MEMORANDUM

SW 10TH STREET CONNECTOR PD&E STUDY

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From:	Lisa Dykstra, PE		
Date:	5/4/2018		
Subject:	**Tier 1 Traffic Analysis (Volume to Capacity and Vehicle-Miles Traveled), and Tier 2 Traffic Analysis (Intersection and Freeway Operations) Results**		

Introduction

The SR 869/SW 10th Street study area from east of the Sawgrass Expressway / Florida's Turnpike to I-95, is located in northern Broward County, Florida and is contained within the City of Deerfield Beach. This section of SR 869/SW 10th Street is an existing Principal Arterial on the State Highway System, serving local residential communities, commercial properties and commuters. SW 10th Street is also part of the state's Strategic Intermodal System (SIS) and the National Highway System (NHS).

The SW 10th Street Connector PD&E study is evaluating additional lanes in the SW 10th Street corridor for the purpose of closing a gap in the existing and planned regional express lanes system network and providing a continuous link in the managed lanes network that will be separate from the local SW 10th Street facility. The proposed improvements are intended to reduce the amount of traffic on local SW 10th Street by allowing vehicles to bypass the area by utilizing the managed lane facility. The purpose of this project is to improve local traffic flow by implementing a separate connection between the Sawgrass Expressway and the I-95 managed lanes, increase capacity, and eliminate various existing operational and safety deficiencies along SW 10th Street between the Sawgrass Expressway / Florida's Turnpike and I-95 while also providing improved connectivity of the regional transportation network.

Traffic performance was evaluated for two different Build Alternatives (a depressed Center Alignment and a depressed Northern Alignment for proposed managed lanes), with six different managed lanes ingress and egress configurations. The AM and PM weekday peak hour traffic volumes, capacity, intersection operations, and freeway operations for SW 10th Street from east of the Sawgrass Expressway / Florida's Turnpike to east of I-95 were analyzed. Traffic analysis results for existing (2016) conditions, 2040 No Build Alternative conditions, 2040 Partial Build conditions, and 2040 Build Alternative conditions for twelve different Build Concepts are documented in this memorandum. The traffic analysis documented in this memorandum was prepared in coordination with the ongoing I-95 PD&E Study from SW 10th Street to Hillsboro Boulevard (FPID 436964-1), and Sawgrass Expressway PD&E Study from south of US 441/SR 7 to Powerline Road/SR 845 (FPID 437153-1).

The fifteen scenarios (existing 2016 conditions, 2040 No Build conditions, 2040 Partial Build conditions, and twelve 2040 Build Concept conditions) were first analyzed by conducting a Tier 1 volume to capacity ratio analysis of the SW 10th Street local lanes and proposed managed lanes. In addition, the vehicle-miles traveled in the managed lanes during the peak hours for each of the twelve Build Concepts were calculated and compared. Next, a Tier 2 intersection operations analysis of the nine signalized study intersections along SW 10th Street from east of Florida's Turnpike to east of I-95 was completed. Finally, a Tier 2 freeway analysis of the proposed managed lanes connecting the Sawgrass, Florida's Turnpike and I-95 was completed. The peak hour traffic operations analysis results were reviewed to screen the twelve Build Concepts for any traffic operations fatal flaws, and the comparison of results was used to identify the most advantageous Build Concepts to be considered further.

The purpose of this memorandum is to document the traffic analysis results of the Tier 1 and Tier 2 screening conducted as part of the SW 10th Street Connector PD&E Study (FPID 439891-1). These traffic analysis findings are documented herein.

Analysis Scenarios

No Build Alternative

The No Build Alternative assumes no improvements or modifications are made to SW 10th Street between Florida's Turnpike and I-95. Some planned background roadway improvements are assumed including the intersection improvements under construction at the SW 10th Street/I-95 interchange, four new express lanes along I-95 (95 Express Phase 3), widening of Florida's Turnpike mainline, and a portion of Sawgrass Expressway widening from Sunrise Boulevard to SR 7. The lane configuration and traffic volumes for this scenario are documented in the *Draft SW 10th Street Project Traffic Forecast Memorandum,* dated January 2018.

Partial Build Alternative

For comparison purposes, a "Partial Build" Alternative was evaluated by the Florida's Turnpike Enterprise (FTE). This scenario assumes the same background roadway improvements as the No Build Alternative. It also assumes improvements being evaluated by the two ongoing adjacent PD&E studies. These include Sawgrass Expressway and Florida's Turnpike mainline improvements and interchange improvements (including direct-connect managed lane ramps) being evaluated as part of the Florida's Turnpike Enterprise PD&E Study for the Sawgrass Expressway from south of US 441/SR 7 to Powerline Road/SR 845. The Partial Build Alternative also assumes proposed ultimate I-95 and SW 10th Street interchange improvements (including direct-connect managed lane ramps) are constructed. These improvements are being studied as part of the Florida Department of Transportation's PD&E Study for I-95 from SW 10th Street to Hillsboro Boulevard. This scenario was evaluated to understand traffic operations under the condition that the interchange improvements are constructed on both ends of the corridor, but no additional improvements are made to SW 10th Street between Powerline Road and Military Trail. The lane configuration and traffic volumes for this scenario are documented in the *Draft SW 10th Street Project Traffic Forecast Memorandum,* dated January 2018.

Build Concepts

The Build Concepts being studied as part of the SW 10th Street Connector PD&E Study include complete reconstruction of the SW 10th Street corridor to add a new separate limited access facility within the existing corridor. The new limited access corridor would consist of two eastbound and two westbound managed lanes in either the center of the existing roadway (Center Alignment), or along the north side of SW 10th Street (North Alignment). The build concepts all include three local lanes (aka "general use lanes") in each direction on SW 10th Street from east of the Sawgrass Expressway / Florida's Turnpike to Powerline Road; generally two local lanes in each direction on SW 10th Street from Powerline Road to Military Trail; and generally three local lanes in each direction from Military Trail to east of I-95. The local lanes are assumed to remain non-limited access arterial lanes that will continue to provide access to adjacent properties. However, the speed limit is assumed to be lowered from the existing 40-45 mph to 35 mph throughout the study area.

The managed lanes proposed as part of the Build Concepts are assumed to be grade separated (some portions depressed and some portions elevated) from the at-grade local lanes, with a speed limit of up to 70 mph. In addition to the two different managed lanes alternative alignments, six (6) different managed lanes ingress and egress ramp configurations were considered, resulting in 12 different Build Concepts. The six different managed

lanes ingress and egress ramp configurations are labeled as 3D-1.1, 3D-1.2, 3D-1.3, 3D-1.4, 3D-1.5, and 3D-1.6, and for simplicity, they are illustrated showing the Center Alignment only in **Figures 1 through 6**.

Simplified Build Concept lane configuration figures (aka line diagrams) depict the proposed number of lanes along SW 10th Street from east of the Sawgrass Expressway / Florida's Turnpike through Military Trail for each of the 12 Build Concepts. These are provided in **Attachment 1**.

Travel Demand Forecast

Traffic volume forecasts were provided to the SW 10th Street Connector PD&E team by Florida's Turnpike Enterprise (FTE) between August 2017 and April 2018. The traffic volume forecasts included existing (2016) conditions volumes and future (2040) traffic volume forecasts for the SW 10th Street Connector PD&E Study No Build, Partial Build, and Build Concepts. They also provided future 2040 traffic volume forecasts for the adjacent Sawgrass Expressway and Turnpike interchange, and I-95 at SW 10th Street interchange. The original forecasted volumes were documented in the June 2017 Draft *SW 10th Street PD&E Project Traffic Forecast Memorandum*, and were reviewed and accepted by FDOT District Four. Traffic volume information was subsequently updated and documented by FTE in the January 2018 Draft *SW 10th Street PD&E Project Traffic Forecast Memorandum*, and additional traffic volume information for the twelve Build Concepts was developed by FTE and provided to the PD&E team throughout January through April 2018 for review and use.

The 2040 AM and PM peak hour turning movement volumes were developed by FTE for each of the six Center Alignment Build Concepts (3D-1.1 through 3D-1.6). The 2040 Build Concepts AM and PM peak hour volumes were then manually reassigned by the SW 10th Street Connector PD&E Study team throughout the roadway network for the six center alignment and corresponding six north alignment build concepts. The manual reassignment of the volumes was done based on proposed intersection modifications and changes to existing driveways/access along the SW 10th Street study corridor that are depicted in the attached lane configuration figures. The resulting 12 sets of AM and PM peak hour volumes are shown on the peak hour volume figures in **Attachment 2**.

Figure 1 - 2040 Build SW 10th Managed Lanes Access – Option 3D-1.1

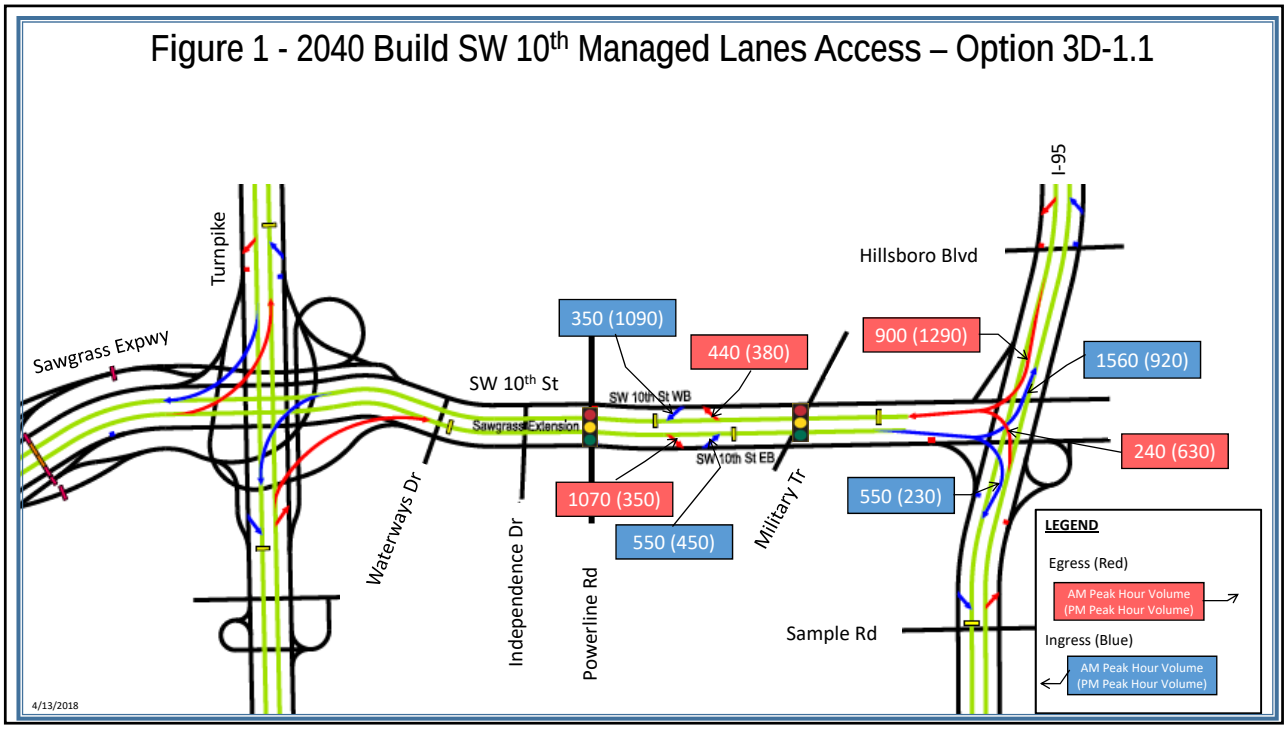


Figure 2 - 2040 Build SW 10th Managed Lanes Access – Option 3D-1.2

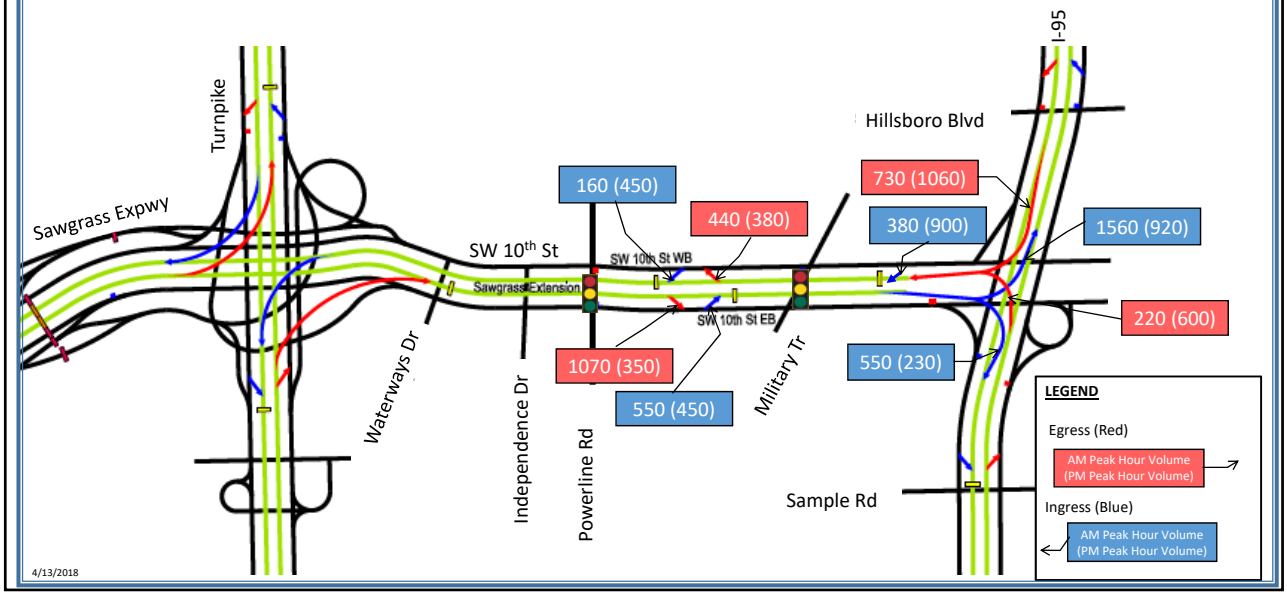


Figure 3 - 2040 Build SW 10th Managed Lanes Access – Option 3D-1.3

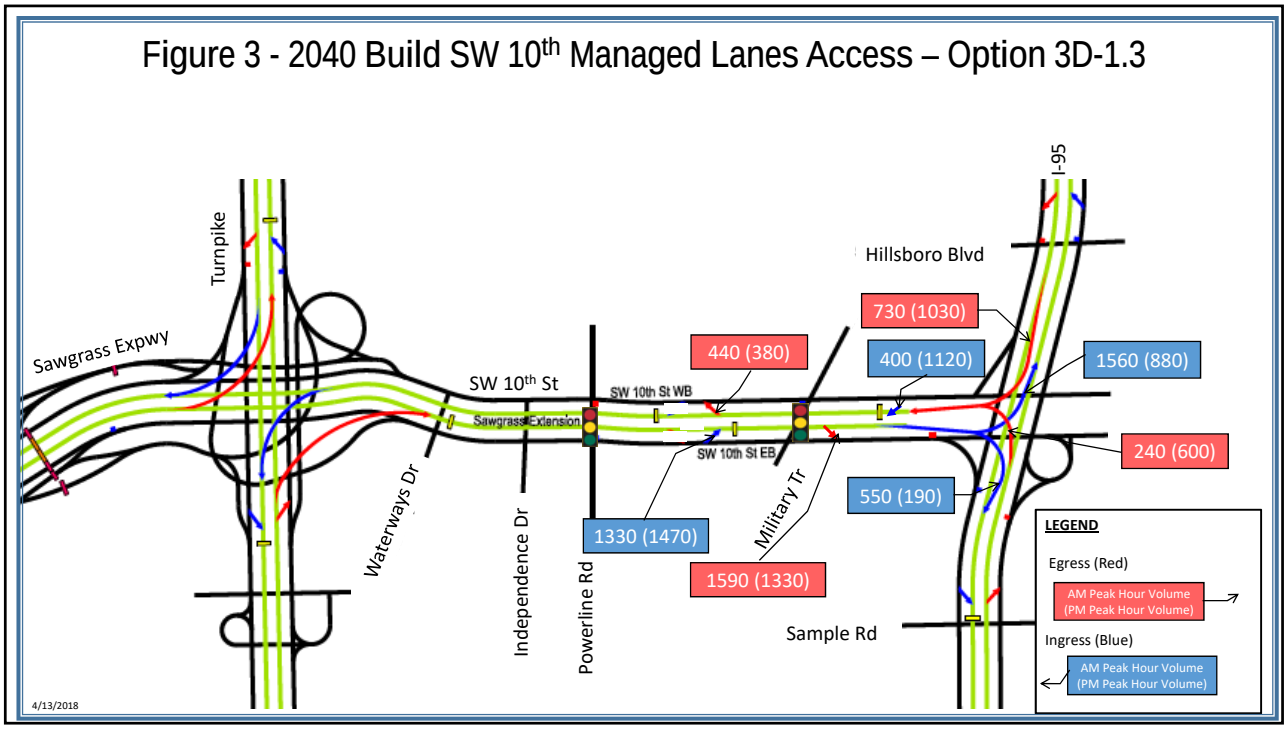


Figure 4 - 2040 Build SW 10th Managed Lanes Access – Option 3D-1.4

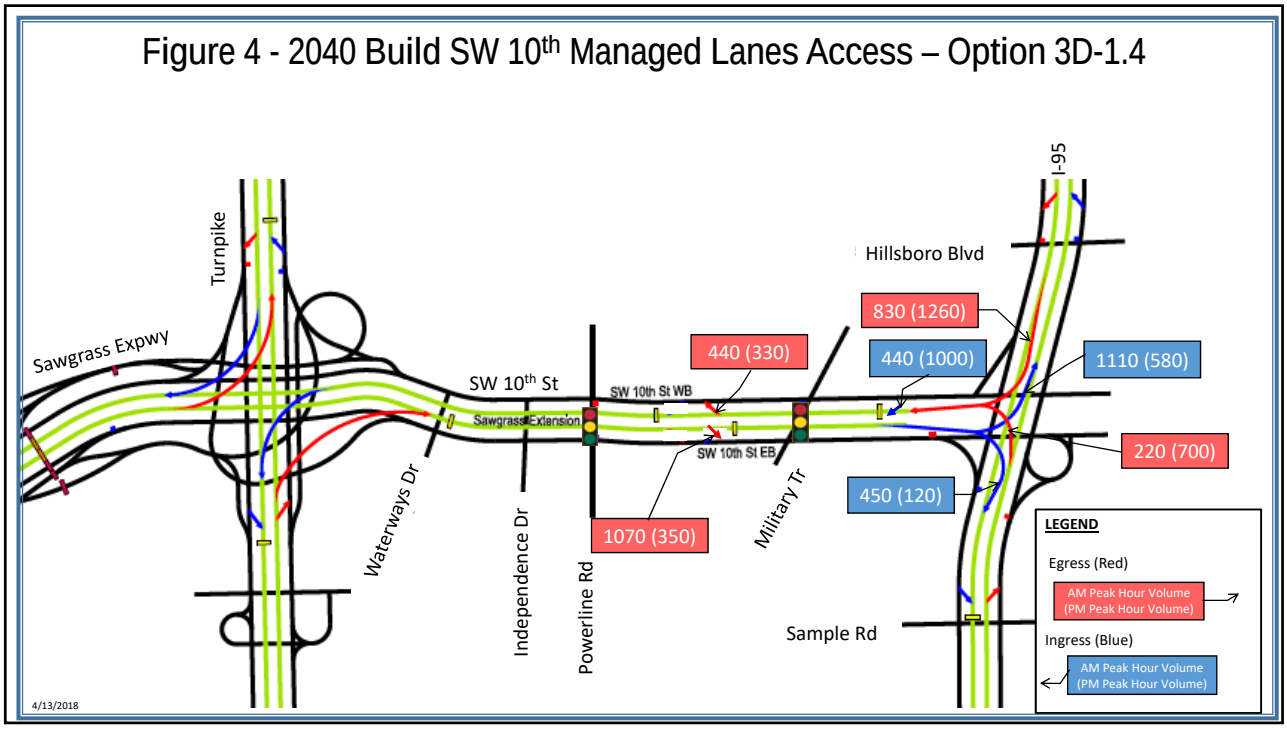


Figure 5 - 2040 Build SW 10th Managed Lanes Access – Option 3D-1.5

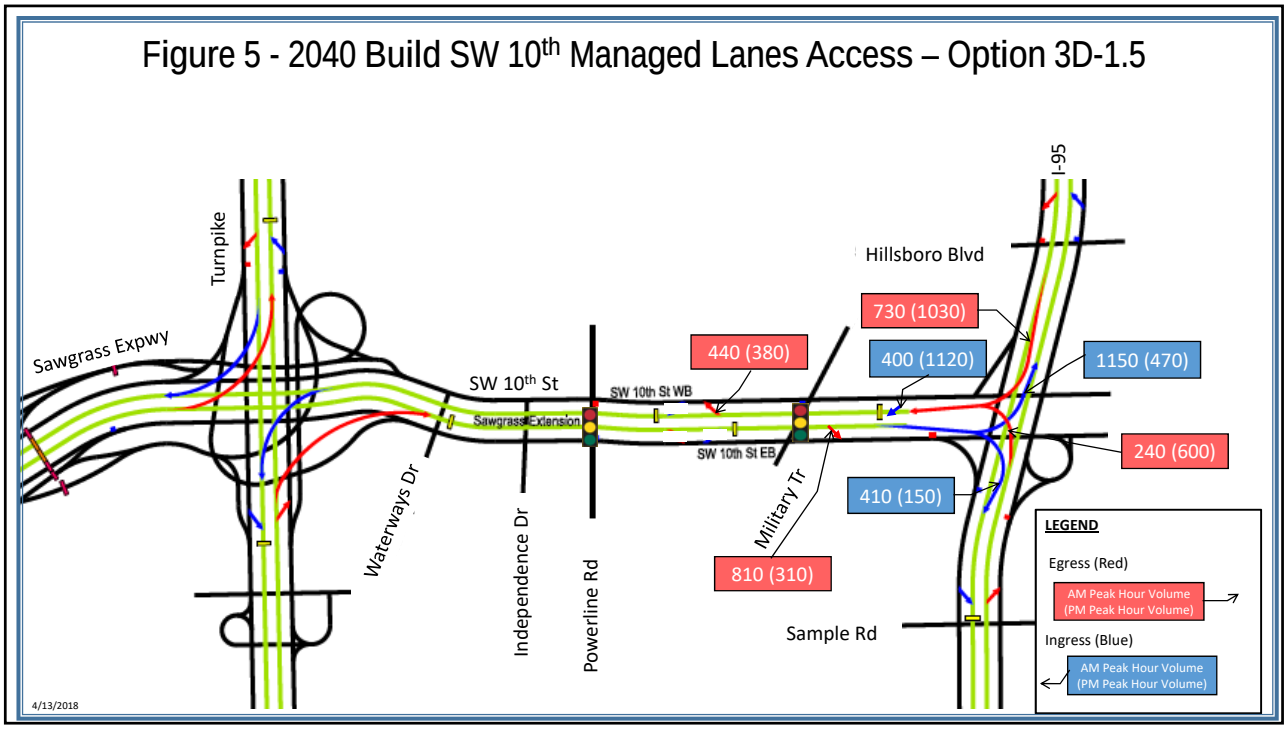
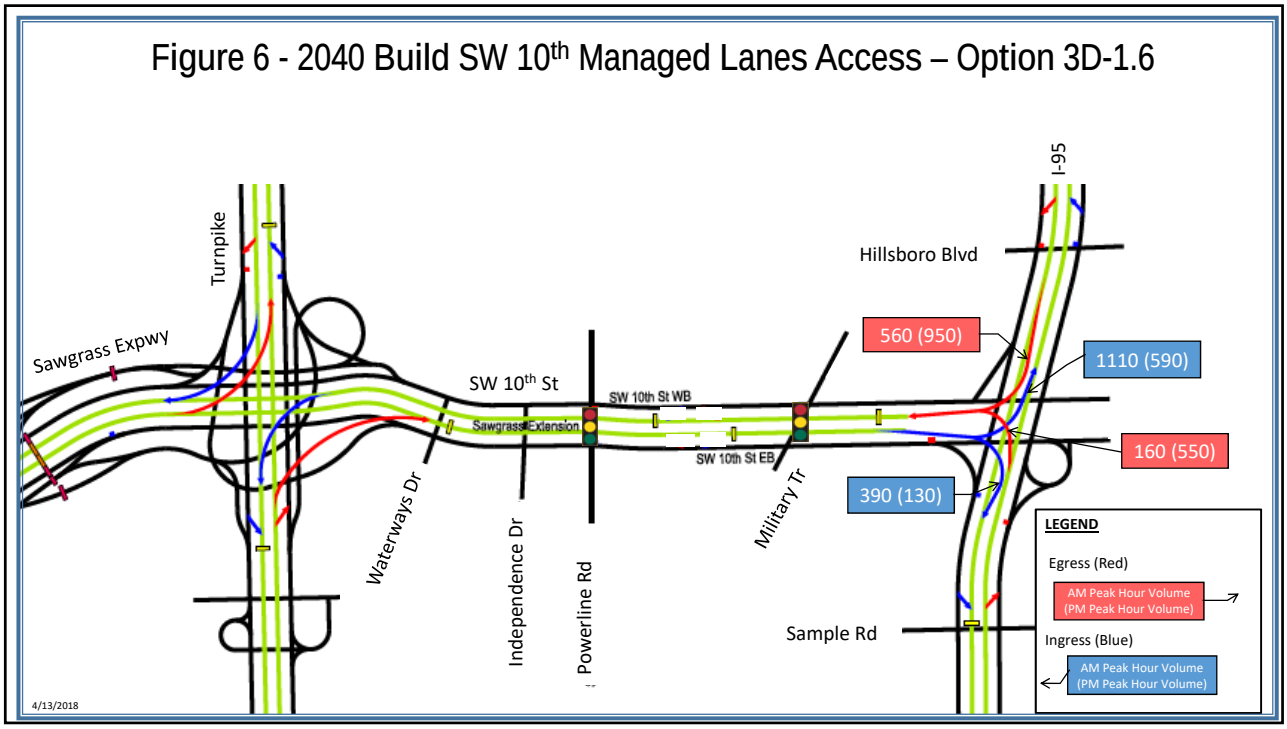


