14/2022 0:28:00	4/14/2022 0:40:00	0.20	12.00				
76	4/14/2022 7:28:00	4/14/2022 7:28:00	0.00	0.00				
77	4/14/2022 8:36:00	4/14/2022 8:36:00	0.00	0.00				
78	4/14/2022 11:29:00	4/14/2022 11:47:00	0.30	18.00				
79	4/14/2022 12:18:00	4/14/2022 12:40:00	0.37	22.00				
80	4/14/2022 21:44:00	4/14/2022 21:44:00	0.00	0.00				
81	4/15/2022 1:47:00	4/15/2022 1:47:00	0.00	0.00				
82	4/15/2022 2:16:00	4/15/2022 2:16:00	0.00	0.00				
83	4/15/2022 3:11:00	4/15/2022 3:11:00	0.00	0.00				
84	4/15/2022 6:48:00	4/15/2022 6:48:00	0.00	0.00				
85	4/15/2022 9:14:00	4/15/2022 9:26:00	0.20	12.00				
86	4/15/2022 10:52:00	4/15/2022 10:52:00	0.00	0.00				
87	4/15/2022 18:49:00	4/15/2022 18:49:00	0.00	0.00				

88	4/15/2022 22:27:00	4/16/2022 1:14:00	2.78	167.00				
89	4/16/2022 4:56:00	4/16/2022 4:56:00	0.00	0.00				
90	4/16/2022 7:11:00	4/16/2022 7:11:00	0.00	0.00				
91	4/16/2022 7:30:00	4/16/2022 8:27:00	0.95	57.00				
92	4/16/2022 13:55:00	4/16/2022 14:22:00	0.45	27.00				
93	4/17/2022 0:01:00	4/17/2022 0:01:00	0.00	0.00				
94	4/17/2022 12:39 AM	4/17/2022 1:03:00	0.40	24.00				
95	4/17/2022 1:58:00	4/17/2022 1:58:00	0.00	0.00				
96	4/17/2022 2:35:00	4/17/2022 2:35:00	0.00	0.00				
97	4/18/2022 0:58:00	4/18/2022 0:58:00	0.00	0.00				
98	4/18/2022 3:29:00	4/18/2022 3:43:00	0.23	14.00				
99	4/18/2022 7:01:00	4/18/2022 7:13:00	0.20	12.00				
100	4/18/2022 7:40:00	4/18/2022 8:30:00	0.83	50.00				
101	4/19/2022 0:35:00	4/19/2022 0:35:00	0.00	0.00				
102	4/19/2022 7:17:00	4/19/2022 7:17:00	0.00	0.00				
103	4/19/2022 8:11:00	4/19/2022 8:32:00	0.35	21.00				
104	4/19/2022 13:34:00	4/19/2022 13:34:00	0.00	0.00				
105	4/20/2022 1:51:00	4/20/2022 2:04:00	0.22	13.00				
106	4/20/2022 7:20:00	4/20/2022 7:48:00	0.47	28.00				
107	4/20/2022 8:05:00	4/20/2022 8:05:00	0.00	0.00				
108	4/20/2022 10:49:00	4/20/2022 11:36:00	0.78	47.00				
109	4/20/2022 13:45:00	4/20/2022 13:45:00	0.00	0.00				
110	4/20/2022 18:40:00	4/20/2022 18:40:00	0.00	0.00				
111	4/20/2022 19:58:00	4/20/2022 23:03:00	3.08	185.00				
112	4/20/2022 23:47:00	4/20/2022 23:47:00	0.00	0.00				
113	4/21/2022 0:55:00	4/21/2022 1:54:00	0.98	59.00				
114	4/21/2022 2:14:00	4/21/2022 2:26:00	0.20	12.00				
115	4/21/2022 7:04:00	4/21/2022 7:04:00	0.00	0.00				
116	4/21/2022 10:21:00	4/21/2022 10:21:00	0.00	0.00				
117	4/21/2022 10:41:00	4/21/2022 10:41:00	0.00	0.00				
118	4/21/2022 11:48:00	4/21/2022 11:48:00	0.00	0.00				
119	4/21/2022 17:44:00	4/21/2022 17:44:00	0.00	0.00				
120	4/22/2022 3:36:00	4/22/2022 3:36:00	0.00	0.00				
121	4/22/2022 4:38:00	4/22/2022 4:38:00	0.00	0.00				
122	4/22/2022 7:08:00	4/22/2022 7:19:00	0.18	11.00				
123	4/22/2022 8:59:00	4/22/2022 8:59:00	0.00	0.00				
124	4/22/2022 13:04:00	4/22/2022 13:04:00	0.00	0.00				
125	4/22/2022 20:41:00	4/22/2022 20:41:00	0.00	0.00				
126	4/22/2022 21:22:00	4/22/2022 21:22:00	0.00	0.00				
127	4/22/2022 23:41:00	4/23/2022 4:07:00	4.43	266.00				
128	4/23/2022 5:34:00	4/23/2022 5:34:00	0.00	0.00				
129	4/23/2022 6:36:00	4/23/2022 6:36:00	0.00	0.00				
130	4/23/2022 7:48:00	4/23/2022 7:48:00	0.00	0.00				
131	4/23/2022 8:17:00	4/23/2022 8:38:00	0.35	21.00				
132	4/23/2022 9:41:00	4/23/2022 9:41:00	0.00	0.00				

133	4/23/2022 11:53:00	4/23/2022 12:16:00	0.38	23.00				
134	4/24/2022 3:38:00	4/24/2022 4:23:00	0.75	45.00				
135	4/24/2022 10:43:00	4/24/2022 10:43:00	0.00	0.00				
136	4/24/2022 13:43:00	4/24/2022 13:58:00	0.25	15.00				
137	4/24/2022 22:23:00	4/24/2022 22:23:00	0.00	0.00				
138	4/25/2022 2:24:00	4/25/2022 2:24:00	0.00	0.00				
139	4/25/2022 4:15:00	4/25/2022 4:28:00	0.22	13.00				
140	4/25/2022 23:46:00	4/25/2022 23:46:00	0.00	0.00				
141	4/26/2022 3:59:00	4/26/2022 4:48:00	0.82	49.00				
142	4/26/2022 7:28:00	4/26/2022 7:28:00	0.00	0.00				
143	4/26/2022 9:28:00	4/26/2022 9:28:00	0.00	0.00				
144	4/26/2022 9:58:00	4/26/2022 9:58:00	0.00	0.00				
145	4/26/2022 15:12:00	4/26/2022 15:12:00	0.00	0.00				
146	4/27/2022 1:02:00	4/27/2022 1:02:00	0.00	0.00				
147	4/27/2022 3:42:00	4/27/2022 3:42:00	0.00	0.00				
148	4/27/2022 4:02:00	4/27/2022 4:40:00	0.63	38.00				
149	4/28/2022 1:48:00	4/28/2022 1:48:00	0.00	0.00				
150	4/28/2022 5:35:00	4/28/2022 5:35:00	0.00	0.00				
151	4/28/2022 7:47:00	4/28/2022 7:47:00	0.00	0.00				
152	4/29/2022 0:25:00	4/29/2022 0:25:00	0.00	0.00				
153	4/29/2022 0:56:00	4/29/2022 0:56:00	0.00	0.00				
154	4/29/2022 3:45:00	4/29/2022 3:45:00	0.00	0.00				
155	4/29/2022 5:40:00	4/29/2022 5:40:00	0.00	0.00				
156	4/29/2022 9:01:00	4/29/2022 9:01:00	0.00	0.00				
157	4/29/2022 9:52:00	4/29/2022 10:08:00	0.27	16.00				
158	4/29/2022 13:22:00	4/29/2022 13:22:00	0.00	0.00				
159	4/29/2022 21:27:00	4/30/2022 3:09:00	5.70	342.00				
160	4/30/2022 3:53:00	4/30/2022 3:53:00	0.00	0.00				
161	4/30/2022 4:46:00	4/30/2022 4:58:00	0.20	12.00				

March 2022			# days in month	31					
	Note: if start and end time is the same; this indicates a train that did not stop.								
Count	Start Blockage	End Blockage	Duration (hours)	Duration (minutes)					
1	3/1/2022 0:09:00	3/1/2022 0:09:00	0.00	0.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	3/1/2022 1:03:00	3/1/2022 1:03:00	0.00	0.00	Date Range:	Mar 1, 2022 to Mar 31, 2022			
3	3/1/2022 2:32:00	3/1/2022 2:32:00	0.00	0.00	# of Trains	188			
4	3/1/2022 3:32:00	3/1/2022 3:39:00	0.12	7.00	# of Trains w/ Blockage >10 Minute	63			
5	3/1/2022 6:40:00	3/1/2022 6:40:00	0.00	0.00	% of Trains w/ Blockage >10 Minute	34%			
6	3/1/2022 7:58:00	3/1/2022 7:58:00	0.00	0.00	Total Duration of Blockages (hrs)	72.85			
7	3/1/2022 8:24:00	3/1/2022 8:24:00	0.00	0.00	% of month w/ a Blockage	10%			
8	3/1/2022 14:54:00	3/1/2022 14:54:00	0.00	0.00	Longest Single Blockage (Hours)	4.70			
9	3/1/2022 21:42:00	3/1/2022 22:27:00	0.75	45.00	Avg. Length of Blockage (Minutes)	68.30			
10	3/1/2022 22:59:00	3/1/2022 22:59:00	0.00	0.00					
11	3/2/2022 1:49:00	3/2/2022 1:49:00	0.00	0.00					
12	3/2/2022 2:18:00	3/2/2022 2:18:00	0.00	0.00					
13	3/2/2022 5:55:00	3/2/2022 6:12:00	0.28	17.00					
14	3/2/2022 10:20:00	3/2/2022 10:20:00	0.00	0.00					
15	3/2/2022 23:05:00	3/2/2022 23:05:00	0.00	0.00					
16	3/3/2022 1:29:00	3/3/2022 1:29:00	0.00	0.00					
17	3/3/2022 2:19:00	3/3/2022 2:19:00	0.00	0.00					
18	3/3/2022 2:21:00	3/3/2022 2:21:00	0.00	0.00					
19	3/3/2022 4:01:00	3/3/2022 4:01:00	0.00	0.00					
20	3/3/2022 4:18:00	3/3/2022 4:18:00	0.00	0.00					
21	3/3/2022 5:41:00	3/3/2022 5:41:00	0.00	0.00					
22	3/3/2022 16:41:00	3/3/2022 16:41:00	0.00	0.00					
23	3/3/2022 17:24:00	3/3/2022 19:44:00	2.33	140.00					
24	3/3/2022 21:17:00	3/4/2022 0:20:00	3.05	183.00					
25	3/4/2022 1:08:00	3/4/2022 2:15:00	1.12	67.00					
26	3/4/2022 2:52:00	3/4/2022 2:52:00	0.00	0.00					
27	3/4/2022 3:19:00	3/4/2022 3:19:00	0.00	0.00					
28	3/4/2022 13:19:00	3/4/2022 13:19:00	0.00	0.00					
29	3/4/2022 23:24:00	3/4/2022 23:24:00	0.00	0.00					
30	3/5/2022 0:29:00	3/5/2022 0:29:00	0.00	0.00					
31	3/5/2022 0:57:00	3/5/2022 0:57:00	0.00	0.00					
32	3/5/2022 3:34:00	3/5/2022 3:34:00	0.00	0.00					
33	3/5/2022 11:04:00	3/5/2022 11:54:00	0.83	50.00					
34	3/5/2022 12:38:00	3/5/2022 12:38:00	0.00	0.00					
35	3/5/2022 14:48:00	3/5/2022 18:05:00	3.28	197.00					
36	3/5/2022 21:03:00	3/6/2022 1:45:00	4.70	282.00					
37	3/6/2022 3:24:00	3/6/2022 3:24:00	0.00	0.00					
38	3/6/2022 6:44:00	3/6/2022 6:44:00	0.00	0.00					
39	3/6/2022 10:18:00	3/6/2022 10:18:00	0.00	0.00					
40	3/6/2022 11:14:00	3/6/2022 11:14:00	0.00	0.00					
41	3/6/2022 11:42:00	3/6/2022 11:42:00	0.00	0.00					
42	3/7/2022 1:18:00	3/7/2022 1:40:00	0.37	22.00					

43	3/7/2022 1:55:00	3/7/2022 2:45:00	0.83	50.00				
44	3/7/2022 7:17:00	3/7/2022 7:17:00	0.00	0.00				
45	3/7/2022 7:46:00	3/7/2022 7:46:00	0.00	0.00				
46	3/7/2022 10:06:00	3/7/2022 10:40:00	0.57	34.00				
47	3/7/2022 11:45:00	3/7/2022 12:03:00	0.30	18.00				
48	3/7/2022 13:31:00	3/7/2022 13:31:00	0.00	0.00				
49	3/8/2022 0:51:00	3/8/2022 1:44:00	0.88	53.00				
50	3/8/2022 2:48:00	3/8/2022 2:48:00	0.00	0.00				
51	3/8/2022 3:40:00	3/8/2022 3:40:00	0.00	0.00				
52	3/8/2022 5:55:00	3/8/2022 5:55:00	0.00	0.00				
53	3/8/2022 7:20:00	3/8/2022 7:20:00	0.00	0.00				
54	3/8/2022 8:15:00	3/8/2022 8:15:00	0.00	0.00				
55	3/8/2022 8:47:00	3/8/2022 8:47:00	0.00	0.00				
56	3/8/2022 16:34:00	3/8/2022 17:17:00	0.72	43.00				
57	3/8/2022 20:24:00	3/9/2022 0:35:00	4.18	251.00				
58	3/9/2022 0:57:00	3/9/2022 0:57:00	0.00	0.00				
59	3/9/2022 6:26:00	3/9/2022 6:26:00	0.00	0.00				
60	3/9/2022 8:00:00	3/9/2022 8:00:00	0.00	0.00				
61	3/9/2022 9:49:00	3/9/2022 9:49:00	0.00	0.00				
62	3/9/2022 11:13:00	3/9/2022 11:58:00	0.75	45.00				
63	3/10/2022 0:47:00	3/10/2022 0:47:00	0.00	0.00				
64	3/10/2022 1:28:00	3/10/2022 1:28:00	0.00	0.00				
65	3/10/2022 2:15:00	3/10/2022 2:15:00	0.00	0.00				
66	3/10/2022 4:55:00	3/10/2022 4:55:00	0.00	0.00				
67	3/10/2022 6:53:00	3/10/2022 6:53:00	0.00	0.00				
68	3/10/2022 23:58:00	3/11/2022 0:30:00	0.53	32.00				
69	3/11/2022 0:45:00	3/11/2022 0:45:00	0.00	0.00				
70	3/11/2022 6:23:00	3/11/2022 6:23:00	0.00	0.00				
71	3/11/2022 11:58:00	3/11/2022 11:58:00	0.00	0.00				
72	3/11/2022 12:33:00	3/11/2022 12:33:00	0.00	0.00				
73	3/11/2022 21:09:00	3/11/2022 23:24:00	2.25	135.00				
74	3/12/2022 2:54:00	3/12/2022 3:30:00	0.60	36.00				
75	3/12/2022 3:50:00	3/12/2022 3:50:00	0.00	0.00				
76	3/12/2022 6:25:00	3/12/2022 7:01:00	0.60	36.00				
77	3/12/2022 7:37:00	3/12/2022 7:37:00	0.00	0.00				
78	3/12/2022 8:11:00	3/12/2022 8:48:00	0.62	37.00				
79	3/12/2022 11:14:00	3/12/2022 11:14:00	0.00	0.00				
80	3/12/2022 21:39:00	3/12/2022 21:58:00	0.32	19.00				
81	3/12/2022 23:45:00	3/12/2022 23:45:00	0.00	0.00				
82	3/13/2022 0:45:00	3/13/2022 0:45:00	0.00	0.00				
83	3/13/2022 2:29:00	3/13/2022 3:52:00	1.38	83.00				
84	3/13/2022 4:09:00	3/13/2022 4:09:00	0.00	0.00				
85	3/13/2022 8:03:00	3/13/2022 8:03:00	0.00	0.00				
86	3/13/2022 9:24:00	3/13/2022 9:24:00	0.00	0.00				
87	3/13/2022 11:57:00	3/13/2022 11:57:00	0.00	0.00				

88	3/13/2022 22:48:00	3/13/2022 22:48:00	0.00	0.00				
89	3/14/2022 2:53:00	3/14/2022 5:04:00	2.18	131.00				
90	3/14/2022 7:01:00	3/14/2022 7:01:00	0.00	0.00				
91	3/14/2022 9:08:00	3/14/2022 9:08:00	0.00	0.00				
92	3/14/2022 10:54:00	3/14/2022 10:54:00	0.00	0.00				
93	3/14/2022 21:02:00	3/14/2022 22:37:00	1.58	95.00				
94	3/15/2022 1:40:00	3/15/2022 5:03:00	3.38	203.00				
95	3/15/2022 5:30:00	3/15/2022 5:30:00	0.00	0.00				
96	3/15/2022 7:05:00	3/15/2022 7:31:00	0.43	26.00				
97	3/15/2022 23:03:00	3/15/2022 23:03:00	0.00	0.00				
98	3/16/2022 0:51:00	3/16/2022 1:16:00	0.42	25.00				
99	3/16/2022 1:40:00	3/16/2022 1:40:00	0.00	0.00				
100	3/16/2022 2:18:00	3/16/2022 2:18:00	0.00	0.00				
101	3/16/2022 4:47:00	3/16/2022 4:47:00	0.00	0.00				
102	3/16/2022 5:05:00	3/16/2022 5:05:00	0.00	0.00				
103	3/16/2022 8:33:00	3/16/2022 8:52:00	0.32	19.00				
104	3/16/2022 14:39:00	3/16/2022 14:39:00	0.00	0.00				
105	3/16/2022 22:03:00	3/16/2022 22:03:00	0.00	0.00				
106	3/17/2022 1:26:00	3/17/2022 1:26:00	0.00	0.00				
107	3/17/2022 7:36:00	3/17/2022 7:36:00	0.00	0.00				
108	3/17/2022 13:00:00	3/17/2022 13:00:00	0.00	0.00				
109	3/18/2022 2:32:00	3/18/2022 3:46:00	1.23	74.00				
110	3/18/2022 6:05:00	3/18/2022 6:45:00	0.67	40.00				
111	3/18/2022 7:22:00	3/18/2022 7:22:00	0.00	0.00				
112	3/18/2022 8:19:00	3/18/2022 8:19:00	0.00	0.00				
113	3/18/2022 8:39:00	3/18/2022 8:39:00	0.00	0.00				
114	3/18/2022 12:00:00	3/18/2022 12:00:00	0.00	0.00				
115	3/18/2022 13:24:00	3/18/2022 13:50:00	0.43	26.00				
116	3/19/2022 0:49:00	3/19/2022 0:49:00	0.00	0.00				
117	3/19/2022 1:44:00	3/19/2022 2:39:00	0.92	55.00				
118	3/19/2022 3:09:00	3/19/2022 3:09:00	0.00	0.00				
119	3/19/2022 8:41:00	3/19/2022 10:05:00	1.40	84.00				
120	3/19/2022 10:29:00	3/19/2022 11:24:00	0.92	55.00				
121	3/19/2022 12:08:00	3/19/2022 12:08:00	0.00	0.00				
122	3/19/2022 16:32:00	3/19/2022 16:32:00	0.00	0.00				
123	3/19/2022 21:40:00	3/19/2022 21:40:00	0.00	0.00				
124	3/19/2022 21:58:00	3/19/2022 21:58:00	0.00	0.00				
125	3/20/2022 0:55:00	3/20/2022 1:33:00	0.63	38.00				
126	3/20/2022 4:00:00	3/20/2022 4:00:00	0.00	0.00				
127	3/20/2022 6:52:00	3/20/2022 6:52:00	0.00	0.00				
128	3/20/2022 7:42:00	3/20/2022 8:22:00	0.67	40.00				
129	3/20/2022 8:59:00	3/20/2022 8:59:00	0.00	0.00				
130	3/20/2022 14:00:00	3/20/2022 14:17:00	0.28	17.00				
131	3/20/2022 21:33:00	3/20/2022 21:33:00	0.00	0.00				
132	3/21/2022 2:46:00	3/21/2022 3:47:00	1.02	61.00				