Figure 6 - 2040 Build SW 10th Managed Lanes Access – Option 3D-1.6



Tier 1 Traffic Analysis

Volume to Capacity (V/C) Ratios

The FDOT 2012 Quality/Level of Service Handbook Tables were used as the source for the generalized peak hour directional capacity threshold for FDOT target Level of Service (LOS) D. The corridor is in an urbanized area, and is classified as a Class I state signalized arterial under existing and No Build conditions, since the segments between Florida's Turnpike and I-95 have a speed limit of 45mph and 40mph. Under the proposed build conditions, the local lanes would be classified as a Class II state signalized arterial, since the speed limit would be 35mph. **Attachment 3** contains the calculated Volume to Capacity (V/C) ratios in Tables 1 through 15. Results are summarized for the eastbound and westbound local lanes and managed lanes along SW 10th Street, under the 2016 existing conditions, 2040 No Build, 2040 Partial Build, 2040 Center Alignment Build Concepts (3D-1.1, 3D-1.2, 3D-1.3, 3D-1.4, 3D-1.5, 3D-1.6), and 2040 North Alignment Build Concepts (3D-1.1, 3D-1.2, 3D-1.3, 3D-1.4, 3D-1.5, 3D-1.6).

In the AM peak hour under existing conditions, the eastbound volumes exceed the LOS D capacity threshold from east of Waterways Boulevard to west of Military Trail, and just west of the I-95 northbound off-ramp. In the PM peak hour under existing conditions, the westbound volumes exceed the LOS D capacity threshold from west of Military Trail to east of Waterways Boulevard. These results match with conditions observed in the field, indicating slower speeds and some congestion on SW 10th Street eastbound in the AM peak hour and westbound in the PM peak hour.

Tables 1 through 15 in attachment 3, labeled with an "A" (example Table 1A), report the V/C analyses for the local lanes. These tables indicate in red shading the locations along the local lanes in the eastbound and westbound directions that have peak hour volumes that exceed the peak hour directional capacity, and result in an undesirable V/C ratio of 1.0 or higher. Tables labeled with a "B" (example Table 4B) report the V/C analyses for the managed lanes.

Table 1 presents a summary and comparison of the V/C results for the **local lanes** for each of the 12 Build Concepts. The Build Concept V/C analysis results reflect benefits provided by the managed lanes where ingress and egress locations allow local traffic to use the managed lanes, thereby reducing the traffic volume in sections of the local lanes. In addition, Build Concepts with a managed lanes exit ramp followed by a closely spaced managed lanes entry ramp include an auxiliary lane between the ramps to help traffic transition out of and into the managed lanes. The auxiliary lane provides additional capacity to the local lanes.

Table 1

SW 10th Street Local Lanes - 2040 Volume to Capacity Ratio Results Comparison

	Local Lane Segments	Center 3D-1.1 Build Concept		Center 3D-1.2 Build Concept		Center 3D-1.3 Build Concept		Center 3D-1.4 Build Concept		Center 3D-1.5 Build Concept		Center 3D-1.6 Build Concept		North 3D-1.1 Build Concept		North 3D-1.2 Build Concept		North 3D-1.3 Build Concept		North 3D-1.4 Build Concept		North 3D-1.5 Build Concept		North 3D-1.6 Build Concept	
	Location Description	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM	V/C AM	V/C PM
SW 10th Street Eastbound	West of Waterways	1.27	0.91	1.27	0.91	1.22	0.88	1.27	0.91	1.22	0.88	1.51	0.93	1.27	0.91	1.27	0.91	1.22	0.88	1.27	0.91	1.22	0.88	1.51	0.93
	East of Waterways	1.37	0.91	1.37	0.91	1.32	0.88	1.37	0.91	1.32	0.88	1.61	0.93	1.36	0.90	1.36	0.90	1.31	0.87	1.36	0.90	1.31	0.87	1.60	0.92
	West of Independence	1.37	0.91	1.37	0.91	1.32	0.88	1.37	0.91	1.32	0.88	1.61	0.93	1.36	0.90	1.36	0.90	1.31	0.87	1.36	0.90	1.31	0.87	1.60	0.92
	East of Independence	1.39	0.90	1.39	0.90	1.34	0.87	1.39	0.90	1.34	0.87	1.63	0.92	1.37	0.89	1.37	0.89	1.32	0.85	1.37	0.89	1.32	0.85	1.61	0.91
	West of Powerline	1.39	0.90	1.39	0.90	1.34	0.87	1.39	0.90	1.34	0.87	1.63	0.92	1.37	0.89	1.37	0.89	1.32	0.85	1.37	0.89	1.32	0.85	1.61	0.91
	East of Powerline	0.92	0.95	0.92	0.95	0.87	0.91	0.92	0.95	0.87	0.91	1.16	0.96	0.85	0.92	0.85	0.92	0.84	0.89	0.85	0.92	0.84	0.89	1.13	0.95
	West of SW 30th Ave	1.42	1.47	1.42	1.47	1.34	1.40	1.42	1.47	1.34	1.40	1.80	1.49	1.98	1.64	1.98	1.64	0.43	0.46	1.28	1.06	1.25	1.36	1.70	1.44
	East of SW 30th Ave	0.91	1.04	0.91	1.03	1.33	1.52	0.91	1.03	1.33	1.52	1.78	1.61	1.97	1.69	1.97	1.69	0.42	0.51	1.27	1.09	1.24	1.41	1.69	1.49
	West of SW 28th Ave	1.33	1.18	1.33	1.17	1.33	1.52	1.33	1.17	1.33	1.52	1.78	1.61	1.97	1.69	1.97	1.69	0.42	0.51	1.97	1.69	1.24	1.41	1.69	1.49
	East of SW 28th Ave	2.07	1.74	2.07	1.72	1.34	1.44	2.05	1.72	1.34	1.44	1.79	1.52	1.66	1.37	1.66	1.37	0.46	0.47	2.00	1.65	1.27	1.37	1.72	1.45
	West of SW 24th Ave	2.07	1.74	2.07	1.72	1.34	1.44	2.05	1.72	1.34	1.44	1.79	1.52	1.66	1.37	1.66	1.37	0.46	0.47	2.00	1.65	1.27	1.37	1.72	1.45
	East of SW 24th Ave	2.01	1.71	2.01	1.69	1.28	1.41	1.99	1.69	1.28	1.41	1.73	1.50	1.58	1.33	1.58	1.33	0.37	0.42	1.92	1.61	1.19	1.33	1.64	1.41
	West of Military Trail	1.06	0.96	1.06	0.95	0.44	0.56	1.27	1.13	0.81	0.94	1.10	1.00	1.04	0.93	1.04	0.93	0.40	0.52	1.26	1.11	0.79	0.92	1.08	0.98
	East of Military Trail	1.32	1.04	1.32	1.04	0.85	0.72	1.53	1.22	1.08	1.05	1.37	1.10	1.32	1.04	1.32	1.04	0.85	0.72	1.53	1.22	1.08	1.05	1.37	1.10
	West of Newport Center Dr	1.32	1.04	1.32	1.04	1.18	0.99	1.54	1.22	1.40	1.17	1.37	1.10	1.32	1.04	1.32	1.04	1.18	0.99	1.54	1.22	1.40	1.17	1.37	1.10
	East of Newport Center Dr	0.76	0.91	0.76	0.91	0.66	0.87	0.92	1.04	0.82	1.00	0.80	0.95	0.76	0.91	0.76	0.91	0.66	0.87	0.92	1.04	0.82	1.00	0.80	0.95
	West of I-95 SB Off-Ramp	0.61	0.72	0.61	0.72	0.52	0.69	0.74	0.83	0.65	0.80	0.63	0.76	0.61	0.72	0.61	0.72	0.37	0.47	0.74	0.83	0.65	0.80	0.63	0.76
	East of I-95 SB Off-Ramp	0.54	0.57	0.54	0.57	0.47	0.54	0.65	0.65	0.56	0.63	0.55	0.59	0.54	0.57	0.54	0.57	0.47	0.54	0.65	0.65	0.56	0.63	0.55	0.59
	West of I-95 NB Off-Ramp	0.35	0.31	0.35	0.31	0.28	0.28	0.35	0.31	0.28	0.28	0.27	0.27	0.35	0.31	0.35	0.31	0.28	0.28	0.35	0.31	0.28	0.28	0.27	0.27
	East of I-95 NB Off-Ramp	0.77	0.79	0.77	0.79	0.67	0.74	0.77	0.79	0.67	0.74	0.64	0.73	0.77	0.79	0.77	0.79	0.67	0.74	0.77	0.79	0.67	0.74	0.64	0.73
	West of Natura Blvd	0.77	0.79	0.77	0.79	0.67	0.74	0.77	0.79	0.67	0.74	0.64	0.73	0.77	0.79	0.77	0.79	0.67	0.74	0.77	0.79	0.67	0.74	0.64	0.73
	East of Natura Blvd	0.72	0.76	0.72	0.76	0.61	0.71	0.72	0.76	0.61	0.71	0.58	0.70	0.72	0.76	0.72	0.76	0.61	0.71	0.72	0.76	0.61	0.71	0.58	0.70
SW 10th Street Westbound	West of Waterways	0.91	1.27	0.91	1.27	0.88	1.22	0.91	1.27	0.88	1.22	0.93	1.51	0.91	1.27	0.91	1.27	0.88	1.22	0.91	1.27	0.88	1.22	0.93	1.51
	East of Waterways	0.87	1.35	0.87	1.35	0.83	1.29	0.87	1.35	0.83	1.29	0.89	1.59	0.86	1.34	0.86	1.34	0.83	1.28	0.86	1.34	0.83	1.28	0.88	1.58
	West of Independence	0.87	1.35	0.87	1.35	0.83	1.29	0.87	1.35	0.83	1.29	0.89	1.59	0.86	1.34	0.86	1.34	0.83	1.28	0.86	1.34	0.83	1.28	0.88	1.58
	East of Independence	0.87	1.35	0.87	1.35	0.83	1.29	0.87	1.35	0.83	1.29	0.89	1.59	0.85	1.33	0.85	1.33	0.81	1.27	0.85	1.33	0.81	1.27	0.87	1.57
	West of Powerline	0.87	1.35	0.87	1.35	0.83	1.29	0.87	1.35	0.83	1.29	0.89	1.59	0.85	1.33	0.85	1.33	0.81	1.27	0.85	1.33	0.81	1.27	0.87	1.57
	East of Powerline	0.93	1.02	0.93	1.02	0.93	0.93	0.95	1.02	0.93	0.97	0.99	1.26	0.91	0.95	0.91	0.95	0.90	0.96	0.91	0.95	0.90	0.96	0.96	1.25
	West of SW 30th Ave	1.50	1.51	1.50	1.51	0.97	0.93	0.98	0.98	0.97	0.93	1.58	1.89	1.13	1.24	1.13	1.24	1.40	1.40	1.13	1.27	1.40	1.40	1.48	1.85
	East of SW 30th Ave	0.97	0.98	0.97	0.98	0.97	0.93	0.98	0.98	0.97	0.93	1.58	1.89	1.14	1.16	1.14	1.16	1.40	1.32	1.14	1.19	1.40	1.32	1.49	1.78
	West of SW 28th Ave	1.11	1.41	1.03	1.16	0.97	0.93	0.98	0.98	0.97	0.93	1.58	1.89	1.14	1.16	1.14	1.16	1.40	1.32	1.14	1.19	1.40	1.32	1.49	1.78
	East of SW 28th Ave	1.02	1.40	0.95	1.15	0.88	0.92	0.88	0.97	0.88	0.92	1.44	1.88	1.24	1.87	1.12	1.47	1.02	1.12	1.02	1.23	1.02	1.12	1.37	1.81
	West of SW 24th Ave	1.02	1.25	0.77	1.15	0.88	0.92	0.71	0.97	0.88	0.92	1.44	1.88	1.24	1.87	1.12	1.47	1.02	1.12	1.02	1.23	1.02	1.12	1.37	1.81
	East of SW 24th Ave	1.02	1.25	0.77	1.15	0.88	0.92	0.71	0.97	0.88	0.92	1.44	1.88	1.22	1.85	1.11	1.45	1.00	1.10	1.01	1.21	1.00	1.10	1.36	1.79
	West of Military Trail	0.85	1.25	1.19	1.54	1.09	1.19	1.10	1.29	1.09	1.19	1.44	1.88	1.28	1.90	1.16	1.51	1.06	1.16	1.06	1.26	1.06	1.16	1.41	1.85
	East of Military Trail	0.95	1.28	1.35	1.58	1.28	1.24	1.25	1.33	1.28	1.24	1.06	1.25	0.95	1.28	0.87	1.02	0.83	0.80	1.25	1.33	1.28	1.24	1.06	1.25
	West of Newport Center Dr	0.95	1.28	0.76	1.03	0.73	0.93	0.73	0.94	0.73	0.93	1.06	1.25	0.95	1.28	1.02	1.38	0.97	1.17	0.98	1.26	0.99	1.25	1.06	1.25
	East of Newport Center Dr	1.22	0.98	1.30	1.09	1.26	0.96	1.26	0.97	1.26	0.96	1.34	0.96	1.22	0.98	1.30	1.09	1.26	0.96	1.26	0.97	1.26	0.96	1.34	0.96
	West of I-95 SB Off-Ramp	1.22	0.98	1.30	1.09	1.26	0.96	1.26	0.97	1.26	0.96	1.34	0.96	1.22	0.98	1.30	1.09	1.26	0.96	1.26	0.97	1.26	0.96	1.34	0.96
	East of I-95 SB Off-Ramp	0.68	0.62	0.68	0.63	0.67	0.55	0.68	0.60	0.84	0.69	0.68	0.54	0.68	0.62	0.68	0.63	0.67	0.55	0.68	0.60	0.67	0.55	0.68	0.54
	West of I-95 NB Off-Ramp	0.68	0.62	0.68	0.63	0.67	0.55	0.68	0.60	0.84	0.69	0.68	0.54	0.68	0.62	0.68	0.63	0.67	0.55	0.68	0.60	0.67	0.55	0.68	0.54
	East of I-95 NB Off-Ramp	0.75	0.78	0.75	0.78	0.75	0.66	0.75	0.78	0.75	0.66	0.74	0.63	0.75	0.78	0.75	0.78	0.75	0.66	0.75	0.78	0.75	0.66	0.74	0.63
	West of Natura Blvd	0.86	0.90	0.86	0.90	0.87	0.79	0.86	0.90	0.87	0.79	0.85	0.76	0.86	0.90	0.86	0.90	0.87	0.79	0.86	0.90	0.87	0.79	0.85	0.76
	East of Natura Blvd	0.69	0.81	0.69	0.81	0.69	0.70	0.69	0.81	0.69	0.70	0.68	0.67	0.69	0.81	0.69	0.81	0.69	0.70	0.69	0.81	0.69	0.70	0.68	0.67
	# of locations where V/C >= 1.0:	20	22	19	24	16	13	17	18	17	16	26	24	23	22	24	24	15	13	24	24	23	23	26	23
	Total # of AM + PM locations where V/C >= 1.0:	42		43		29		35		33		50		45		48		28		48		46		49	
	Local Lanes V/C Rank:	**5**		**6**		**2**		**4**		**3**		**11**		**7**		**9**		**1**		**9**		**8**		**10**	

4/23/2018

Due to the differences in volumes and lane configurations along the corridor, some Build Concepts have fewer locations along the corridor that are expected to exceed the generalized capacity threshold in one direction or the other, in the AM and PM peak hours. To compare performance of each of the 12 Build Concepts, the number of locations with a V/C ratio greater than 1.0 in the eastbound and westbound local lanes, and in the AM and PM peak hours, was summed. The 12 Build Concepts were then ranked with the highest ranking (1) given to the Build Concept with the lowest number of locations where the V/C ratio exceeds 1.0. The Build Concepts with the lowest number of locations where the V/C ratio exceeds 1.0, are expected to have the best traffic operations. The ranking of the 12 Build Concepts based on the local lanes V/C ratios, is shown along the bottom of Table 1-A. Center Build Concept 3D-1.3 and North Build Concept 3D-1.3 are estimated to have the fewest locations with a V/C ratio over 1.0, and so are ranked the highest.

The V/C ratio analysis of the managed lanes demonstrates that the travel demand assigned to the managed lanes is not expected to exceed the theoretical capacity on any segment, under any of the 12 Build Concepts, in either the 2040 AM or PM peak hour. This is by design, as the travel demand in the managed lanes must be maintained at a level so that the traffic operates at free flow conditions at all times. However, the greater attractiveness, and therefore the use of the managed lanes, can help alleviate congestion in the local lanes. In this instance where the travel demand is not expected to exceed or come close to capacity in the managed lanes, the Build Concepts that attract a relatively higher travel demand volume and result in a larger throughput in the managed lanes, can be considered more desirable.

Vehicle Miles Traveled (VMT) - Build Concepts Managed Lanes

To compare the managed lanes performance for each of the 12 Build Concepts, Vehicle-Miles Traveled (VMT) in the managed lanes along the SW 10th Street corridor from Waterways Boulevard to I-95 was estimated for the 2040 AM and PM peak hours. The AM and PM peak hour volumes in the eastbound and westbound managed lanes were multiplied by the approximate distance in miles of each of the managed lanes segments (eastbound and westbound) to calculate VMT. The peak hours VMT for each segment is shown in **Table 2**, along with the total peak hours VMT for each Build Concept. The 12 Build Concepts were ranked with the highest ranking (1) given to the Build Concept with the highest VMT. The North Build Concept 3D-1.3 and Center Build Concept 3D-1.3 were ranked the highest based on the managed lanes VMT results.

Overall, the results of the Tier 1 traffic analyses indicate that the North Build Concept 3D-1.3 and Center Build Concept 3D-1.3 are ranked the highest.

Table 2
SW 10th Street Managed Lanes - 2040 Peak Hour Vehicle-Miles Traveled (VMT) Comparison

			SW 10th Street Eastbound					SW 10th Street Westbound						TOTAL AM + PM, EB + WB VMT	Ranking Based on VMT
			West of Waterways to East of Powerline Rd	East of Powerline Rd to East of SW 30th Ave	East of SW 30th Ave to East of SW 24th Ave	East of SW 24th Ave to West of Military Trail	West of Military Trail to I 95	West of Waterways to East of Powerline Rd	East of Powerline Rd to West of SW 30th Ave	West of SW 30th Ave to East of SW 28th Ave	East of SW 28th Ave to West of Military Trail	West of Military Trail to East of Military Trail	East of Military Trail to I-95		
Distance (miles):			0.72	0.45	0.43	0.25	0.75	0.72	0.30	0.39	0.44	0.53	0.22		
Center 3D-1.1 Build Concept	AM 2040	Volume	2,630	1,560	1,560	2,110	2,110	1,050	700	700	700	1,140	1,140		
	PM 2040	Volume	1,050	700	700	1,150	1,150	2,630	1,540	1,540	1,540	1,920	1,920		**10**
	AM+PM	**VMT [1]**	**2,650**	**1,017**	**972**	**815**	**2,445**	**2,650**	**672**	**874**	**986**	**1,622**	**673**	**15,374**	
Center 3D-1.2 Build Concept	AM 2040	Volume	2,630	1,560	1,560	2,110	2,110	1,050	890	890	890	1,330	950		
	PM 2040	Volume	1,050	700	700	1,150	1,150	2,630	2,180	2,180	2,180	2,560	1,660		**8**
	AM+PM	**VMT [1]**	**2,650**	**1,017**	**972**	**815**	**2,445**	**2,650**	**921**	**1,197**	**1,351**	**2,062**	**574**	**16,653**	
Center 3D-1.3 Build Concept	AM 2040	Volume	2,370	2,370	2,370	3,700	2,110	930	930	930	930	1,370	970		
	PM 2040	Volume	930	930	930	2,400	1,070	2,370	2,370	2,370	2,370	2,750	1,630		**2**
	AM+PM	**VMT [1]**	**2,376**	**1,485**	**1,419**	**1,525**	**2,385**	**2,376**	**990**	**1,287**	**1,452**	**2,184**	**572**	**18,051**	
Center 3D-1.4 Build Concept	AM 2040	Volume	2,630	1,560	1,560	1,560	1,560	1,050	1,050	1,050	1,050	1,490	1,050		
	PM 2040	Volume	1,050	700	700	700	700	2,630	2,630	2,630	2,630	2,960	1,960		**7**
	AM+PM	**VMT [1]**	**2,650**	**1,017**	**972**	**565**	**1,695**	**2,650**	**1,104**	**1,435**	**1,619**	**2,359**	**662**	**16,727**	
Center 3D-1.5 Build Concept	AM 2040	Volume	2,370	2,370	2,370	2,370	1,560	930	930	930	930	1,370	970		
	PM 2040	Volume	930	930	930	930	620	2,370	2,370	2,370	2,370	2,750	1,630		**9**
	AM+PM	**VMT [1]**	**2,376**	**1,485**	**1,419**	**825**	**1,635**	**2,376**	**990**	**1,287**	**1,452**	**2,184**	**572**	**16,601**	
Center 3D-1.6 Build Concept	AM 2040	Volume	1,500	1,500	1,500	1,500	1,500	720	720	720	720	720	720		
	PM 2040	Volume	720	720	720	720	720	1,500	1,500	1,500	1,500	1,500	1,500		**11**
	AM+PM	**VMT [1]**	**1,598**	**999**	**955**	**555**	**1,665**	**1,598**	**666**	**866**	**977**	**1,177**	**488**	**11,544**	
North 3D-1.1 Build Concept	AM 2040	Volume	2,630	1,560	1,560	2,110	2,110	1,050	1,490	1,140	1,140	1,140	1,140		
	PM 2040	Volume	1,050	700	700	1,150	1,150	2,630	3,010	1,920	1,920	1,920	1,920		**6**
	AM+PM	**VMT [1]**	**2,650**	**1,017**	**972**	**815**	**2,445**	**2,650**	**1,350**	**1,193**	**1,346**	**1,622**	**673**	**16,733**	
North 3D-1.2 Build Concept	AM 2040	Volume	2,630	1,560	1,560	2,110	2,110	1,050	1,490	1,330	1,330	1,330	950		
	PM 2040	Volume	1,050	700	700	1,150	1,150	2,630	3,010	2,560	2,560	2,560	1,660		**3**
	AM+PM	**VMT [1]**	**2,650**	**1,017**	**972**	**815**	**2,445**	**2,650**	**1,350**	**1,517**	**1,712**	**2,062**	**574**	**17,763**	
North 3D-1.3 Build Concept	AM 2040	Volume	2,370	2,370	3,700	3,700	2,110	930	930	930	1,370	1,370	970		
	PM 2040	Volume	930	930	2,400	2,400	1,070	2,370	2,370	2,370	2,750	2,750	1,630		**1**
	AM+PM	**VMT [1]**	**2,376**	**1,485**	**2,623**	**1,525**	**2,385**	**2,376**	**990**	**1,287**	**1,813**	**2,184**	**572**	**19,615**	
North 3D-1.4 Build Concept	AM 2040	Volume	2,630	1,560	1,560	1,560	1,560	1,050	1,490	1,490	1,490	1,490	1,050		
	PM 2040	Volume	1,050	700	700	700	700	2,630	2,960	2,960	2,960	2,960	1,960		**4**
	AM+PM	**VMT [1]**	**2,650**	**1,017**	**972**	**565**	**1,695**	**2,650**	**1,335**	**1,736**	**1,958**	**2,359**	**662**	**17,597**	
North 3D-1.5 Build Concept	AM 2040	Volume	2,370	2,370	2,370	2,370	1,560	930	930	930	1,370	1,370	970		
	PM 2040	Volume	930	930	930	930	620	2,370	2,370	2,370	2,750	2,750	1,630		**5**
	AM+PM	VMT [1]	**2,376**	**1,485**	**1,419**	**825**	**1,635**	**2,376**	**990**	**1,287**	**1,813**	**2,184**	**572**	**16,961**	
North 3D-1.6 Build Concept	AM 2040	Volume	1,500	1,500	1,500	1,500	1,500	720	720	720	720	720	720		
	PM 2040	Volume	720	720	720	720	720	1,500	1,500	1,500	1,500	1,500	1,500		**11**
	AM+PM	**VMT [1]**	**1,598**	**999**	**955**	**555**	**1,665**	**1,598**	**666**	**866**	**977**	**1,177**	**488**	**11,544**	

NOTES:

(1) VMT = Vehicle-Miles Traveled AM + PM VMT = Distance (miles) X (AM Pk Hr Volume + PM Pk Hr Volume)

4/26/2018

Tier 2 Traffic Analysis

Intersection Traffic Operations

The AM and PM peak hour traffic operations of the nine signalized study intersections along SW 10th Street from Waterways Boulevard to FAU Research Park Boulevard were analyzed. Each scenario (2016 existing conditions, 2040 No Build, 2040 Partial Build, and all twelve 2040 Build Concepts) was analyzed using Synchro Version 9 software and Highway Capacity Manual (HCM) 2000 methodology. A comparison of the overall intersection LOS and delays for each scenario is provided in **Table 3**. In **Attachment 4,** detailed intersection performance measures are provided for each signalized intersection in the AM and PM peak hours for each of the scenarios.

The total overall average intersection delay for AM and PM peak hours for each Build Concept were summed, and the results were compared and ranked in Table 2. Results show that Center Build Concept 3D-1.3 has the lowest estimated signalized intersection delay, while North Build Concept 3D-1.3 has the second lowest estimated signalized intersection delay.

Managed Lanes Freeway Operations

The 2040 AM and PM peak hour operations of the proposed managed lanes freeway segments for all twelve 2040 Build Concepts were analyzed using Highway Capacity Software (HCS) 2010 methodology. The results of the analysis of all 12 Build Concepts are summarized in **Table 4-A and 4-B**. **Attachment 5** contains the detailed HCS2 2010 reports.

Results show that the eastbound and westbound managed lanes segments are expected to perform acceptably, at a LOS D or better in the AM and PM peak hours, for all 12 Build Concepts. Although HCS 2010 results show no issues with the performance of the managed lanes, these results are preliminary indicators only. A microsimulation analysis of appropriate Build Alternatives is recommended to fully evaluate the operations of traffic in such a complex system. The microsimulation traffic analysis can evaluate the interaction of the managed lanes traffic with the ingress and egress traffic, as well as traffic in the local lanes interacting with the ingress and egress traffic.

TABLE 3

Intersection Analysis Results Comparison

SW 10th Street Intersection:			Waterways Blvd		Independence Dr		Powerline Rd		SW 28th Ave		Military Trail		Newport Center Dr		I-95 Southbound Ramps		I-95 Northbound Ramps		FAU Research Park Blvd			
SCENARIO	**Signalized or Unsignalized:**		**Signalized**		**Unsignalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Total**	
			LOS [1]	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**LOS [1]**	**Delay (sec) [1]**	**Delay (sec)**	
2016 Conditions	Intersection LOS	AM	B	14	A	7	F	88	C	29	F	86	C	33	D	44	D	48	D	38		
		PM	B	12	B	11	F	110	A	8	F	96	D	38	D	50	F	96	D	49		
	Total AM + PM Delay			25		18		198		37		182		71		93		144		87	**856**	
2040 No Build	Intersection LOS	AM	D	49	C	27	F	107	E	59	F	151	D	53	E	57	F	81	D	49		
		PM	B	18	A	9	F	147	C	29	F	157	F	82	D	45	F	148	E	79		
	Total AM + PM Delay			67		36		254		88		308		135		103		230		128	**1348**	
2040 Partial Build	Intersection LOS	AM	E	72	F	135	F	100	F	140	F	89	C	24	D	46	C	23	D	51		
		PM	F	85	F	103	F	194	F	92	F	85	E	63	C	32	C	23	E	60		
	Total AM + PM Delay			157		238		294		232		174		87		78		47		110	**1415**	
2040 BUILD CENTER CONCEPTS	**Signalized or Unsignalized:**		**Signalized**		**Unsignalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Total**	**Build**
			LOS [2]	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [3]**	**Delay (sec) [3]**	**LOS [3]**	**Delay (sec) [3]**	**LOS [3]**	**Delay (sec) [3]**	**LOS [3]**	**Delay (sec) [3]**	**Delay (sec)**	**Intersection Ranking**
Build Concept Center 3D-1.1	Intersection LOS	AM	C	34	-	-	E	60	F	89	F	115	C	21	B	18	B	19	D	50		
		PM	C	32	-	-	E	71	F	100	F	96	C	31	B	19	B	20	E	56		
	Total AM + PM Delay			66				131		189		211		52		37		38		106	**830**	8
Build Concept Center 3D-1.2	Intersection LOS	AM	C	34	-	-	E	60	F	85	F	127	C	23	B	18	B	19	D	50		
		PM	C	32	-	-	E	71	D	49	F	81	E	72	B	16	C	20	E	56		
	Total AM + PM Delay			66				131		134		208		95		33		39		106	**812**	7
Build Concept Center 3D-1.3	Intersection LOS	AM	C	32	-	-	E	62	C	27	E	72	C	24	B	19	C	22	D	49		
		PM	C	33	-	-	E	69	C	24	D	52	E	74	B	14	C	21	D	54		
	Total AM + PM Delay			65				131		51		124		98		34		43		102	**647**	1
Build Concept Center 3D-1.4	Intersection LOS	AM	C	34	-	-	E	62	F	122	F	147	C	23	B	18	B	19	D	50		
		PM	C	32	-	-	E	76	D	46	F	91	F	85	B	17	C	21	E	55		
	Total AM + PM Delay			66				138		168		238		108		35		41		105	**899**	10
Build Concept Center 3D-1.5	Intersection LOS	AM	C	33	-	-	E	61	C	31	F	87	C	32	B	18	C	21	D	48		
		PM	C	33	-	-	E	70	C	26	E	68	F	83	B	15	D	46	D	53		
	Total AM + PM Delay			66				131		57		155		115		34		67		101	**726**	3
Build Concept Center 3D-1.6	Intersection LOS	AM	E	63	-	-	E	66	E	59	F	116	C	23	B	18	C	22	D	48		
		PM	C	32	-	-	F	96	C	28	F	99	D	36	B	17	C	21	D	53		
	Total AM + PM Delay			95				162		87		215		59		34		42		101	**795**	5
2040 BUILD NORTH CONCEPTS	**Signalized or Unsignalized:**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Total**	**Build**
			LOS [2]	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [2]**	**Delay (sec) [2]**	**LOS [3]**	**Delay (sec) [3]**	**LOS [3]**	**Delay (sec) [3]**	**LOS [3]**	**Delay (sec) [3]**	**LOS [3]**	**Delay (sec) [3]**	**Delay (sec)**	**Intersection Ranking**
Build Concept North 3D-1.1	Intersection LOS	AM	C	33	A	7	E	59	D	50	F	113	C	21	B	18	B	19	D	51		
		PM	C	31	A	5	E	69	C	33	F	96	C	30	B	18	B	20	E	56		
	Total AM + PM Delay			64		12		128		83		209		52		36		39		106	**728**	3
Build Concept North 3D-1.2	Intersection LOS	AM	C	33	A	7	E	59	D	52	F	113	C	23	B	18	B	19	D	50		
		PM	C	31	A	6	E	68	C	30	F	85	E	72	B	15	C	21	E	56		
	Total AM + PM Delay			64		13		127		82		198		95		33		39		106	**757**	4
Build Concept North 3D-1.3	Intersection LOS	AM	C	31	A	6	E	58	D	51	E	71	C	29	B	18	C	23	D	48		
		PM	C	30	A	5	E	65	D	45	E	55	E	73	B	14	C	21	D	53		
	Total AM + PM Delay			61		11		123		96		127		102		32		44		101	**697**	2
Build Concept North 3D-1.4	Intersection LOS	AM	C	33	A	7	E	63	E	79	F	145	C	23	B	18	B	20	D	50		
		PM	C	31	A	6	E	72	C	33	F	107	F	85	B	17	B	20	E	61		
	Total AM + PM Delay			64		13		135		112		252		107		35		39		112	**869**	9
Build Concept North 3D-1.5	Intersection LOS	AM	C	31	A	6	E	60	D	54	F	92	C	28	B	19	C	21	D	48		
		PM	C	30	A	4	E	67	E	70	E	64	F	87	B	15	D	46	D	53		
	Total AM + PM Delay			61		10		127		125		156		115		34		67		101	**795**	5
Build Concept North 3D-1.6	Intersection LOS	AM	E	63	B	13	E	62	D	39	F	113	C	23	B	17	C	22	D	48		
		PM	C	30	A	9	F	101	C	35	F	92	D	42	B	16	C	21	D	55		
	Total AM + PM Delay			93		22		163		74		205		65		33		43		103	**801**	6

NOTES:

(1) 2016 Conditions, 2040 No Build, and 2040 Partial Build intersection LOS and delays provided by AECOM on 4/13/18 for SW 10th Street Connector and I-95 and SW 10th St Interchange traffic analysis. 4/13/2018

(2) Build Concept intersection LOS and delays for intersections from Waterways through Military Trail analyzed by RS&H as part of SW 10th Street Connector PD&E Study traffic analysis.

(3) Build Concept intersection LOS and delays for intersections from Newport Center Drive through FAU Research Park Blvd provided by AECOM on 3/1/18 from I-95 and SW 10th Street Interchange PD&E Study traffic analysis.

Table 4-A

SW 10th Street Managed Lanes - 2040 HCS Freeway Analysis Center Alignment Build Concepts

Center Alignment Build Concept 3D-1.1						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	19.9	C	7.9	A
Egress E/O Powerline Rd	EB	Diverge	21.4	C	7.1	A
Egress to Ingress	EB	Basic Freeway	11.7	B	5.3	A
Ingress W/O Military Trail	EB	Merge	13.1	B	5.3	A
Ingress to I-95	EB	Basic Freeway	15.9	B	8.6	A
I-95 to Egress	WB	Basic Freeway	8.6	A	14.4	B
Egress W/O Military	WB	Diverge	7.9	A	15	B
Egress to Ingress	WB	Basic Freeway	5.3	A	11.6	B
Ingress E/O Powerline	WB	Merge	4.5	A	17.1	B
Ingress to Turnpike	WB	Basic Freeway	7.9	A	19.9	C

Center Alignment Build Concept 3D-1.2						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	19.9	C	7.9	A
Egress E/O Powerline Rd	EB	Diverge	21.4	C	7.1	A
Egress to Ingress	EB	Basic Freeway	11.7	B	5.3	A
Ingress W/O Military Trail	EB	Merge	13.1	B	5.3	A
Ingress to I-95	EB	Basic Freeway	15.9	B	8.6	A
I-95 to Ingress	WB	Basic Freeway	7.1	A	12.5	B
Ingress to Egress at Military	WB	Weave	7.5	A	15.3	B
Egress to Ingress	WB	Basic Freeway	6.7	A	16.4	B
Ingress E/O Powerline Rd	WB	Merge	4.6	A	17.5	B
Ingress to Turnpike	WB	Basic Freeway	7.9	A	19.9	C

Center Alignment Build Concept 3D-1.3						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Ingress	EB	Basic Freeway	17.8	B	7.0	A
Ingress to Egress at Military	EB	Weave	24.2	C	14.1	B
Egress to I-95	EB	Basic Freeway	15.9	B	8.0	A
I-95 to Ingress	WB	Basic Freeway	7.3	A	12.3	B
Ingress to Egress at Military	WB	Weave	7.8	A	16.7	B
Egress to Turnpike	WB	Basic Freeway	7.0	A	17.8	B

Center Alignment Build Concept 3D-1.4						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	19.9	C	7.9	A
Egress E/O Powerline Rd	EB	Diverge	21.4	C	7.1	A
Egress to I-95	EB	Basic Freeway	11.7	B	5.3	A
I-95 to Ingress	WB	Basic Freeway	7.9	A	14.7	B
Ingress to Egress at Military Trail	WB	Weave	8.5	A	17.9	B
Egress to Turnpike	WB	Basic Freeway	7.9	A	19.9	C

Center Alignment Build Concept 3D-1.5						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	17.8	B	7.0	A
Egress W/O Military Trail	EB	Diverge	19.0	D	6.0	A
Egress to I-95	EB	Basic Freeway	11.7	B	4.7	A
I-95 to Ingress	WB	Basic Freeway	7.3	A	12.3	B
Ingress to Egress at Military Trail	WB	Weave	7.8	A	16.7	B
Egress to Turnpike	WB	Basic Freeway	7.0	A	17.8	B

Center Alignment Build Concept 3D-1.6						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to I-95	EB	Basic Freeway	11.3	B	5.4	A
I-95 to Turnpike	WB	Basic Freeway	5.4	A	11.3	B

4/15/2018

Table 4-B

SW 10th Street Managed Lanes - 2040 HCS Freeway Analysis North Alignment Build Concepts

North Alignment Build Concept 3D-1.1						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	19.9	C	7.9	A
Egress E/O Powerline Rd	EB	Diverge	21.4	C	7.1	A
Egress to Ingress	EB	Basic Freeway	11.7	B	5.3	A
Ingress W/O Military Trail	EB	Merge	13.1	B	5.3	A
Ingress to I-95	EB	Basic Freeway	15.9	B	8.6	A
I-95 to Ingress	WB	Basic Freeway	8.6	A	14.4	B
Ingress to Egress E/O Powerline	WB	Weave	8.8	A	20.0	C
Egress to I-95	WB	Basic Freeway	7.9	A	19.9	C

North Alignment Build Concept 3D-1.2						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	19.9	C	7.9	A
Egress E/O Powerline Rd	EB	Diverge	21.4	C	7.1	A
Egress to Ingress	EB	Basic Freeway	11.7	B	5.3	A
Ingress W/O Military Trail	EB	Merge	13.1	B	5.3	A
Ingress to I-95	EB	Basic Freeway	15.9	B	8.6	A
I-95 to Ingress	WB	Basic Freeway	7.1	A	12.5	B
Ingress E/O Military Trail	WB	Merge	6.8	A	16.6	B
Ingress to Ingress	WB	Basic Freeway	10.0	A	19.3	C
Ingress to Egress E/O Powerline Rd	WB	Weave	8.5	A	18.3	B
Egress to Turnpike	WB	Basic Freeway	7.9	A	19.9	C

North Alignment Build Concept 3D-1.3						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Ingress	EB	Basic Freeway	17.8	B	7.0	A
Ingress to Egress	EB	Weave	23.6	C	13.9	B
Egress W/O Military to I-95	EB	Basic Freeway	15.9	B	8.0	A
I-95 to Ingress E/O Military	WB	Basic Freeway	7.3	A	12.3	B
Ingress to Egress W/O Military	WB	Weave	7.8	A	16.7	B
Egress to Turnpike	WB	Basic Freeway	7.0	A	17.8	B

North Alignment Build Concept 3D-1.4						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	19.9	C	7.9	A
Egress E/O Powerline Rd	EB	Diverge	21.4	C	7.1	A
Egress to I-95	EB	Basic Freeway	11.7	B	5.3	A
I-95 to Ingress	WB	Basic Freeway	7.9	A	14.7	B
Ingress E/O Military Trail	WB	Merge	8.1	A	19.9	B
Ingress to Egress E/O Powerline	WB	Basic Freeway	11.2	B	22.7	C
Egress E/O Powerline Rd	WB	Diverge	11.1	B	24.4	C
Egress to Turnpike	WB	Basic Freeway	7.9	A	19.9	C

North Alignment Build Concept 3D-1.5						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to Egress	EB	Basic Freeway	17.8	B	7.0	A
Egress W/O Military Trail	EB	Diverge	19.0	B	6.0	A
Egress to I-95	EB	Basic Freeway	11.7	B	4.7	A
I-95 to Ingress	WB	Basic Freeway	7.3	A	12.3	B
Ingress to Egress at Military Trail	WB	Weave	7.8	A	16.7	B
Egress to Turnpike	WB	Basic Freeway	7.0	A	17.8	B

North Alignment Build Concept 3D-1.6						
Segment	Direction	Analysis Type	AM Peak Hour		PM Peak Hour	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Turnpike to I-95	EB	Basic Freeway	11.3	B	5.4	A
I-95 to Turnpike	WB	Basic Freeway	5.4	A	11.3	B

4/15/2018

Conclusion

Four methods of analysis were used to complete a preliminary evaluation of the traffic operations of the twelve (12) Build Concepts:

1) Volume to Capacity (V/C) ratio analysis of the SW 10th Street local lanes,

2) Vehicle-Miles Traveled (VMT) analysis of the proposed managed lanes,

3) Signalized intersection delay for SW 10th Street local lanes, and

4) HCM freeway LOS analysis of the proposed managed lanes.

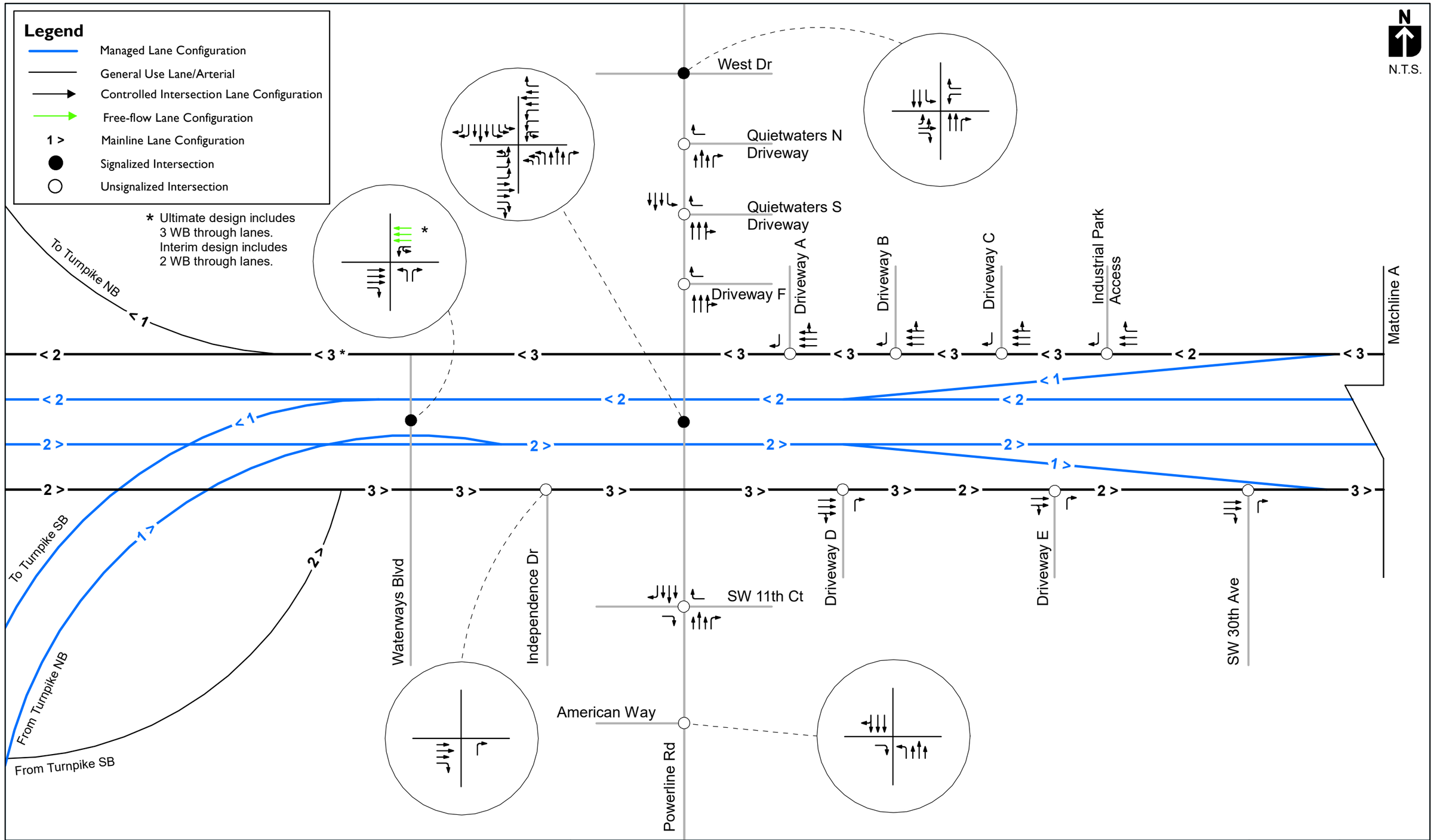
Results of the V/C, VMT, and signalized intersection analyses indicate that the Center Build Concept 3D-1.3 and North Build Concept 3D-1.3 provide the best operations in the local lanes, while also providing the highest throughput (VMT) in the managed lanes. The results of the HCS freeway LOS analysis indicate that in all twelve (12) Build Concepts, the managed lanes are expected to operate acceptably, at a LOS D or better. Microsimulation analysis must be completed next to adequately analyze traffic operations and effects of traffic between the managed lanes, ingress and egress, and local lanes.