133	3/21/2022 4:15:00	3/21/2022 6:15:00	2.00	120.00				
134	3/21/2022 8:35:00	3/21/2022 8:35:00	0.00	0.00				
135	3/21/2022 11:51:00	3/21/2022 12:04:00	0.22	13.00				
136	3/21/2022 12:21:00	3/21/2022 12:21:00	0.00	0.00				
137	3/21/2022 23:32:00	3/21/2022 23:32:00	0.00	0.00				
138	3/22/2022 2:04:00	3/22/2022 2:04:00	0.00	0.00				
139	3/22/2022 3:56:00	3/22/2022 5:04:00	1.13	68.00				
140	3/22/2022 9:20:00	3/22/2022 10:13:00	0.88	53.00				
141	3/23/2022 1:16:00	3/23/2022 2:14:00	0.97	58.00				
142	3/23/2022 3:05:00	3/23/2022 4:10:00	1.08	65.00				
143	3/23/2022 4:50:00	3/23/2022 5:03:00	0.22	13.00				
144	3/23/2022 12:48:00	3/23/2022 13:21:00	0.55	33.00				
145	3/23/2022 2:09 PM	3/23/2022 2:09 PM	0.00	0.00				
146	3/24/2022 5:46:00	3/24/2022 7:30:00	1.73	104.00				
147	3/24/2022 11:03:00	3/24/2022 11:03:00	0.00	0.00				
148	3/24/2022 11:39:00	3/24/2022 11:39:00	0.00	0.00				
149	3/24/2022 14:21:00	3/24/2022 14:21:00	0.00	0.00				
150	3/24/2022 14:45:00	3/24/2022 15:18:00	0.55	33.00				
151	3/25/2022 2:39:00	3/25/2022 3:31:00	0.87	52.00				
152	3/25/2022 5:10:00	3/25/2022 5:24:00	0.23	14.00				
153	3/25/2022 6:35:00	3/25/2022 6:35:00	0.00	0.00				
154	3/25/2022 8:10:00	3/25/2022 8:10:00	0.00	0.00				
155	3/26/2022 0:17:00	3/26/2022 3:29:00	3.20	192.00				
156	3/26/2022 3:54:00	3/26/2022 4:30:00	0.60	36.00				
157	3/26/2022 5:42:00	3/26/2022 5:42:00	0.00	0.00				
158	3/26/2022 8:31:00	3/26/2022 10:19:00	1.80	108.00				
159	3/26/2022 18:06:00	3/26/2022 18:06:00	0.00	0.00				
160	3/27/2022 0:59:00	3/27/2022 0:59:00	0.00	0.00				
161	3/27/2022 1:40:00	3/27/2022 1:53:00	0.22	13.00				
162	3/27/2022 4:21:00	3/27/2022 4:21:00	0.00	0.00				
163	3/27/2022 8:25:00	3/27/2022 8:25:00	0.00	0.00				
164	3/27/2022 13:57:00	3/27/2022 13:57:00	0.00	0.00				
165	3/27/2022 18:50:00	3/27/2022 18:50:00	0.00	0.00				
166	3/27/2022 20:09:00	3/27/2022 20:09:00	0.00	0.00				
167	3/28/2022 3:19:00	3/28/2022 3:19:00	0.00	0.00				
168	3/28/2022 4:08:00	3/28/2022 4:24:00	0.27	16.00				
169	3/28/2022 5:14:00	3/28/2022 5:14:00	0.00	0.00				
170	3/28/2022 10:38:00	3/28/2022 10:55:00	0.28	17.00				
171	3/28/2022 13:44:00	3/28/2022 13:58:00	0.23	14.00				
172	3/28/2022 14:35:00	3/28/2022 15:15:00	0.67	40.00				
173	3/29/2022 1:36:00	3/29/2022 1:36:00	0.00	0.00				
174	3/29/2022 4:24:00	3/29/2022 4:24:00	0.00	0.00				
175	3/29/2022 7:05:00	3/29/2022 7:05:00	0.00	0.00				
176	3/29/2022 8:57:00	3/29/2022 8:57:00	0.00	0.00				
177	3/29/2022 9:14:00	3/29/2022 9:14:00	0.00	0.00				

178	3/29/2022 10:03:00	3/29/2022 10:03:00	0.00	0.00					
179	3/30/2022 0:26:00	3/30/2022 0:26:00	0.00	0.00					
180	3/30/2022 4:16:00	3/30/2022 4:16:00	0.00	0.00					
181	3/30/2022 8:47:00	3/30/2022 8:47:00	0.00	0.00					
182	3/30/2022 23:16:00	3/31/2022 3:22:00	4.10	246.00					
183	3/31/2022 6:28:00	3/31/2022 7:15:00	0.78	47.00					
184	3/31/2022 7:43:00	3/31/2022 7:43:00	0.00	0.00					
185	3/31/2022 9:42:00	3/31/2022 10:11:00	0.48	29.00					
186	3/31/2022 10:56:00	3/31/2022 10:56:00	0.00	0.00					
187	3/31/2022 17:31:00	3/31/2022 17:31:00	0.00	0.00					
188	3/31/2022 23:44:00	4/1/2022 1:40:00	1.93	116.00					

February 2022			# days in month	28					
	Note: if start and end time is the same; this indicates a train that did not stop.								
Count	Start Blockage	End Blockage	Duration (hours)	Duration (minutes)					
1	2/1/2022 2:05:00	2/1/2022 5:54:00	3.82	229.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	2/1/2022 5:32:00	2/1/2022 5:32:00	0.00	0.00	Date Range:	Feb 1, 2022 to Feb 28, 2022			
3	2/1/2022 6:30:00	2/1/2022 6:45:00	0.25	15.00	# of Trains	166			
4	2/1/2022 8:45:00	2/1/2022 8:45:00	0.00	0.00	# of Trains w/ Blockage >10 Minute	48			
5	2/1/2022 9:45:00	2/1/2022 9:45:00	0.00	0.00	% of Trains w/ Blockage >10 Minute	29%			
6	2/2/2022 2:21:00	2/2/2022 2:32:00	0.18	11.00	Total Duration of Blockages (hrs)	45.23			
7	2/2/2022 4:06:00	2/2/2022 4:38:00	0.53	32.00	% of month w/ a Blockage	7%			
8	2/2/2022 4:56:00	2/2/2022 4:56:00	0.00	0.00	Longest Single Blockage (Hours)	4.38			
9	2/2/2022 10:29:00	2/2/2022 10:29:00	0.00	0.00	Avg. Length of Blockage (Minutes)	71.54			
10	2/2/2022 13:44:00	2/2/2022 13:44:00	0.00	0.00					
11	2/2/2022 20:55:00	2/2/2022 20:55:00	0.00	0.00					
12	2/3/2022 2:25:00	2/3/2022 2:25:00	0.00	0.00					
13	2/3/2022 3:55:00	2/3/2022 3:55:00	0.00	0.00					
14	2/3/2022 4:28:00	2/3/2022 4:28:00	0.00	0.00					
15	2/3/2022 9:53:00	2/3/2022 9:53:00	0.00	0.00					
16	2/3/2022 14:11:00	2/3/2022 14:11:00	0.00	0.00					
17	2/3/2022 23:44:00	2/3/2022 23:44:00	0.00	0.00					
18	2/4/2022 1:17:00	2/4/2022 3:42:00	2.42	145.00					
19	2/4/2022 5:23:00	2/4/2022 5:23:00	0.00	0.00					
20	2/4/2022 6:25:00	2/4/2022 6:25:00	0.00	0.00					
21	2/4/2022 8:50:00	2/4/2022 9:23:00	0.55	33.00					
22	2/4/2022 9:40:00	2/4/2022 9:40:00	0.00	0.00					
23	2/4/2022 10:51:00	2/4/2022 10:51:00	0.00	0.00					
24	#####	#####	0.00	0.00					
25	2/4/2022 23:20:00	2/5/2022 3:34:00	4.23	254.00					
26	2/5/2022 5:01:00	2/5/2022 5:01:00	0.00	0.00					
27	2/5/2022 6:54:00	2/5/2022 7:19:00	0.42	25.00					
28	2/5/2022 10:32:00	2/5/2022 10:32:00	0.00	0.00					
29	2/5/2022 11:15:00	2/5/2022 11:15:00	0.00	0.00					
30	2/5/2022 11:57:00	2/5/2022 11:57:00	0.00	0.00					
31	2/6/2022 0:19:00	2/6/2022 0:48:00	0.48	29.00					
32	2/6/2022 4:07:00	2/6/2022 4:07:00	0.00	0.00					
33	2/6/2022 4:40:00	2/6/2022 4:40:00	0.00	0.00					
34	2/6/2022 8:03:00	2/6/2022 9:00:00	0.95	57.00					
35	2/6/2022 9:59:00	2/6/2022 9:59:00	0.00	0.00					
36	2/6/2022 13:24:00	2/6/2022 13:24:00	0.00	0.00					
37	2/6/2022 21:28:00	2/6/2022 21:28:00	0.00	0.00					
38	2/6/2022 21:48:00	2/6/2022 21:48:00	0.00	0.00					
39	2/6/2022 23:47:00	2/6/2022 23:47:00	0.00	0.00					
40	2/7/2022 8:07:00	2/7/2022 8:07:00	0.00	0.00					
41	2/7/2022 9:37:00	2/7/2022 9:54:00	0.28	17.00					
42	2/7/2022 10:17:00	2/7/2022 10:17:00	0.00	0.00					

43	2/7/2022 23:44:00	2/7/2022 23:44:00	0.00	0.00				
44	2/8/2022 0:30:00	2/8/2022 0:30:00	0.00	0.00				
45	2/8/2022 5:00 AM	2/8/2022 7:34 AM	2.57	154.00				
46	2/8/2022 7:59:00	2/8/2022 7:59:00	0.00	0.00				
47	2/8/2022 8:25:00	2/8/2022 8:25:00	0.00	0.00				
48	2/8/2022 12:08:00	2/8/2022 12:31:00	0.38	23.00				
49	2/8/2022 20:11:00	2/8/2022 20:11:00	0.00	0.00				
50	2/8/2022 20:52:00	2/8/2022 20:52:00	0.00	0.00				
51	2/9/2022 12:18:00	2/9/2022 12:18:00	0.00	0.00				
52	2/9/2022 3:42:00	2/9/2022 3:42:00	0.00	0.00				
53	2/9/2022 8:18:00	2/9/2022 8:18:00	0.00	0.00				
54	2/9/2022 8:55:00	2/9/2022 9:35:00	0.67	40.00				
55	2/9/2022 1:32:00	2/9/2022 2:27:00	0.92	55.00				
56	2/9/2022 21:48:00	2/9/2022 22:38:00	0.83	50.00				
57	2/10/2022 1:38:00	2/10/2022 1:38:00	0.00	0.00				
58	2/11/2022 1:59:00	2/11/2022 2:18:00	0.32	19.00				
59	2/11/2022 3:16:00	2/11/2022 3:16:00	0.00	0.00				
60	2/11/2022 3:33:00	2/11/2022 4:46:00	1.22	73.00				
61	2/11/2022 5:00:00	2/11/2022 5:00:00	0.00	0.00				
62	2/11/2022 5:33:00	2/11/2022 5:33:00	0.00	0.00				
63	2/11/2022 11:54:00	2/11/2022 12:48:00	0.90	54.00				
64	2/11/2022 18:54:00	2/11/2022 18:54:00	0.00	0.00				
65	2/11/2022 20:22:00	2/11/2022 20:22:00	0.00	0.00				
66	2/12/2022 1:00:00	2/12/2022 1:00:00	0.00	0.00				
67	2/12/2022 1:24:00	2/12/2022 2:30:00	1.10	66.00				
68	2/12/2022 2:35:00	2/12/2022 2:35:00	0.00	0.00				
69	2/12/2022 3:44:00	2/12/2022 3:44:00	0.00	0.00				
70	2/12/2022 4:50:00	2/12/2022 4:50:00	0.00	0.00				
71	2/12/2022 8:57:00	2/12/2022 9:25:00	0.47	28.00				
72	2/13/2022 0:27:00	2/13/2022 0:27:00	0.00	0.00				
73	2/13/2022 1:11:00	2/13/2022 1:48:00	0.62	37.00				
74	2/13/2022 5:10:00	2/13/2022 5:10:00	0.00	0.00				
75	2/13/2022 9:06:00	2/13/2022 9:06:00	0.00	0.00				
76	2/13/2022 22:41:00	2/13/2022 23:00:00	0.32	19.00				
77	2/14/2022 0:11:00	2/14/2022 0:11:00	0.00	0.00				
78	2/14/2022 1:41:00	2/14/2022 1:41:00	0.00	0.00				
79	2/14/2022 2:04:00	2/14/2022 2:04:00	0.00	0.00				
80	2/14/2022 2:55:00	2/14/2022 2:55:00	0.00	0.00				
81	2/14/2022 15:41:00	2/14/2022 15:41:00	0.00	0.00				
82	2/14/2022 21:13:00	2/14/2022 21:13:00	0.00	0.00				
83	2/15/2022 1:09:00	2/15/2022 1:50:00	0.68	41.00				
84	2/15/2022 8:30:00	2/15/2022 8:30:00	0.00	0.00				
85	2/15/2022 9:55:00	2/15/2022 10:30:00	0.58	35.00				
86	2/15/2022 12:08:00	2/15/2022 12:08:00	0.00	0.00				
87	2/15/2022 12:53:00	2/15/2022 12:53:00	0.00	0.00				

88	2/15/2022 16:36:00	2/15/2022 16:36:00	0.00	0.00				
89	2/15/2022 22:39:00	2/16/2022 0:22:00	1.72	103.00				
90	2/16/2022 1:33:00	2/16/2022 1:33:00	0.00	0.00				
91	2/16/2022 2:24:00	2/16/2022 2:24:00	0.00	0.00				
92	2/16/2022 4:28:00	2/16/2022 4:28:00	0.00	0.00				
93	2/16/2022 5:36:00	2/16/2022 6:46:00	1.17	70.00				
94	2/16/2022 12:07:00	2/16/2022 12:07:00	0.00	0.00				
95	2/17/2022 0:42:00	2/17/2022 0:42:00	0.00	0.00				
96	2/17/2022 2:21:00	2/17/2022 2:21:00	0.00	0.00				
97	2/17/2022 3:27:00	2/17/2022 4:42:00	1.25	75.00				
98	2/17/2022 5:55:00	2/17/2022 5:55:00	0.00	0.00				
99	2/17/2022 14:36:00	2/17/2022 2:36:00	-12.00	-720.00				
100	2/18/2022 10:16:00	2/18/2022 10:51:00	0.58	35.00				
101	2/18/2022 20:52:00	2/18/2022 20:52:00	0.00	0.00				
102	2/19/2022 0:04:00	2/19/2022 0:04:00	0.00	0.00				
103	2/19/2022 0:54:00	2/19/2022 0:54:00	0.00	0.00				
104	2/19/2022 1:00:00	2/19/2022 5:00:00	4.00	240.00	*gate down, bells chimed; blocking Lockwood + East			
105	2/19/2022 8:40:00	2/19/2022 8:40:00	0.00	0.00				
106	2/19/2022 11:47:00	2/19/2022 12:23:00	0.60	36.00				
107	2/19/2022 15:44:00	2/19/2022 15:44:00	0.00	0.00				
108	2/19/2022 22:16:00	2/19/2022 22:35:00	0.32	19.00				
109	2/20/2022 2:09:00	2/20/2022 2:09:00	0.00	0.00				
110	2/20/2022 4:44:00	2/20/2022 4:44:00	0.00	0.00				
111	2/20/2022 5:15:00	2/20/2022 5:15:00	0.00	0.00				
112	2/20/2022 7:42:00	2/20/2022 8:05:00	0.38	23.00				
113	2/20/2022 9:48:00	2/20/2022 9:48:00	0.00	0.00				
114	2/20/2022 10:08:00	2/20/2022 10:08:00	0.00	0.00				
115	2/20/2022 21:20:00	2/20/2022 21:20:00	0.00	0.00				
116	2/21/2022 0:59:00	2/21/2022 2:47:00	1.80	108.00				
117	2/21/2022 3:45:00	2/21/2022 3:45:00	0.00	0.00				
118	2/21/2022 5:18:00	2/21/2022 5:32:00	0.23	14.00				
119	2/21/2022 6:20:00	2/21/2022 6:20:00	0.00	0.00				
120	2/21/2022 10:31:00	2/21/2022 10:31:00	0.00	0.00				
121	2/21/2022 14:50:00	2/21/2022 15:33:00	0.72	43.00				
122	2/21/2022 22:12:00	2/22/2022 2:35:00	4.38	263.00				
123	2/22/2022 5:19:00	2/22/2022 5:19:00	0.00	0.00				
124	2/22/2022 11:19:00	2/22/2022 11:19:00	0.00	0.00				
125	2/22/2022 13:18:00	2/22/2022 13:57:00	0.65	39.00				
126	2/22/2022 23:50:00	2/22/2022 23:50:00	0.00	0.00				
127	2/23/2022 1:58:00	2/23/2022 3:51:00	1.88	113.00				
128	2/23/2022 5:26:00	2/23/2022 5:26:00	0.00	0.00				
129	2/23/2022 9:50:00	2/23/2022 9:50:00	0.00	0.00				
130	2/23/2022 12:04:00	2/23/2022 12:04:00	0.00	0.00				
131	2/23/2022 12:39:00	2/23/2022 12:39:00	0.00	0.00				
132	2/23/2022 23:46:00	2/23/2022 23:46:00	0.00	0.00				

133	2/24/2022 0:35:00	2/24/2022 0:35:00	0.00	0.00				
134	2/24/2022 0:59:00	2/24/2022 0:59:00	0.00	0.00				
135	2/24/2022 1:52:00	2/24/2022 1:52:00	0.00	0.00				
136	2/24/2022 6:30:00	2/24/2022 8:55:00	2.42	145.00				
137	2/24/2022 11:05:00	2/24/2022 12:00:00	0.92	55.00				
138	2/24/2022 22:04:00	2/25/2022 0:45:00	2.68	161.00				
139	2/25/2022 2:30:00	2/25/2022 2:30:00	0.00	0.00				
140	2/25/2022 3:59:00	2/25/2022 3:59:00	0.00	0.00				
141	2/25/2022 7:52:00	2/25/2022 7:52:00	0.00	0.00				
142	2/25/2022 8:47:00	2/25/2022 8:47:00	0.00	0.00				
143	2/25/2022 10:16:00	2/25/2022 10:16:00	0.00	0.00				
144	2/25/2022 10:41:00	2/25/2022 10:41:00	0.00	0.00				
145	2/25/2022 22:00:00	2/25/2022 22:00:00	0.00	0.00				
146	2/26/2022 8:47:00	2/26/2022 8:59:00	0.20	12.00				
147	2/26/2022 9:18:00	2/26/2022 12:04:00	2.77	166.00				
148	2/26/2022 13:06:00	2/26/2022 13:06:00	0.00	0.00				
149	2/26/2022 13:37:00	2/26/2022 13:37:00	0.00	0.00				
150	2/26/2022 21:09:00	2/26/2022 21:41:00	0.53	32.00				
151	2/27/2022 1:44:00	2/27/2022 1:44:00	0.00	0.00				
152	2/27/2022 3:04:00	2/27/2022 3:04:00	0.00	0.00				
153	2/27/2022 6:17:00	2/27/2022 6:17:00	0.00	0.00				
154	2/27/2022 8:44:00	2/27/2022 8:44:00	0.00	0.00				
155	2/27/2022 9:44:00	2/27/2022 11:21:00	1.62	97.00				
156	2/27/2022 13:59:00	2/27/2022 14:17:00	0.30	18.00				
157	2/28/2022 0:40:00	2/28/2022 1:06:00	0.43	26.00				
158	2/28/2022 1:57:00	2/28/2022 1:57:00	0.00	0.00				
159	2/28/2022 5:21:00	2/28/2022 5:21:00	0.00	0.00				
160	2/28/2022 6:55:00	2/28/2022 6:55:00	0.00	0.00				
161	2/28/2022 7:37:00	2/28/2022 7:37:00	0.00	0.00				
162	2/28/2022 9:19:00	2/28/2022 9:19:00	0.00	0.00				
163	2/28/2022 9:42:00	2/28/2022 9:42:00	0.00	0.00				
164	2/28/2022 11:05:00	2/28/2022 11:05:00	0.00	0.00				
165	2/28/2022 23:16:00	2/28/2022 23:16:00	0.00	0.00				
166	2/28/2022 12:52:00	2/28/2022 12:52:00	0.00	0.00				

January 2022		# days in month		31					
	Note: if start and end time is the same; this indicates a train that did not stop.								
Count	Start Blockage	End Blockage	Duration (hours)	Duration (minutes)					
1	1/1/2022 0:55:00	1/1/2022 0:55:00	0.00	0.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	1/1/2022 1:23:00	1/1/2022 1:30:00	0.12	7.00	Date Range:	Jan 1, 2022 to Jan 31, 2022			
3	1/1/2022 4:47:00	1/1/2022 6:06:00	1.32	79.00	# of Trains	160			
4	1/1/2022 6:33:00	1/1/2022 6:51:00	0.30	18.00	# of Trains w/ Blockage >10 Minutes	41			
5	1/1/2022 8:32:00	1/1/2022 8:32:00	0.00	0.00	% of Trains w/ Blockage >10 Minutes	26%			
6	1/1/2022 9:16:00	1/1/2022 9:16:00	0.00	0.00	Total Duration of Blockages (hrs)	35.23			
7	1/1/2022 22:49:00	1/1/2022 22:49:00	0.00	0.00	% of month w/ a Blockage	5%			
8	1/1/2022 23:48:00	1/2/2022 0:32:00	0.73	44.00	Longest Single Blockage (Hours)	2.63			
9	1/2/2022 3:38:00	1/2/2022 5:15:00	1.62	97.00	Avg. Length of Blockage (Minutes)	49.16			
10	1/2/2022 11:05:00	1/2/2022 11:19:00	0.23	14.00					
11	1/2/2022 14:27:00	1/2/2022 14:27:00	0.00	0.00					
12	1/2/2022 17:22:00	1/2/2022 17:22:00	0.00	0.00					
13	1/3/2022 4:13:00	1/3/2022 4:55:00	0.70	42.00					
14	1/3/2022 10:28:00	1/3/2022 10:28:00	0.00	0.00					
15	1/4/2022 6:10:00	1/4/2022 6:10:00	0.00	0.00					
16	1/4/2022 6:25:00	1/4/2022 6:25:00	0.00	0.00					
17	1/4/2022 13:09:00	1/4/2022 13:09:00	0.00	0.00					
18	1/5/2022 1:03:00	1/5/2022 1:03:00	0.00	0.00					
19	1/5/2022 2:40:00	1/5/2022 2:40:00	0.00	0.00					
20	1/5/2022 5:53:00	1/5/2022 5:53:00	0.00	0.00					
21	1/6/2022 0:00:00	1/6/2022 0:00:00	0.00	0.00					
22	1/6/2022 2:26:00	1/6/2022 2:26:00	0.00	0.00					
23	1/6/2022 2:47:00	1/6/2022 3:04:00	0.28	17.00					
24	1/6/2022 7:49:00	1/6/2022 8:06:00	0.28	17.00					
25	1/6/2022 16:10:00	1/6/2022 16:10:00	0.00	0.00					
26	1/7/2022 0:53:00	1/7/2022 0:53:00	0.00	0.00					
27	1/7/2022 1:23:00	1/7/2022 1:23:00	0.00	0.00					
28	1/7/2022 3:09:00	1/7/2022 4:20:00	1.18	71.00					
29	1/7/2022 9:59:00	1/7/2022 9:59:00	0.00	0.00					
30	1/7/2022 13:20:00	1/7/2022 13:20:00	0.00	0.00					
31	1/7/2022 16:48:00	1/7/2022 16:48:00	0.00	0.00					
32	1/8/2022 6:03:00	1/8/2022 6:37:00	0.57	34.00					
33	1/8/2022 7:18:00	1/8/2022 7:18:00	0.00	0.00					
34	1/8/2022 8:44:00	1/8/2022 9:02:00	0.30	18.00					
35	1/8/2022 18:22:00	1/8/2022 18:22:00	0.00	0.00					
36	1/9/2022 2:13:00	1/9/2022 3:30:00	1.28	77.00					
37	1/9/2022 7:10:00	1/9/2022 7:10:00	0.00	0.00					
38	1/9/2022 10:33:00	1/9/2022 10:33:00	0.00	0.00					
39	1/9/2022 13:12:00	1/9/2022 13:12:00	0.00	0.00					
40	1/9/2022 17:00:00	1/9/2022 17:00:00	0.00	0.00					
41	1/9/2022 17:26:00	1/9/2022 17:26:00	0.00	0.00					
42	1/9/2022 19:28:00	1/9/2022 19:28:00	0.00	0.00					
43	1/10/2022 0:25:00	1/10/2022 0:25:00	0.00	0.00					