Attachments

1) Build Concepts Lane Configuration Figures
2) Build Concepts 2040 AM and PM Peak Hour Turning Movement Volume Figures
3) Volume to Capacity Ratio Analysis Tables
4) Intersection Traffic Operations Summary Tables
5) HCS Freeway Analysis of Build Concepts

ATTACHMENT 1

Build Concepts Lane Configuration Figures



FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.1 Tier 1 Lane Configuration	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Military Trail

East Drive

Matchline A

< 3 < 3 < 2 < 3 < 3

< 2 < 2 < 2 < 2

2 > 2 > 2 > 2 >

3 > 2 > 2 > 2 > 3 > 3 >

< 1 < 1 < 1

1 > 1 >

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SW 28th Ave

SW 24th Ave

W. Driveway

E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.1 Tier 1 Lane Configuration	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes. Interim design includes 2 WB through lanes.

N

N.T.S.

To Turnpike NB

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.2 Tier 1 Lane Configuration	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Military Trail

East Drive

Matchline A

< 3 < 3 < 2 < 3 < 2

< 2 < 2 < 3 < 3 < 2

2 > 2 > 2 > 2 > 2 >

3 > 2 > 2 > 2 > 3 > 3 >

< 1 < 1 < 1 < 1

1 > 1 >

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SW 28th Ave

SW 24th Ave

W. Driveway

E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.2 Tier 1 Lane Configuration	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes. Interim design includes 2 WB through lanes.

N

N.T.S.

To Turnpike NB

< 1

< 2 | < 3 * | < 3 | < 3 | < 3 | < 3 | < 3 | < 3 | < 3 | < 3

< 2 | < 2 | < 2 | < 2

< 1

2 > | 2 > | 2 > | 2 >

1 >

2 >

2 > | 3 > | 3 > | 3 > | 3 > | 3 > | 2 > | 2 > | 2 >

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.3 Tier 1 Lane Configuration	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Military Trail

East Drive

Matchline A

< 3 < 3 < 2 < 3 < 2 < 3

< 2 < 2 < 3 < 3 < 2 < 1

2 > 2 > 3 > 2 > 1 >

2 > 2 > 2 > 2 > 2 > 2 > 3 >

1 > 1 > 1 >

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SW 28th Ave

SW 24th Ave

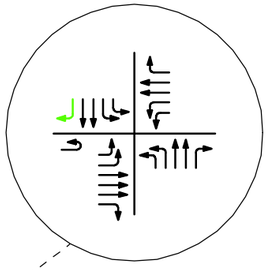
W. Driveway

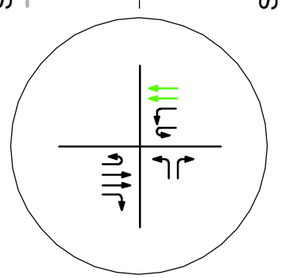
E. Driveway

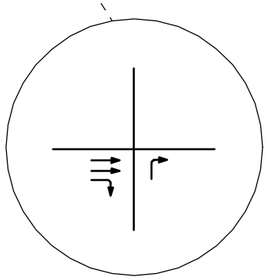
Palm Trails Plaza

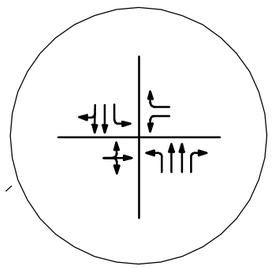
The Lakes at Deerfield Apt S

Horizon Club Driveway

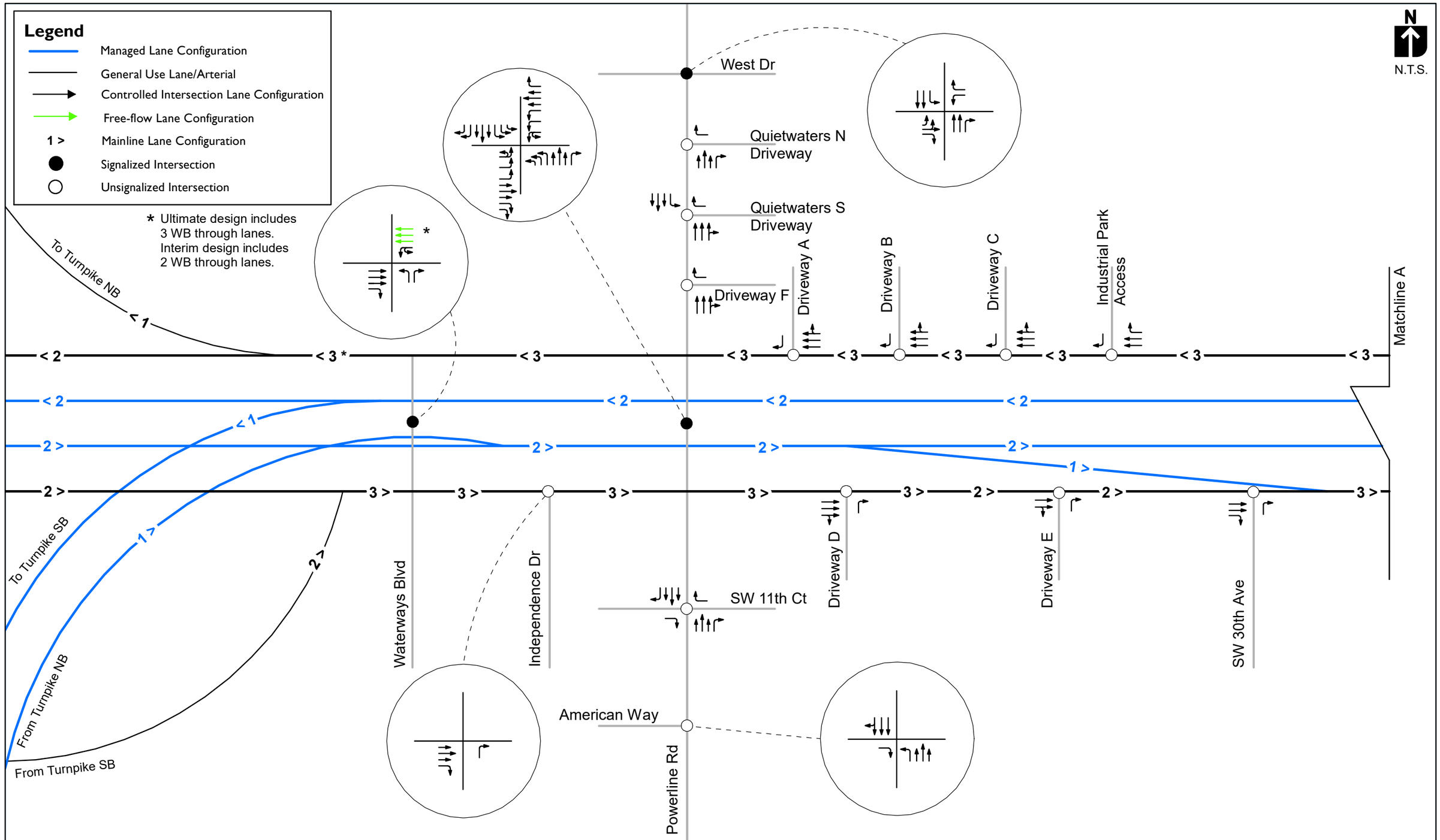








FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.3 Tier 1 Lane Configuration	Page 2 of 2	Figure 1



SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.4 Tier 1 Lane Configuration	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Military Trail

East Drive

Matchline A

< 3 < 3 < 3 < 2 < 3 < 2 < 3

< 2 < 2 < 3 < 3 < 2

2 > 2 > 2 > 2 >

3 > 2 > 2 > 2 > 3 > 3 >

< 1 < 1 < 1 < 1

1 > 1 >

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SW 28th Ave

SW 24th Ave

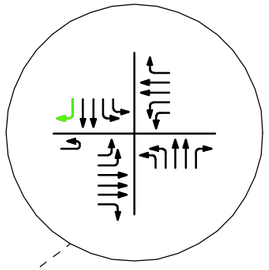
W. Driveway

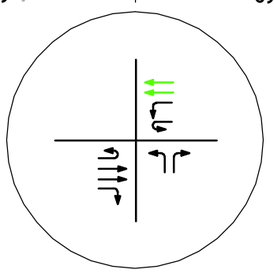
E. Driveway

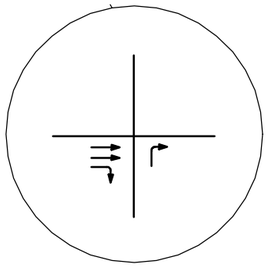
Palm Trails Plaza

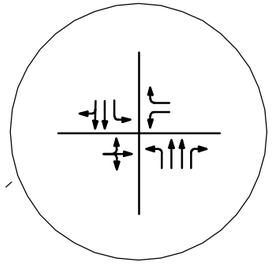
The Lakes at Deerfield Apt S

Horizon Club Driveway









FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.4 Tier 1 Lane Configuration	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design incudes 3 WB through lanes. Interim design includes 2 WB through lanes.

N

N.T.S.

To Turnpike NB

< 1

< 2 | < 3 * | < 3 | < 3 | < 3 | < 3 | < 3 | < 3 | < 3 | < 3

< 2 | < 2 | < 2 | < 2 | < 2

2 > | 2 > | 2 > | 2 > | 2 >

2 > | 3 > | 3 > | 3 > | 3 > | 3 > | 3 > | 2 > | 2 > | 2 > | 2 >

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

To Turnpike SB

From Turnpike NB

From Turnpike SB

< 1

1 >

2 >

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.5 Tier 1 Lane Configuration	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SW 28th Ave

SW 24th Ave

W. Driveway

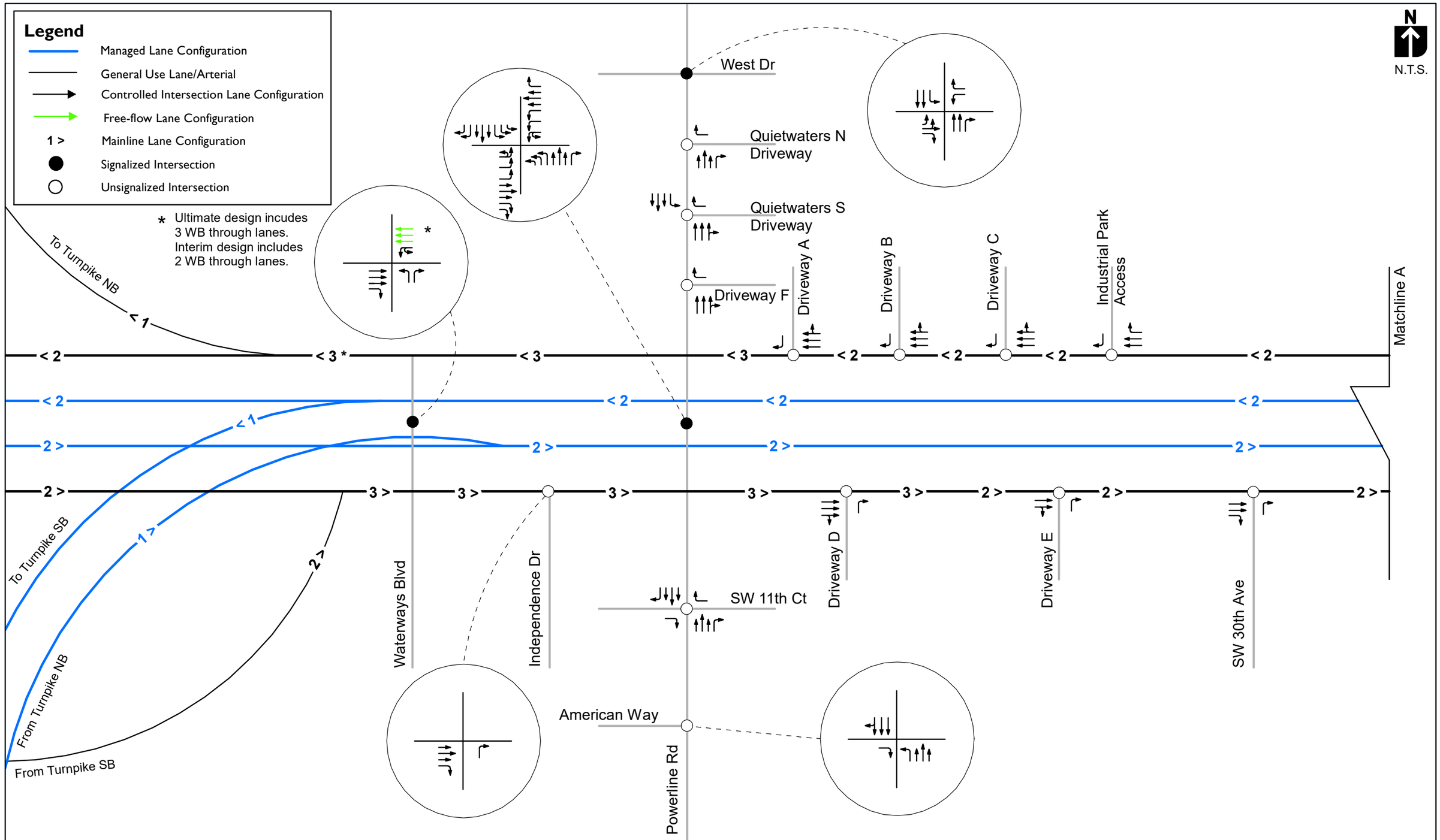
E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.5 Tier 1 Lane Configuration	Page 2 of 2	Figure 1



FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.6 Tier 1 Lane Configuration	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Military Trail

East Drive

Matchline A

< 2 < 2 < 3 < 3 < 3

< 2 < 2 < 2 < 2

2 > 2 > 2 > 2 >

2 > 2 > 2 > 2 > 3 > 3 >

< 1

< 1

1 >

1 >

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SW 28th Ave

SW 24th Ave

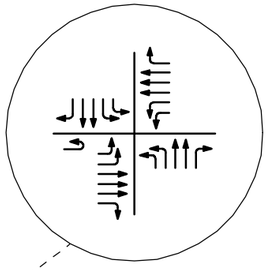
W. Driveway

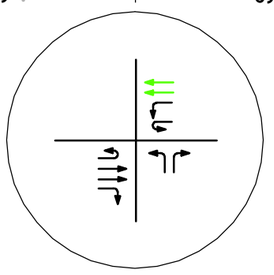
E. Driveway

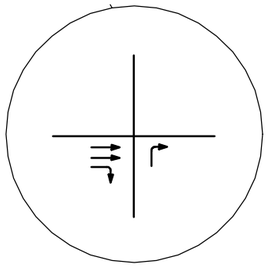
Palm Trails Plaza

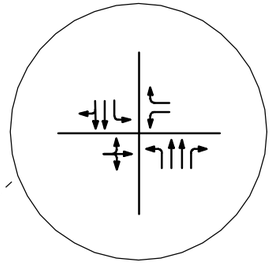
The Lakes at Deerfield Apt S

Horizon Club Driveway









FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.6 Tier 1 Lane Configuration	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes.
Interim design includes 2 WB through lanes.

N

N.T.S.

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

To Turnpike NB

< 1

< 3

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

< 3 *

< 2

2 >

1 >

3 >

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.1 Tier 1 Lane Configuration	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

< 2 | < 2 | < 2 | < 2 | < 2

< 1 | 1 >

2 > | 2 > | 2 > | 2 > | < 1 | 1 >

< 2 | < 2 | < 2 | < 2 | < 3 | < 3 | < 3

2 > | 2 > | 2 > | 2 > | 3 > | 3 >

SW 28th Ave

SW 24th Ave

W. Driveway

E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	North Alignment Alternative 3D-1.1 Tier 1 Lane Configuration	Page 2 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes.
Interim design includes 2 WB through lanes.

N

N.T.S.

To Turnpike NB

< 1

< 3

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.2
Tier 1 Lane Configuration

Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

SW 28th Ave

SW 24th Ave

W. Driveway

E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.2 Tier 1 Lane Configuration	Page 2 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes.
Interim design includes 2 WB through lanes.

N

N.T.S.

To Turnpike NB
< 1
< 3
To WB Sawgrass
To WB Sawgrass ELs
From EB Sawgrass ELs
2 >
From EB Sawgrass
< 1
1 >
2 >
To Turnpike SB
From Turnpike NB
From Turnpike SB
< 3 *
< 2
2 >
< 3
3 >
West Dr
Quietwaters N Driveway
Quietwaters S Driveway
Driveway F
SW 11th Ct
American Way
Powerline Rd
Waterways Blvd
Independence Dr
Driveway D
Industrial Park Access
SW 30th Ave
Matchline A

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.3 Tier 1 Lane Configuration	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SW 28th Ave

SW 24th Ave

W. Driveway

E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.3 Tier 1 Lane Configuration	Page 2 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes.
Interim design includes 2 WB through lanes.

N

N.T.S.

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

To Turnpike NB

< 1

< 3

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

< 3 *

< 2

2 >

1 >

3 >

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.4 Tier 1 Lane Configuration	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

SW 28th Ave

SW 24th Ave

W. Driveway

E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.4 Tier 1 Lane Configuration	Page 2 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes.
Interim design includes 2 WB through lanes.

N

N.T.S.

To Turnpike NB

< 1

< 3

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

< 2

2 >

< 3 *

< 3

3 >

< 1

1 >

2 >

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

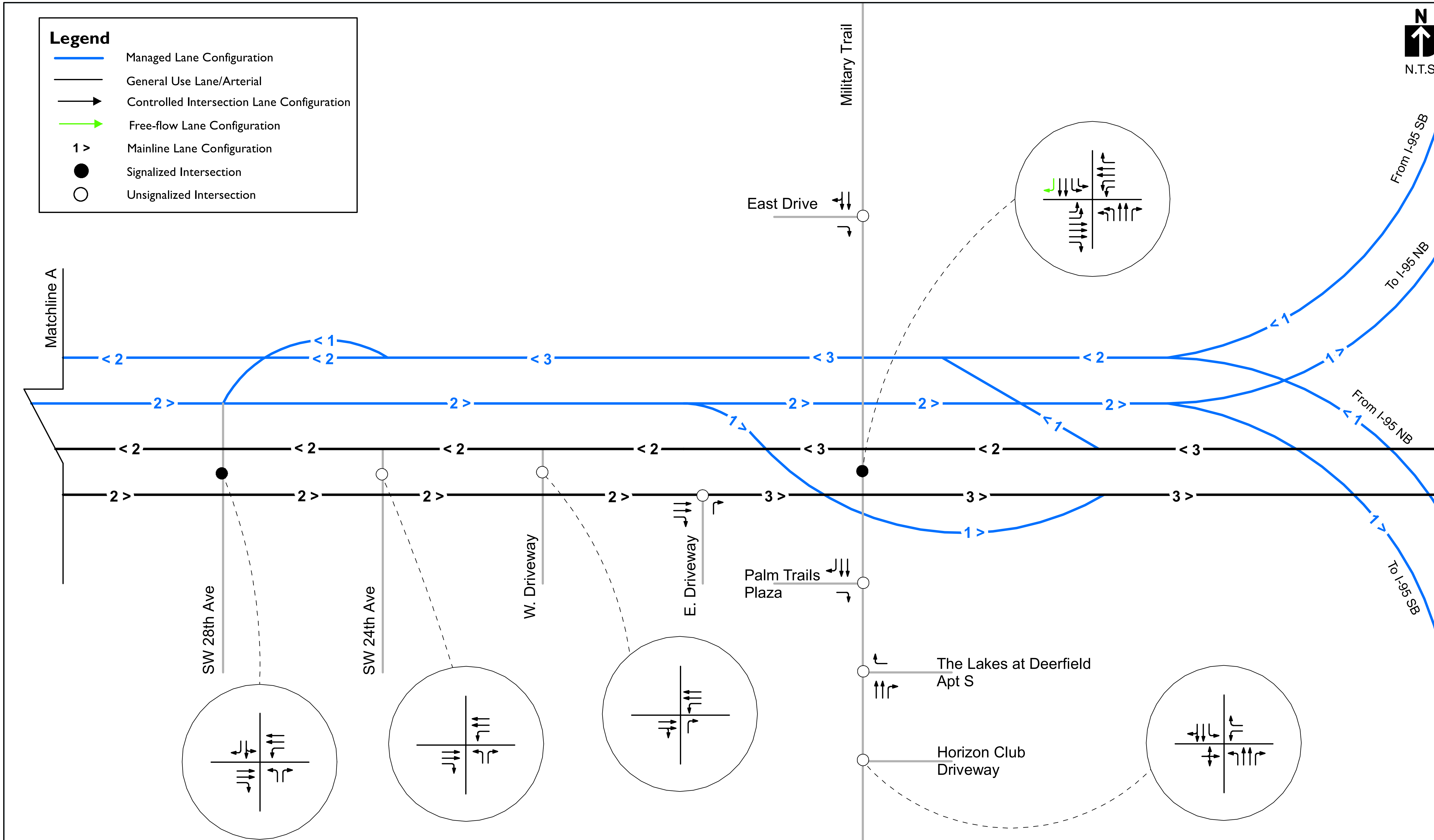
Driveway E

SW 30th Ave

American Way

Powerline Rd

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.5 Tier 1 Lane Configuration	Page 1 of 2	Figure 2



Legend
Managed Lane Configuration
General Use Lane/Arterial
Controlled Intersection Lane Configuration
Free-flow Lane Configuration
1 >
Mainline Lane Configuration
Signalized Intersection
Unsignalized Intersection
N
N.T.S.
Matchline A
Military Trail
East Drive
Palm Trails Plaza
The Lakes at Deerfield Apt S
Horizon Club Driveway
SW 28th Ave
SW 24th Ave
W. Driveway
E. Driveway
From I-95 SB
To I-95 NB
From I-95 NB
To I-95 SB

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.5
Tier 1 Lane Configuration

Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

* Ultimate design includes 3 WB through lanes.
Interim design includes 2 WB through lanes.

N

N.T.S.

To Turnpike NB

< 1

< 3

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

2 >

From EB Sawgrass

< 3 *

< 1

To Turnpike SB

1 >

From Turnpike NB

2 >

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Industrial Park Access

Matchline A

< 2

2 >

3 >

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.6 Tier 1 Lane Configuration	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- Controlled Intersection Lane Configuration
- Free-flow Lane Configuration
- 1 > Mainline Lane Configuration
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Military Trail

Matchline A

East Drive

From I-95 SB

To I-95 NB

From I-95 NB

To I-95 SB

< 2 < 2 < 2 < 2 < 2

2 > 2 > 2 > 2 > 2 >

< 2 < 2 < 2 < 2 < 3 < 3

2 > 2 > 2 > 2 > 3 > 3 >

< 1

1 >

< 1

1 >

SW 28th Ave

SW 24th Ave

W. Driveway

E. Driveway

Palm Trails Plaza

The Lakes at Deerfield Apt S

Horizon Club Driveway

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.6 Tier 1 Lane Configuration	Page 2 of 2	Figure 2

ATTACHMENT 2

Build Concepts 2040 AM and PM Peak Hour Turning Movement Volume Figures

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

135 (135) Quietwaters N Driveway

10 (10) Quietwaters S Driveway

10 (15) Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

American Way

Powerline Rd

Driveway D

Driveway E

SW 30th Ave

60 (55) SW 11th Ct

45 (65)

125 (260)

1,050 (2,630)

350 (1,090)

700 (1,540)

2,630 (1,050)

1,070 (350)

1,560 (700)

410 (935)
1,290 (910)
250 (470)
615 (430)
1,330 (1,645)
325 (365)
85 (125)
60 (45)
985 (480)
1,690 (1,415)
780 (340)
390 (770)
1,225 (1,175)
285 (385)

1,840 (2,205)
95 (95)
95 (95)
105 (105)
5 (5)
5 (5)
20 (20)
2,845 (2,105)
115 (115)

1,950 (2,315)
15 (15)
2,825 (2,085)
5 (5)
2,820 (2,080)
10 (10)
2,815 (2,075)
10 (10)

2,110 (3,115)
60 (255)
20 (25)
3,180 (2,170)
30 (130)
190 (95)
255 (110)

45 (150)
135 (50)
2,310 (2,415)

2,160 (2,365)
150 (30)

45 (65)
2,350 (1,550)
60 (55)
1,840 (2,275)
60 (55)

3,425 (2,210)
30 (95)
90 (70)

30 (60)
2,365 (1,555)
225 (55)
70 (90)
1,900 (2,330)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.1 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

55 (125)
1,260 (1,840)
110 (85)

340 (645)
530 (830)
500 (450)
500 (550)
1,545 (2,140)
340 (525)
50 (50)
330 (360)
2,145 (1,780)
155 (195)
200 (315)
670 (585)
690 (400)

From I-95 SB

900 (1,290)

To I-95 NB

1,560 (920)

240 (630)

From I-95 NB

550 (230)

To I-95 SB

440 (380)

700 (1,540)

1,140 (1,920)

1,560 (700)

2,110 (1,150)

550 (450)

2,660 (2,290)
60 (50)

20 (85)

W. Driveway

2,610 (2,225)
70 (150)

70 (190)

E. Driveway

50 (150)
975 (1,400)

Palm Trails Plaza

55 (190)

SW 28th Ave

SW 24th Ave

2,430 (3,250)
30 (170)
115 (110)
145 (190)
3,130 (2,610)
80 (175)
220 (115)
130 (110)

3,185 (2,705)
190 (125)
85 (85)

115 (45)

The Lakes at Deerfield Apt S

1,445 (1,255)
30 (70)

Horizon Club Driveway

5 (20)
1,015 (1,560)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,460 (1,275)
15 (15)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.1 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

410 (935)
1,290 (910)
250 (470)
615 (430)
1,330 (1,645)
325 (365)
85 (125)
60 (45)
985 (480)
1,690 (1,415)
780 (340)
390 (770)
1,225 (1,175)
285 (385)

1,935 (2,205)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,710 (2,105)
55 (115)

2,110 (3,115)
60 (255)
20 (25)
3,180 (2,170)
30 (130)
190 (95)
255 (110)

40 (135)
1,950 (2,315)
80 (15)
2,725 (2,085)
100 (5)
10 (10)
2,815 (2,080)
10 (10)
10 (15)
2,815 (2,075)
10 (10)

45 (150)
135 (50)
2,310 (2,415)

160 (450)
1,050 (2,630)
890 (2,180)
2,630 (1,050)
1,070 (350)
1,560 (700)

2,160 (2,335)
150 (60)
125 (260)

45 (65)
2,395 (1,550)
60 (55)
45 (65)
1,900 (2,275)
60 (55)

3,425 (2,210)
30 (95)
90 (70)

30 (60)
2,365 (1,555)
225 (55)
70 (90)
1,900 (2,330)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.2 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive
55 (125)
1,260 (1,840)
110 (85)

340 (645)
530 (830)
500 (450)
500 (550)
1,355 (1,500)
340 (525)
50 (50)
330 (360)
2,145 (1,780)
155 (195)
200 (315)
670 (585)
690 (400)

From I-95 SB
730 (1,060)
To I-95 NB
1,560 (920)
220 (600)
550 (230)
From I-95 NB
To I-95 SB

440 (380)
890 (2,180)
1,330 (2,560)
380 (900)
950 (1,660)
1,560 (700)
2,110 (1,150)
550 (450)

2,660 (2,260)
60 (50)
20 (85)
W. Driveway

2,610 (2,195)
70 (150)
70 (190)
E. Driveway

Palm Trails Plaza
50 (150)
975 (1,400)
55 (190)

115 (45)
The Lakes at Deerfield Apt S
1,445 (1,255)
30 (70)

Horizon Club Driveway

SW 28th Ave

SW 24th Ave

2,240 (2,610)
30 (170)
115 (110)
145 (190)
3,130 (2,580)
80 (175)
220 (115)
130 (110)

3,185 (2,675)
190 (125)
85 (85)

5 (20)
1,015 (1,560)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,460 (1,275)
15 (15)

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.2 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

American Way

Powerline Rd

Driveway D

Driveway E

SW 30th Ave

930 (2,370)

2,370 (930)

380 (925)
1,290 (910)
240 (440)
625 (430)
1,300 (1,525)
335 (365)
85 (125)
60 (45)
955 (450)
1,590 (1,365)
770 (330)
360 (760)
1,225 (1,175)
275 (355)

1,895 (2,165)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,690 (2,075)
55 (115)

40 (135)
1,910 (2,275)
80 (15)
2,705 (2,055)
100 (5)
10 (10)
2,795 (2,050)
10 (10)
10 (15)
2,795 (2,045)
10 (10)

2,020 (2,975)
60 (255)
20 (25)
3,040 (2,080)
30 (130)
190 (95)
255 (110)

45 (55)
135 (50)
2,300 (2,295)

2,040 (2,225)
150 (60)
125 (260)

45 (65)
2,350 (1,540)
60 (55)
45 (65)
1,800 (2,235)
60 (55)

30 (60)
2,365 (1,545)
225 (55)
70 (90)
1,860 (2,290)

3,285 (2,120)
30 (95)
90 (70)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.3 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive
55 (125)
1,220 (1,800)
110 (85)

310 (615)
530 (830)
490 (440)
500 (540)
1,245 (990)
340 (495)
50 (50)
300 (330)
215 (340)
145 (185)
170 (285)
670 (585)
680 (390)

From I-95 SB
730 (1,030)
To I-95 NB
1,560 (880)
240 (600)
From I-95 NB
550 (190)
To I-95 SB

440 (380)
930 (2,370)
1,370 (2,750)
400 (1,120)
970 (1,630)
2,370 (930)
1,330 (1,470)
3,700 (2,400)
2,110 (1,070)
1,590 (1,330)

690 (780)
60 (50)
20 (85)
W. Driveway
640 (715)
70 (150)
70 (190)
E. Driveway
50 (150)
965 (1,360)
Palm Trails Plaza
55 (190)

SW 28th Ave
SW 24th Ave

2,070 (2,040)
30 (170)
115 (110)
145 (190)
1,940 (2,120)
80 (175)
220 (115)
130 (110)

1,995 (2,215)
190 (125)
85 (85)

115 (45)
The Lakes at Deerfield Apt S
1,405 (1,215)
30 (70)
Horizon Club Driveway

5 (20)
1,005 (1,520)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,420 (1,235)
15 (15)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.3 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To Turnpike SB

From Turnpike NB

From Turnpike SB

Matchline A

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Waterways Blvd

Independence Dr

SW 11th Ct

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

1,050 (2,630)

2,630 (1,050)

1,070 (350)

1,560 (700)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.4 AM (PM) Peak Hour Volume
	Page 1 of 2
	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive
55 (125)
1,260 (1,840)
110 (85)

340 (645)
530 (830)
500 (450)
500 (550)
1,195 (1,100)
340 (525)
50 (50)
330 (360)
2,665 (2,230)
155 (195)
200 (315)
670 (585)
690 (400)

From I-95 SB
830 (1,260)
To I-95 NB
1,110 (580)
220 (700)
From I-95 NB
450 (120)
To I-95 SB

440 (330)
1,050 (2,630)
1,490 (2,960)
440 (1,000)
1,050 (1,960)
1,560 (700)

SW 28th Ave
SW 24th Ave

3,180 (2,710)
60 (50)
20 (85)
W. Driveway

3,130 (2,645)
70 (150)
70 (190)
E. Driveway

Palm Trails Plaza
50 (150)
975 (1,400)
55 (190)

115 (45)
The Lakes at Deerfield Apt S
1,445 (1,255)
30 (70)

Horizon Club Driveway

2,170 (2,160)
30 (170)
25 (110)
85 (190)
3,190 (2,580)
80 (175)
220 (115)
130 (110)

3,155 (2,675)
190 (125)
85 (85)

5 (20)
1,015 (1,560)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,460 (1,275)
15 (15)

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.4 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

American Way

Powerline Rd

Driveway D

Driveway E

SW 30th Ave

930 (2,370)

2,370 (930)

380 (925)
1,290 (910)
240 (440)
625 (430)
1,300 (1,525)
335 (365)
85 (125)
60 (45)
955 (450)
1,590 (1,365)
770 (330)
360 (760)
1,225 (1,175)
275 (355)

1,895 (2,165)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,690 (2,075)
55 (115)

40 (135)
1,910 (2,275)
80 (15)
2,705 (2,055)
100 (5)
10 (10)
2,795 (2,050)
10 (10)
10 (15)
2,795 (2,045)
10 (10)

2,020 (2,975)
60 (255)
20 (25)
3,040 (2,080)
30 (130)
190 (95)
255 (110)

45 (150)
135 (50)
2,300 (2,295)

2,040 (2,225)
150 (60)
125 (260)

45 (65)
2,350 (1,540)
60 (55)
45 (65)
1,800 (2,235)
60 (55)

30 (60)
2,365 (1,545)
225 (55)
70 (90)
1,860 (2,290)

3,285 (2,120)
30 (95)
90 (70)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.5 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

55 (125)
1,220 (1,800)
110 (85)

310 (615)
530 (830)
490 (440)
500 (540)
1,245 (990)
340 (495)
50 (50)
300 (330)
1,545 (1,810)
145 (185)
170 (285)
670 (585)
680 (390)

From I-95 SB

730 (1,030)

To I-95 NB

1,150 (470)

240 (600)

From I-95 NB

410 (150)

To I-95 SB

440 (380)
930 (2,370)
1,370 (2,750)
400 (1,120)
970 (1,630)
2,370 (930)
1,560 (620)
810 (310)

2,020 (2,250)
60 (50)
20 (85)
W. Driveway

1,970 (2,185)
70 (150)
70 (190)
E. Driveway

50 (150)
965 (1,360)
Palm Trails Plaza
55 (190)

115 (45)
The Lakes at Deerfield Apt S
1,405 (1,215)
30 (70)

Horizon Club Driveway

SW 28th Ave

SW 24th Ave

2,070 (2,040)
30 (170)
115 (110)
145 (190)
1,940 (2,120)
80 (175)
220 (115)
130 (110)

1,995 (2,215)
190 (125)
85 (85)

5 (20)
1,005 (1,520)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,420 (1,235)
15 (15)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.5 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Driveway A

Driveway B

Driveway C

Industrial Park Access

Matchline A

Waterways Blvd

Independence Dr

SW 11th Ct

American Way

Powerline Rd

Driveway D

Driveway E

SW 30th Ave

720 (1,500)

1,500 (720)

380 (925)
1,290 (910)
240 (440)
625 (430)
1,440 (2,265)
335 (365)
85 (125)
60 (45)
955 (450)
2,330 (1,505)
770 (330)
360 (760)
1,225 (1,175)
275 (355)

1,895 (2,165)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,690 (2,075)
55 (115)

40 (135)
1,910 (2,275)
80 (15)
2,705 (2,055)
100 (5)
10 (10)
2,795 (2,050)
10 (10)
10 (15)
2,795 (2,045)
10 (10)

2,160 (3,715)
60 (255)
20 (25)
3,780 (2,220)
30 (130)
190 (95)
255 (110)

45 (150)
135 (50)
2,440 (3,035)

2,780 (2,365)
150 (60)
125 (260)

45 (65)
2,350 (1,540)
60 (55)
45 (65)
1,800 (2,235)
60 (55)

4,025 (2,260)
30 (95)
90 (70)

30 (60)
2,365 (1,545)
225 (55)
70 (90)
1,860 (2,290)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	Center Alignment Alternative 3D-1.6 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive
55 (125)
1,220 (1,800)
110 (85)

310 (615)
530 (830)
490 (440)
500 (540)
1,825 (2,110)
340 (495)
50 (50)
300 (330)
2,285 (1,950)
145 (185)
170 (285)
670 (585)
680 (390)

From I-95 SB
560 (960)
To I-95 NB
1,110 (590)
160 (550)
From I-95 NB
390 (130)
To I-95 SB

720 (1,500)
1,500 (720)

SW 28th Ave
SW 24th Ave

2,760 (2,390)
60 (50)
20 (85)
W. Driveway

2,710 (2,325)
70 (150)
70 (190)
E. Driveway

Palm Trails Plaza
50 (150)
965 (1,360)
55 (190)

115 (45)
The Lakes at Deerfield Apt S
1,405 (1,215)
30 (70)

Horizon Club Driveway

2,210 (2,780)
30 (170)
115 (110)
145 (190)
2,680 (2,260)
80 (175)
220 (115)
130 (110)

2,735 (2,355)
190 (125)
85 (85)

5 (20)
1,005 (1,520)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,420 (1,235)
15 (15)

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	Center Alignment Alternative 3D-1.6 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 1

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

West Dr

430 (970)
1,295 (920)
250 (555)
655 (430)
1,310 (1,610)
320 (355)
1,050 (505)
1,625 (1,390)
780 (340)
390 (770)
1,235 (1,180)
275 (380)

1,970 (2,345)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,755 (2,350)
55 (115)

40 (135) Quietwaters N Driveway

1,975 (2,445)
90 (25)
2,770 (2,330)
100 (5)

20 (105) Quietwaters S Driveway

2,850 (2,230)
10 (10)

55 (165) Driveway F

2,805 (2,075)
135 (40)

To Turnpike NB

To WB Sawgrass

To WB Sawgrass ELs

1,050 (2,630)

1,490 (3,010)

1,140 (1,920)

350 (1,090)

440 (380)

Matchline A

From EB Sawgrass ELs

2,630 (1,050)

1,560 (700)

1,070 (350)

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

Waterways Blvd

Independence Dr

Driveway D

Driveway E

SW 30th Ave

45 (65)
2,350 (1,550)
60 (55) SW 11th Ct
45 (65)
1,840 (2,275)
60 (55)

American Way

Powerline Rd

2,110 (3,115)
60 (255)
3,180 (2,170)
30 (130)
190 (95)
255 (110)

2,110 (3,325)
20 (25)
3,425 (2,210)
10 (70)
60 (45)
30 (25)

30 (60)
2,365 (1,555)
225 (55)
70 (90)
1,900 (2,330)

1,785 (1,865)
75 (30)
3,145 (2,645)
75 (30)
60 (150)
65 (110)

FDOT

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.1
AM (PM) Peak Hour Volume

Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

55 (125)
1,260 (1,840)

110 (85)

340 (645)
530 (830)
500 (450)

500 (550)
1,545 (2,140)
340 (525)

330 (360)
2,145 (1,780)
155 (195)

200 (315)
670 (585)
690 (400)

From I-95 SB

To I-95 NB

900 (1,290)

1,560 (920)

From I-95 NB

240
(630)

550
(230)

To I-95 SB

1,140 (1,920)

350 (1,090)

1,560 (700)

550 (450)

2,110 (1,150)

2,560 (2,145)
70 (150)

70 (190)

E. Driveway

W. Driveway

SW 24th Ave

SW 28th Ave

50 (150)
975 (1,400)

Palm Trails
Plaza

55 (190)

115 (45)

The Lakes at Deerfield
Apt S

1,445 (1,255)
30 (70)

Horizon Club
Driveway

328 (1,078)
1,662 (1,792)
30 (170)

537 (439)
2,593 (2,141)
80 (175)

198 (103)
35 (23)
117 (99)

1,970 (2,990)
25 (20)

2,545 (2,135)
165 (105)

50 (50)
35 (35)

1,995 (3,010)
35 (25)
55 (65)

2,555 (2,145)
25 (25)

20 (85)

5 (20)
1,015 (1,560)
10 (10)

10 (15)
15 (10)

5 (35)
5 (5)
35 (80)

50 (115)
1,460 (1,275)
15 (15)

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	North Alignment Alternative 3D-1.1 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

West Dr

40 (135) Quietwaters N Driveway

20 (105) Quietwaters S Driveway

55 (165) Driveway F

1,050 (2,630)

1,490 (3,010)

1,330 (2,560)

160 (450)

440 (380)

1,560 (700)

1,070 (350)

2,630 (1,050)

Matchline A

To Turnpike NB

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

Waterways Blvd

Independence Dr

SW 11th Ct

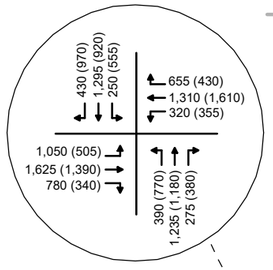
American Way

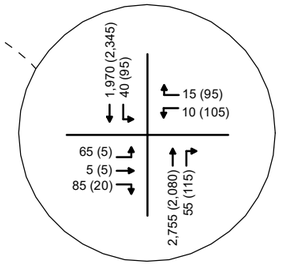
Powerline Rd

Driveway D

Driveway E

SW 30th Ave



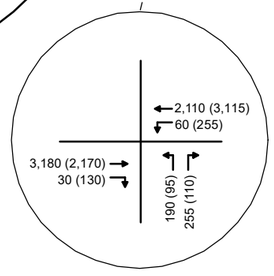


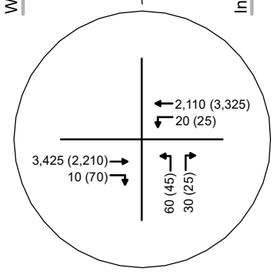
1,975 (2,445) 90 (25)

2,770 (2,330) 100 (5)

2,850 (2,230) 10 (10)

2,805 (2,075) 135 (40)



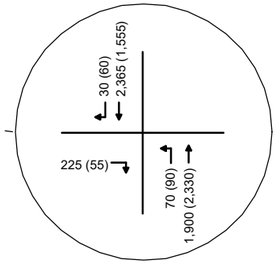


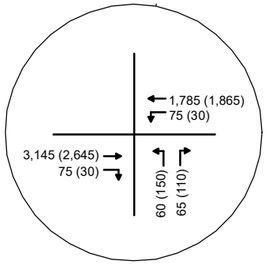
45 (65) 2,395 (1,550)

60 (55)

45 (65)

1,900 (2,275) 60 (55)





SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.2 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive

55 (125)
1,260 (1,840)
110 (85)

340 (645)
530 (830)
500 (450)
500 (550)
1,355 (1,500)
340 (525)
330 (360)
2,145 (1,780)
155 (195)
200 (315)
670 (585)
690 (400)

1,330 (2,560)
950 (1,660)
730 (1,060)
From I-95 SB
To I-95 NB
160 (450)
550 (450)
1,560 (700)
2,110 (1,150)
380 (900)
1,560 (920)
From I-95 NB
220
(600)
550
(230)
To I-95 SB

SW 28th Ave
SW 24th Ave
W. Driveway
E. Driveway
70 (190)
2,560 (2,145)
70 (150)

Palm Trails
Plaza
50 (150)
975 (1,400)
55 (190)

115 (45)
The Lakes at Deerfield
Apt S
1,445 (1,255)
30 (70)

Horizon Club
Driveway

138 (438)
1,662 (1,792)
30 (170)
537 (439)
2,593 (2,141)
80 (175)
198 (103)
35 (23)
117 (99)

1,780 (2,350)
25 (20)
2,545 (2,135)
165 (105)
50 (50)
35 (35)

1,805 (2,370)
35 (25)
55 (65)
2,555 (2,145)
25 (25)
20 (85)

5 (20)
1,015 (1,560)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,460 (1,275)
15 (15)

FDOT

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.2
AM (PM) Peak Hour Volume

Page 2 of 2

Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To WB Sawgrass

To WB Sawgrass ELs

930 (2,370)

From EB Sawgrass ELs

2,370 (930)

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

West Dr

380 (925)
1,290 (910)
240 (440)
625 (430)
1,300 (1,525)
335 (365)
10 (95)
955 (450)
1,590 (1,365)
770 (330)
360 (760)
1,225 (1,175)
275 (355)

1,895 (2,165)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,690 (2,075)
55 (115)

45 (150)
50 (10)
2,225 (2,265)
85 (40)
700 (745)

40 (135) Quietwaters N Driveway

1,910 (2,275)
80 (15)
2,705 (2,055)
100 (5)

10 (10) Quietwaters S Driveway

2,795 (2,050)
10 (10)

10 (15) Driveway F

2,795 (2,045)
10 (10)

Industrial Park Access

930 (2,370)

2,370 (930)

Matchline A

1,330 (1,470)

Waterways Blvd

Independence Dr

Driveway D

SW 30th Ave

45 (65)
2,350 (1,540)
60 (55) SW 11th Ct
45 (65)
1,800 (2,235)
60 (55)

American Way

Powerline Rd

2,020 (2,975)
60 (255)
3,040 (2,080)
30 (130)
190 (95)
255 (110)

2,020 (3,185)
20 (25)
3,285 (2,120)
10 (70)
60 (45)
30 (25)

30 (60)
2,365 (1,545)
225 (55)
70 (90)
1,860 (2,290)

2,215 (2,125)
75 (30)
625 (715)
75 (30)
60 (150)
65 (110)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.3 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

930 (2,370)

440 (380)

1,370 (2,750)

970 (1,630)

730 (1,030)

From I-95 SB

To I-95 NB

1,560 (880)

400 (1,120)

3,700 (2,400)

3,700 (2,400)

2,110 (1,070)

From I-95 NB

240
(600)

550
(190)

To I-95 SB

1,590 (1,330)

Military Trail

East Drive

55 (125)
1,220 (1,800)

110 (85)

310 (615)
530 (830)
490 (440)

500 (540)
1,245 (990)
340 (495)

300 (330)
215 (340)
145 (185)

170 (285)
670 (585)
680 (390)

590 (665)
70 (150)

70 (190)

E. Driveway

W. Driveway

SW 28th Ave

SW 24th Ave

Palm Trails
Plaza

50 (150)
965 (1,360)

55 (190)

115 (45)

The Lakes at Deerfield
Apt S

1,405 (1,215)
30 (70)

Horizon Club
Driveway

430 (370)
5 (5)
5 (5)

1,640 (1,660)
20 (170)

610 (650)
80 (175)

220 (115)
130 (110)

1,610 (1,780)
25 (20)

575 (655)
170 (110)

50 (50)
35 (35)

1,635 (1,800)
35 (25)
55 (65)

585 (665)
25 (25)

20 (85)

5 (20)
1,005 (1,520)
10 (10)

10 (15)
15 (10)

5 (35)
5 (5)
35 (80)

50 (115)
1,420 (1,235)
15 (15)

FDOT **SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E**	North Alignment Alternative 3D-1.3 AM (PM) Peak Hour Volume	Page 2 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

West Dr

Quietwaters N Driveway

Quietwaters S Driveway

Driveway F

Matchline A

To Turnpike NB

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

Waterways Blvd

Independence Dr

SW 11th Ct

American Way

Powerline Rd

Driveway D

Driveway E

SW 30th Ave

1,050 (2,630)

1,490 (2,960)

440 (330)

2,630 (1,050)

1,560 (700)

1,070 (350)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.4 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

1,490 (2,960)

1,560 (700)

1,050 (1,960)

830 (1,260)

440 (1,000)

1,110 (580)

From I-95 SB

To I-95 NB

From I-95 NB

220 (700)

450 (120)

To I-95 SB

Military Trail

East Drive

55 (125)
1,260 (1,840)

110 (85)

340 (645)
530 (830)
500 (450)

500 (550)
1,195 (1,100)
340 (525)

330 (360)
2,695 (2,230)
155 (195)

200 (315)
670 (585)
690 (400)

SW 28th Ave

1,640 (1,830)
30 (170)

3,130 (2,580)
80 (175)

220 (115)
0 (0)
130 (110)

SW 24th Ave

1,620 (1,950)
25 (20)

3,095 (2,585)
165 (105)

50 (50)
35 (35)

W. Driveway

1,645 (1,970)
35 (25)
55 (65)

3,105 (2,595)
25 (25)

20 (85)

3,110 (2,595)
70 (150)

E. Driveway

70 (190)

Palm Trails Plaza

50 (150)
975 (1,400)

55 (190)

115 (45)