44	1/10/2022 0:57:00	1/10/2022 0:57:00	0.00	0.00				
45	1/10/2022 7:38:00	1/10/2022 8:17:00	0.65	39.00				
46	1/10/2022 21:35:00	1/10/2022 21:59:00	0.40	24.00				
47	1/10/2022 23:45:00	1/11/2022 2:04:00	2.32	139.00				
48	1/11/2022 7:09:00	1/11/2022 7:09:00	0.00	0.00				
49	1/11/2022 9:30:00	1/11/2022 9:30:00	0.00	0.00				
50	1/11/2022 10:13:00	1/11/2022 10:13:00	0.00	0.00				
51	1/11/2022 13:04:00	1/11/2022 13:21:00	0.28	17.00				
52	1/11/2022 16:06:00	1/11/2022 16:59:00	0.88	53.00				
53	1/12/2022 1:17:00	1/12/2022 2:09:00	0.87	52.00				
54	1/12/2022 2:23:00	1/12/2022 2:23:00	0.00	0.00				
55	1/12/2022 5:47:00	1/12/2022 6:05:00	0.30	18.00				
56	1/12/2022 7:07:00	1/12/2022 7:07:00	0.00	0.00				
57	1/12/2022 21:51:00	1/12/2022 21:51:00	0.00	0.00				
58	1/12/2022 23:21:00	1/13/2022 1:23:00	2.03	122.00				
59	1/13/2022 3:36:00	1/13/2022 3:36:00	0.00	0.00				
60	1/13/2022 21:34:00	1/13/2022 22:01:00	0.45	27.00				
61	1/14/2022 0:08:00	1/14/2022 0:08:00	0.00	0.00				
62	1/14/2022 3:00:00	1/14/2022 4:23:00	1.38	83.00				
63	1/14/2022 6:03:00	1/14/2022 6:03:00	0.00	0.00				
64	1/15/2022 0:31:00	1/15/2022 1:05:00	0.57	34.00				
65	1/15/2022 1:25:00	1/15/2022 1:25:00	0.00	0.00				
66	1/15/2022 4:27:00	1/15/2022 4:27:00	0.00	0.00				
67	1/15/2022 8:25:00	1/15/2022 8:25:00	0.00	0.00				
68	1/15/2022 8:47:00	1/15/2022 8:47:00	0.00	0.00				
69	1/16/2022 2:06:00	1/16/2022 2:06:00	0.00	0.00				
70	1/16/2022 4:44:00	1/16/2022 5:19:00	0.58	35.00				
71	1/16/2022 7:10:00	1/16/2022 7:10:00	0.00	0.00				
72	1/16/2022 23:39:00	1/16/2022 23:39:00	0.00	0.00				
73	1/17/2022 4:33:00	1/17/2022 4:33:00	0.00	0.00				
74	1/17/2022 8:34:00	1/17/2022 8:34:00	0.00	0.00				
75	1/17/2022 18:40:00	1/17/2022 18:40:00	0.00	0.00				
76	1/17/2022 22:05:00	1/17/2022 22:05:00	0.00	0.00				
77	1/18/2022 4:41:00	1/18/2022 4:41:00	0.00	0.00				
78	1/18/2022 7:35:00	1/18/2022 7:35:00	0.00	0.00				
79	1/18/2022 9:01:00	1/18/2022 9:01:00	0.00	0.00				
80	1/18/2022 11:33:00	1/18/2022 11:33:00	0.00	0.00				
81	1/19/2022 0:30:00	1/19/2022 0:30:00	0.00	0.00				
82	1/19/2022 2:10:00	1/19/2022 2:10:00	0.00	0.00				
83	1/19/2022 2:55:00	1/19/2022 2:55:00	0.00	0.00				
84	1/19/2022 5:27:00	1/19/2022 5:27:00	0.00	0.00				
85	1/19/2022 5:51:00	1/19/2022 5:51:00	0.00	0.00				
86	1/19/2022 9:45:00	1/19/2022 9:45:00	0.00	0.00				
87	1/19/2022 23:00:00	1/19/2022 23:00:00	0.00	0.00				
88	1/20/2022 5:41:00	1/20/2022 5:41:00	0.00	0.00				
89	1/20/2022 8:44:00	1/20/2022 8:44:00	0.00	0.00				

90	1/20/2022 10:18:00	1/20/2022 10:18:00	0.00	0.00				
91	1/20/2022 10:30:00	1/20/2022 10:30:00	0.00	0.00				
92	1/20/2022 19:55:00	1/20/2022 19:55:00	0.00	0.00				
93	1/20/2022 20:39:00	1/20/2022 22:14:00	1.58	95.00				
94	1/21/2022 0:46:00	1/21/2022 0:46:00	0.00	0.00				
95	1/21/2022 1:25:00	1/21/2022 1:50:00	0.42	25.00				
96	1/21/2022 2:18:00	1/21/2022 2:18:00	0.00	0.00				
97	1/21/2022 5:28:00	1/21/2022 5:28:00	0.00	0.00				
98	1/21/2022 11:57:00	1/21/2022 12:21:00	0.40	24.00				
99	1/21/2022 13:21:00	1/21/2022 13:38:00	0.28	17.00				
100	1/21/2022 15:24:00	1/21/2022 15:24:00	0.00	0.00				
101	1/21/2022 19:05:00	1/21/2022 19:05:00	0.00	0.00				
102	1/21/2022 22:02:00	1/22/2022 0:40:00	2.63	158.00				
103	1/22/2022 1:30:00	1/22/2022 1:30:00	0.00	0.00				
104	1/22/2022 2:06:00	1/22/2022 3:22:00	1.27	76.00				
105	1/22/2022 3:58:00	1/22/2022 3:58:00	0.00	0.00				
106	1/22/2022 6:03:00	1/22/2022 6:03:00	0.00	0.00				
107	1/22/2022 6:26:00	1/22/2022 6:26:00	0.00	0.00				
108	1/22/2022 9:34:00	1/22/2022 9:34:00	0.00	0.00				
109	1/22/2022 20:24:00	1/22/2022 20:24:00	0.00	0.00				
110	1/22/2022 22:25:00	1/22/2022 22:25:00	0.00	0.00				
111	1/23/2022 4:50:00	1/23/2022 4:50:00	0.00	0.00				
112	1/23/2022 7:30:00	1/23/2022 7:30:00	0.00	0.00				
113	1/23/2022 8:46:00	1/23/2022 8:46:00	0.00	0.00				
114	1/23/2022 11:50:00	1/23/2022 12:10:00	0.33	20.00				
115	1/23/2022 23:30:00	1/23/2022 23:30:00	0.00	0.00				
116	1/24/2022 0:04:00	1/24/2022 1:07:00	1.05	63.00				
117	1/24/2022 2:43:00	1/24/2022 3:34:00	0.85	51.00				
118	1/24/2022 5:49:00	1/24/2022 6:40:00	0.85	51.00				
119	1/24/2022 11:18:00	1/24/2022 11:18:00	0.00	0.00				
120	1/24/2022 12:15:00	1/24/2022 12:15:00	0.00	0.00				
121	1/24/2022 18:40:00	1/24/2022 18:40:00	0.00	0.00				
122	1/24/2022 19:05:00	1/24/2022 20:10:00	1.08	65.00				
123	1/25/2022 0:42:00	1/25/2022 0:42:00	0.00	0.00				
124	1/25/2022 1:19:00	1/25/2022 1:30:00	0.18	11.00				
125	1/25/2022 6:16:00	1/25/2022 6:16:00	0.00	0.00				
126	1/25/2022 7:55:00	1/25/2022 7:55:00	0.00	0.00				
127	1/25/2022 10:27:00	1/25/2022 10:27:00	0.00	0.00				
128	1/26/2022 1:02:00	1/26/2022 1:31:00	0.48	29.00				
129	1/26/2022 2:10:00	1/26/2022 2:10:00	0.00	0.00				
130	1/26/2022 4:21:00	1/26/2022 4:21:00	0.00	0.00				
131	1/26/2022 4:44:00	1/26/2022 4:44:00	0.00	0.00				
132	1/26/2022 7:24:00	1/26/2022 7:24:00	0.00	0.00				
133	1/26/2022 11:12:00	1/26/2022 11:12:00	0.00	0.00				
134	1/26/2022 21:59:00	1/26/2022 21:59:00	0.00	0.00				
135	1/26/2022 23:16:00	1/26/2022 23:16:00	0.00	0.00				

136	1/27/2022 1:29:00	1/27/2022 1:29:00	0.00	0.00					
137	1/27/2022 2:24:00	1/27/2022 2:24:00	0.00	0.00					
138	1/27/2022 7:14:00	1/27/2022 7:14:00	0.00	0.00					
139	1/27/2022 22:02:00	1/27/2022 22:02:00	0.00	0.00					
140	1/28/2022 0:56:00	1/28/2022 1:43:00	0.78	47.00					
141	1/28/2022 5:26:00	1/28/2022 5:26:00	0.00	0.00					
142	1/28/2022 6:07:00	1/28/2022 6:07:00	0.00	0.00					
143	1/28/2022 18:06:00	1/28/2022 18:06:00	0.00	0.00					
144	1/29/2022 0:09:00	1/29/2022 0:09:00	0.00	0.00					
145	1/29/2022 0:48:00	1/29/2022 0:48:00	0.00	0.00					
146	1/29/2022 1:20:00	1/29/2022 1:20:00	0.00	0.00					
147	1/29/2022 5:15:00	1/29/2022 5:15:00	0.00	0.00					
148	1/29/2022 5:47:00	1/29/2022 5:54:00	0.12	7.00					
149	1/29/2022 8:14:00	1/29/2022 8:43:00	0.48	29.00					
150	1/30/2022 0:06:00	1/30/2022 0:06:00	0.00	0.00					
151	1/30/2022 12:37:00	1/30/2022 12:37:00	0.00	0.00					
152	1/30/2022 1:48:00	1/30/2022 1:48:00	0.00	0.00					
153	1/30/2022 2:40:00	1/30/2022 3:22:00	0.70	42.00					
154	1/30/2022 11:39:00	1/30/2022 11:39:00	0.00	0.00					
155	1/30/2022 20:14:00	1/30/2022 22:20:00	2.10	126.00					
156	1/31/2022 2:22:00	1/31/2022 2:22:00	0.00	0.00					
157	1/31/2022 4:32:00	1/31/2022 4:32:00	0.00	0.00					
158	1/31/2022 6:44:00	1/31/2022 6:44:00	0.00	0.00					
159	1/31/2022 12:50:00	1/31/2022 12:50:00	0.00	0.00					
160	1/31/2022 22:42:00	1/31/2022 22:42:00	0.00	0.00					

December 2021			# days in month	31					
	Note: if start and end time is the same; this indicates a train that did not stop.								
Count	Start Blockage	End Blockage	Duration (hours)	Duration (minutes)					
1	12/2/2021 1:07:00	12/2/2021 1:38:00	0.52	31.00	Crossing:	Eastwood & Rusk (859522Y - GALVESTON SUB)			
2	12/2/2021 5:57:00	12/2/2021 8:30:00	2.55	153.00	Date Range:	Dec 1, 2021 to Dec 31, 2021			
3	12/3/2021 0:00:00	12/3/2021 1:55:00	1.92	115.00	# of Trains	152			
4	12/3/2021 2:24:00	12/3/2021 4:11:00	1.78	107.00	# of Trains w/ Blockage >10 Minutes	63			
5	12/3/2021 7:07:00	12/3/2021 7:07:00	0.00	0.00	% of Trains w/ Blockage >10 Minutes	41%			
6	12/3/2021 7:34:00	12/3/2021 8:23:00	0.82	49.00	Total Duration of Blockages (hrs)	51.50			
7	12/3/2021 9:40:00	12/3/2021 10:01:00	0.35	21.00	% of month w/ a Blockage	7%			
8	12/3/2021 22:00:00	12/3/2021 22:00:00	0.00	0.00	Longest Single Blockage (Hours)	3.80			
9	12/4/2021 2:23:00	12/4/2021 2:23:00	0.00	0.00	Avg. Length of Blockage (Minutes)	48.28			
10	12/4/2021 3:31:00	12/4/2021 3:31:00	0.00	0.00					
11	12/4/2021 7:37:00	12/4/2021 7:37:00	0.00	0.00					
12	12/4/2021 8:35:00	12/4/2021 10:54:00	2.32	139.00					
13	12/4/2021 14:14:00	12/4/2021 14:55:00	0.68	41.00					
14	12/4/2021 22:00:00	12/4/2021 22:00:00	0.00	0.00					
15	12/5/2021 1:10:00	12/5/2021 1:10:00	0.00	0.00					
16	12/5/2021 2:26:00	12/5/2021 2:26:00	0.00	0.00					
17	12/5/2021 5:18:00	12/5/2021 5:30:00	0.20	12.00					
18	12/5/2021 6:17:00	12/5/2021 7:28:00	1.18	71.00					
19	12/5/2021 8:12:00	12/5/2021 8:12:00	0.00	0.00					
20	12/5/2021 8:37:00	12/5/2021 9:13:00	0.60	36.00					
21	12/5/2021 14:16:00	12/5/2021 14:16:00	0.00	0.00					
22	12/5/2021 20:51:00	12/5/2021 20:51:00	0.00	0.00					
23	12/6/2021 1:31:00	12/6/2021 1:31:00	0.00	0.00					
24	12/6/2021 3:36:00	12/6/2021 3:36:00	0.00	0.00					
25	12/6/2021 4:54:00	12/6/2021 5:50:00	0.93	56.00					
26	12/6/2021 7:19:00	12/6/2021 7:19:00	0.00	0.00					
27	12/6/2021 8:07:00	12/6/2021 8:30:00	0.38	23.00					
28	12/6/2021 20:28:00	12/6/2021 20:48:00	0.33	20.00					
29	12/6/2021 23:52:00	12/6/2021 23:52:00	0.00	0.00					
30	12/7/2021 3:21:00	12/7/2021 3:21:00	0.00	0.00					
31	12/7/2021 4:43:00	12/7/2021 4:43:00	0.00	0.00					
32	12/7/2021 7:28:00	12/7/2021 8:16:00	0.80	48.00					
33	12/7/2021 9:16:00	12/7/2021 9:16:00	0.00	0.00					
34	12/7/2021 9:35:00	12/7/2021 9:35:00	0.00	0.00					
35	12/7/2021 10:56:00	12/7/2021 10:56:00	0.00	0.00					
36	12/7/2021 14:46:00	12/7/2021 14:46:00	0.00	0.00					
37	12/7/2021 21:36:00	12/7/2021 21:57:00	0.35	21.00					
38	12/8/2021 2:04:00	12/8/2021 2:30:00	0.43	26.00					
39	12/8/2021 3:31:00	12/8/2021 3:31:00	0.00	0.00					
40	12/8/2021 7:37:00	12/8/2021 7:37:00	0.00	0.00					
41	12/8/2021 8:35:00	12/8/2021 10:24:00	1.82	109.00					
42	12/8/2021 14:14:00	12/8/2021 14:55:00	0.68	41.00					
43	12/9/2021 1:26:00	12/9/2021 2:10:00	0.73	44.00					

44	12/9/2021 7:23:00	12/9/2021 8:08:00	0.75	45.00				
45	12/9/2021 8:56:00	12/9/2021 8:56:00	0.00	0.00				
46	12/9/2021 11:23:00	12/9/2021 11:23:00	0.00	0.00				
47	12/9/2021 11:54:00	12/9/2021 11:54:00	0.00	0.00				
48	12/9/2021 21:03:00	12/9/2021 21:23:00	0.33	20.00				
49	12/10/2021 1:46:00	12/10/2021 2:04:00	0.30	18.00				
50	12/10/2021 8:06:00	12/10/2021 8:06:00	0.00	0.00				
51	12/10/2021 8:40:00	12/10/2021 8:40:00	0.00	0.00				
52	12/10/2021 9:03:00	12/10/2021 9:35:00	0.53	32.00				
53	12/11/2021 8:05:00	12/11/2021 8:05:00	0.00	0.00				
54	12/11/2021 9:23:00	12/11/2021 9:23:00	0.00	0.00				
55	12/11/2021 10:06:00	12/11/2021 10:54:00	0.80	48.00				
56	12/12/2021 0:46:00	12/12/2021 0:46:00	0.00	0.00				
57	12/12/2021 3:13:00	12/12/2021 3:13:00	0.00	0.00				
58	12/12/2021 14:00:00	12/12/2021 14:00:00	0.00	0.00				
59	12/13/2021 2:07:00	12/13/2021 2:07:00	0.00	0.00				
60	12/13/2021 4:36:00	12/13/2021 5:21:00	0.75	45.00				
61	12/13/2021 11:13:00	12/13/2021 11:46:00	0.55	33.00				
62	12/13/2021 14:11:00	12/13/2021 14:11:00	0.00	0.00				
63	12/13/2021 23:23:00	12/13/2021 23:40:00	0.28	17.00				
64	12/14/2021 1:49:00	12/14/2021 1:49:00	0.00	0.00				
65	12/14/2021 2:23:00	12/14/2021 2:32:00	0.15	9.00				
66	12/14/2021 5:49:00	12/14/2021 7:10:00	1.35	81.00				
67	12/14/2021 7:33:00	12/14/2021 8:28:00	0.92	55.00				
68	12/14/2021 10:55:00	12/14/2021 10:55:00	0.00	0.00				
69	12/14/2021 12:13:00	12/14/2021 12:58:00	0.75	45.00				
70	12/15/2021 3:08:00	12/15/2021 4:10:00	1.03	62.00				
71	12/15/2021 4:49:00	12/15/2021 4:49:00	0.00	0.00				
72	12/15/2021 5:20:00	12/15/2021 6:04:00	0.73	44.00				
73	12/15/2021 6:20:00	12/15/2021 6:32:00	0.20	12.00				
74	12/15/2021 8:50:00	12/15/2021 9:06:00	0.27	16.00				
75	12/16/2021 0:05:00	12/16/2021 0:05:00	0.00	0.00				
76	12/16/2021 3:40:00	12/16/2021 5:03:00	1.38	83.00				
77	12/16/2021 5:16:00	12/16/2021 5:16:00	0.00	0.00				
78	12/16/2021 7:53:00	12/16/2021 9:08:00	1.25	75.00				
79	12/16/2021 9:31:00	12/16/2021 9:31:00	0.00	0.00				
80	12/16/2021 10:07:00	12/16/2021 10:07:00	0.00	0.00				
81	12/16/2021 15:49:00	12/16/2021 15:49:00	0.00	0.00				
82	12/16/2021 22:40:00	12/16/2021 23:04:00	0.40	24.00				
83	12/17/2021 2:42:00	12/17/2021 2:42:00	0.00	0.00				
84	12/17/2021 3:30:00	12/17/2021 3:56:00	0.43	26.00				
85	12/17/2021 4:19:00	12/17/2021 4:19:00	0.00	0.00				
86	12/17/2021 9:12:00	12/17/2021 10:47:00	1.58	95.00				
87	12/18/2021 2:25:00	12/18/2021 4:27:00	2.03	122.00				
88	12/18/2021 6:45:00	12/18/2021 6:45:00	0.00	0.00				
89	12/18/2021 7:04:00	12/18/2021 7:22:00	0.30	18.00				