The Lakes at Deerfield Apt S

1,445 (1,255)
30 (70)

Horizon Club Driveway

5 (20)
1,015 (1,560)
10 (10)

10 (15)
15 (10)

5 (35)
5 (5)
35 (80)

50 (115)
1,460 (1,275)
15 (15)

FDOT

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.4
AM (PM) Peak Hour Volume

Page 2 of 2

Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

930 (2,370)

2,370 (930)

930 (2,370)

2,370 (930)

Matchline A

West Dr

380 (925)
1,290 (910)
240 (440)
625 (430)
1,300 (1,525)
335 (365)
10 (95)
955 (450)
1,590 (1,365)
770 (330)
360 (760)
1,225 (1,175)
275 (355)

1,895 (2,165)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,690 (2,075)
55 (115)

45 (150)
50 (10)
2,225 (2,265)
85 (40)
2,030 (2,215)

40 (135) Quietwaters N Driveway

1,910 (2,275)
80 (15)
2,705 (2,055)
100 (5)

10 (10) Quietwaters S Driveway

2,795 (2,050)
10 (10)

10 (15) Driveway F

2,795 (2,045)
10 (10)

Industrial Park Access

Waterways Blvd

Independence Dr

45 (65)
2,350 (1,540)
60 (55) SW 11th Ct
45 (65)
1,800 (2,235)
60 (55)

Driveway D

Driveway E

SW 30th Ave

American Way

Powerline Rd

2,020 (2,975)
60 (255)
3,040 (2,080)
30 (130)
190 (95)
255 (110)

2,020 (3,185)
20 (25)
3,285 (2,120)
10 (70)
60 (45)
30 (25)

30 (60)
2,365 (1,545)
225 (55)
70 (90)
1,860 (2,290)

2,215 (2,125)
75 (30)
1,955 (2,185)
75 (30)
60 (150)
65 (110)

FDOT

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.5
AM (PM) Peak Hour Volume

Page 1 of 2

Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

930 (2,370)

440 (380)

1,370 (2,750)

970 (1,630)

730 (1,030)

From I-95 SB

To I-95 NB

1,150 (470)

400 (1,120)

2,370 (930)

2,370 (930)

1,560 (620)

From I-95 NB

240
(600)

410
(150)

To I-95 SB

810 (310)

Military Trail

East Drive

55 (125)
1,220 (1,800)

110 (85)

310 (615)
530 (830)
490 (440)

500 (540)
1,245 (990)
340 (495)

300 (330)
1,545 (1,810)
145 (185)

170 (285)
670 (585)
680 (390)

1,920 (2,135)
70 (150)

70 (190)

E. Driveway

W. Driveway

50 (150)
965 (1,360)

Palm Trails
Plaza

55 (190)

SW 28th Ave

SW 24th Ave

115 (45)

The Lakes at Deerfield
Apt S

1,405 (1,215)
30 (70)

Horizon Club
Driveway

440 (380)
5 (5)
5 (5)

1,630 (1,660)
30 (170)

1,940 (2,120)
80 (175)

220 (115)
130 (110)

1,610 (1,780)
25 (20)

1,905 (2,125)
165 (105)

50 (50)
35 (35)

1,635 (1,800)
35 (25)
55 (65)

1,915 (2,135)
25 (25)

20 (85)

5 (20)
1,005 (1,520)
10 (10)

10 (15)
15 (10)

5 (35)
5 (5)
35 (80)

50 (115)
1,420 (1,235)
15 (15)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.5
AM (PM) Peak Hour Volume

Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

To Turnpike NB

To WB Sawgrass

To WB Sawgrass ELs

From EB Sawgrass ELs

From EB Sawgrass

To Turnpike SB

From Turnpike NB

From Turnpike SB

720 (1,500)

1,500 (720)

720 (1,500)

1,500 (720)

Matchline A

West Dr

380 (925)
1,290 (910)
240 (440)
625 (430)
1,440 (2,265)
335 (365)
10 (95)
955 (450)
2,330 (1,505)
770 (330)
360 (760)
1,225 (1,175)
275 (355)

1,895 (2,165)
40 (95)
15 (95)
10 (105)
65 (5)
5 (5)
85 (20)
2,690 (2,075)
55 (115)

45 (150)
50 (10)
2,365 (3,005)
85 (40)
2,770 (2,355)

40 (135) Quietwaters N Driveway

1,910 (2,275)
80 (15)
2,705 (2,055)
100 (5)

10 (10) Quietwaters S Driveway

2,795 (2,050)
10 (10)

10 (15) Driveway F

2,795 (2,045)
10 (10)

Industrial Park Access

Waterways Blvd

Independence Dr

45 (65)
2,350 (1,540)
60 (55) SW 11th Ct
45 (65)
1,800 (2,235)
60 (55)

American Way

Powerline Rd

Driveway D

Driveway E

SW 30th Ave

2,160 (3,715)
60 (255)
3,780 (2,220)
30 (130)
190 (95)
255 (110)

2,160 (3,925)
20 (25)
4,025 (2,260)
10 (70)
60 (45)
30 (25)

30 (60)
2,365 (1,545)
225 (55)
70 (90)
1,860 (2,290)

2,355 (2,865)
75 (30)
2,695 (2,325)
75 (30)
60 (150)
65 (110)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E	North Alignment Alternative 3D-1.6 AM (PM) Peak Hour Volume	Page 1 of 2	Figure 2

Legend

- Managed Lane Configuration
- General Use Lane/Arterial
- X,XXX (X,XXX) AM (PM) Mainline/Ramp Volume
- Signalized Intersection
- Unsignalized Intersection

N

N.T.S.

Matchline A

Military Trail

East Drive
55 (125)
1,220 (1,800)
110 (85)

310 (615)
530 (830)
490 (440)
500 (540)
1,825 (2,110)
340 (495)
300 (330)
2,285 (1,950)
145 (185)
170 (285)
670 (585)
680 (390)

720 (1,500)
1,500 (720)

From I-95 SB
560 (950)
To I-95 NB
1,110 (590)
From I-95 NB
160
(550)
390
(130)
To I-95 SB

2,660 (2,275)
70 (150)
70 (190)
W. Driveway
E. Driveway

Palm Trails
Plaza
50 (150)
965 (1,360)
55 (190)

115 (45)
The Lakes at Deerfield
Apt S
1,405 (1,215)
30 (70)
Horizon Club
Driveway

SW 28th Ave
2,210 (2,780)
30 (170)
2,680 (2,260)
80 (175)
220 (115)
130 (110)

SW 24th Ave
2,190 (2,900)
25 (20)
2,645 (2,265)
165 (105)
50 (50)
35 (35)

2,215 (2,920)
35 (25)
55 (65)
2,655 (2,275)
25 (25)
20 (85)

5 (20)
1,005 (1,520)
10 (10)
10 (15)
15 (10)
5 (35)
5 (5)
35 (80)
50 (115)
1,420 (1,235)
15 (15)

SR-826/SW 10th Street (East of Turnpike to Military Trail) PD&E

North Alignment Alternative 3D-1.6
AM (PM) Peak Hour Volume

Page 2 of 2

Figure 2

ATTACHMENT 3

Volume to Capacity Ratio Analysis Tables

SW 10th Street PD&E Study

Existing (2016) Conditions

Table 1A - Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	2,780	1,535	3,020	0.92	0.51
	East of Waterways	3	3,105	1,635	3,020	1.03	0.54
	West of Independence	3	3,105	1,635	3,020	1.03	0.54
	East of Independence	3	3,155	1,665	3,020	1.04	0.55
	West of Powerline	3	3,155	1,665	3,020	1.04	0.55
	East of Powerline	3	2,580	1,660	3,020	0.85	0.55
	West of SW 30th Ave	2	2,505	1,725	2,000	1.25	0.86
	East of SW 30th Ave	2	2,505	1,850	2,000	1.25	0.93
	West of 28th Ave	2	2,505	1,850	2,000	1.25	0.93
	East of 28th Ave	2	2,535	1,795	2,000	1.27	0.90
	West of 24th Ave	2	2,535	1,795	2,000	1.27	0.90
	East of 24th Ave	2	2,400	1,725	2,000	1.20	0.86
	West of Military Trail	3	2,450	1,890	3,020	0.81	0.63
	East of Military Trail	3	3,085	1,950	3,020	1.02	0.65
	West of Newport Center Drive	4	3,085	1,950	4,040	0.76	0.48
	East of Newport Center Drive	4	2,500	2,285	4,040	0.62	0.57
	West of I-95 SB Off-Ramp	3	2,500	2,285	3,020	0.83	0.76
	East of I-95 SB Off-Ramp	3	2,095	1,795	3,020	0.69	0.59
	West of I-95 NB Off-Ramp	3	2,095	1,795	3,020	0.69	0.59
	East of I-95 NB Off-Ramp	3	1,395	1,590	3,020	0.46	0.53
	West of Natura Blvd	3	1,395	1,590	3,020	0.46	0.53
	East of Natura Blvd	3	1,360	1,505	3,020	0.45	0.50
SW 10th Street Westbound	West of Waterways	3	1,730	2,925	3,020	0.57	0.97
	East of Waterways	3	1,700	3,205	3,020	0.56	1.06
	West of Independence	3	1,700	3,205	3,020	0.56	1.06
	East of Independence	3	1,690	3,260	3,020	0.56	1.08
	West of Powerline	3	1,690	3,260	3,020	0.56	1.08
	East of Powerline	3	1,620	2,560	3,020	0.54	0.85
	West of SW 30th Ave	2	1,635	2,515	2,000	0.82	1.26
	East of SW 30th Ave	2	1,715	2,525	2,000	0.86	1.26
	West of 28th Ave	2	1,715	2,525	2,000	0.86	1.26
	East of 28th Ave	2	1,605	2,535	2,000	0.80	1.27
	West of 24th Ave	2	1,605	2,535	2,000	0.80	1.27
	East of 24th Ave	2	1,580	2,505	2,000	0.79	1.25
	West of Military Trail	2	1,670	2,590	2,000	0.84	1.30
	East of Military Trail	3	1,835	2,795	3,020	0.61	0.93
	West of Newport Center Drive	4	1,835	2,795	4,040	0.45	0.69
	East of Newport Center Drive	3	2,330	2,305	3,020	0.77	0.76
	West of I-95 SB Off-Ramp	3	2,330	2,305	3,020	0.77	0.76
	East of I-95 SB Off-Ramp	3	2,195	2,025	3,020	0.73	0.67
	West of I-95 NB Off-Ramp	3	2,195	2,025	3,020	0.73	0.67
	East of I-95 NB Off-Ramp	3	1,865	1,690	3,020	0.62	0.56
	West of Natura Blvd	3	1,865	1,690	3,020	0.62	0.56
	East of Natura Blvd	3	1,545	1,400	3,020	0.51	0.46

NOTES: 4/23/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class I arterial (40 mph or higher)

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 No-Build Option

Table 2A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,490	2,240	3,020	1.16	0.74
	East of Waterways	3	3,815	2,340	3,020	1.26	0.77
	West of Independence	3	3,815	2,340	3,020	1.26	0.77
	East of Independence	3	3,865	2,370	3,020	1.28	0.78
	West of Powerline	3	3,865	2,370	3,020	1.28	0.78
	East of Powerline	3	3,010	2,135	3,020	1.00	0.71
	West of SW 30th Ave	2	2,935	2,190	2,000	1.47	1.10
	East of SW 30th Ave	2	2,935	2,305	2,000	1.47	1.15
	West of 28th Ave	2	2,935	2,305	2,000	1.47	1.15
	East of 28th Ave	2	2,965	2,235	2,000	1.48	1.12
	West of 24th Ave	2	2,965	2,235	2,000	1.48	1.12
	East of 24th Ave	2	2,835	2,165	2,000	1.42	1.08
	West of Military Trail	3	2,885	2,330	3,020	0.96	0.77
	East of Military Trail	3	3,515	2,380	3,020	1.16	0.79
	West of Newport Center Drive	4	3,515	2,380	4,040	0.87	0.59
	East of Newport Center Drive	4	2,850	2,785	4,040	0.71	0.69
	West of I-95 SB Off-Ramp	3	2,850	2,785	3,020	0.94	0.92
	East of I-95 SB Off-Ramp	3	2,565	2,375	3,020	0.85	0.79
	West of I-95 NB Off-Ramp	3	2,565	2,375	3,020	0.85	0.79
	East of I-95 NB Off-Ramp	3	1,665	2,055	3,020	0.55	0.68
	West of Natura Blvd	3	1,665	2,055	3,020	0.55	0.68
	East of Natura Blvd	3	1,515	1,940	3,020	0.50	0.64
SW 10th Street Westbound	West of Waterways	3	2,240	3,490	3,020	0.74	1.16
	East of Waterways	3	2,210	3,770	3,020	0.73	1.25
	West of Independence	3	2,210	3,770	3,020	0.73	1.25
	East of Independence	3	2,200	3,825	3,020	0.73	1.27
	West of Powerline	3	2,200	3,825	3,020	0.73	1.27
	East of Powerline	3	2,010	3,035	3,020	0.67	1.00
	West of SW 30th Ave	2	2,025	2,990	2,000	1.01	1.50
	East of SW 30th Ave	2	2,105	3,000	2,000	1.05	1.50
	West of 28th Ave	2	2,105	3,000	2,000	1.05	1.50
	East of 28th Ave	2	1,975	3,005	2,000	0.99	1.50
	West of 24th Ave	2	1,975	3,005	2,000	0.99	1.50
	East of 24th Ave	2	1,950	2,975	2,000	0.98	1.49
	West of Military Trail	2	2,040	3,065	2,000	1.02	1.53
	East of Military Trail	3	2,240	3,310	3,020	0.74	1.10
	West of Newport Center Drive	4	2,240	3,310	4,040	0.55	0.82
	East of Newport Center Drive	4	2,845	2,845	4,040	0.70	0.70
	West of I-95 SB Off-Ramp	4	2,845	2,845	4,040	0.70	0.70
	East of I-95 SB Off-Ramp	3	2,690	2,495	3,020	0.89	0.83
	West of I-95 NB Off-Ramp	3	2,690	2,495	3,020	0.89	0.83
	East of I-95 NB Off-Ramp	3	2,130	1,905	3,020	0.71	0.63
	West of Natura Blvd	3	2,130	1,905	3,020	0.71	0.63
	East of Natura Blvd	3	1,790	1,575	3,020	0.59	0.52

NOTES: 4/23/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class I arterial (40 mph or higher)

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Partial Build Option

Table 3A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	4	5,570	3,010	4,040	1.38	0.75
	East of Waterways	4	5,775	3,010	4,040	1.43	0.75
	West of Independence	4	5,775	3,010	4,040	1.43	0.75
	East of Independence	3	5,795	3,015	3,020	1.92	1.00
	West of Powerline	3	5,795	3,015	3,020	1.92	1.00
	East of Powerline	3	4,075	2,835	3,020	1.35	0.94
	West of SW 30th Ave	2	4,000	2,890	2,000	2.00	1.45
	East of SW 30th Ave	2	3,975	2,970	2,000	1.99	1.49
	West of 28th Ave	2	3,975	2,970	2,000	1.99	1.49
	East of 28th Ave	2	4,005	2,885	2,000	2.00	1.44
	West of 24th Ave	2	4,005	2,885	2,000	2.00	1.44
	East of 24th Ave	2	3,870	2,815	2,000	1.94	1.41
	West of Military Trail	3	2,765	2,340	3,020	0.92	0.77
	East of Military Trail	3	3,335	2,640	3,020	1.10	0.87
	West of Newport Center Drive	3	3,335	2,640	3,020	1.10	0.87
	East of Newport Center Drive	4	2,585	3,080	4,040	0.64	0.76
	West of I-95 SB Off-Ramp	5	2,585	3,080	5,040	0.51	0.61
	East of I-95 SB Off-Ramp	5	2,330	2,570	5,040	0.46	0.51
	West of I-95 NB Off-Ramp	5	2,330	2,570	5,040	0.46	0.51
	East of I-95 NB Off-Ramp	3	1,910	2,210	3,020	0.63	0.73
	West of Natura Blvd	3	1,910	2,210	3,020	0.63	0.73
	East of Natura Blvd	3	1,675	2,085	3,020	0.55	0.69
SW 10th Street Westbound	West of Waterways	3	3,010	5,570	3,020	1.00	1.84
	East of Waterways	3	2,860	5,750	3,020	0.95	1.90
	West of Independence	3	2,860	5,750	3,020	0.95	1.90
	East of Independence	3	2,820	5,780	3,020	0.93	1.91
	West of Powerline	3	2,820	5,780	3,020	0.93	1.91
	East of Powerline	3	2,680	3,980	3,020	0.89	1.32
	West of SW 30th Ave	2	2,695	3,930	2,000	1.35	1.97
	East of SW 30th Ave	2	2,730	3,860	2,000	1.37	1.93
	West of 28th Ave	2	2,730	3,860	2,000	1.37	1.93
	East of 28th Ave	2	2,560	3,890	2,000	1.28	1.95
	West of 24th Ave	2	2,560	3,890	2,000	1.28	1.95
	East of 24th Ave	2	2,535	3,860	2,000	1.27	1.93
	West of Military Trail	2	2,065	3,070	2,000	1.03	1.54
	East of Military Trail	3	2,480	3,200	3,020	0.82	1.06
	West of Newport Center Drive	4	2,480	3,200	4,040	0.61	0.79
	East of Newport Center Drive	3	3,045	2,490	3,020	1.01	0.82
	West of I-95 SB Off-Ramp	3	3,045	2,490	3,020	1.01	0.82
	East of I-95 SB Off-Ramp	5	2,950	2,590	5,040	0.59	0.51
	West of I-95 NB Off-Ramp	5	2,950	2,590	5,040	0.59	0.51
	East of I-95 NB Off-Ramp	3	2,340	2,010	3,020	0.77	0.67
	West of Natura Blvd	3	2,340	2,010	3,020	0.77	0.67
	East of Natura Blvd	3	1,900	1,750	3,020	0.63	0.58

NOTES: 4/18/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class I arterial (40 mph or higher); 5LD capacity estimated as 1,000 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Partial Build Option Center Alignment

Table 3B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity Thresholds (1) (pc/h/ln)	V/C (2)	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	ML On Ramp West of Military Trail	1	1,160	640	2,200	0.53	0.29
	West of Military Trail to I 95	2	1,160	640	4,200	0.28	0.15
	ML Direct-Connect Off Ramp to I 95 NB	1	900	520	2,200	0.41	0.24
	ML Direct-Connect Off Ramp to I 95 SB	1	260	120	2,200	0.12	0.05
SW 10th Street Westbound	ML Off Ramp West of Military Trail	1	560	880	2,200	0.25	0.40
	West of Military Trail to I-95	2	560	880	4,200	0.13	0.21
	ML Direct-Connect On Ramp from I 95 SB	1	470	700	2,200	0.21	0.32
	ML Direct-Connect On Ramp from I 95 NB	1	90	180	2,200	0.04	0.08

NOTES: 4/12/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.1 Center Alignment

Table 4A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,210	2,300	2,520	1.27	0.91
	East of Waterways	3	3,455	2,305	2,520	1.37	0.91
	West of Independence	3	3,455	2,305	2,520	1.37	0.91
	East of Independence	3	3,515	2,280	2,520	1.39	0.90
	West of Powerline	3	3,515	2,280	2,520	1.39	0.90
	East of Powerline	3	2,310	2,395	2,520	0.92	0.95
	West of SW 30th Ave	2	2,310	2,395	1,630	1.42	1.47
	East of SW 30th Ave	3	2,285	2,625	2,520	0.91	1.04
	West of SW 28th Ave	3	3,355	2,975	2,520	1.33	1.18
	East of SW 28th Ave	2	3,375	2,830	1,630	2.07	1.74
	West of SW 24th Ave	2	3,375	2,830	1,630	2.07	1.74
	East of SW 24th Ave	2	3,270	2,790	1,630	2.01	1.71
	West of Military Trail	3	2,680	2,415	2,520	1.06	0.96
	East of Military Trail	3	3,335	2,630	2,520	1.32	1.04
	West of Newport Center Dr	3	3,335	2,630	2,520	1.32	1.04
	East of Newport Center Dr	4	2,585	3,070	3,390	0.76	0.91
	West of I-95 SB Off-Ramp	5	2,585	3,070	4,260	0.61	0.72
	East of I-95 SB Off-Ramp	5	2,310	2,420	4,260	0.54	0.57
	West of I-95 NB Off-Ramp	5	1,480	1,320	4,260	0.35	0.31
	East of I-95 NB Off-Ramp	3	1,950	2,000	2,520	0.77	0.79
	West of Natura Blvd	3	1,950	2,000	2,520	0.77	0.79
	East of Natura Blvd	3	1,805	1,920	2,520	0.72	0.76
SW 10th Street Westbound	West of Waterways	3	2,300	3,210	2,520	0.91	1.27
	East of Waterways	3	2,190	3,395	2,520	0.87	1.35
	West of Independence	3	2,190	3,395	2,520	0.87	1.35
	East of Independence	3	2,190	3,395	2,520	0.87	1.35
	West of Powerline	3	2,190	3,395	2,520	0.87	1.35
	East of Powerline	3	2,355	2,565	2,520	0.93	1.02
	West of SW 30th Ave	2	2,445	2,465	1,630	1.50	1.51
	East of SW 30th Ave	3	2,445	2,465	2,520	0.97	0.98
	West of SW 28th Ave	3	2,795	3,555	2,520	1.11	1.41
	East of SW 28th Ave	3	2,575	3,530	2,520	1.02	1.40
	West of SW 24th Ave	3	2,575	3,150	2,520	1.02	1.25
	East of SW 24th Ave	3	2,575	3,150	2,520	1.02	1.25
	West of Military Trail	3	2,135	3,150	2,520	0.85	1.25
	East of Military Trail	3	2,385	3,215	2,520	0.95	1.28
	West of Newport Center Dr	3	2,385	3,215	2,520	0.95	1.28
	East of Newport Center Dr	3	3,085	2,480	2,520	1.22	0.98
	West of I-95 SB Off-Ramp	3	3,085	2,480	2,520	1.22	0.98
	East of I-95 SB Off-Ramp	5	2,890	2,640	4,260	0.68	0.62
	West of I-95 NB Off-Ramp	5	2,890	2,640	4,260	0.68	0.62
	East of I-95 NB Off-Ramp	3	1,880	1,960	2,520	0.75	0.78
	West of Natura Blvd	3	2,170	2,280	2,520	0.86	0.90
	East of Natura Blvd	3	1,735	2,050	2,520	0.69	0.81

NOTES: 4/23/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.1 Center Alignment

Table 4B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,630	1,050	4,200	0.63	0.25
	ML Off Ramp East of Powerline Rd	1	1,070	350	2,200	0.49	0.16
	East of Powerline Rd to East of SW 30th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,560	700	4,200	0.37	0.17
	ML On Ramp East of SW 24th Ave	1	550	450	2,200	0.25	0.20
	East of SW 24th Ave to West of Military Trail	2	2,110	1,150	4,200	0.50	0.27
	West of Military Trail to I 95	2	2,110	1,150	4,200	0.50	0.27
	ML Direct-Connect Off Ramp to I 95 NB	1	1,560	920	2,200	0.71	0.42
	ML Direct-Connect Off Ramp to I 95 SB	1	550	230	2,200	0.25	0.10
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	1,050	2,630	4,200	0.25	0.63
	ML On Ramp East of Powerline Rd	1	350	1,090	2,200	0.16	0.50
	East of Powerline Rd to West of SW 30th Ave	2	700	1,540	4,200	0.17	0.37
	West of SW 30th Ave to East of SW 28th Ave	2	700	1,540	4,200	0.17	0.37
	East of SW 28th Ave to West of Military Trail	2	700	1,540	4,200	0.17	0.37
	ML Off Ramp West of Military Trail	1	440	380	2,200	0.20	0.17
	West of Military Trail to East of Military Trail	2	1,140	1,920	4,200	0.27	0.46
	East of Military Trail to I-95	2	1,140	1,920	4,200	0.27	0.46
	ML Direct-Connect On Ramp from I 95 SB	1	900	1,290	2,200	0.41	0.59
	ML Direct-Connect On Ramp from I 95 NB	1	240	630	2,200	0.11	0.29