90	12/18/2021 9:11:00	12/18/2021 9:11:00	0.00	0.00				
91	12/18/2021 10:41:00	12/18/2021 10:53:00	0.20	12.00				
92	12/18/2021 21:26:00	12/18/2021 21:54:00	0.47	28.00				
93	12/19/2021 1:03:00	12/19/2021 1:03:00	0.00	0.00				
94	12/19/2021 1:31:00	12/19/2021 3:03:00	1.53	92.00				
95	12/19/2021 6:28:00	12/19/2021 6:28:00	0.00	0.00				
96	12/19/2021 6:57:00	12/19/2021 7:20:00	0.38	23.00				
97	12/19/2021 10:47:00	12/19/2021 12:19:00	1.53	92.00				
98	12/20/2021 0:23:00	12/20/2021 0:23:00	0.00	0.00				
99	12/20/2021 4:48:00	12/20/2021 5:03:00	0.25	15.00				
100	12/20/2021 7:09:00	12/20/2021 7:30:00	0.35	21.00				
101	12/20/2021 7:51:00	12/20/2021 8:10:00	0.32	19.00				
102	12/20/2021 8:34:00	12/20/2021 8:34:00	0.00	0.00				
103	12/20/2021 10:33:00	12/20/2021 10:33:00	0.00	0.00				
104	12/20/2021 11:59:00	12/20/2021 11:59:00	0.00	0.00				
105	12/21/2021 4:30:00	12/21/2021 4:30:00	0.00	0.00				
106	12/21/2021 5:06:00	12/21/2021 5:21:00	0.25	15.00				
107	12/22/2021 1:28:00	12/22/2021 1:28:00	0.00	0.00				
108	12/22/2021 4:13:00	12/22/2021 4:50:00	0.62	37.00				
109	12/22/2021 5:08:00	12/22/2021 5:08:00	0.00	0.00				
110	12/22/2021 10:56:00	12/22/2021 10:56:00	0.00	0.00				
111	12/22/2021 11:32:00	12/22/2021 11:51:00	0.32	19.00				
112	12/22/2021 17:57:00	12/22/2021 17:57:00	0.00	0.00				
113	12/23/2021 6:58:00	12/23/2021 7:50:00	0.87	52.00				
114	12/23/2021 8:45:00	12/23/2021 8:45:00	0.00	0.00				
115	12/23/2021 9:21:00	12/23/2021 9:21:00	0.00	0.00				
116	12/23/2021 21:58:00	12/24/2021 1:46:00	3.80	228.00				
117	12/24/2021 6:24:00	12/24/2021 6:24:00	0.00	0.00				
118	12/24/2021 14:33:00	12/24/2021 14:33:00	0.00	0.00				
119	12/24/2021 15:06:00	12/24/2021 15:25:00	0.32	19.00				
120	12/25/2021 8:38:00	12/25/2021 8:38:00	0.00	0.00				
121	12/25/2021 12:59:00	12/25/2021 13:22:00	0.38	23.00				
122	12/26/2021 7:52:00	12/26/2021 7:52:00	0.00	0.00				
123	12/26/2021 8:38:00	12/26/2021 8:38:00	0.00	0.00				
124	12/26/2021 8:55:00	12/26/2021 9:42:00	0.78	47.00				
125	12/26/2021 17:45:00	12/26/2021 17:45:00	0.00	0.00				
126	12/27/2021 0:16:00	12/27/2021 0:16:00	0.00	0.00				
127	12/27/2021 1:18:00	12/27/2021 1:48:00	0.50	30.00				
128	12/27/2021 3:53:00	12/27/2021 3:53:00	0.00	0.00				
129	12/27/2021 8:14:00	12/27/2021 8:14:00	0.00	0.00				
130	12/27/2021 10:30:00	12/27/2021 10:30:00	0.00	0.00				
131	12/27/2021 12:52:00	12/27/2021 12:52:00	0.00	0.00				
132	12/27/2021 13:38:00	12/27/2021 14:09:00	0.52	31.00				
133	12/28/2021 1:42:00	12/28/2021 1:42:00	0.00	0.00				
134	12/28/2021 2:11:00	12/28/2021 2:11:00	0.00	0.00				
135	12/28/2021 3:02:00	12/28/2021 3:02:00	0.00	0.00				

136	12/28/2021 4:56:00	12/28/2021 4:56:00	0.00	0.00				
137	12/29/2021 3:30:00	12/29/2021 3:30:00	0.00	0.00				
138	12/29/2021 4:57:00	12/29/2021 5:58:00	1.02	61.00				
139	12/29/2021 8:56:00	12/29/2021 8:56:00	0.00	0.00				
140	12/29/2021 9:33:00	12/29/2021 9:51:00	0.30	18.00				
141	12/29/2021 13:08:00	12/29/2021 13:08:00	0.00	0.00				
142	12/30/2021 0:47:00	12/30/2021 0:47:00	0.00	0.00				
143	12/30/2021 1:21:00	12/30/2021 1:21:00	0.00	0.00				
144	12/30/2021 5:56:00	12/30/2021 5:56:00	0.00	0.00				
145	12/30/2021 22:53:00	12/30/2021 22:53:00	0.00	0.00				
146	12/31/2021 0:30:00	12/31/2021 0:30:00	0.00	0.00				
147	12/31/2021 1:54:00	12/31/2021 1:54:00	0.00	0.00				
148	12/31/2021 7:04:00	12/31/2021 7:04:00	0.00	0.00				
149	12/31/2021 9:10:00	12/31/2021 9:30:00	0.33	20.00				
150	12/31/2021 19:17:00	12/31/2021 19:17:00	0.00	0.00				
151	12/31/2021 21:39:00	12/31/2021 21:39:00	0.00	0.00				
152	12/31/2021 22:59:00	12/31/2021 22:59:00	0.00	0.00				

November 2021			# days in month	30					
	Note: if start and end time is the same; this indicates a train that did not stop.								
Count	Start Blockage	End Blockage	Duration (hours)	Duration (minutes)					
1	11/1/2021 0:16:00	11/1/2021 0:33:00	0.28	17.00	Crossing:	Eastwood & Rusk	(859522Y - GALVESTON SUB)		
2	11/1/2021 4:59:00	11/1/2021 5:49:00	0.83	50.00	Date Range:	Nov 1 to Nov 30, 2021			
3	11/1/2021 11:46:00	11/1/2021 11:46:00	0.00	0.00	# of Trains	148			
4	11/1/2021 23:13:00	11/1/2021 23:38:00	0.42	25.00	# of Trains w/ Blockage >10 Minutes	59			
5	11/2/2021 1:10:00	11/2/2021 2:46:00	1.60	96.00	% of Trains w/ Blockage >10 Minutes	40%			
6	11/2/2021 4:50:00	11/2/2021 4:50:00	0.00	0.00	Total Duration of Blockages (hrs)	87.82			
7	11/2/2021 5:57:00	11/2/2021 5:57:00	0.00	0.00	% of month w/ a Blockage	12%			
8	11/2/2021 9:14:00	11/2/2021 11:40:00	2.43	146.00	Longest Single Blockage (Hours)	8.63			
9	11/2/2021 16:19:00	11/2/2021 16:19:00	0.00	0.00	Avg. Length of Blockage (Minutes)	87.82			
10	11/2/2021 21:49:00	11/2/2021 22:18:00	0.48	29.00					
11	11/2/2021 22:40:00	11/2/2021 22:40:00	0.00	0.00					
12	11/3/2021 5:21:00	11/3/2021 5:21:00	0.00	0.00					
13	11/3/2021 5:40:00	11/3/2021 5:40:00	0.00	0.00					
14	11/3/2021 7:00:00	11/3/2021 7:00:00	0.00	0.00					
15	11/3/2021 12:48:00	11/3/2021 13:04:00	0.27	16.00					
16	11/3/2021 13:30:00	11/3/2021 13:30:00	0.00	0.00					
17	11/3/2021 21:22:00	11/3/2021 21:22:00	0.00	0.00					
18	11/4/2021 4:50:00	11/4/2021 4:50:00	0.00	0.00					
19	11/4/2021 7:09:00	11/4/2021 7:28:00	0.32	19.00					
20	11/4/2021 10:57:00	11/4/2021 10:57:00	0.00	0.00					
21	11/4/2021 16:30:00	11/4/2021 16:30:00	0.00	0.00					
22	11/5/2021 0:20:00	11/5/2021 0:20:00	0.00	0.00					
23	11/5/2021 1:50:00	11/5/2021 1:50:00	0.00	0.00					
24	11/5/2021 2:39:00	11/5/2021 3:05:00	0.43	26.00					
25	11/5/2021 3:31:00	11/5/2021 3:31:00	0.00	0.00					
26	11/5/2021 15:31:00	11/5/2021 15:31:00	0.00	0.00					
27	11/6/2021 10:21:00	11/6/2021 10:49:00	0.47	28.00					
28	11/6/2021 11:13:00	11/6/2021 11:33:00	0.33	20.00					
29	11/6/2021 20:11:00	11/6/2021 20:38:00	0.45	27.00					
30	11/7/2021 3:40:00	11/7/2021 10:30:00	6.83	410.00					
31	11/8/2021 0:01:00	11/8/2021 4:25:00	4.40	264.00					
32	11/8/2021 8:45:00	11/8/2021 13:15:00	4.50	270.00					
33	11/8/2021 19:53:00	11/8/2021 19:53:00	0.00	0.00					
34	11/9/2021 0:00:00	11/9/2021 3:30:00	3.50	210.00					
35	11/9/2021 3:37:00	11/9/2021 4:28:00	0.85	51.00					
36	11/9/2021 13:48:00	11/9/2021 14:13:00	0.42	25.00					
37	11/9/2021 18:49:00	11/9/2021 19:12:00	0.38	23.00					
38	11/9/2021 19:52:00	11/9/2021 19:52:00	0.00	0.00					
39	11/10/2021 0:36:00	11/10/2021 0:36:00	0.00	0.00					
40	11/10/2021 6:02:00	11/10/2021 6:02:00	0.00	0.00					
41	11/10/2021 8:39:00	11/10/2021 8:48:00	0.15	9.00					
42	11/10/2021 12:30:00	11/10/2021 12:55:00	0.42	25.00					
43	11/10/2021 16:17:00	11/10/2021 17:30:00	1.22	73.00					
44	11/10/2021 19:29:00	11/10/2021 19:29:00	0.00	0.00					

45	11/11/2021 0:48:00	11/11/2021 0:48:00	0.00	0.00				
46	11/11/2021 2:20:00	11/11/2021 2:20:00	0.00	0.00				
47	11/11/2021 20:41:00	11/11/2021 22:37:00	1.93	116.00				
48	11/12/2021 1:17:00	11/12/2021 2:28:00	1.18	71.00				
49	11/12/2021 4:48:00	11/12/2021 4:48:00	0.00	0.00				
50	11/12/2021 6:16:00	11/12/2021 6:16:00	0.00	0.00				
51	11/12/2021 21:41:00	11/12/2021 21:41:00	0.00	0.00				
52	11/13/2021 3:59:00	11/13/2021 3:59:00	0.00	0.00				
53	11/13/2021 5:59:00	11/13/2021 5:59:00	0.00	0.00				
54	11/13/2021 11:26:00	11/13/2021 11:26:00	0.00	0.00				
55	11/13/2021 11:57:00	11/13/2021 11:57:00	0.00	0.00				
56	11/13/2021 12:27:00	11/13/2021 12:27:00	0.00	0.00				
57	11/13/2021 12:54:00	11/13/2021 12:54:00	0.00	0.00				
58	11/13/2021 13:51:00	11/13/2021 13:51:00	0.00	0.00				
59	11/14/2021 2:22:00	11/14/2021 2:22:00	0.00	0.00				
60	11/14/2021 4:51:00	11/14/2021 6:04:00	1.22	73.00				
61	11/14/2021 6:25:00	11/14/2021 7:59:00	1.57	94.00				
62	11/14/2021 9:45:00	11/14/2021 10:16:00	0.52	31.00				
63	11/14/2021 12:07:00	11/14/2021 12:27:00	0.33	20.00				
64	11/14/2021 13:20:00	11/14/2021 13:20:00	0.00	0.00				
65	11/14/2021 18:55:00	11/14/2021 18:55:00	0.00	0.00				
66	11/14/2021 21:33:00	11/14/2021 21:33:00	0.00	0.00				
67	11/15/2021 1:12:00	11/15/2021 1:58:00	0.77	46.00				
68	11/15/2021 3:40:00	11/15/2021 4:38:00	0.97	58.00				
69	11/15/2021 11:25:00	11/15/2021 12:03:00	0.63	38.00				
70	11/15/2021 13:34:00	11/15/2021 13:34:00	0.00	0.00				
71	11/15/2021 14:48:00	11/15/2021 14:48:00	0.00	0.00				
72	11/16/2021 1:22:00	11/16/2021 3:54:00	2.53	152.00				
73	11/16/2021 4:16:00	11/16/2021 5:05:00	0.82	49.00				
74	11/16/2021 6:27:00	11/16/2021 6:27:00	0.00	0.00				
75	11/16/2021 7:00:00	11/16/2021 7:00:00	0.00	0.00				
76	11/16/2021 12:11:00	11/16/2021 12:26:00	0.25	15.00				
77	11/16/2021 19:32:00	11/16/2021 19:32:00	0.00	0.00				
78	11/17/2021 0:49:00	11/17/2021 4:28:00	3.65	219.00				
79	11/17/2021 5:00:00	11/17/2021 5:21:00	0.35	21.00				
80	11/17/2021 8:47:00	11/17/2021 9:18:00	0.52	31.00				
81	11/17/2021 13:36:00	11/17/2021 14:05:00	0.48	29.00				
82	11/17/2021 18:04:00	11/17/2021 18:04:00	0.00	0.00				
83	11/17/2021 22:29:00	11/17/2021 22:29:00	0.00	0.00				
84	11/17/2021 23:23:00	11/17/2021 23:50:00	0.45	27.00				
85	11/18/2021 1:39:00	11/18/2021 1:39:00	0.00	0.00				
86	11/18/2021 4:12:00	11/18/2021 7:55:00	3.72	223.00				
87	11/18/2021 9:09:00	11/18/2021 9:29:00	0.33	20.00				
88	11/18/2021 10:18:00	11/18/2021 10:18:00	0.00	0.00				
89	11/18/2021 19:26:00	11/19/2021 1:40:00	6.23	374.00				
90	11/19/2021 3:45:00	11/19/2021 3:45:00	0.00	0.00				
91	11/19/2021 5:21:00	11/19/2021 5:21:00	0.00	0.00				

92	11/19/2021 5:53:00	11/19/2021 5:53:00	0.00	0.00				
93	11/19/2021 7:30:00	11/19/2021 7:30:00	0.00	0.00				
94	11/19/2021 11:06:00	11/19/2021 11:06:00	0.00	0.00				
95	11/19/2021 3:14:00	11/19/2021 3:14:00	0.00	0.00				
96	11/19/2021 8:45:00	11/19/2021 8:45:00	0.00	0.00				
97	11/20/2021 9:10:00	11/20/2021 9:10:00	0.00	0.00				
98	11/20/2021 9:46:00	11/20/2021 9:46:00	0.00	0.00				
99	11/20/2021 12:49:00	11/20/2021 12:49:00	0.00	0.00				
100	11/20/2021 22:07:00	11/20/2021 22:57:00	0.83	50.00				
101	11/21/2021 0:12:00	11/21/2021 0:12:00	0.00	0.00				
102	11/21/2021 1:56:00	11/21/2021 1:56:00	0.00	0.00				
103	11/21/2021 6:45:00	11/21/2021 7:02:00	0.28	17.00				
104	11/21/2021 14:27:00	11/21/2021 14:27:00	0.00	0.00				
105	11/22/2021 3:01:00	11/22/2021 3:01:00	0.00	0.00				
106	11/22/2021 4:15:00	11/22/2021 4:15:00	0.00	0.00				
107	11/22/2021 7:56:00	11/22/2021 7:56:00	0.00	0.00				
108	11/22/2021 10:14:00	11/22/2021 10:36:00	0.37	22.00				
109	11/22/2021 12:12:00	11/22/2021 12:12:00	0.00	0.00				
110	11/22/2021 13:55:00	11/22/2021 15:10:00	1.25	75.00				
111	11/22/2021 15:40:00	11/22/2021 15:40:00	0.00	0.00				
112	11/23/2021 1:46:00	11/23/2021 1:46:00	0.00	0.00				
113	11/23/2021 5:33:00	11/23/2021 6:25:00	0.87	52.00				
114	11/23/2021 11:35:00	11/23/2021 12:28:00	0.88	53.00				
115	11/23/2021 12:47:00	11/23/2021 19:36:00	6.82	409.00				
116	11/24/2021 11:15:00	11/24/2021 13:00:00	1.75	105.00				
117	11/25/2021 5:48:00	11/25/2021 7:06:00	1.30	78.00				
118	11/25/2021 8:49:00	11/25/2021 8:49:00	0.00	0.00				
119	11/25/2021 9:04:00	11/25/2021 9:29:00	0.42	25.00				
120	11/25/2021 12:42:00	11/25/2021 12:42:00	0.00	0.00				
121	11/26/2021 0:54:00	11/26/2021 0:54:00	0.00	0.00				
122	11/26/2021 3:50:00	11/26/2021 3:50:00	0.00	0.00				
123	11/26/2021 4:59:00	11/26/2021 4:59:00	0.00	0.00				
124	11/26/2021 5:25:00	11/26/2021 5:25:00	0.00	0.00				
125	11/26/2021 6:25:00	11/26/2021 6:25:00	0.00	0.00				
126	11/26/2021 9:36:00	11/26/2021 10:05:00	0.48	29.00				
127	11/26/2021 14:23:00	11/26/2021 14:23:00	0.00	0.00				
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129	11/27/2021 4:14:00	11/27/2021 4:14:00	0.00	0.00				
130	11/27/2021 4:54:00	11/27/2021 5:27:00	0.55	33.00				
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137	11/28/2021 9:53:00	11/28/2021 9:53:00	0.00	0.00				
138	11/29/2021 2:11:00	11/29/2021 2:11:00	0.00	0.00				

139	11/29/2021 4:12:00	11/29/2021 4:12:00	0.00	0.00				
140	11/29/2021 7:10:00	11/29/2021 7:10:00	0.00	0.00				
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142	11/29/2021 20:30:00	11/29/2021 20:46:00	0.27	16.00				
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144	11/30/2021 6:41:00	11/30/2021 6:41:00	0.00	0.00				
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148	11/30/2021 12:11:00	11/30/2021 13:30:00	1.32	79.00				



Gulf Coast Rail District

HB&T West Belt Improvements Study

January 2012



Prepared by
HNTB

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EXECUTIVE SUMMARY

The Houston Belt & Terminal Railroad's West Belt Subdivision is an approximately 9-mile double-track rail line, which runs in between East Downtown Houston and the Greater East End with an average of between 65 and 75 trains daily, depending upon location.

This study was conducted with the goal of identifying improvements to eliminate all at-grade crossings on the West Belt Subdivision between Cullen Boulevard and railroad Tower 26 near Lyons Avenue just north of I-10 in order to create a sealed corridor on one of the busiest rail lines in Houston. The 12 existing at-grade crossings within the study area are listed in the table below.

Street Name	Classification	Daily Traffic Count (2010)
West	Local Street	180
Lyons	Major Thoroughfare	3,489
Nance	Local Street	4,622
Runnels	Local Street	5,187
Commerce	Local Street	1,372
Hutchins	Local Street	1,592
Sampson	Major Thoroughfare	2,824
York	Major Thoroughfare	2,396
McKinney	Major Collector	1,630
Milby	Local Street	2,467
Leeland	Major Collector	4,342
Cullen	Major Collector	7,116

The creation of a sealed freight rail corridor along the West Belt would allow for the creation of an approximate 5-mile-long quiet zone that would remove train horn noise for nearly 15,000 households located along the West Belt.

The construction of roadway/rail grade separations or the closure of at-grade crossings along the West Belt would eliminate vehicle delays, engine idling, and grade crossing accidents that are caused when trains block the crossings. Additional related benefits would be reduced fuel consumption, noise, and emissions.

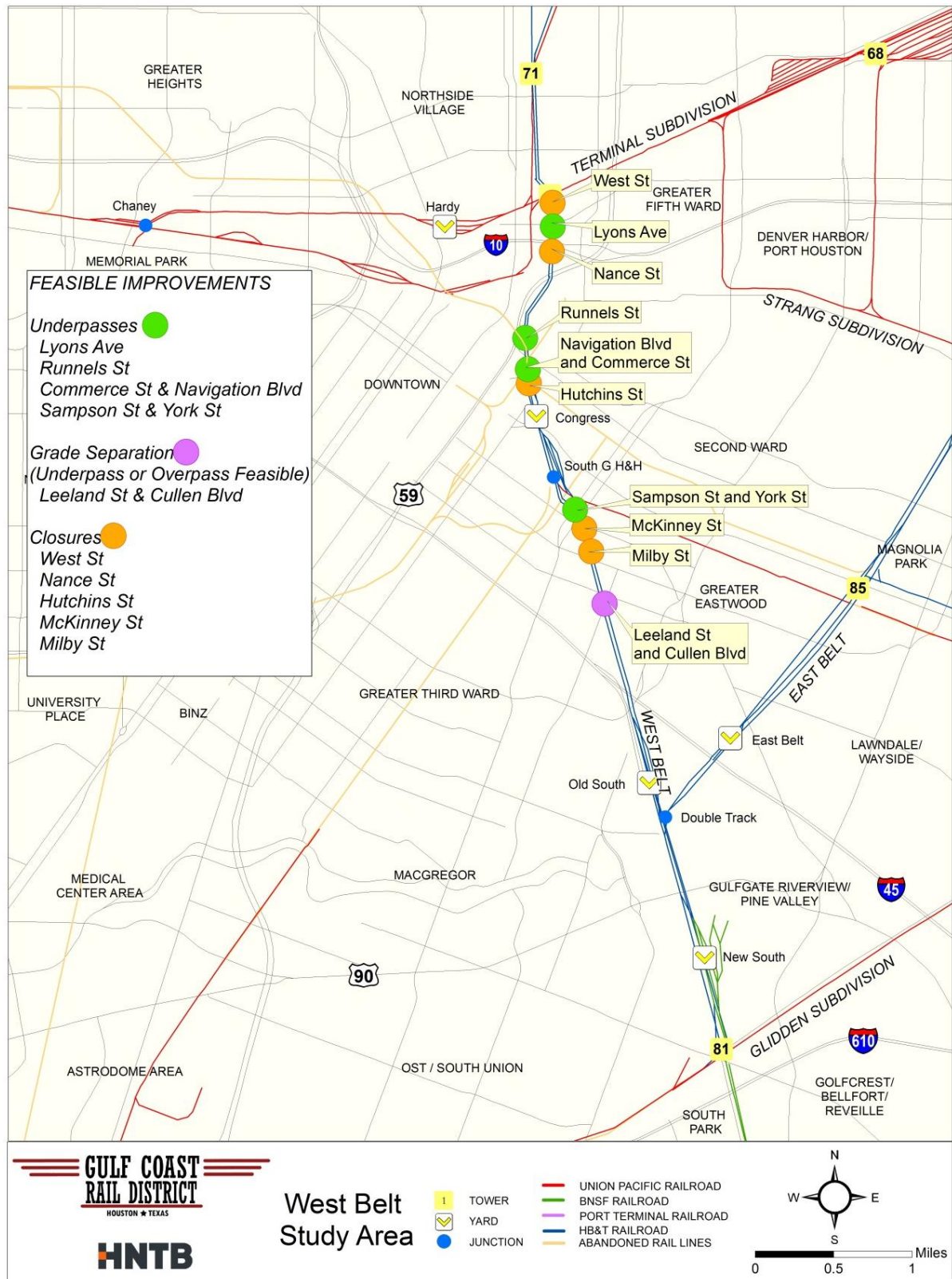
The process that was used to identify feasible improvements at each of the 12 at-grade crossings within the study area is outlined as follows:

1. Identify existing conditions, planned projects, and issues impacting potential improvements within the study area
 - a. Obtain City of Houston 2010 traffic counts

- b. Perform background review of ongoing or completed area studies and plans
 - c. Coordinate with advisory committee comprised of representatives from the City of Houston, Harris County, H-GAC, TxDOT, the Houston Fire and Police Departments, Houston METRO, and the railroads (UP, BNSF, and HB&T)
- 2. Develop and evaluate preliminary assessments
 - a. Create evaluation matrix to determine the feasibility of the least expensive alternative based on mobility and safety, integration with existing and planned infrastructure, community impacts, and route reliability
 - b. Perform traffic impact analysis modeling for potential crossing closures
 - c. Coordinate with advisory committee
- 3. Develop Feasible Improvements
 - a. Complete conceptual designs and cost estimates
 - b. Coordinate with advisory committee
 - c. Perform public outreach

The alternatives identified as feasible improvements along the West Belt in this study along with associated estimated costs are shown in the following table and are mapped in the following figure.

Street Name	Recommended Improvement	Estimated Total Cost	PE + NEPA
West	Closure	\$46,000	\$11,000
Lyons	Grade Separation - Underpass	\$13,660,000	\$900,000
Nance	Closure (future grade separation alternative identified not included in cost)	\$140,000	\$24,000
Runnels	Grade Separation - Underpass	\$12,540,000	\$860,000
Navigation & Commerce	Grade Separation - Underpass	\$22,480,000	\$1,220,000
Hutchins	Closure	Cost Included with Commerce & Navigation	
Sampson & York	Grade Separation - Underpass	\$30,720,000	\$1,860,000
McKinney	Closure	Cost Included with Sampson & York	
Milby	Closure	\$30,000	\$11,000
Leeland & Cullen	Grade Separation (Cost for overpass option shown though underpass option also feasible)	\$28,090,000	\$1,175,000
Total		\$107,706,000	\$6,061,000
Note: Closure costs shown in the PE + NEPA column are total design costs.			



WEST BELT GRADE CROSSING IMPROVEMENTS

Introduction

The Houston Belt & Terminal Railroad's West Belt Subdivision is an approximately 9-mile double-track rail line, which runs in between East Downtown Houston and the Greater East End with an average of between 65 and 75 trains daily, depending upon location. There are numerous sidings, industrial tracks, and yards along this rail line.

This study was conducted with the goal of identifying improvements to eliminate all at-grade crossings on the West Belt Subdivision between Cullen Boulevard and railroad Tower 26 near Lyons Avenue just north of I-10 in order to create a sealed corridor on one of the busiest rail lines in Houston.

The implementation of a sealed freight rail corridor as envisioned with this project has been done before in the late 1980s. The construction of the Hardy Toll Road represented the first grade-separated corridor in Texas and created an efficient mobility corridor for trucks and vehicles, while also providing benefits to the freight railroads by creating a 21-mile sealed rail corridor.

The creation of a sealed freight rail corridor along the West Belt would allow for the creation of an approximate 5-mile-long quiet zone that would remove train horn noise for nearly 15,000 households located along the West Belt. A quiet zone would permit trains to pass through the area without the use of train horns. The construction of roadway/rail grade separations or the closure of at-grade crossings along the West Belt would eliminate vehicle delays, engine idling, and grade crossing accidents that are caused when trains block the crossings. Additional related benefits would be reduced fuel consumption, noise, and emissions.

Additionally, the elimination of at-grade crossings would provide benefits to the operating railroads by allowing trains to be stopped along the tracks where such movements are currently prohibited on the West Belt. Railroad operating benefits associated with a sealed West Belt corridor include operating trains on the West Belt in lieu of the East Belt line, which would reduce congestion on the East Belt, as well as providing the railroad additional locations as potential crew change points within the network. The implementation of a sealed West Belt freight rail corridor may also result in making Houston more competitive for shippers and companies relying on freight deliveries, as a corridor without grade crossings will reduce delays and improve freight mobility efficiency through the region.

The limits of the study area are shown in Figure 1, and each of the at-grade crossings included within the study limits are listed below in Table 1 with 2010 average daily traffic counts from the City of Houston.

Street Name	Classification	Daily Traffic Count (2010)
West	Local Street	180
Lyons	Major Thoroughfare	3,489
Nance	Local Street	4,622
Runnels	Local Street	5,187
Commerce	Local Street	1,372
Hutchins	Local Street	1,592
Sampson	Major Thoroughfare	2,824
York	Major Thoroughfare	2,396
McKinney	Major Collector	1,630
Milby	Local Street	2,467
Leeland	Major Collector	4,342
Cullen	Major Collector	7,116

Table 1: At-Grade Crossings within Study Limits
(note: McKinney traffic count is based on H-GAC modeling)

The analysis completed in this study included the following tasks:

- Obtain and review previous studies completed for the West Belt corridor and for any of the streets crossing the corridor
- Analyze traffic impacts associated with the potential crossing improvements
- Develop a matrix to evaluate the potential improvements
- Perform preliminary engineering and determine order-of-magnitude estimated costs for the grade crossing improvements
- Perform public outreach services to inform the community about the study and the potential improvements at the crossings

This report describes the regional background relating to this study, the evaluation methodology utilized, results of the analysis conducted for the crossing improvements, and estimated costs for the recommended improvements.



Figure 1: West Belt Improvement Project Study Area

Regional Background

The HB&T West Belt Subdivision runs through the center of Houston and serves as a dividing line between downtown and the East End. The majority of residents along the West Belt are either Hispanic (55%) or African American (31%), while Non-Hispanic whites account for 11.3% of the area population. The West Belt area is

characterized as a low and lower-middle income area, with nearly 32% of the area households below the poverty level in 1999. More than 43% of the West Belt area households had 1999 incomes under \$20,000 as reported in the 2007 Houston Region Freight Study. Additionally, approximately 17% of the area households (approximately 2,500 households) were considered to be linguistically isolated (primarily Spanish speaking) in 1999.

Within the project limits of this study, the West Belt runs along the boundaries of the Downtown and Second Ward super neighborhoods and through the Greater Eastwood super neighborhood. The West Belt also crosses through the Fifth Ward Redevelopment Corporation, the northeastern corner of the Downtown Management District and runs along the boundary between the East Downtown and East End Management Districts. Several of these super neighborhoods and management districts, in addition to the City of Houston (COH), have developed visions and plans for development of the area. The project limits also overlap project limits for the Harris County Toll Road Authority (HCTRA) Hardy Toll Road Extension project as well as the METRO East End and Southeast light rail line plans.

In order to maintain consistency with the various plans for the region, the plans and studies listed below were reviewed to determine potential impacts on this study.

- Hardy Toll Road Extension
- Houston Belt and Terminal (HB&T) Railroad Relocation
- H-GAC Livable Centers Program for the Greater East End Management District and the East Downtown Management District
- City of Houston Bikeway Program Network
- City of Houston Planned Quiet Zones
- Fifth Ward Pedestrian and Bicyclist Special District Study
- Galveston - Houston Commuter Rail Study
- METRO Vision
- Greater East End Management District Plans and Studies
- East Downtown Management District Plans and Studies
- TxDOT Houston Region Freight Study
- Gulf Coast Rail District Analysis of Rail Improvements

Hardy Toll Road Extension

The proposed Harris County Toll Road Authority (HCTRA) Hardy Toll Road Downtown Connector project, which is currently in the final stages of design, is proposed to extend the Hardy Toll Road a distance of 3.6 miles from its current terminus at Loop 610 to downtown Houston and will consist of four toll lanes (two in each direction). This project is intended to alleviate congestion at Loop 610, I-45, and US 59. The alignment of the Hardy Toll Road extension generally parallels the West Belt Subdivision on the west side of the rail line north of I-10 and railroad Tower 26. The proposed HCTRA project includes several grade separations and crossing closures along the West Belt Subdivision as listed in Table 2 and also requires the completion of the HB&T Railroad Relocation since the extension will

use a portion of the existing HB&T right of way. Figure 2 shows the approximate location of the Hardy Toll Road extension along this study's project limits.

Street Name	Classification	Planned Improvement	Daily Traffic Count (2010)
Collingsworth	Major Collector	Planned Grade Separation	5,460
Quitman	Major Thoroughfare	Planned Grade Separation	5,480
Lee	Local Street	Planned Closure	380
Lorraine	Major Collector	Planned Grade Separation	2,800
Semmes	Local Street	Planned Closure	260
Harrington	Local Street	Planned Closure	670
Brooks	Local Street	Planned Closure	600

Table 2: Hardy Toll Road Extension Planned At-Grade Crossing Improvements



Figure 2: Planned Hardy Toll Road Extension and West Belt

HB&T Railroad Relocation

Due to the proposed alignment of the Hardy Toll Road extension, 2.5 miles of the Houston Belt and Terminal Railroad (HB&T) tracks require reconfiguration and shifting from as little as 2 feet to more than 150 feet in some locations. The project will include track construction and rehabilitation, fiber optic relocation, a railroad bridge at Lorraine Street, drainage modifications, and new centralized traffic control signalization for three mainline tracks, two wye tracks, shoofly tracks, industry siding tracks, and passing tracks. Engineering plans and specifications, as well as construction sequencing documents are currently in the final stages of completion.

H-GAC Livable Centers Program

H-GAC, the Houston Downtown Management District, and the East Downtown Management District have undertaken a Livable Centers study of the area generally bounded by Dowling Street on the East, Leeland Street on the South, Commerce Street on the North, and Austin Street on the West. The Greater East End Management District also completed a Livable Center Study for the area bound by US 59 and the West Belt on the west, Clinton Drive on the north, and Hirsch and York Streets on the east. The plans focus on the redevelopment potential of infrastructure and existing land uses within the area to determine a program of projects that could be facilitated through public and private investment throughout the study area. Projects of note in the Downtown-EaDo Livable Centers Study include an assessment of the crossings at Navigation Boulevard and Commerce Street and pedestrian/bicycle improvements that are proposed along Hutchins Street. In addition, street design modifications recommended in the studies which could impact improvements at the rail crossings include on-street parking, wider sidewalks, and street furniture.

The Downtown-EaDo Livable Centers Study includes a recommendation in which the current at-grade crossing of the West Belt Subdivision at Commerce Street is combined with the Navigation Boulevard grade separation. Additionally, the H-GAC Study includes a recommendation for pedestrian/ bicycle improvements that would include six-foot sidewalks and a dedicated six-foot bike lane along Hutchins Street. The pedestrian and bicycle facilities would be provided on both sides of the street requiring a total of 24-feet of right of way for non-motorized uses, which could be accommodated with modifications to the proposed Navigation/ Commerce Street grade separation if Hutchins Street is closed as proposed in this GCRD West Belt Improvements Study.

Of the remaining Livable Centers recommendations, the only other project of note would be the concept for the introduction of an at-grade streetcar from the Greater East End accessing destinations on the west side of the West Belt Subdivision, again utilizing the Navigation/Commerce grade separation. The streetcar concept has been presented by both the Greater East End Management District Livable Centers Study and the Downtown-EaDo Livable Centers Study as an alternative mode of transit that could be considered at a future date. The studies have

determined that the best available crossing option would occur at Navigation/Commerce given that the Preston underpass would not likely be feasible.

City of Houston Bikeway Program Network

The COH Bikeway Program network map shows existing and planned routes for pedestrian and bike trails. The bikeway network includes bike lanes on Lyons Avenue and Cullen Street and signed bike routes along Sampson, York, Runnels, and Commerce Streets within this study's limits. Existing and planned bikeway routes were considered when evaluating potential crossing improvements in this study.

City of Houston Planned Quiet Zones

The COH Quiet Zones Program is aimed at mitigating train noise in Houston neighborhoods. The program creates guidelines with which to review and consider the implementation of railroad quiet zones. The Quiet Zones Program seeks to enhance/upgrade railroad crossing safety, allowing neighborhood residents to live without the disruption of passing train horns, thus improving the quality of life for those communities adjacent to railroad corridors.¹ The COH has implemented several quiet zones in the region, including a quiet zone along the West Belt rail line that includes Runnels and Canal Streets and also shows plans for a quiet zone along the West Belt between Cullen Boulevard and Sampson Street. The improvements identified in this study, in addition to the crossing improvements planned north of Tower 26 along the Hardy Toll Road extension, would create the opportunity to implement an approximately 5-mile-long quiet zone from Cullen Boulevard to Cavalcade Street.

Fifth Ward Pedestrian and Bicyclist Special District Study

H-GAC identified the Fifth Ward area northeast of Downtown Houston in 2010 as a district with high levels of existing or potential pedestrian and bicyclist activity and potential to replace vehicle trips with pedestrian or bicycle trips and to improve pedestrian and bicyclist safety. The Fifth Ward area is generally bounded by McKee Street on the west, Waco Street / Hirsch Road / York Street on the east, Oats Street on the north and Canal Street on the south, which includes the Runnels Street, Nance Street, and Lyons Avenue crossings evaluated in this West Belt Study.

The Fifth Ward Pedestrian and Bicyclist Special District Study completed in September 2011 identified several recommendations to improve pedestrian and bicycle connectivity in the Fifth Ward area. The recommendations include bicycle lane coloration along Lyons Avenue, a crosswalk and median extension on Runnels Street near US 59, and a new bike trail between the existing Bayou Bike Trail near the crossing of US 59 and Buffalo Bayou on the west and Jensen Drive on the East.

The recommendations contained in the Fifth Ward Study at the three locations listed above would be impacted by the proposed improvements contained in this GCRD

¹ <http://www.publicworks.houstontx.gov/traffic/programs.html>

West Belt Improvements Study, though the intended purpose of the recommendations would be maintained. The proposed grade separations in this West Belt Study, which include pedestrian and bicycle lanes, would provide improved bicycle access across the West Belt rail line. The potential Bike Trail crossing recommended in the Fifth Ward Study would need to be constructed as a bridge to prevent the addition of an at-grade crossing along the West Belt within the study area (which is indicated in the Fifth Ward Study), and would need to be further coordinated with potential grade separation alternatives at Nance Street as identified in this West Belt Study.

Galveston-Houston Commuter Rail

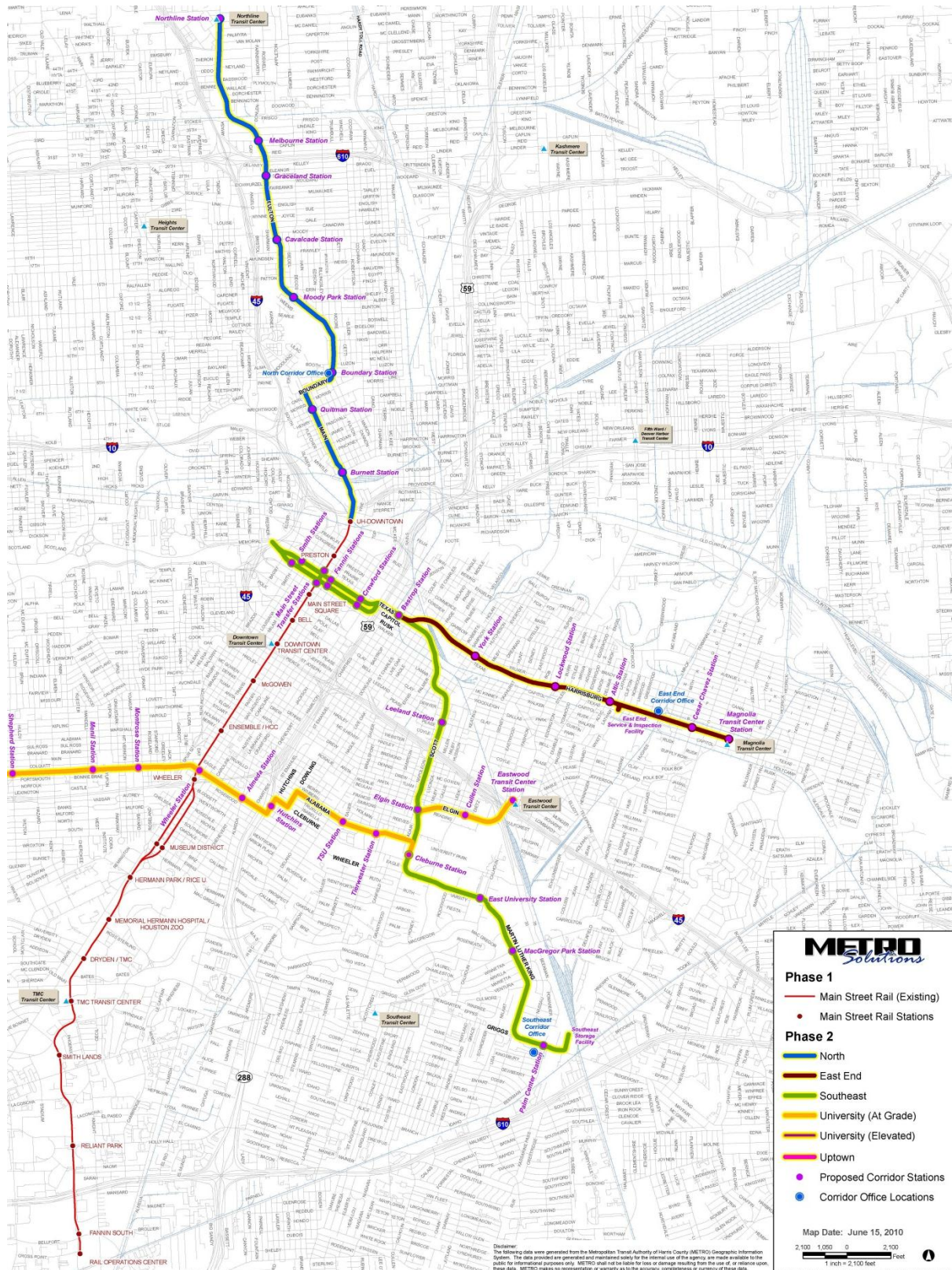
The Galveston-Houston commuter rail corridor has undergone several analyses over the last 10 years as listed below.

- Weekend passenger rail demonstration services (*Texas GulfLiner*) between League City and Galveston, 2002 and 2003
- Galveston-Houston ITS Commuter Rail Feasibility Study, 2008
- H-GAC Regional Rail Connectivity Study, 2008
- Galveston-Houston Mobility Corridor Alternatives Analysis, in progress

Alignments for the commuter rail line studied in the Galveston-Houston Mobility Corridor Alternatives Analysis include an alternative that follows the existing UP Galveston Subdivision with a termination at a connection with the West Belt Subdivision near Harrisburg Boulevard just northwest of the Sampson and York Street crossings as well as an alternative that follows the Glidden Subdivision from its connection with the UP Galveston Subdivision to connect to the West Belt Subdivision.

METRO System and Plans

The Metropolitan Transit Authority of Harris County, Houston, Texas (METRO) bus system includes several routes that run through the limits of this study. Existing bus routes utilize Lyons Avenue, Runnels Street, Navigation Boulevard, Sampson Street, York Street, and McKinney Streets across the West Belt. Additionally, the METRO Solutions Proposed Light Rail (LRT) System Map shows two future light rail lines that are currently under construction, the East End line and the Southeast line, that impact the improvements identified in this study. The existing and future light rail routes within the study limits are shown in Figure 3.



Greater East End Management District Plans and Studies

Management Districts are special districts created by the Texas Legislature. These districts are empowered to promote, develop, encourage and maintain employment, commerce, transportation, housing, tourism, recreation, arts, entertainment, economic development, safety and the public welfare. Management Districts are given the power to finance their operations by issuing bonds or other obligations, payable in whole or in part from ad valorem taxes, assessments, impact fees, or other funds of the District to provide improvements and services.²

The Greater East End Management District covers a 16-square-mile area between Clinton Drive on the north, Loop 610 on the east, Telephone Road to I-45 on the south, and the West Belt rail line on the west. The Greater East End Management District has proposed a vision for the area and has several projects underway. Notably, the Greater East End Management District has shown a preference for underpass structures as opposed to overpass structures at the proposed METRO East End light rail line Harrisburg Boulevard crossing with the East Belt rail line.

East Downtown Management District Plans and Studies

The East Downtown Management District boundaries are defined by the West Belt on the east and I-45 and US 59 on the west, forming a triangle. The East Downtown area is situated between downtown Houston and the East End of Houston.

The 2007-2011 Service Plan for the East Downtown Management District outlines the goals and initiatives planned for the District that address public safety, maintenance of public spaces, business development, and planning. A Master Plan has not yet been completed for the area, though it is included as a planning goal in the Service Plan.

The East Downtown Tax Increment Reinvestment Zone (TIRZ) No. 15 overlaps the boundaries of the East Downtown Management District. An Infrastructure Assessment Study was completed in 2009 to identify needed improvements to existing infrastructure in the East Downtown area. The street and utility improvements identified in that study include recommendations for three streets analyzed in this study, though the improvements were limited to areas west of this study's limits. Recommended improvements also included the replacement of sidewalks, ramps, curbs, drainage, and sanitary and water utility lines along Leeland, McKinney, and Hutchins Streets.