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.2 Center Alignment

Table 5A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,210	2,300	2,520	1.27	0.91
	East of Waterways	3	3,455	2,305	2,520	1.37	0.91
	West of Independence	3	3,455	2,305	2,520	1.37	0.91
	East of Independence	3	3,515	2,280	2,520	1.39	0.90
	West of Powerline	3	3,515	2,280	2,520	1.39	0.90
	East of Powerline	3	2,310	2,395	2,520	0.92	0.95
	West of SW 30th Ave	2	2,310	2,395	1,630	1.42	1.47
	East of SW 30th Ave	3	2,285	2,595	2,520	0.91	1.03
	West of 28th Ave	3	3,355	2,945	2,520	1.33	1.17
	East of 28th Ave	2	3,375	2,800	1,630	2.07	1.72
	West of 24th Ave	2	3,375	2,800	1,630	2.07	1.72
	East of 24th Ave	2	3,270	2,760	1,630	2.01	1.69
	West of Military Trail	3	2,680	2,385	2,520	1.06	0.95
	East of Military Trail	3	3,335	2,630	2,520	1.32	1.04
	West of Newport Center Dr	3	3,335	2,630	2,520	1.32	1.04
	East of Newport Center Dr	4	2,585	3,070	3,390	0.76	0.91
	West of I-95 SB Off-Ramp	5	2,585	3,070	4,260	0.61	0.72
	East of I-95 SB Off-Ramp	5	2,310	2,420	4,260	0.54	0.57
	West of I-95 NB Off-Ramp	5	1,480	1,320	4,260	0.35	0.31
	East of I-95 NB Off-Ramp	3	1,950	2,000	2,520	0.77	0.79
	West of Natura Blvd	3	1,950	2,000	2,520	0.77	0.79
	East of Natura Blvd	3	1,805	1,920	2,520	0.72	0.76
SW 10th Street Westbound	West of Waterways	3	2,300	3,210	2,520	0.91	1.27
	East of Waterways	3	2,190	3,395	2,520	0.87	1.35
	West of Independence	3	2,190	3,395	2,520	0.87	1.35
	East of Independence	3	2,190	3,395	2,520	0.87	1.35
	West of Powerline	3	2,190	3,395	2,520	0.87	1.35
	East of Powerline	3	2,355	2,565	2,520	0.93	1.02
	West of SW 30th Ave	2	2,445	2,465	1,630	1.50	1.51
	East of SW 30th Ave	3	2,445	2,465	2,520	0.97	0.98
	West of 28th Ave	3	2,605	2,915	2,520	1.03	1.16
	East of 28th Ave	3	2,385	2,890	2,520	0.95	1.15
	West of 24th Ave	3	1,945	2,890	2,520	0.77	1.15
	East of 24th Ave	3	1,945	2,890	2,520	0.77	1.15
	West of Military Trail	2	1,945	2,510	1,630	1.19	1.54
	East of Military Trail	3	2,195	2,575	2,520	1.35	1.58
	West of Newport Center Dr	4	2,575	3,475	3,390	0.76	1.03
	East of Newport Center Dr	3	3,275	2,740	2,520	1.30	1.09
	West of I-95 SB Off-Ramp	3	3,275	2,740	2,520	1.30	1.09
	East of I-95 SB Off-Ramp	5	2,910	2,670	4,260	0.68	0.63
	West of I-95 NB Off-Ramp	5	2,910	2,670	4,260	0.68	0.63
	East of I-95 NB Off-Ramp	3	1,880	1,960	2,520	0.75	0.78
	West of Natura Blvd	3	2,170	2,280	2,520	0.86	0.90
	East of Natura Blvd	3	1,735	2,050	2,520	0.69	0.81

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.2 Center Alignment

Table 5B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,630	1,050	4,200	0.63	0.25
	ML Off Ramp East of Powerline Rd	1	1,070	350	2,200	0.49	0.16
	East of Powerline Rd to East of SW 30th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,560	700	4,200	0.37	0.17
	ML On Ramp East of SW 24th Ave	1	550	450	2,200	0.25	0.20
	East of SW 24th Ave to West of Military Trail	2	2,110	1,150	4,200	0.50	0.27
	West of Military Trail to I 95	2	2,110	1,150	4,200	0.50	0.27
	ML Direct-Connect Off Ramp to I 95 NB	1	1,560	920	2,200	0.71	0.42
	ML Direct-Connect Off Ramp to I 95 SB	1	550	230	2,200	0.25	0.10
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	1,050	2,630	4,200	0.25	0.63
	ML On Ramp East of Powerline Rd	1	160	450	2,200	0.07	0.20
	East of Powerline Rd to West of SW 30th Ave	2	890	2,180	4,200	0.21	0.52
	West of SW 30th Ave to East of SW 28th Ave	2	890	2,180	4,200	0.21	0.52
	East of SW 28th Ave to West of Military Trail	2	890	2,180	4,200	0.21	0.52
	ML Off Ramp West of Military Trail	1	440	380	2,200	0.20	0.17
	West of Military Trail to East of Military Trail	3	1,330	2,560	4,200	0.32	0.61
	ML On Ramp East of Military Trail	1	380	900	2,200	0.17	0.41
	East of Military Trail to I-95	2	950	1,660	4,200	0.23	0.40
	ML Direct-Connect On Ramp from I 95 SB	1	730	1,060	2,200	0.33	0.48
	ML Direct-Connect On Ramp from I 95 NB	1	220	600	2,200	0.10	0.27

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.3 Center Alignment

Table 6A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,070	2,210	2,520	1.22	0.88
	East of Waterways	3	3,315	2,215	2,520	1.32	0.88
	West of Independence	3	3,315	2,215	2,520	1.32	0.88
	East of Independence	3	3,375	2,190	2,520	1.34	0.87
	West of Powerline	3	3,375	2,190	2,520	1.34	0.87
	East of Powerline	3	2,190	2,285	2,520	0.87	0.91
	West of SW 30th Ave	2	2,190	2,285	1,630	1.34	1.40
	East of SW 30th Ave	2	2,165	2,485	1,630	1.33	1.52
	West of 28th Ave	2	2,165	2,485	1,630	1.33	1.52
	East of 28th Ave	2	2,185	2,340	1,630	1.34	1.44
	West of 24th Ave	2	2,185	2,340	1,630	1.34	1.44
	East of 24th Ave	2	2,080	2,300	1,630	1.28	1.41
	West of Military Trail	2	710	905	1,630	0.44	0.56
	East of Military Trail	2	1,385	1,170	1,630	0.85	0.72
	West of Newport Center Dr	3	2,975	2,500	2,520	1.18	0.99
	East of Newport Center Dr	4	2,225	2,940	3,390	0.66	0.87
	West of I-95 SB Off-Ramp	5	2,225	2,940	4,260	0.52	0.69
	East of I-95 SB Off-Ramp	5	1,990	2,290	4,260	0.47	0.54
	West of I-95 NB Off-Ramp	5	1,210	1,190	4,260	0.28	0.28
	East of I-95 NB Off-Ramp	3	1,680	1,870	2,520	0.67	0.74
	West of Natura Blvd	3	1,680	1,870	2,520	0.67	0.74
	East of Natura Blvd	3	1,535	1,790	2,520	0.61	0.71
SW 10th Street Westbound	West of Waterways	3	2,210	3,070	2,520	0.88	1.22
	East of Waterways	3	2,100	3,255	2,520	0.83	1.29
	West of Independence	3	2,100	3,255	2,520	0.83	1.29
	East of Independence	3	2,100	3,255	2,520	0.83	1.29
	West of Powerline	3	2,100	3,255	2,520	0.83	1.29
	East of Powerline	3	2,345	2,350	2,520	0.93	0.93
	West of SW 30th Ave	3	2,435	2,345	2,520	0.97	0.93
	East of SW 30th Ave	3	2,435	2,345	2,520	0.97	0.93
	West of 28th Ave	3	2,435	2,345	2,520	0.97	0.93
	East of 28th Ave	3	2,215	2,320	2,520	0.88	0.92
	West of 24th Ave	3	2,215	2,320	2,520	0.88	0.92
	East of 24th Ave	3	2,215	2,320	2,520	0.88	0.92
	West of Military Trail	2	1,775	1,940	1,630	1.09	1.19
	East of Military Trail	2	2,085	2,025	1,630	1.28	1.24
	West of Newport Center Dr	4	2,485	3,145	3,390	0.73	0.93
	East of Newport Center Dr	3	3,185	2,410	2,520	1.26	0.96
	West of I-95 SB Off-Ramp	3	3,185	2,410	2,520	1.26	0.96
	East of I-95 SB Off-Ramp	5	2,860	2,340	4,260	0.67	0.55
	West of I-95 NB Off-Ramp	5	2,860	2,340	4,260	0.67	0.55
	East of I-95 NB Off-Ramp	3	1,890	1,670	2,520	0.75	0.66
	West of Natura Blvd	3	2,180	1,990	2,520	0.87	0.79
	East of Natura Blvd	3	1,745	1,760	2,520	0.69	0.70

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.3 Center Alignment

Table 6B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,370	930	4,200	0.56	0.22
	East of Powerline Rd to East of SW 30th Ave	2	2,370	930	4,200	0.56	0.22
	East of SW 30th Ave to East of SW 24th Ave	2	2,370	930	4,200	0.56	0.22
	ML On Ramp East of SW 24th Ave	1	1,330	1,470	2,200	0.60	0.67
	East of SW 24th Ave to West of Military Trail	3	3,700	2,400	6,300	0.59	0.38
	ML Off Ramp West of Military Trail	1	1,590	1,330	2,200	0.72	0.60
	West of Military Trail to I 95	2	2,110	1,070	4,200	0.50	0.25
	ML Direct-Connect Off Ramp to I 95 NB	1	1,560	880	2,200	0.71	0.40
	ML Direct-Connect Off Ramp to I 95 SB	1	550	190	2,200	0.25	0.09
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	930	2,370	4,200	0.22	0.56
	East of Powerline Rd to West of SW 30th Ave	2	930	2,370	4,200	0.22	0.56
	West of SW 30th Ave to East of SW 28th Ave	2	930	2,370	4,200	0.22	0.56
	East of SW 28th Ave to West of Military Trail	2	930	2,370	4,200	0.22	0.56
	ML Off Ramp West of Military Trail	1	440	380	2,200	0.20	0.17
	West of Military Trail to East of Military Trail	3	1,370	2,750	6,300	0.22	0.44
	ML On Ramp East of Military Trail	1	400	1,120	2,200	0.18	0.51
	East of Military Trail to I-95	2	970	1,630	4,200	0.23	0.39
	ML Direct-Connect On Ramp from I 95 SB	1	730	1,030	2,200	0.33	0.47
	ML Direct-Connect On Ramp from I 95 NB	1	240	600	2,200	0.11	0.27

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.4 Center Alignment

Table 7A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,210	2,300	2,520	1.27	0.91
	East of Waterways	3	3,455	2,305	2,520	1.37	0.91
	West of Independence	3	3,455	2,305	2,520	1.37	0.91
	East of Independence	3	3,515	2,280	2,520	1.39	0.90
	West of Powerline	3	3,515	2,280	2,520	1.39	0.90
	East of Powerline	3	2,310	2,395	2,520	0.92	0.95
	West of SW 30th Ave	2	2,310	2,395	1,630	1.42	1.47
	East of SW 30th Ave	3	2,285	2,595	2,520	0.91	1.03
	West of 28th Ave	3	3,355	2,945	2,520	1.33	1.17
	East of 28th Ave	2	3,345	2,800	1,630	2.05	1.72
	West of 24th Ave	2	3,345	2,800	1,630	2.05	1.72
	East of 24th Ave	2	3,240	2,760	1,630	1.99	1.69
	West of Military Trail	3	3,200	2,835	2,520	1.27	1.13
	East of Military Trail	3	3,855	3,080	2,520	1.53	1.22
	West of Newport Center Dr	3	3,885	3,080	2,520	1.54	1.22
	East of Newport Center Dr	4	3,135	3,520	3,390	0.92	1.04
	West of I-95 SB Off-Ramp	5	3,135	3,520	4,260	0.74	0.83
	East of I-95 SB Off-Ramp	5	2,760	2,760	4,260	0.65	0.65
	West of I-95 NB Off-Ramp	5	1,480	1,320	4,260	0.35	0.31
	East of I-95 NB Off-Ramp	3	1,950	2,000	2,520	0.77	0.79
	West of Natura Blvd	3	1,950	2,000	2,520	0.77	0.79
	East of Natura Blvd	3	1,805	1,920	2,520	0.72	0.76
SW 10th Street Westbound	West of Waterways	3	2,300	3,210	2,520	0.91	1.27
	East of Waterways	3	2,190	3,395	2,520	0.87	1.35
	West of Independence	3	2,190	3,395	2,520	0.87	1.35
	East of Independence	3	2,190	3,395	2,520	0.87	1.35
	West of Powerline	3	2,190	3,395	2,520	0.87	1.35
	East of Powerline	3	2,385	2,565	2,520	0.95	1.02
	West of SW 30th Ave	3	2,475	2,465	2,520	0.98	0.98
	East of SW 30th Ave	3	2,475	2,465	2,520	0.98	0.98
	West of 28th Ave	3	2,475	2,465	2,520	0.98	0.98
	East of 28th Ave	3	2,225	2,440	2,520	0.88	0.97
	West of 24th Ave	3	1,785	2,440	2,520	0.71	0.97
	East of 24th Ave	3	1,785	2,440	2,520	0.71	0.97
	West of Military Trail	2	1,785	2,110	1,630	1.10	1.29
	East of Military Trail	2	2,035	2,175	1,630	1.25	1.33
	West of Newport Center Dr	4	2,475	3,175	3,390	0.73	0.94
	East of Newport Center Dr	3	3,175	2,440	2,520	1.26	0.97
	West of I-95 SB Off-Ramp	3	3,175	2,440	2,520	1.26	0.97
	East of I-95 SB Off-Ramp	5	2,910	2,570	4,260	0.68	0.60
	West of I-95 NB Off-Ramp	5	2,910	2,570	4,260	0.68	0.60
	East of I-95 NB Off-Ramp	3	1,880	1,960	2,520	0.75	0.78
	West of Natura Blvd	3	2,170	2,280	2,520	0.86	0.90
	East of Natura Blvd	3	1,735	2,050	2,520	0.69	0.81

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.4 Center Alignment

Table 7B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,630	1,050	4,200	0.63	0.25
	ML Off Ramp East of Powerline Rd	1	1,070	350	2,200	0.49	0.16
	East of Powerline Rd to East of SW 30th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 24th Ave to West of Military Trail	2	1560	700	4200	0.37	0.17
	West of Military Trail to I 95	2	1560	700	4200	0.37	0.17
	ML Direct-Connect Off Ramp to I 95 NB	1	1,110	580	2,200	0.50	0.26
	ML Direct-Connect Off Ramp to I 95 SB	1	450	120	2,200	0.20	0.05
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	1,050	2,630	4,200	0.25	0.63
	East of Powerline Rd to West of SW 30th Ave	2	1,050	2,630	4,200	0.25	0.63
	West of SW 30th Ave to East of SW 28th Ave	2	1,050	2,630	4,200	0.25	0.63
	East of SW 28th Ave to West of Military Trail	2	1,050	2,630	4,200	0.25	0.63
	ML Off Ramp West of Military Trail	1	440	330	2,200	0.20	0.15
	West of Military Trail to East of Military Trail	3	1,490	2,960	6,300	0.24	0.47
	ML On Ramp East of Military Trail	1	440	1,000	2,200	0.20	0.45
	East of Military Trail to I-95	2	1,050	1,960	4,200	0.25	0.47
	ML Direct-Connect On Ramp from I 95 SB	1	830	1,260	2,200	0.38	0.57
	ML Direct-Connect On Ramp from I 95 NB	1	220	700	2,200	0.10	0.32

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.5 Center Alignment

Table 8A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,070	2,210	2,520	1.22	0.88
	East of Waterways	3	3,315	2,215	2,520	1.32	0.88
	West of Independence	3	3,315	2,215	2,520	1.32	0.88
	East of Independence	3	3,375	2,190	2,520	1.34	0.87
	West of Powerline	3	3,375	2,190	2,520	1.34	0.87
	East of Powerline	3	2,190	2,285	2,520	0.87	0.91
	West of SW 30th Ave	2	2,190	2,285	1,630	1.34	1.40
	East of SW 30th Ave	2	2,165	2,485	1,630	1.33	1.52
	West of 28th Ave	2	2,165	2,485	1,630	1.33	1.52
	East of 28th Ave	2	2,185	2,340	1,630	1.34	1.44
	West of 24th Ave	2	2,185	2,340	1,630	1.34	1.44
	East of 24th Ave	2	2,080	2,300	1,630	1.28	1.41
	West of Military Trail	3	2,040	2,375	2,520	0.81	0.94
	East of Military Trail	3	2,715	2,640	2,520	1.08	1.05
	West of Newport Center Dr	3	3,525	2,950	2,520	1.40	1.17
	East of Newport Center Dr	4	2,775	3,390	3,390	0.82	1.00
	West of I-95 SB Off-Ramp	5	2,775	3,390	4,260	0.65	0.80
	East of I-95 SB Off-Ramp	5	2,400	2,700	4,260	0.56	0.63
	West of I-95 NB Off-Ramp	5	1,210	1,190	4,260	0.28	0.28
	East of I-95 NB Off-Ramp	3	1,680	1,870	2,520	0.67	0.74
	West of Natura Blvd	3	1,680	1,870	2,520	0.67	0.74
	East of Natura Blvd	3	1,535	1,790	2,520	0.61	0.71
SW 10th Street Westbound	West of Waterways	3	2,210	3,070	2,520	0.88	1.22
	East of Waterways	3	2,100	3,255	2,520	0.83	1.29
	West of Independence	3	2,100	3,255	2,520	0.83	1.29
	East of Independence	3	2,100	3,255	2,520	0.83	1.29
	West of Powerline	3	2,100	3,255	2,520	0.83	1.29
	East of Powerline	3	2,345	2,445	2,520	0.93	0.97
	West of SW 30th Ave	3	2,435	2,345	2,520	0.97	0.93
	East of SW 30th Ave	3	2,435	2,345	2,520	0.97	0.93
	West of 28th Ave	3	2,435	2,345	2,520	0.97	0.93
	East of 28th Ave	3	2,215	2,320	2,520	0.88	0.92
	West of 24th Ave	3	2,215	2,320	2,520	0.88	0.92
	East of 24th Ave	3	2,215	2,320	2,520	0.88	0.92
	West of Military Trail	2	1,775	1,940	1,630	1.09	1.19
	East of Military Trail	2	2,085	2,025	1,630	1.28	1.24
	West of Newport Center Dr	4	2,485	3,145	3,390	0.73	0.93
	East of Newport Center Dr	3	3,185	2,410	2,520	1.26	0.96
	West of I-95 SB Off-Ramp	3	3,185	2,410	2,520	1.26	0.96
	East of I-95 SB Off-Ramp	5	2,860	2,340	3,390	0.84	0.69
	West of I-95 NB Off-Ramp	5	2,860	2,340	3,390	0.84	0.69
	East of I-95 NB Off-Ramp	3	1,890	1,670	2,520	0.75	0.66
	West of Natura Blvd	3	2,180	1,990	2,520	0.87	0.79
	East of Natura Blvd	3	1,745	1,760	2,520	0.69	0.70

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.5 Center Alignment

Table 8B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,370	930	4,200	0.56	0.22
	East of Powerline Rd to East of SW 30th Ave	2	2370	930	4200	0.56	0.22
	East of SW 30th Ave to East of SW 24th Ave	2	2370	930	4200	0.56	0.22
	East of SW 24th Ave to West of Military Trail	2	2370	930	4200	0.56	0.22
	ML Off Ramp West of Military Trail	1	810	310	2,200	0.37	0.14
	West of Military Trail to I 95	2	1,560	620	4,200	0.37	0.15
	ML Direct-Connect Off Ramp to I 95 NB	1	1,150	470	2,200	0.52	0.21
	ML Direct-Connect Off Ramp to I 95 SB	1	410	150	2,200	0.19	0.07
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	930	2,370	4,200	0.22	0.56
	East of Powerline Rd to West of SW 30th Ave	2	930	2,370	4,200	0.22	0.56
	West of SW 30th Ave to East of SW 28th Ave	2	930	2,370	4,200	0.22	0.56
	East of SW 28th Ave to West of Military Trail	2	930	2,370	4,200	0.22	0.56
	ML Off Ramp West of Military Trail	1	440	380	2,200	0.20	0.17
	West of Military Trail to East of Military Trail	3	1,370	2,750	6,300	0.22	0.44
	ML On Ramp East of Military Trail	1	400	1,120	2,200	0.18	0.51
	East of Military Trail to I-95	2	970	1,630	4,200	0.23	0.39
	ML Direct-Connect On Ramp from I 95 SB	1	730	1,030	2,200	0.33	0.47
	ML Direct-Connect On Ramp from I 95 NB	1	240	600	2,200	0.11	0.27

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.6 Center Alignment

Table 9A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,810	2,350	2,520	1.51	0.93
	East of Waterways	3	4,055	2,355	2,520	1.61	0.93
	West of Independence	3	4,055	2,355	2,520	1.61	0.93
	East of Independence	3	4,115	2,330	2,520	1.63	0.92
	West of Powerline	3	4,115	2,330	2,520	1.63	0.92
	East of Powerline	3	2,930	2,425	2,520	1.16	0.96
	West of SW 30th Ave	2	2,930	2,425	1,630	1.80	1.49
	East of SW 30th Ave	2	2,905	2,625	1,630	1.78	1.61
	West of 28th Ave	2	2,905	2,625	1,630	1.78	1.61
	East of 28th Ave	2	2,925	2,480	1,630	1.79	1.52
	West of 24th Ave	2	2,925	2,480	1,630	1.79	1.52
	East of 24th Ave	2	2,820	2,440	1,630	1.73	1.50
	West of Military Trail	3	2,780	2,515	2,520	1.10	1.00
	East of Military Trail	3	3,455	2,780	2,520	1.37	1.10
	West of Newport Center Dr	3	3,455	2,780	2,520	1.37	1.10
	East of Newport Center Dr	4	2,705	3,220	3,390	0.80	0.95
	West of I-95 SB Off-Ramp	5	2,705	3,220	4,260	0.63	0.76
	East of I-95 SB Off-Ramp	5	2,330	2,520	4,260	0.55	0.59
	West of I-95 NB Off-Ramp	5	1,140	1,170	4,260	0.27	0.27
	East of I-95 NB Off-Ramp	3	1,610	1,850	2,520	0.64	0.73
	West of Natura Blvd	3	1,610	1,850	2,520	0.64	0.73
	East of Natura Blvd	3	1,465	1,770	2,520	0.58	0.70
SW 10th Street Westbound	West of Waterways	3	2,350	3,810	2,520	0.93	1.51
	East of Waterways	3	2,240	3,995	2,520	0.89	1.59
	West of Independence	3	2,240	3,995	2,520	0.89	1.59
	East of Independence	3	2,240	3,995	2,520	0.89	1.59
	West of Powerline	3	2,240	3,995	2,520	0.89	1.59
	East of Powerline	3	2,485	3,185	2,520	0.99	1.26
	West of SW 30th Ave	2	2,575	3,085	1,630	1.58	1.89
	East of SW 30th Ave	2	2,575	3,085	1,630	1.58	1.89
	West of 28th Ave	2	2,575	3,085	1,630	1.58	1.89
	East of 28th Ave	2	2,355	3,060	1,630	1.44	1.88
	West of 24th Ave	2	2,355	3,060	1,630	1.44	1.88
	East of 24th Ave	2	2,355	3,060	1,630	1.44	1.88
	West of Military Trail	2	2,355	3,060	1,630	1.44	1.88
	East of Military Trail	3	2,665	3,145	2,520	1.06	1.25
	West of Newport Center Dr	3	2,665	3,145	2,520	1.06	1.25
	East of Newport Center Dr	3	3,365	2,410	2,520	1.34	0.96
	West of I-95 SB Off-Ramp	3	3,365	2,410	2,520	1.34	0.96
	East of I-95 SB Off-Ramp	5	2,900	2,300	4,260	0.68	0.54
	West of I-95 NB Off-Ramp	5	2,900	2,300	4,260	0.68	0.54
	East of I-95 NB Off-Ramp	3	1,860	1,600	2,520	0.74	0.63
	West of Natura Blvd	3	2,150	1,920	2,520	0.85	0.76
	East of Natura Blvd	3	1,715	1,690	2,520	0.68	0.67