Additional studies for the East Downtown area were conducted for the Dynamo soccer stadium expected to open in 2012 as well as studies for additional pedestrian walkways in the region.

² <http://www.houstontx.gov/planning/Neighborhood/mgmt.html>

Houston Region Freight Study

The TxDOT Houston Region Freight Study (HRFS), completed in 2007, assessed railroad operating conditions and identified potential infrastructure improvements throughout eight counties in the Houston area. The 2007 study was conducted to identify improvements that would provide relief to residents and motorists adversely affected by delays, interruptions, and noise attributable to the movement of rail freight, and to rail carriers and shippers subjected to inefficiencies in the rail network. Grade separations, grade crossing closures, new rail connections, and expansions of track capacity comprised the majority of recommended infrastructure improvements, the effectiveness of which were validated by detailed grade crossing analyses and rail network simulations.

The HRFS included identified improvements at each of the at-grade crossings within this study. The public benefits of eliminating the at-grade crossings along the West Belt included in this study were estimated to be nearly \$134 million over 20 years. Additionally, the study included the analysis of private benefits to the railroads that could result from the removal of at-grade crossings in the area. The crossing improvements along the West Belt within the limits of this study contributed to the approximate \$73 million private benefit associated with Planning Case 2 analyzed in the HRFS. The crossing improvements would permit trains to stop on the West Belt (for crew changes, coordination of train moves, etc.) where they were previously unable to do so. These improvements would result in a shift of trains currently operating on the East Belt Subdivision, which has several at-grade crossings and runs through the East End, to instead operate on the proposed sealed corridor along the West Belt, which would improve the operational performance of the overall rail network as well as benefit the area with a five-mile quiet zone.

Gulf Coast Rail District Analysis of Rail Improvements

The Gulf Coast Rail District Analysis of Rail Improvements, completed in 2009, was based on the 2007 Houston Region Freight Study. The report quantified the amount of delay in moving specific commodities that is caused by congestion of the Houston rail network and updated the estimated costs and benefits associated with certain improvements identified in the Houston Region Freight Study. This follow-up work consisted of a coordinated effort between TxDOT and the Gulf Coast Rail District to more fully describe the benefits of investment on the Houston-area economy and to justify the implementation of rail improvement projects.

Evaluation Methodology

Each at-grade crossing along the West Belt, between Cullen Boulevard and railroad Tower 26, was evaluated to identify feasible improvements for the establishment of a sealed rail corridor. The evaluation methodology for improvements at each crossing was developed as a filtering process, in which each step of the process would determine if the least expensive alternative, closure, was feasible at that particular crossing.

Each crossing was first evaluated to determine if a crossing closure would be feasible based on impacts to surrounding mobility and safety (primarily first responder access and access to neighborhood schools) in the region. If a crossing closure was determined infeasible, a potential roadway overpass was analyzed as the next alternative. If an overpass was determined infeasible, impacts associated with a potential roadway underpass were analyzed. Variations of the overpass and underpass alternatives that incorporated railroad profile adjustments were evaluated as necessary based on geometric constraints.

This evaluation was completed with the goal of identifying the type of improvement at each crossing to be carried forward in the analysis process for community review, conceptual design and cost estimates. It is worth noting that the detailed cost estimates were not included in the evaluation matrix. General industry guidelines and examples of similar projects were considered when determining the relative cost of one type of improvement versus another. Crossing closure costs typically do not exceed \$100,000, when including the removal of pavement across the crossing, traffic signs, traffic barricades, minor roadway improvements such as paving and sidewalk improvements, and minor city traffic signal work associated with closing a crossing. The railroads typically pay for the costs associated with removing the crossing panels and signals within their right of way and at times have been known to provide a minimal financial contribution to the overall crossing closure cost.

Grade separation costs in a dense urban setting may vary widely depending on the value of required right-of-way acquisition and the type of structure used. Underpass structures are typically higher in cost than overpass structures for various reasons, such as the additional cost of drilled shaft retaining walls needed, as opposed to mechanically stabilized earth (MSE) walls typically used for overpasses. Additionally, railroad bridge structures as needed for a roadway underpass are generally costlier than those required to carry the vehicular loads associated with an overpass. Furthermore, underpass structures, in particular for the Houston area, may also include a cost for pump stations that may be needed to alleviate flood conditions.

For example, preliminary alternatives analysis of a grade separation at the intersection of Harrisburg Boulevard and the East Belt Subdivision determined that an overpass would cost approximately 25% less than an underpass (equivalent to a savings of approximately \$11 million). Traditionally, the lifetime maintenance costs associated with an underpass are typically higher than those associated with an overpass due to the exposure to accumulations of water, potential for impact damage due to vehicles exceeding the designed vertical clearance, lighting, and the operation of a pump station.

However, this study recognizes that cost is not the only factor that should be considered when evaluating transportation improvements in the region. Mobility, safety, integration with existing and planned infrastructure as well as community impacts and land use were also considered in the evaluation process.

Environmental impacts were not included in the evaluation criteria based on the assumption that an overpass structure or an underpass structure would have relatively similar environmental impacts, although an underpass may have higher costs associated with archeology and hazardous materials investigation and remediation. Environmental impacts were determined not to be a factor that could rule out one grade separation type in favor of another. The improvements were evaluated based on the considerations described as follows.

Crossing Closure Fatal Flaw Analysis

Mobility and Safety

Roadway Classification

The 2010 COH Major Thoroughfare and Freeway Plan (MTFP) was reviewed to determine the classification of each roadway. Streets classified as local streets were evaluated for potential closure, while roadways classified as major thoroughfares and collectors were determined to require grade separation. The roadway classifications according to the COH 2010 MTFP along the West Belt are shown in Figure 4.

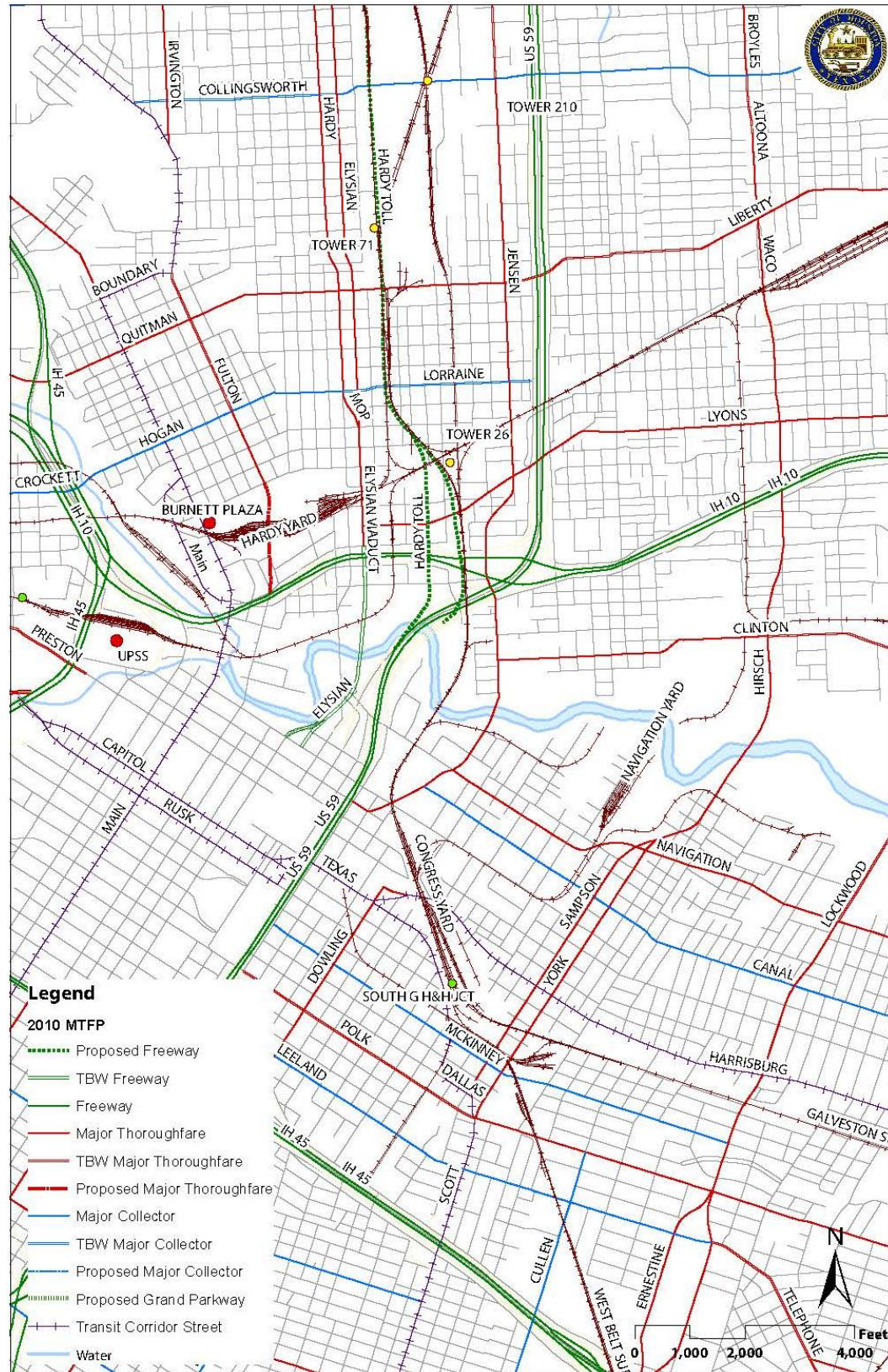


Figure 4: City of Houston 2010 MTFP Classifications Along the West Belt

Source: City of Houston Transportation Planning and Development Department

Vehicular Traffic Volume

The annual daily traffic (ADT) volumes for 2010 provided by the COH as well as the traffic projections contained in the H-GAC traffic demand model were reviewed at each crossing. Generally, crossings with ADT values over 3,000 were determined to be too high for closure and were evaluated for potential grade separation, with the exception of Nance Street (ADT = 4,620) which was evaluated for potential closure based on input from the Advisory Committee.

East-West Connectivity

The East End area of Houston, through which the West Belt passes, has historically been challenged with access/mobility issues associated with the many grade crossings located there. More recent developments, such as the construction of the George R. Brown Convention Center and various professional sports and entertainment facilities, have limited access to and from downtown. Grade crossing improvements were identified such that east-west connectivity would not be degraded and would, wherever possible, be enhanced. School district zones and neighborhoods they served were also reviewed to identify connectivity impacts to each recommendation.

Emergency Vehicle Response

Preservation of the accessibility of fire, police, and ambulance service to residences and businesses throughout the community was a critical component of the decision-making process. Consequently, potential grade crossing closures were identified only where the accessibility of these emergency response vehicles could be relatively unaffected. Fire, Police and related EMS facilities were mapped to identify connectivity impacts to each recommendation. Additionally, the Houston Fire and Police Departments were consulted to determine which crossings may be closed without negatively impacting emergency response operations. In many cases, closures were enabled by the access guaranteed with the addition of a grade separation at an adjacent crossing.

Pedestrian Safety & Accessibility

The identification of potential grade crossing closure locations included consideration for high pedestrian traffic volumes that travel between the east and west side of the West Belt to avoid impedence to existing and projected pedestrian mobility. Concerns over pedestrian safety also extended to the need for eliminating trespassers onto railroad right of way. Existing pedestrian access and bikeways were identified at each crossing as well as any plans from the COH Bikeway Program and the H-GAC Livable Centers Program.

Access to Public Transportation

The reliability of bus service to public transit riders must be preserved. Impacts to bus routes and bus stop locations were mapped and reviewed in the evaluation of crossing improvements. Although the presence of a bus route along a roadway would not necessarily prohibit the roadway from being closed at the crossing with the railroad, it would require mitigation efforts and coordination with METRO to reroute the bus traffic to an acceptable location. Sidewalk connectivity linking access along diverted routes was also evaluated.

Grade Separation Evaluation

Integration with Existing and Planned Infrastructure

Design Requirements and COH Design Standards

Conceptual engineering analysis and design of potential grade separations were based on the 2010 COH Infrastructure Design Manual. The design manual specified the design speed limits, horizontal and vertical geometry, vertical grades, and pavement widths for each roadway classification. Additionally, vertical clearances were based on the 2010 TxDOT Roadway Design Manual and the Union Pacific Railroad design standards. Each crossing was analyzed to determine if the potential grade separation alternatives would meet COH design standards based on existing geometric constraints of the roadways. Locations where design variances may be required were identified.

Impact on Proposed/Planned Infrastructure

Segments of the West Belt are in proximity to the proposed extension of the Hardy Toll Road from I-610 North Loop into downtown Houston. The recommendations for grade crossing improvements were evaluated with the goal of avoiding conflicts between West Belt projects and the Hardy Toll Road extension and the associated HB&T railroad relocation as well as other planned infrastructure.

Integration of Commuter Rail

Initial stages of a Houston region commuter rail system may consist of a commuter line operating between Galveston and Houston on the former GH&H rail line that runs parallel to SH 3 on the southeast side of town. This line could connect to downtown by running in proximity to the West Belt corridor. The analysis conducted in this study considered the potential interaction with commuter rail and possible future high speed passenger rail.

Integration of METRO Light Rail

Phase 2 of the Houston METRO light rail system includes two rail lines in proximity to the West Belt as shown previously in the METRO LRT map (Figure 3) and also Figure 4 (shown as transit street corridor). The Southeast corridor is nearest the West Belt to the west of Congress Yard. The East End line will run west along Harrisburg Boulevard and under the West Belt at the north end of Congress Yard. The analysis conducted in this study related to the development of a sealed rail corridor on the West Belt considered the location and interface with these METRO light rail lines.

Route Reliability

The decision to construct a grade-separated underpass rather than an overpass may create ponding issues within the underpass during extreme storm events, limiting roadway mobility. Therefore, the evaluation of specific structure types considered the type of grade separations nearby that might provide opportunity for rerouting traffic during flooding conditions.

Community Impacts

Visual Impacts

In the case of residential, retail, and office land uses, the construction of a structure may impose upon a property owner an obstructed sightline, sense of lost connectivity to nearby residences, or economic impacts. The various visual impacts of an overpass versus an underpass were considered at each crossing.

Environmental Justice

Environmental Justice analysis applies for all Federal funding projects. The Environmental Protection Agency's Office of Environmental Justice offers the following definition: "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies." The goal of this "fair treatment" is not to shift risks among populations but to identify potential disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.

As mentioned previously in the discussion of regional background for this study, the majority of residents along the West Belt are minorities (86%) with low to lower-middle income. Proposed improvements will provide measurable mobility and safety benefits to residents as well as enhanced quality of life with the establishment of a quiet zone.

The evaluation matrix created using the previously listed considerations is shown in Table 3.

Table 3: Evaluation Template

Crossing Closure Fatal Flaw Checklist	
Project Considerations	Evaluation Notes
Mobility & Safety	
Roadway Classification	Principal Thoroughfare, Major Thoroughfare, Major Collector, or Local Street
Vehicular Traffic Volume (ADT)	2010 COH ADT
East-West Connectivity	Discuss connectivity provided between points of interest, schools, and neighborhoods across rail line.
Emergency Vehicle Response	Discuss HFD and HPD response and relation to fire and police stations.
Pedestrian/ Bicycle Safety & Accessibility	Discuss existing pedestrian/ bikeways access and impacts of pedestrian/ bikeway plans from H-GAC Livable Centers.
Access to Public Transportation	Discuss presence of METRO bus routes and alternative routing options.
Resulting Recommendation	
Overpass Fatal Flaw Checklist	
Project Considerations	Evaluation Notes
Integration with Existing and Planned Infrastructure	
Design Requirements and COH Design Standards	Discuss ability to meet clearance and grade requirements given geometric constraints.
Impact on Planned Infrastructure and Development	Discuss coordination with Hardy Toll Road extension, HB&T RR relocation, H-GAC Livable Centers Program and other planned infrastructure.
Integration of Commuter Rail	Discuss impacts of potential future Houston to Galveston commuter rail line.
Integration of Light Rail	Discuss impacts of METRO LRT plans.
Community Impacts	
Visual Impacts	Discuss land use type and potential impacts of visual obstruction associated with an overpass.
Environmental Justice	Discuss potential Environmental Justice issues.
Resulting Recommendation	
Underpass Fatal Flaw Checklist	
Project Considerations	Evaluation Notes
Integration with Existing and Planned Infrastructure	
Design Requirements and COH Design Standards	Discuss ability to meet clearance and grade requirements given geometric constraints.
Impact on Planned Infrastructure and Development	Discuss coordination with Hardy Toll Road extension, HB&T RR relocation, H-GAC Livable Centers Program and other planned infrastructure.
Integration of Commuter Rail	Discuss impacts of potential future Houston to Galveston commuter rail line.
Integration of Light Rail	Discuss impacts of METRO LRT plans.
Route Reliability (flooding, alternative route, etc.)	Discuss if alternate route not susceptible to flooding is available.
Resulting Recommendation	

Traffic Impact Analysis

As was previously mentioned in the discussion of evaluation methodology, each at-grade crossing within the study limits was first evaluated to determine if a crossing closure would be feasible based on impacts to mobility and safety in the region.

The analysis of mobility consisted of both qualitative and quantitative assessments. The qualitative assessment used a combination of resources including information gathered from field investigations, coordination with the project Advisory Committee, investigation of planned infrastructure and development in the area, and existing conditions data such as COH traffic counts and roadway classifications. The quantitative assessment was performed using the H-GAC's Regional Travel Demand Model to evaluate various closure scenarios to determine what mobility impacts those closures could have on the adjacent roadway network.

Existing Conditions

The following section summarizes the existing conditions of each crossing based on field investigations and data provided by the COH.

West Street Crossing

COH MTFP Classification	Local Street
Existing Adjacent Land Use	Residential north of the crossing, vacant/ light commercial south of the crossing
Typical Section	Undivided, one lane each direction
Speed Limit	30 mph
Connectivity	West Street is a north-south local street that connects Lyons Avenue to Quitman Street just north of I-10. No signalized intersections currently exist on West Street.
METRO Bus Route	No
24 - Hour Traffic Volumes (Collected in 2010)	102 (NB) 78 (SB)

Lyons Avenue Crossing

COH MTFP Classification	Major Thoroughfare
Existing Adjacent Land Use	Commercial/industrial with some vacant parcels east of the railroad crossing
Typical Section	Undivided, one lane each direction
Speed Limit	30 mph
Connectivity	Lyons Avenue is the primary thoroughfare used for east-west mobility north of I-10 and south of the Terminal Subdivision. Lyons Avenue connects to Jensen Drive at a signal just east of the grade crossing and connects to US 59. West of the grade crossing Lyons Avenue forms a "T" intersection with McKee Street.
METRO Bus Route	Yes
24 - Hour Traffic Volumes (Collected in 2010)	1,921 (EB) 1,568 (WB)

Nance Street Crossing

COH MTFP Classification	Local Street
Existing Adjacent Land Use	Commercial/ Industrial
Typical Section	Undivided, one lane each direction
Speed Limit	30 mph
Connectivity	Nance Street is an east-west local street that connects to I-10 west of the railroad crossing and terminates at Jensen Drive east of the crossing. Traveling from west to east, I-10 has an exit ramp To directly access Nance Street from the west. This west-to-east Connection from I-10 provides for primary access to Jensen Drive for vehicles approaching from the west of I-10.
METRO Bus Route	No
24 - Hour Traffic Volumes (Collected in 2010)	4,134 (EB) 488 (WB)

Runnels Street Crossing

COH MTFP Classification	Local Street
Existing Adjacent Land Use	Residential on north side, light commercial/vacant on south side
Typical Section	Undivided, one lane each direction with a two-way left turn lane
Speed Limit	30 mph
Connectivity	Runnels Street is an east-west local street that connects to McKee Street to the west of the railroad crossing and intersects Jensen Drive (signalized) to the east turning into Navigation Boulevard which is designated as a major thoroughfare by the COH. Runnels Street provides the only access point for the Clayton Homes Head Start Center which is designated for low income housing.
METRO Bus Route	Yes
24 - Hour Traffic Volumes (Collected in 2010)	2,105 (EB) 3,081 (WB)

Commerce Street Crossing

COH MTFP Classification	Local Street
Existing Adjacent Land Use	Industrial/Light Commercial
Typical Section	Undivided, one lane each direction
Speed Limit	30 mph
Connectivity	Commerce Street is an east-west local street that provides access into downtown from the Greater East End. Commerce Street travels through downtown to the west of the crossing terminating at Milam Street and terminates east of the crossing at Milby Street in the Greater East End.
METRO Bus Route	No
24 - Hour Traffic Volumes (Collected in 2010)	353 (EB) 1,018 (WB)

Hutchins Street Crossing

COH MTFP Classification	Local Street
Existing Adjacent Land Use	Vacant/Light Commercial
Typical Section	Undivided, one lane each direction
Speed Limit	30 mph
Connectivity	Hutchins Street is a small north-south local street that connects Commerce Street to Preston Street just east of US-59. Hutchins Street intersects Commerce, Franklin, Congress and Preston Streets.
METRO Bus Route	No
24 - Hour Traffic Volumes (Collected in 2010)	868 (NB) 724 (SB)

Sampson Street Crossing

COH MTFP Classification	Major Thoroughfare
Existing Adjacent Land Use	Vacant/Light Commercial
Typical Section	One-way -two lanes southbound
Speed Limit	35 mph
Connectivity	Sampson Street is a one-way southbound major thoroughfare that connects the heart of the Greater East End to I-45 as it turns into Scott Street traveling south. In the vicinity of the West Belt crossing, Sampson Street intersects McKinney Street (signal) just south of the crossing and the next major intersection to the north is Harrisburg Boulevard (signal).
METRO Bus Route	Yes
24 - Hour Traffic Volumes (Collected in 2010)	2,824 (SB)

York Street Crossing

COH MTFP Classification	Major Thoroughfare
Existing Adjacent Land Use	Vacant/ Light Commercial
Typical Section	One-way, four lanes northbound
Speed Limit	35 mph
Connectivity	York Street is the other one-way couplet of Sampson Street. York Street is a one-way northbound major thoroughfare that connects the heart of the Greater East End to I-45 as it turns into Scott Street traveling south. In the vicinity of the West Belt crossing, York Street intersects McKinney Street (signal) south of the crossing. The next Major intersection to the north is Harrisburg Blvd (signal).
METRO Bus Route	Yes
24 - Hour Traffic Volumes (Collected in 2010)	2,395 (NB)

McKinney Street Crossing

COH MTFP Classification	Major Collector
Existing Adjacent Land Use	Light Commercial/Light Industrial
Typical Section	undivided, one lane each direction
Speed Limit	30 mph
Connectivity	McKinney Street is an east-west major collector that connects US-59 to Lockwood Drive. Adjacent to the West Belt crossing, McKinney Street has a signal at York Street to the west and Milby Street to the east.
METRO Bus Route	Yes
24 - Hour Traffic Volumes (Collected in 2010)	1,630 (Combined)

Milby Street Crossing

COH MTFP Classification	Local Street
Existing Adjacent Land Use	Light Commercial/Light Industrial
Typical Section	undivided, one lane each direction
Speed Limit	30 mph
Connectivity	Milby Street is a local north-south street that provides connectivity to Polk Street on the south side of the Greater East End and connection to Navigation Boulevard on the north side. At the West Belt crossing, Milby Street forms an offset "T" intersection with Polk street to south and intersects McKinney Street (signal) to the north.
METRO Bus Route	No
24 - Hour Traffic Volumes (Collected in 2010)	759 (NB) 1709 (SB)

Leeland Street Crossing

COH MTFP Classification	Major Collector
Existing Adjacent Land Use	Industrial/Commercial/Residential
Typical Section	undivided, two lanes each direction
Speed Limit	30 mph
Connectivity	Leeland Street is an east-west major collector that provides connectivity west of the crossing to downtown and east of the crossing to Telephone Road which connects to I-45. Adjacent signalized intersections to the West Belt crossing include Scott Street to the west and Cullen Boulevard to the east.
METRO Bus Route	No
24 - Hour Traffic Volumes (Collected in 2010)	1,879 (EB) 2,463 (WB)

Cullen Boulevard Crossing

COH MTFP Classification	Major Collector
Existing Adjacent Land Use	Industrial/Commercial/Residential
Typical Section	North of Crossing: Undivided, two lanes each direction South of Crossing: Divided, two lanes each direction
Speed Limit	35 mph
Connectivity	Cullen Boulevard is a north-south major collector that provides connectivity to I-45 and the University of Houston south of the West Belt Crossing. Just north of the West Belt crossing, Cullen Boulevard intersects Leeland Street (signal) and continues north into a residential area before ending at the Galveston Subdivision.
METRO Bus Route	No
24 - Hour Traffic Volumes (Collected in 2010)	3,859 (NB) 3,257 (SB)

Closure Analysis

The qualitative assessment of the crossings based on the existing conditions data as well as input from the Advisory Committee resulted in the identification of the following crossings as potential candidates for closure:

- West Street
- Nance Street
- Hutchins Street
- McKinney Street
- Milby Street

The above-listed crossings were then evaluated by looking at regional connectivity, road classification, exiting traffic volumes, impact to available parallel routes, and future demand for years 2015 and 2035.

The H-GAC Regional Travel Demand Model was used to determine the impact of planned closures by evaluating future roadway traffic volume projections and the impacts to the surrounding street network for years 2015 and 2035 for the planned closures. The closures of Nance and Milby Streets were included as part of this analysis; however, Hutchins and West Streets were excluded from the modeling analysis as they are not currently included within the H-GAC model. H-GAC independently performed the modeling for McKinney Street.

According to the COH MTFP Policy Statement, the effectiveness of the roadway in maintaining an acceptable standard of traffic flow, given its design capacity, is evaluated in terms of its level of service (LOS). LOS ratings use an alphabetic scale with "A" as most free-flowing and "F" as having severe congestion. Roadways with level-of-service "A" through "C" are desirable. Roadways with LOS "D" experience moderate congestion which is considered acceptable within the COH when considering the need to get the most out of infrastructure investments citywide. LOS

“E,” heavy congestion, and “F”, severe congestion, are usually addressed by increasing the number of traffic lanes and/or using other traffic control measures. Maps illustrating the levels of service and projected traffic volumes with and without closing the crossings for 2015 and 2035 scenarios at each of the potential closure locations can be found in the Appendix B.

Nance Street

The modeling results suggest that the closure of the at-grade crossing at Nance Street would not adversely impact the surrounding roadways and traffic patterns to a level that would be a cause for concern. The network would be able to absorb the closure of the at-grade crossing for Nance Street, since the adjacent streets have available capacity as shown in Table 4.

Table 4: Nance Street Travel Demand Model Results

Streets	2015		2015		2035		2035	
	No Closure		Closure		No Closure		Closure	
	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
Nance Street	2,700	A,B	n/a	n/a	6,200	A,B	n/a	n/a
Lyons Avenue	4,400	A,B	4,900	A,B	7,900	C	9,200	C
McKee Street	3,600	A,B	3,800	A,B	8,100	A,B	9,100	A,B
Jensen Drive	10,800	A,B	10,000	A,B	17,800	C	16,300	C

However, additional factors should be considered when analyzing the Nance Street closure option. First, the travel demand model results do not adequately reflect the current traffic volumes along Nance Street in year 2015. Based on traffic volumes collected by the COH in 2010, approximately 4,500 vehicles per day are using Nance Street, which is more than what the model is projecting for year 2015. Since Nance Street is considered a local street with limited connectivity, the regional model may be underestimating the usage of the route. It is therefore reasonable to assume that the same percentage increase between year 2015 and year 2035 found in the regional model would apply to the actual COH field traffic data resulting in a greater shift in traffic to the alternate routes than what is shown in Table 4.

Additionally, the model does not account for a recently-discussed development pattern that is proposed south of Burnett Street at the old Hardy Yard location, with traffic relying significantly on Clinton and Jensen Streets for local circulation patterns. Travelers destined to the proposed Burnett Street development from the west may use the Nance Street exit from I-10 resulting in a further increase in traffic volumes beyond what is represented in the model. These additional considerations indicate that although closure at Nance Street may not have adverse impacts to LOS in the near-term, a grade separation may be warranted in the future.

Milby Street

The analysis of the closure of the at-grade crossing at Milby Street showed impacts along Sampson and York Streets, Polk Street, and Harrisburg Boulevard. The modeling results showed that traffic on Sampson and York Streets would be

increased. The increase in traffic on York Street has relatively minimal impact to the level of service on the roadway, since York Street has available capacity in the model in 2015 and is at capacity in 2035. Sampson Street has already exceeded capacity in the model in year 2015, meaning that the model is routing non-local trips using alternate routes. As a result, the increase in volume on Sampson Street was not as significant as compared to York Street.

The modeling results for Polk Street seem counterintuitive given that the level of service either stays the same or improves resulting from closure at Milby Street. The modeling results indicate that the traffic diversions resulting from closing Milby would redirect congestion to Harrisburg Boulevard, Sampson Street and York Street, while Polk Street may actually benefit from the closure scenarios.

Harrisburg Boulevard will include one travel lane in each direction upon the completion of the East End LRT line, with LRT in the median. This typical section results in limited capacity along Harrisburg Boulevard, which means that even small increases in traffic would impact the LOS. The traffic diversions that would result from closing Milby Street caused moderate congestion increases on Harrisburg Boulevard in both the 2015 and 2035 forecast years.

Table 5: Milby Street Travel Demand Model Results

Streets	2015		2015	
	No Closures		Closure	
	Volume	LOS	Volume	LOS
Milby Street	8,700	C	800	A,B
Harrisburg Boulevard	8,100	A,B	12,600	D
Polk Street	11,300	D	5,300	A,B
McKinney Street	12,800	D	12,500	D
Sampson Street	13,300	E	15,100	E
York Street	12,300	A,B	16,000	C
Cullen Street	2,900	A,B	3,000	A,B
Streets	2035		2035	
Milby Street	12,900	D	6,700	A,B
Harrisburg Boulevard	14,200	E	15,900	E
Polk Street	15,700	F	11,300	D
McKinney Street	14,500	D	14,700	E
Sampson Street	18,500	F	18,900	F
York Street	21,600	D	24,000	D
Cullen Street	7,900	C	9,500	C

Preliminary Assessment of Improvements

An evaluation matrix was completed for each at-grade crossing within the study limits using the evaluation methodology previously described, including the traffic

impact analysis for potential crossing closures. The evaluation matrices are included in Appendix A, with the resulting preliminary assessment of improvements for each crossing summarized below and listed in Table 6.

West Street Crossing (Recommended Closure)

West Street is not in the H-GAC Regional Model since it has limited connectivity and is considered a local street. Closing West Street at the West Belt crossing is not anticipated to have an impact to the adjacent street network due to the low traffic volumes that are currently using the roadway (180 vehicles per day) and would not limit access from residential neighborhoods or to the local schools. Additionally, closing West Street would improve safety by eliminating the risk of vehicles becoming trapped between the West Belt and Terminal subdivision crossings along the roadway.

Lyons Avenue (Recommended Grade Separation - Underpass)

Lyons Avenue is classified as a major thoroughfare by the COH MTFP and is a major street for east-west connectivity north of I-10 with daily traffic of nearly 3,500 vehicles per day. It is recommended that Lyons Avenue remain open and be improved as a grade separation at the West Belt crossing. The grade separation at Lyons Avenue would need to be an underpass rather than an overpass due to the proximity of the Hardy Toll Road extension to the west of the crossing. An overpass would not be able to meet vertical clearance requirements over the railroad while maintaining vertical clearance requirements under the Hardy Toll Road extension.

Nance Street (Recommended Closure with Future Grade Separation Alignment Alternative)

As previously discussed, a closure at Nance is recommended as the near-term solution based on the traffic impact analysis. However, an alternative for a grade separation was developed should it be warranted in the future based on anticipated growth. A grade separation is not feasible at the existing crossing location due to the proximity of the direct connectors at the I-10/US 59 interchange. As a result, a new roadway alignment has been identified that would close the existing Nance Street crossing but provide a new roadway connection that may be grade-separated across the West Belt south of I-10 and US 59. The new alignment would connect south of the existing intersection of Jensen and Clinton Drives providing a logical access point into downtown that would not require the use of the freeway system. The grade separation would utilize the Rothwell Street alignment that currently terminates south of the US 59 elevated freeway as shown in Figure 5. Preliminary analysis indicates that the new alignment may shift approximately 2,500 vehicles to Clinton Drive, which has available capacity to handle the additional traffic.

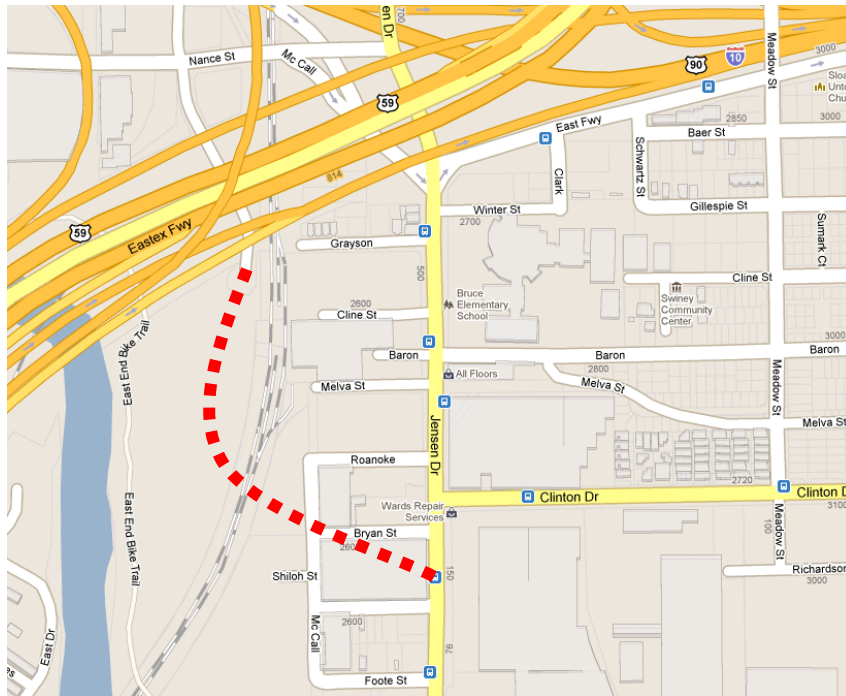


Figure 5: Alternative Alignment for Grade Separation at Nance Street

Runnels Street (Recommended Grade Separation - Underpass)

Although Runnels Street is classified as a local street by the COH, it carries the second highest crossing traffic volume within the study area with nearly 5,200 daily vehicles. Runnels Street connects to McKee Street to the west, which provides access into downtown, and becomes Navigation Boulevard to the east. Runnels Street is also used as an emergency response route for police, fire, and EMS responders. Due to the adjacent closure of Canal Street and limited connectivity west of US 59, it is recommended that this street remain open and improved with a grade separation at the West Belt crossing. An underpass is recommended at this location due to the geometry constraints imposed by the proximity of the US 59 northbound frontage road west of the crossing as well as considerations for access and visual obstruction to the residential development located northwest of the crossing.

Commerce Street (Recommended Grade Separation - Underpass)

Commerce Street is classified as by the COH as a local street; however, Commerce Street contributes to connectivity throughout the East End and to downtown west of US 59. In order to maintain east-west connectivity and an alternate route for emergency responders, it is recommended that Commerce Street be developed in conjunction with the Navigation Boulevard as a grade separation. Navigation is considered a major thoroughfare within the study area by the COH and is currently grade-separated as an underpass beneath the West Belt Crossing. It is recommended that Navigation Boulevard and Commerce Street be reconstructed each as an underpass with an intersection within the underpasses.

Hutchins Street (Recommended Closure)

Hutchins Street is listed as a local street in the COH MTFP, has a relatively low vehicular traffic volume of approximately 1,600 vehicles per day, and provides minimal connectivity for the area. Closing Hutchins Street will not impact the study area from a traffic mobility perspective as long as Commerce Street and Navigation Boulevard are grade-separated. Hutchins Street provides for emergency access as an alternate route, although the proposed construction of an improved Commerce and Navigation underpass would provide a reliable emergency access route. It is recommended that Hutchins Street be closed at the West Belt crossing.

Sampson Street (Recommended Grade Separation - Underpass)

Sampson Street is classified as a major thoroughfare and is critical to connectivity throughout the East End from Navigation Boulevard to I-45. Traffic volumes on Sampson Street are projected to exceed 18,000 vehicles in 2035. It is recommended that Sampson Street remain open and be improved with a grade separation combined with York Street to travel under both the Galveston and West Belt subdivisions. The underpass would provide for the future opportunity to grade-separate a potential commuter rail line along the Galveston Subdivision at the connection with the West Belt.

York Street (Recommended Grade Separation - Underpass)

York street is the one-way pair to Sampson Street and is important to connectivity throughout the East End from Navigation Boulevard to I-45. It is recommended that York Street remain open and be improved with a grade separation combined with Sampson Street to underpass both the Galveston and West Belt subdivisions. The underpass would provide for the future opportunity to grade separate a potential commuter rail line along the Galveston Subdivision at the connection with the West Belt.

McKinney Street (Recommended Closure)

McKinney Street is classified as a major collector in the East End, although the traffic volume is less than 2,000 vehicles per day. Closing McKinney Street at the West Belt crossing is not anticipated to have an impact to the adjacent street network due to the low traffic volumes that are currently using the roadway based on the modeling results provided by H-GAC. Routing of the METRO bus line that utilizes McKinney Street would need to be addressed.

Milby Street (Recommended Closure)

The crossing of the West Belt Subdivision at Milby Street is located on the south end of the road just north of where it terminates at Polk Street. Since the crossing is located near the end of Milby Street, closing the roadway will not have a significant impact to surrounding traffic mobility. Furthermore, Milby Street is located in close proximity to Polk Street to the south, which is already grade separated. It is recommended to close Milby Street at the crossing with the West Belt.

Leeland Street (Recommended Grade Separation)

Leeland Street is listed as a major collector in the COH MTFP and provides east-west connectivity between US 59 and Telephone Road across the West Belt Subdivision. It is recommended that Leeland Street remain open and be improved with a grade separation combined with Cullen Boulevard as an overpass or underpass at the West Belt.

Cullen Boulevard (Recommended Grade Separation)

Cullen Boulevard is listed as a major collector in the COH MTFP and provides north-south connectivity between I-45 and the East End across the West Belt Subdivision. It is recommended that Cullen Boulevard remain open and be improved with a grade separation combined with Leeland Street as an overpass or underpass at the West Belt.

Table 6: Summary Preliminary Assessments of Crossing Improvements

Street Name	COH MTFP Classification	COH Traffic Count (2010)	Preliminary Assessment
West	Local Street	180	Closure
Lyons	Major Thoroughfare	3,489	Grade Separation - Underpass
Nance	Local Street	4,622	Closure at Existing Crossing, Grade Separation (Overpass) at New Alignment Crossing
Runnels	Local Street	5,187	Grade Separation - Underpass
Commerce	Local Street	1,372	Grade Separation - Underpass
Hutchins	Local Street	1,592	Closure
Sampson	Major Thoroughfare	2,824	Grade Separation - Underpass
York	Major Thoroughfare	2,396	Grade Separation - Underpass
McKinney	Major Collector	1,630	Closure
Milby	Local Street	2,467	Closure
Leeland	Major Collector	4,342	Grade Separation
Cullen	Major Collector	7,116	Grade Separation

Conceptual Designs and Estimated Project Costs**Methodology**

The conceptual-level estimates provided for each grade separation include construction costs (roadway, structure, and other miscellaneous items), professional services costs (environmental, preliminary engineering, final design, and construction administration), and right-of-way acquisition costs.

Construction and right-of-way costs are based on conceptual-level designs completed at each location using design standards outlined in the City of Houston Roadway Design Manual and vertical clearance requirements as defined by Union Pacific Railroad for roadway overpasses (23'-0" minimum clearance) and TxDOT for roadway underpasses (16'-6" minimum clearance). The designs assume a depth of

six feet from the top of rail to the bottom of the rail bridge structure for the roadway underpass grade separations.

The designs were developed using existing ground elevations taken from contours contained in the latest available LiDAR data for Harris County, which was collected in 2003. Since City of Houston average unit costs were not readily available, unit costs for construction items were based primarily on TxDOT Houston District average unit bid prices as well as average bid prices published by Harris County and previous work with the City of Houston. Items that were not designed in the conceptual engineering phase were estimated on either a cost per unit length of the project (e.g., drainage, lighting, pavement markings) or as an overall percentage of the construction value (e.g., utility adjustments, traffic control, landscaping). Additionally, although not designed at the conceptual engineering stage, pump station costs were estimated to be between \$3 million and \$5 million for underpass structures. A construction contingency of 30% was included in the estimates to account for miscellaneous items that will be required that are not included in the conceptual-level cost estimate.

Costs for professional services included costs for required environmental permitting work in accordance with the National Environmental Protection Act (NEPA), preliminary engineering, final design, as well as construction administration. The estimated cost for environmental work was estimated as 5% of the construction cost, which accounts for the possibility that an Environmental Impact Statement (EIS) may be required. In the event that an Environmental Assessment (EA) is required rather than an EIS, the environmental cost may be closer to 2% of the construction value of each grade separation. The cost of basic engineering services was estimated using the City of Houston fee curve for basic services, which details the design fee percentage of a project based on the construction cost. The total design fee was then broken down into preliminary engineering (35%), final design (50%), and construction administration (15%). An additional \$45,000 to \$50,000 was added to the preliminary engineering fee to account for additional services such as geotechnical analysis and surveying that are not included in the basic services cost estimated in the City of Houston fee curve.

Quantities for right-of-way acquisitions were determined based on the conceptual designs and include both partial and whole acquisitions for properties that would be encroached upon by the grade separation as well as properties that would lose roadway access. The grade separation designs minimized right-of-way acquisitions and provided access driveways where possible. The right-of-way acquisition costs were estimated based on the total area (square feet) of right of way to be acquired and the average value per square foot of surrounding properties as obtained from Harris County Appraisal District (HCAD) data for each grade separation. The HCAD appraisal values were then doubled (based on data compiled during the ROW acquisition phase for TxDOT's US 290/Loop 610 interchange project) to account for differences in appraisal values and true market values as well as additional

acquisition fees including title transfers, condemnation requirements, hearings, relocation fees, and other miscellaneous costs.

The estimated costs for the crossing closures include the removal of pavement, the installation of traffic barricades and traffic signs and design services. The removal of the crossing panels and traffic signals at the railroad are also included as part of the estimated costs; however, the railroad owner may assume a portion or all of these costs as part of the crossing closure.

The costs shown in the estimates represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from the provided estimates.

Conceptual Designs

The conceptual design exhibits and cost estimates for each recommended improvement are included in Appendices C and D, respectively, and summarized below.

West Street Crossing (Recommended Closure)

The recommended closure at West Street would close three at-grade crossings (one at the West Belt, one at the Terminal Subdivision mainline, and one at the wye track in the northeast quadrant of the intersection of the West Belt and Terminal Subdivision). The closure would improve safety by preventing vehicles from becoming trapped along the roadway between the different rail lines.

Traffic north of the closure on the Terminal Subdivision would be rerouted from West Street east along Mills Street to cross the railroad via Jensen Drive, which is an existing grade separation at the Terminal Subdivision. Traffic south of the closure on the West Belt would be rerouted from West Street west along a new-location segment of Opelousas Street and then south on Semmes Street to cross the railroad via Lyons Avenue, which is included in this study as a recommended grade separation at the West Belt. The Lyons Avenue crossing is located approximately 800 feet south of the West Street crossing on the West Belt and the Jensen Drive is located approximately 1,400 feet (0.25 mile) east on the Terminal Subdivision. The estimated cost for the closure of West Street is \$46,000.

Lyons Avenue (Recommended Grade Separation - Underpass)

The recommended underpass at Lyons Avenue consists of one 14-foot-wide vehicular lane, a 6-foot-wide bike lane, and a 5-foot-wide sidewalk in each direction as shown in the typical section in Appendix C. The bike lanes are included in the design since Lyons Avenue is identified as a bike route in the City of Houston Bikeway Network Map. The underpass has a design speed of 45 mph based on the COH roadway classification as a major thoroughfare and would provide a minimum roadway clearance of 18 feet beneath the rail bridge. A design variance with the COH would be required for the conceptual design vertical grade of 5%, which

exceeds the design standard of 3.5% for major thoroughfares. The variance would be required to shorten the length of the grade separation in order to avoid removing direct roadway access to properties between West and Semmes Streets that would result significant right-of-way acquisition.

The conceptual design would require the closure of West Street at the intersection with Lyons Avenue. Access for properties along West Street to the adjacent roadway network is proposed via a connection to an existing driveway south of Lyons and an extension of Opelousas Street along existing COH right of way between Semmes and West Streets north of Lyons. The access roadways would reduce the amount of right-of-way acquisition required due to the grade separation.

The underpass would require a pump station to mitigate potential hazards in flood events. The conceptual design includes a pump station as well as an access driveway to the pump station north of Lyons on the east side of the West Belt.

Right-of-way acquisition for the conceptual design includes property for the pump station and access road northeast of the crossing. Additional property acquisition would be required north of Lyons on the east side of the West Belt due to the proximity of buildings to the grade separation and the access to the buildings that would be lost due to the grade separation.

The estimated cost of the Lyons Avenue underpass is approximately \$13.66 million, including construction, design, and right-of-way fees.

Nance Street (Recommended Closure with Future Grade Separation Alignment Alternative)

The recommended closure at Nance Street would occur just west of the West Belt crossing as well as at Jensen Drive on the east side of the West Belt. Traffic on the west side of the rail line would be rerouted from Nance Street north along Hardy Road to cross the West Belt at Lyons Avenue, which is included in this study as a recommended grade separation at the West Belt. Traffic on the east side of the rail line would be rerouted from Nance Street north along Jensen Drive to cross the West Belt at Lyons Avenue.

The estimated cost to close Nance Street is \$140,000, and includes the removal of pavement from the closure just west of the rail line to the intersection with Jensen Drive as well as the existing pavement along Nance Street beneath US 59 to the connection with Jensen Drive south of US 59. The removal of the existing bridge just east of the crossing is also included.

A grade separation alternative was developed as a potential future alternative that may be warranted by anticipated development, including the Hardy Yard development previously discussed. The potential grade separation alternative would utilize a connection along Rothwell Street that currently crosses under US 59 just south of the existing Nance Street grade crossing. The identified grade separation

would require an extension of Rothwell Street to cross the West Belt as an overpass and connect to Jensen Drive.

The future overpass alternative has a design speed of 35 mph based on the COH roadway classification as a local street and would provide a minimum roadway clearance of 25'-9" beneath the rail bridge. The estimated cost of the Nance Street overpass alternative is approximately \$6.74 million, including construction, design, and right-of-way fees.

Runnels Street (Recommended Grade Separation - Underpass)

The recommended underpass at Runnels Street consists of one 14-foot-wide vehicular lane and a 5-foot-wide sidewalk in each direction as shown in the typical section in Appendix C. The underpass has a design speed of 35 mph based on the COH roadway classification as a local street and would provide a minimum roadway clearance of 16'-7" beneath the rail bridge. A design variance with the COH would be required for the conceptual design vertical grade of 6.5%, which exceeds the design standard of 6% for local streets due to the available distance between the US 59 northbound frontage road and the rail line to meet vertical clearance requirements. Additionally, the design would require modification to the existing rail profile by raising the rail line 1 foot to meet the clearance requirement. The design includes sidewalks elevated above the roadway level to allow the sidewalks to meet ADA requirements for a maximum vertical grade of 5%.

The conceptual design would require the closure of East Drive at the intersection with Runnels Street, which provides access to the residential housing development north of Runnels Street on the west side of the West Belt. The conceptual design would maintain access to the housing development through West Drive and would provide for an additional emergency access road across the bridge on the west side of the rail line, though details for the emergency access road were not designed and would be determined during final design.

Access for properties north of Runnels east of the West Belt would be maintained via Lottman Street, though the intersection would require reconstruction to meet the vertical elevation of the Runnels Street underpass. The conceptual design provides for an additional emergency access road across the bridge on the east side of the rail line. The properties south of Runnels on the west side of the rail line would lose direct access to Runnels due to the grade separation, although they would maintain direct access to the US 59 frontage road that connects to the underpass at Runnels.

The underpass would require a pump station to mitigate potential hazards in flood events. The conceptual design includes a pump station as well as an access driveway to the pump station south of Runnels on the east side of the West Belt on undeveloped property. Right-of-way acquisition would be required south of Runnels on the east side of the West Belt for the pump station and access road.

The estimated cost of the Runnels Street underpass is approximately \$12.54 million, including construction, design, and right-of-way fees.

Commerce Street (Recommended Grade Separation - Underpass)

The recommended Commerce Street grade separation would require reconstruction of the existing Navigation Boulevard grade separation, since the roadways intersect at the crossing with the rail line. The conceptual design shows a proposed underpass for both Commerce and Navigation.

The recommended underpass at Commerce Street consists of two vehicular lanes (one 12-foot-wide lane and one 13-foot-wide lane) and a 5-foot-wide sidewalk in each direction as shown in the typical section in Appendix C. The Commerce Street underpass has a design speed of 35 mph based on the COH roadway classification as a local street and would provide a minimum roadway clearance of 16'-6" beneath the rail bridge. A design variance with the COH would be required for the conceptual design vertical grade of 7.1%, which exceeds the design standard of 6% for local streets due to the available distance between US 59 and the rail line to meet vertical clearance requirements. Additionally, the design would require modification to the existing rail profile by raising the rail line 1 foot to meet the clearance requirement. The design includes sidewalks elevated above the roadway level to allow the sidewalks to meet ADA requirements for a maximum vertical grade of 5%.

The revised underpass along Navigation Boulevard consists of two vehicular lanes (one 12-foot-wide lane and one 13-foot-wide lane), a 6-foot-wide bike lane, and a 5-foot-wide sidewalk in each direction. The Navigation Boulevard underpass has a design speed of 45 mph based on the COH roadway classification as a major thoroughfare and would provide a minimum roadway clearance of 16'-6" beneath the rail bridge. The existing underpass at Navigation has only one traffic lane in each direction and has a 13' vertical roadway clearance. A design variance with the COH would be required for the conceptual design vertical grade of 6.0%, which exceeds the design standard of 3.5% for major thoroughfares due to the available distance between US 59 and the rail line to meet vertical clearance requirements. The sidewalks shown in the typical section are elevated above the roadway level to allow the sidewalks to meet ADA requirements for a maximum vertical grade of 5%.

The conceptual design would require the closure of St Emanuel Street at Navigation Boulevard, Hutchins Streets at the intersection with Commerce Street, and the closure of Franklin Street between Navigation and Hutchins. First responders do not anticipate negative impacts resulting from these closures with the improvements in place based on discussions in the Advisory Committee Meetings. The properties located between Navigation and Commerce on the east and west sides of the West Belt would lose roadway access and have to be acquired.

The underpass would require a pump station to mitigate potential hazards in flood events. The conceptual design includes a pump station as well as access to the pump station via Hutchins Street south of Navigation Boulevard on the west side of the West Belt on undeveloped property.

Right-of-way acquisition for the conceptual design would include an approximate 15- to 20-foot-width strip along each side of the Navigation Boulevard grade separation

to account for the widened roadway section to include the additional traffic and bike lanes, sidewalks, buffers, and retaining walls. Additional property acquisition would be required between Navigation and Commerce on the east and west sides of the West Belt.

The estimated cost of the Commerce/ Navigation underpass is approximately \$22.48 million, including construction, design, and right-of-way fees.

Hutchins Street (Recommended Closure)

The recommended closure at Hutchins Street is dependent on the completion of the grade separations at Commerce and Navigation. Additionally, the Commerce/ Navigation underpass design requires the closure of Hutchins Street. Traffic on the south side of the rail line would be rerouted from Hutchins west along Congress Avenue to cross the West Belt at Navigation Boulevard or Commerce Street, which are included as recommended grade separations in this study. The recommended grade-separated crossing is located approximately 50 feet north of the Hutchins Street crossing.

The Downtown-EaDo Livable Centers Study includes a recommendation for pedestrian/ bicycle improvements that would include six-foot sidewalks and a dedicated six-foot bike lane along Hutchins Street. The pedestrian and bicycle facilities would be provided on both sides of the street requiring a total of 24-feet of right of way for non-motorized uses, which could be accommodated with modifications to the proposed Navigation/ Commerce Street grade separation if Hutchins Street is closed as proposed in this GCRD West Belt Improvements Study.

The estimated cost to close Hutchins is included in the grade separation cost for the Commerce/ Navigation underpass.

Sampson and York Streets (Recommended Grade Separation - Underpass)

The recommended grade separation at Sampson and York Streets would modify the alignments of the two roadways to merge them into one underpass beneath both the West Belt and UP Galveston Subdivision. The existing at-grade crossing at Sampson Street and the West Belt would be closed as part of the grade separation, though the Sampson Street crossing on the UP Galveston Subdivision would remain open to maintain property access between the two rail lines.

The recommended combined underpass for Sampson and York Streets consists of four vehicular lanes (three 12-foot-wide lanes and one 13-foot-wide lane) and a 5-foot-wide sidewalk in each direction as shown in the typical section in Appendix C. The typical section also shows an 8-foot median to allow for a center bent for the railroad bridge.

The underpass has a design speed of 45 mph based on the COH roadway classification as a major thoroughfare and would provide a minimum roadway clearance of 18'-3" beneath the rail bridge. A design variance with the COH would be required for the conceptual design vertical grade of 5%, which exceeds the

design standard of 3.5% for major thoroughfares due to the available distance between the West Belt crossing and Polk Street on the south side and between the Galveston Subdivision crossing and Harrisburg Boulevard on the north side. The underpass structure would be at-grade at the intersections with Polk Street and Harrisburg to maintain connectivity with those roadways as well as to avoid any impacts to the METRO East End light rail line under construction along Harrisburg Boulevard.

The conceptual design would require the closure of McKinney Street at the intersection with York Street and the closure of Texas Avenue at the intersection with Sampson Street. Intersections with Dallas Avenue, Lamar Street, and Texas Avenue (at York Street) would need to be reconstructed and re-graded to maintain connectivity with the proposed Sampson/ York underpass.

The underpass would require a pump station to mitigate potential hazards in flood events. The conceptual design includes a pump station as well as access to the pump station via Rusk Street west of the proposed underpass.

Right-of-way acquisition for the conceptual design would require several properties between the existing Sampson and York Street alignments along the length of the potential underpass due to the proposed grade separation alignment that merges the two roadways together to cross the rail lines. Alternatives to maintain separate grade separations for Sampson and York were considered, though they were determined to have greater costs and would still eliminate roadway access to properties located between the two roadways.

The estimated cost of the Sampson/ York underpass is approximately \$30.72 million, including construction, design, and right-of-way fees.

McKinney Street (Recommended Closure)

The Sampson/ York underpass design requires the closure of McKinney Street. Traffic on the west side of the rail line would be rerouted from McKinney to cross the West Belt at Polk Street, which is an existing underpass at the West Belt, or at the proposed Sampson/ York Streets underpass as included in this study. Traffic on the east side of the rail line would be rerouted from McKinney Street south on St. Joseph Street to cross the West Belt using the existing Polk Street underpass. The Polk Street grade separated crossing is located approximately 1,200 feet (0.22 miles) south of the McKinney Street crossing. Routing of the METRO bus line that utilizes McKinney Street would need to be addressed in the next stage of this project and should consider changes to METRO bus service in the area expected upon completion of the METRO LRT lines. The estimated cost to close McKinney is included in the grade separation cost for the Sampson/ York underpass.

Milby Street (Recommended Closure)

The recommended closure at Milby Street would occur at the boundaries of the railroad right of way on each side of the West Belt rail line. Traffic on the west side of the rail line would be rerouted from Milby to cross the West Belt at Polk Street,

which is an existing underpass at the West Belt. Traffic on the east side of the rail line would be rerouted from Milby Street east along Woodleigh Street and then south on St. Joseph Street to cross the West Belt at Polk Street. The Polk Street grade separated crossing is located approximately 400 feet south of the Milby Street crossing. The estimated cost to close Milby Street is \$30,000.

Leeland Street and Cullen Boulevard (Recommended Grade Separation)

The recommended grade separations for Leeland Street and Cullen Boulevard would intersect approximately 400 feet north of the crossing with the rail line, which is not enough distance for either grade separation to return to existing grade. The conceptual designs show that both an overpass and an underpass are feasible alternatives. The grade separation alternatives maintain connectivity between the two roadways with either an elevated (overpass) or depressed (underpass) intersection of Leeland Street and Cullen Boulevard.

The recommended grade separations at both Leeland Street and Cullen Boulevard consist of two vehicular lanes (one 12-foot-wide lane and one 13-foot-wide lane). The design also includes a 5-foot-wide sidewalk along Leeland and a 9-foot-wide shared-use path in each direction along Cullen, since Cullen is included in the Houston Bikeway Network Map, as shown in the typical section in Appendix C. The proposed grade separations have a design speed of 45 mph based on the COH major collector roadway classification and would provide a minimum clearance of 24'-5" above the rail line for the overpass alternative and 16'-6" above the roadway for the underpass alternative.

The conceptual design for the overpass alternative would require the closure of Jefferson, Bell, and Clay Streets at the intersections with Cullen Boulevard and the closure of Keating and Ingeborg Streets at the intersections with Leeland Street. The design includes an access road between Keating Street and Hussion Street to maintain roadway access to properties along Keating Street. The conceptual design for the underpass alternative would require the same closures as the overpass alternative, with the exception of Clay Street which would remain open. First responders do not anticipate negative impacts resulting from these closures with the improvements in place based on discussions in the Advisory Committee Meetings.

Right-of-way acquisition for the conceptual design would include an approximate 2- to 5-foot-width strip along the grade separation to account for the widened roadway to include the bike lanes, sidewalks, buffers, and retaining walls. Additional property acquisition would be required for properties along Leeland Street and Cullen Boulevard that would lose direct roadway access due to the grade separations.

The estimated cost of the Leeland/ Cullen overpass alternative is approximately \$28.09 million while the underpass alternative is estimated to cost \$34.88 million, including construction, design, and right-of-way fees.

Summary of Recommended Improvements and Costs

The recommended improvements are shown in Figure 6 and associated costs are summarized in Table 7 for each of the West Belt crossings included in this study.



Figure 6: West Belt Improvement Recommendations

The cost at Nance does not include the future option for a grade separation and only includes the cost for the near-term recommended improvement of a crossing closure. Table 7 also shows the estimated preliminary and environmental design fees (listed as PE + NEPA in the table), which are included in the total estimated costs, needed to complete the preliminary work that would be necessary prior to receiving funding for final design and construction.

Table 7: Summary Recommended Improvements and Estimated Costs

Street Name	Recommended Improvement	Estimated Total Cost	PE + NEPA
West	Closure	\$46,000	\$11,000
Lyons	Grade Separation - Underpass	\$13,660,000	\$900,000
Nance	Closure (future grade separation alternative identified not included in cost)	\$140,000	\$24,000
Runnels	Grade Separation - Underpass	\$12,540,000	\$860,000
Navigation & Commerce	Grade Separation - Underpass	\$22,480,000	\$1,220,000
Hutchins	Closure	Cost Included with Commerce & Navigation	
Sampson & York	Grade Separation - Underpass	\$30,720,000	\$1,860,000
McKinney	Closure	Cost Included with Sampson & York	
Milby	Closure	\$30,000	\$11,000
Leeland & Cullen	Grade Separation (Cost for overpass option shown though underpass option also feasible)	\$28,090,000	\$1,175,000
Total		\$107,706,000	\$6,061,000
Note: Closure costs shown in the PE + NEPA column are total design costs.			

ADVISORY COMMITTEE & STAKEHOLDER OUTREACH

The goals of the Stakeholder Outreach Process were three-fold:

1. Coordinate development of recommendations with public agencies that manage and use right of way within the Study Area to develop proposed improvements that are consistent with local plans and operating requirements.
2. Allow the Public through established organizations (East End Chamber of Commerce, Super Neighborhoods, etc.) an opportunity to voice suggestions and concerns specific to the at-grade crossings within the Study Area.
3. Take the meaningful input from Stakeholders and the Public to inform Study recommendations and next steps.

The public/stakeholder outreach process was comprised of Advisory Committee/Stakeholder meetings, public meetings, and coordination meetings with local elected officials. The Advisory Committee was formed to provide input used to guide preliminary assessments of improvements. Subsequently, elected/appointed

officials were informed of potential improvements, and the results of the study were presented to the public at community meetings.

Advisory Committee Meetings

Advisory Committee Meetings were conducted throughout the life of this Project to receive input from select Stakeholders regarding logistical, political, and quality of life issues within the Study Area to inform final Study recommendations. The members of the Advisory Committee are listed below:

Joe Adams
Vice President – Public Affairs
Union Pacific Railroad

Carl Matejka
Executive Assistant Chief
Houston Fire Department

Chandra Bondzie
Senior Transportation Planner
Houston-Galveston Area Council

Hugh McCulley
Representing HB&T Railroad and
BNSF Railway

Alan Clark
Transportation Director
Houston-Galveston Area Council

Amar Mohite
Transportation Planner, Planning and
Development Department
City of Houston

Maureen Crocker
Executive Director
Gulf Coast Rail District

Officer A.G. Olvera
Houston Police Department

Charles Dean
Planning Director, Public Infrastructure
Harris County

Patrick Porzillo
Assoc. Vice President, Commuter Rail
Houston METRO

Officer Jack Hanagriff
FRA Law Enforcement Liaison
Houston Police Department

Officer Travis Schmidt
Houston Police Department

Dale Hill
Manager, Industry and Public Projects
Union Pacific Railroad

Rakesh Tripathi
Director of Planning, Houston District
Texas Department of Transportation

Mike Kramer
Assistant Director, Planning and
Development Department
City of Houston

Chris Van Slyke
Transportation Program Manager
Houston-Galveston Area Council

Mark Loethen, P.E.
Deputy Director, Public Works &
Engineering Department
City of Houston

Jeff Weatherford, P.E.
Deputy Director, Public Works &
Engineering Department
City of Houston

Advisory Committee Meeting 1

The first Advisory Committee meeting took place on May 26, 2011 and served as an opportunity to lay the groundwork for the Study, familiarize the Committee with the project, and to gain input from Committee members. Input requested from the Committee included knowledge of area developments that may impact the crossings in the study and any concerns or known issues with grade separating or closing the at-grade crossings.

The attendance at the meeting included representatives from the project study team, the City of Houston, Harris County, H-GAC, TxDOT, the Houston Fire and Police Departments, and the railroads (UP and BNSF) for a total of 17 attendees.

Key topics discussed at the meeting are listed below.

- Study goals and purpose
- Study area map and list of at-grade crossings
- At-grade crossings included in other projects (e.g., Hardy Toll Road extension, HB&T relocation) that will not be included in this study
- Considerations for each at-grade crossing included in this study and implications to proposed improvements

Advisory Committee Meeting 2

The second Advisory Committee meeting took place on July 28, 2011 and served as an opportunity to present the evaluation methodology developed and the preliminary assessments of improvements and to gain input from Committee members. Input requested from the Committee included any concerns or comments regarding the evaluation methodology, traffic impact analysis, and resulting preliminary recommended list of improvements.

The attendance at the meeting included representatives from the project study team, the City of Houston, Harris County, H-GAC, TxDOT, the Houston Fire and Police Departments, the railroads (UP and BNSF), and METRO for a total of 17 attendees.

Key topics discussed at the meeting are listed below.

- Evaluation methodology and evaluation matrices
- Traffic modeling results for potential closures
- Preliminary recommended improvements at each crossing

Advisory Committee Meeting 3

The third and final Advisory Committee meeting took place on October 20, 2011 and included the review of conceptual designs and cost estimates as well as discussion of next steps for the project. Input requested from the Committee included concerns or comments regarding design impacts, particularly in regards to emergency response issues.

The attendance at the meeting included representatives from the project study team, the City of Houston, Harris County, H-GAC, the Houston Fire and Police Departments, and the railroads (UP, HB&T, and BNSF) for a total of 12 attendees.

Key topics discussed at the meeting are listed below.

- Right-of-way acquisition requirements associated with the conceptual grade separation designs
- Pedestrian and bikeway access
- Impacts to emergency response routes and access to affected properties
- Potential project groupings for the Preliminary Engineering/ NEPA process

Public Meetings

Presentations and briefings for the project were given throughout the study area to allow interested parties to become familiar with the project and provide comments. The meetings conducted are listed below.

- Greater East End Management District – September 1, 2011
- Super Neighborhood #63 (Second Ward) – November 7, 2011
- Gulf Coast Rail District Board of Directors – November 8, 2011
- East Downtown Management District – November 16, 2011
- East End Chamber of Commerce – December 6, 2011
- Fifth Ward Redevelopment Corporation – December 15, 2011

General support for the corridor project was voiced at all meetings. There were specific mentions of support for the Quiet Zone benefits at several meetings. There is particular interest in determination of the grade separation type for Leeland/Cullen where either an overpass or underpass is feasible.

A summary of meeting notes from the Advisory Committee meetings and a list of participating stakeholders can be found in Appendix D to this report.