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.6 Center Alignment

Table 9B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	1,500	720	4,200	0.36	0.17
	East of Powerline Rd to East of SW 30th Ave	2	1,500	720	4,200	0.36	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,500	720	4,200	0.36	0.17
	East of SW 24th Ave to West of Military Trail	2	1,500	720	4,200	0.36	0.17
	West of Military Trail to I 95	2	1,500	720	4,200	0.36	0.17
	ML Direct-Connect Off Ramp to I 95 NB	1	1,110	590	2,200	0.50	0.27
	ML Direct-Connect Off Ramp to I 95 SB	1	390	130	2,200	0.18	0.06
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	720	1,500	4,200	0.17	0.36
	East of Powerline Rd to West of SW 30th Ave	2	720	1,500	4,200	0.17	0.36
	West of SW 30th Ave to East of SW 28th Ave	2	720	1,500	4,200	0.17	0.36
	East of SW 28th Ave to West of Military Trail	2	720	1,500	4,200	0.17	0.36
	West of Military Trail to East of Military Trail	2	720	1,500	4,200	0.17	0.36
	East of Military Trail to I-95	2	720	1,500	4,200	0.17	0.36
	ML Direct-Connect On Ramp from I 95 SB	1	560	950	2,200	0.25	0.43
	ML Direct-Connect On Ramp from I 95 NB	1	160	550	2,200	0.07	0.25

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.1 North Alignment

Table 10A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,210	2,300	2,520	1.27	0.91
	East of Waterways	3	3,435	2,280	2,520	1.36	0.90
	West of Independence	3	3,435	2,280	2,520	1.36	0.90
	East of Independence	3	3,455	2,235	2,520	1.37	0.89
	West of Powerline	3	3,455	2,235	2,520	1.37	0.89
	East of Powerline	3	2,150	2,325	2,520	0.85	0.92
	West of SW 30th Ave	2	3,220	2,675	1,630	1.98	1.64
	East of SW 30th Ave	2	3,210	2,755	1,630	1.97	1.69
	West of 28th Ave	2	3,210	2,755	1,630	1.97	1.69
	East of 28th Ave	2	2,710	2,240	1,630	1.66	1.37
	West of 24th Ave	2	2,710	2,240	1,630	1.66	1.37
	East of 24th Ave	2	2,580	2,170	1,630	1.58	1.33
	West of Military Trail	3	2,630	2,335	2,520	1.04	0.93
	East of Military Trail	3	3,335	2,630	2,520	1.32	1.04
	West of Newport Center Dr	3	3,335	2,630	2,520	1.32	1.04
	East of Newport Center Dr	4	2,585	3,070	3,390	0.76	0.91
	West of I-95 SB Off-Ramp	5	2,585	3,070	4,260	0.61	0.72
	East of I-95 SB Off-Ramp	5	2,310	2,420	4,260	0.54	0.57
	West of I-95 NB Off-Ramp	5	1,480	1,320	4,260	0.35	0.31
	East of I-95 NB Off-Ramp	3	1,950	2,000	2,520	0.77	0.79
	West of Natura Blvd	3	1,950	2,000	2,520	0.77	0.79
	East of Natura Blvd	3	1,805	1,920	2,520	0.72	0.76
SW 10th Street Westbound	West of Waterways	3	2,300	3,210	2,520	0.91	1.27
	East of Waterways	3	2,170	3,370	2,520	0.86	1.34
	West of Independence	3	2,170	3,370	2,520	0.86	1.34
	East of Independence	3	2,130	3,350	2,520	0.85	1.33
	West of Powerline	3	2,130	3,350	2,520	0.85	1.33
	East of Powerline	3	2,285	2,395	2,520	0.91	0.95
	West of SW 30th Ave	2	1,845	2,015	1,630	1.13	1.24
	East of SW 30th Ave	2	1,860	1,895	1,630	1.14	1.16
	West of 28th Ave	2	1,860	1,895	1,630	1.14	1.16
	East of 28th Ave	2	2,020	3,040	1,630	1.24	1.87
	West of 24th Ave	2	2,020	3,040	1,630	1.24	1.87
	East of 24th Ave	2	1,995	3,010	1,630	1.22	1.85
	West of Military Trail	2	2,085	3,100	1,630	1.28	1.90
	East of Military Trail	3	2,385	3,215	2,520	0.95	1.28
	West of Newport Center Dr	3	2,385	3,215	2,520	0.95	1.28
	East of Newport Center Dr	3	3,085	2,480	2,520	1.22	0.98
	West of I-95 SB Off-Ramp	3	3,085	2,480	2,520	1.22	0.98
	East of I-95 SB Off-Ramp	5	2,890	2,640	4,260	0.68	0.62
	West of I-95 NB Off-Ramp	5	2,890	2,640	4,260	0.68	0.62
	East of I-95 NB Off-Ramp	3	1,880	1,960	2,520	0.75	0.78
	West of Natura Blvd	3	2,170	2,280	2,520	0.86	0.90
	East of Natura Blvd	3	1,735	2,050	2,520	0.69	0.81

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.1 North Alignment

Table 10B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity (1)	V/C (2)	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,630	1,050	4,200	0.63	0.25
	ML Off Ramp East of Powerline Rd	1	1,070	350	2,200	0.49	0.16
	East of Powerline Rd to East of SW 30th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,560	700	4,200	0.37	0.17
	ML On Ramp East of SW 24th Ave	1	550	450	2,200	0.25	0.20
	East of SW 24th Ave to West of Military Trail	2	2,110	1,150	4,200	0.50	0.27
	West of Military Trail to I 95	2	2,110	1,150	4,200	0.50	0.27
	ML Direct-Connect Off Ramp to I 95 NB	1	1,560	920	2,200	0.71	0.42
	ML Direct-Connect Off Ramp to I 95 SB	1	550	230	2,200	0.25	0.10
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	1,050	2,630	4,200	0.25	0.63
	ML Off Ramp East of Powerline Rd	1	440	380	2,200	0.20	0.17
	East of Powerline Rd to West of SW 30th Ave	3	1,490	3,010	6,300	0.24	0.48
	ML On Ramp West of SW 30th Ave	1	350	1,090	2,200	0.16	0.50
	West of SW 30th Ave to East of SW 28th Ave	2	1,140	1,920	4,200	0.27	0.46
	East of SW 28th Ave to West of Military Trail	2	1,140	1,920	4,200	0.27	0.46
	West of Military Trail to East of Military Trail	2	1,140	1,920	4,200	0.27	0.46
	East of Military Trail to I-95	2	1,140	1,920	4,200	0.27	0.46
	ML Direct-Connect On Ramp from I 95 SB	1	900	1,290	2,200	0.41	0.59
	ML Direct-Connect On Ramp from I 95 NB	1	240	630	2,200	0.11	0.29

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.2 North Alignment

Table 11A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,210	2,300	2,520	1.27	0.91
	East of Waterways	3	3,435	2,280	2,520	1.36	0.90
	West of Independence	3	3,435	2,280	2,520	1.36	0.90
	East of Independence	3	3,455	2,235	2,520	1.37	0.89
	West of Powerline	3	3,455	2,235	2,520	1.37	0.89
	East of Powerline	3	2,150	2,325	2,520	0.85	0.92
	West of SW 30th Ave	2	3,220	2,675	1,630	1.98	1.64
	East of SW 30th Ave	2	3,210	2,755	1,630	1.97	1.69
	West of 28th Ave	2	3,210	2,755	1,630	1.97	1.69
	East of 28th Ave	2	2,710	2,240	1,630	1.66	1.37
	West of 24th Ave	2	2,710	2,240	1,630	1.66	1.37
	East of 24th Ave	2	2,580	2,170	1,630	1.58	1.33
	West of Military Trail	3	2,630	2,335	2,520	1.04	0.93
	East of Military Trail	3	3,335	2,630	2,520	1.32	1.04
	West of Newport Center Dr	3	3,335	2,630	2,520	1.32	1.04
	East of Newport Center Dr	4	2,585	3,070	3,390	0.76	0.91
	West of I-95 SB Off-Ramp	5	2,585	3,070	4,260	0.61	0.72
	East of I-95 SB Off-Ramp	5	2,310	2,420	4,260	0.54	0.57
	West of I-95 NB Off-Ramp	5	1,480	1,320	4,260	0.35	0.31
	East of I-95 NB Off-Ramp	3	1,950	2,000	2,520	0.77	0.79
	West of Natura Blvd	3	1,950	2,000	2,520	0.77	0.79
	East of Natura Blvd	3	1,805	1,920	2,520	0.72	0.76
SW 10th Street Westbound	West of Waterways	3	2,300	3,210	2,520	0.91	1.27
	East of Waterways	3	2,170	3,370	2,520	0.86	1.34
	West of Independence	3	2,170	3,370	2,520	0.86	1.34
	East of Independence	3	2,130	3,350	2,520	0.85	1.33
	West of Powerline	3	2,130	3,350	2,520	0.85	1.33
	East of Powerline	3	2,285	2,395	2,520	0.91	0.95
	West of SW 30th Ave	2	1,845	2,015	1,630	1.13	1.24
	East of SW 30th Ave	2	1,860	1,895	1,630	1.14	1.16
	West of 28th Ave	2	1,860	1,895	1,630	1.14	1.16
	East of 28th Ave	2	1,830	2,400	1,630	1.12	1.47
	West of 24th Ave	2	1,830	2,400	1,630	1.12	1.47
	East of 24th Ave	2	1,805	2,370	1,630	1.11	1.45
	West of Military Trail	2	1,895	2,460	1,630	1.16	1.51
	East of Military Trail	3	2,195	2,575	2,520	0.87	1.02
	West of Newport Center Dr	3	2,575	3,475	2,520	1.02	1.38
	East of Newport Center Dr	3	3,275	2,740	2,520	1.30	1.09
	West of I-95 SB Off-Ramp	3	3,275	2,740	2,520	1.30	1.09
	East of I-95 SB Off-Ramp	5	2,910	2,670	4,260	0.68	0.63
	West of I-95 NB Off-Ramp	5	2,910	2,670	4,260	0.68	0.63
	East of I-95 NB Off-Ramp	3	1,880	1,960	2,520	0.75	0.78
	West of Natura Blvd	3	2,170	2,280	2,520	0.86	0.90
	East of Natura Blvd	3	1,735	2,050	2,520	0.69	0.81

NOTES: 4/23/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.2 North Alignment

Table 11B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,630	1,050	4,200	0.63	0.25
	ML Off Ramp East of Powerline Rd	1	1,070	350	2,200	0.49	0.16
	East of Powerline Rd to East of SW 30th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,560	700	4,200	0.37	0.17
	ML On Ramp East of SW 24th Ave	1	550	450	2,200	0.25	0.20
	East of SW 24th Ave to West of Military Trail	2	2,110	1,150	4,200	0.50	0.27
	West of Military Trail to I 95	2	2,110	1,150	4,200	0.50	0.27
	ML Direct-Connect Off Ramp to I 95 NB	1	1,560	920	2,200	0.71	0.42
	ML Direct-Connect Off Ramp to I 95 SB	1	550	230	2,200	0.25	0.10
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	1,050	2,630	4,200	0.25	0.63
	ML Off Ramp East of Powerline Rd	1	440	380	2,200	0.20	0.17
	East of Powerline Rd to West of SW 30th Ave	3	1,490	3,010	6,300	0.24	0.48
	ML On Ramp West of SW 30th Ave	1	160	450	2,200	0.07	0.20
	West of SW 30th Ave to East of SW 28th Ave	2	1,330	2,560	4,200	0.32	0.61
	East of SW 28th Ave to West of Military Trail	2	1,330	2,560	4,200	0.32	0.61
	West of Military Trail to East of Military Trail	2	1,330	2,560	4,200	0.32	0.61
	ML On Ramp East of Military Trail	1	380	900	2,200	0.17	0.41
	East of Military Trail to I-95	2	950	1,660	4,200	0.23	0.40
	ML Direct-Connect On Ramp from I 95 SB	1	730	1,060	2,200	0.33	0.48
	ML Direct-Connect On Ramp from I 95 NB	1	220	600	2,200	0.10	0.27

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.
(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.3 North Alignment

Table 12A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,070	2,210	2,520	1.22	0.88
	East of Waterways	3	3,295	2,190	2,520	1.31	0.87
	West of Independence	3	3,295	2,190	2,520	1.31	0.87
	East of Independence	3	3,315	2,145	2,520	1.32	0.85
	West of Powerline	3	3,315	2,145	2,520	1.32	0.85
	East of Powerline	3	2,115	2,255	2,520	0.84	0.89
	West of SW 30th Ave	2	700	745	1,630	0.43	0.46
	East of SW 30th Ave	2	690	825	1,630	0.42	0.51
	West of 28th Ave	2	690	825	1,630	0.42	0.51
	East of 28th Ave	2	745	765	1,630	0.46	0.47
	West of 24th Ave	2	745	765	1,630	0.46	0.47
	East of 24th Ave	2	610	690	1,630	0.37	0.42
	West of Military Trail	2	660	855	1,630	0.40	0.52
	East of Military Trail	2	1,385	1,170	1,630	0.85	0.72
	West of Newport Center Dr	3	2,975	2,500	2,520	1.18	0.99
	East of Newport Center Dr	4	2,225	2,940	3,390	0.66	0.87
	West of I-95 SB Off-Ramp	5	1,580	1,990	4,260	0.37	0.47
	East of I-95 SB Off-Ramp	5	1,990	2,290	4,260	0.47	0.54
	West of I-95 NB Off-Ramp	5	1,210	1,190	4,260	0.28	0.28
	East of I-95 NB Off-Ramp	3	1,680	1,870	2,520	0.67	0.74
	West of Natura Blvd	3	1,680	1,870	2,520	0.67	0.74
	East of Natura Blvd	3	1,535	1,790	2,520	0.61	0.71
SW 10th Street Westbound	West of Waterways	3	2,210	3,070	2,520	0.88	1.22
	East of Waterways	3	2,080	3,230	2,520	0.83	1.28
	West of Independence	3	2,080	3,230	2,520	0.83	1.28
	East of Independence	3	2,040	3,210	2,520	0.81	1.27
	West of Powerline	3	2,040	3,210	2,520	0.81	1.27
	East of Powerline	3	2,270	2,415	2,520	0.90	0.96
	West of SW 30th Ave	2	2,275	2,275	1,630	1.40	1.40
	East of SW 30th Ave	2	2,290	2,155	1,630	1.40	1.32
	West of 28th Ave	2	2,290	2,155	1,630	1.40	1.32
	East of 28th Ave	2	1,660	1,830	1,630	1.02	1.12
	West of 24th Ave	2	1,660	1,830	1,630	1.02	1.12
	East of 24th Ave	2	1,635	1,800	1,630	1.00	1.10
	West of Military Trail	2	1,725	1,890	1,630	1.06	1.16
	East of Military Trail	3	2,085	2,025	2,520	0.83	0.80
	West of Newport Center Dr	3	2,455	2,955	2,520	0.97	1.17
	East of Newport Center Dr	3	3,185	2,410	2,520	1.26	0.96
	West of I-95 SB Off-Ramp	3	3,185	2,410	2,520	1.26	0.96
	East of I-95 SB Off-Ramp	5	2,860	2,340	4,260	0.67	0.55
	West of I-95 NB Off-Ramp	5	2,860	2,340	4,260	0.67	0.55
	East of I-95 NB Off-Ramp	3	1,890	1,670	2,520	0.75	0.66
	West of Natura Blvd	3	2,180	1,990	2,520	0.87	0.79
	East of Natura Blvd	3	1,745	1,760	2,520	0.69	0.70

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.3 North Alignment

Table 12B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,370	930	4,200	0.56	0.22
	East of Powerline Rd to East of SW 30th Ave	2	2,370	930	4,200	0.56	0.22
	ML On Ramp West of SW 30th Ave	1	1,330	1,470	2,200	0.60	0.67
	East of SW 30th Ave to East of SW 24th Ave	3	3,700	2,400	6,300	0.59	0.38
	East of SW 24th Ave to West of Military Trail	3	3,700	2,400	6,300	0.59	0.38
	ML Off Ramp West of Military Trail	1	1,590	1,330	2,200	0.72	0.60
	West of Military Trail to I 95	2	2,110	1,070	4,200	0.50	0.25
	ML Direct-Connect Off Ramp to I 95 NB	1	1,560	880	2,200	0.71	0.40
	ML Direct-Connect Off Ramp to I 95 SB	1	550	190	2,200	0.25	0.09
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	930	2,370	4,200	0.22	0.56
	East of Powerline Rd to West of SW 30th Ave	2	930	2,370	4,200	0.22	0.56
	West of SW 30th Ave to East of SW 28th Ave	2	930	2,370	4,200	0.22	0.56
	ML Off Ramp East of SW 28th Ave	1	440	380	2,200	0.20	0.17
	East of SW 28th Ave to West of Military Trail	3	1,370	2,750	6,300	0.22	0.44
	West of Military Trail to East of Military Trail	3	1,370	2,750	6,300	0.22	0.44
	ML On Ramp East Of Military Trail	1	400	1,120	2,200	0.18	0.51
	East of Military Trail to I-95	2	970	1,630	4,200	0.23	0.39
	ML Direct-Connect On Ramp from I 95 SB	1	730	1,030	2,200	0.33	0.47
	ML Direct-Connect On Ramp from I 95 NB	1	240	600	2,200	0.11	0.27

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.4 North Alignment

Table 13A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,210	2,300	2,520	1.27	0.91
	East of Waterways	3	3,435	2,280	2,520	1.36	0.90
	West of Independence	3	3,435	2,280	2,520	1.36	0.90
	East of Independence	3	3,455	2,235	2,520	1.37	0.89
	West of Powerline	3	3,455	2,235	2,520	1.37	0.89
	East of Powerline	3	2,150	2,325	2,520	0.85	0.92
	West of SW 30th Ave	3	3,220	2,675	2,520	1.28	1.06
	East of SW 30th Ave	3	3,210	2,755	2,520	1.27	1.09
	West of 28th Ave	2	3,210	2,755	1,630	1.97	1.69
	East of 28th Ave	2	3,260	2,690	1,630	2.00	1.65
	West of 24th Ave	2	3,260	2,690	1,630	2.00	1.65
	East of 24th Ave	2	3,130	2,620	1,630	1.92	1.61
	West of Military Trail	3	3,180	2,785	2,520	1.26	1.11
	East of Military Trail	3	3,855	3,080	2,520	1.53	1.22
	West of Newport Center Dr	3	3,885	3,080	2,520	1.54	1.22
	East of Newport Center Dr	4	3,135	3,520	3,390	0.92	1.04
	West of I-95 SB Off-Ramp	5	3,135	3,520	4,260	0.74	0.83
	East of I-95 SB Off-Ramp	5	2,760	2,760	4,260	0.65	0.65
	West of I-95 NB Off-Ramp	5	1,480	1,320	4,260	0.35	0.31
	East of I-95 NB Off-Ramp	3	1,950	2,000	2,520	0.77	0.79
	West of Natura Blvd	3	1,950	2,000	2,520	0.77	0.79
	East of Natura Blvd	3	1,805	1,920	2,520	0.72	0.76
SW 10th Street Westbound	West of Waterways	3	2,300	3,210	2,520	0.91	1.27
	East of Waterways	3	2,170	3,370	2,520	0.86	1.34
	West of Independence	3	2,170	3,370	2,520	0.86	1.34
	East of Independence	3	2,130	3,350	2,520	0.85	1.33
	West of Powerline	3	2,130	3,350	2,520	0.85	1.33
	East of Powerline	3	2,285	2,395	2,520	0.91	0.95
	West of SW 30th Ave	2	1,845	2,065	1,630	1.13	1.27
	East of SW 30th Ave	2	1,860	1,945	1,630	1.14	1.19
	West of 28th Ave	2	1,860	1,945	1,630	1.14	1.19
	East of 28th Ave	2	1,670	2,000	1,630	1.02	1.23
	West of 24th Ave	2	1,670	2,000	1,630	1.02	1.23
	East of 24th Ave	2	1,645	1,970	1,630	1.01	1.21
	West of Military Trail	2	1,735	2,060	1,630	1.06	1.26
	East of Military Trail	2	2,035	2,175	1,630	1.25	1.33
	West of Newport Center Dr	3	2,475	3,175	2,520	0.98	1.26
	East of Newport Center Dr	3	3,175	2,440	2,520	1.26	0.97
	West of I-95 SB Off-Ramp	3	3,175	2,440	2,520	1.26	0.97
	East of I-95 SB Off-Ramp	5	2,910	2,570	4,260	0.68	0.60
	West of I-95 NB Off-Ramp	5	2,910	2,570	4,260	0.68	0.60
	East of I-95 NB Off-Ramp	3	1,880	1,960	2,520	0.75	0.78
	West of Natura Blvd	3	2,170	2,280	2,520	0.86	0.90
	East of Natura Blvd	3	1,735	2,050	2,520	0.69	0.81

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.4 North Alignment

Table 13B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity (1)	V/C (2)	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,630	1,050	4,200	0.63	0.25
	ML Off Ramp East of Powerline Rd	1	1,070	350	2,200	0.49	0.16
	East of Powerline Rd to East of SW 30th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,560	700	4,200	0.37	0.17
	East of SW 24th Ave to West of Military Trail	2	1,560	700	4,200	0.37	0.17
	West of Military Trail to I 95	2	1,560	700	4,200	0.37	0.17
	ML Direct-Connect Off Ramp to I 95 NB	1	1,110	580	2,200	0.50	0.26
	ML Direct-Connect Off Ramp to I 95 SB	1	450	120	2,200	0.20	0.05
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	1,050	2,630	4,200	0.25	0.63
	ML Off Ramp East of Powerline Rd	1	440	330	2,200	0.20	0.15
	East of Powerline Rd to West of SW 30th Ave	2	1,490	2,960	4,200	0.35	0.70
	West of SW 30th Ave to East of SW 28th Ave	2	1,490	2,960	4,200	0.35	0.70
	East of SW 28th Ave to West of Military Trail	2	1,490	2,960	4,200	0.35	0.70
	West of Military Trail to East of Military Trail	2	1,490	2,960	4,200	0.35	0.70
	ML On Ramp East of Military Trail	1	440	1,000	2,200	0.20	0.45
	East of Military Trail to I-95	2	1,050	1,960	4,200	0.25	0.47
	ML Direct-Connect On Ramp from I 95 SB	1	830	1,260	2,200	0.38	0.57
	ML Direct-Connect On Ramp from I 95 NB	1	220	700	2,200	0.10	0.32

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.5 North Alignment

Table 14A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,070	2,210	2,520	1.22	0.88
	East of Waterways	3	3,295	2,190	2,520	1.31	0.87
	West of Independence	3	3,295	2,190	2,520	1.31	0.87
	East of Independence	3	3,315	2,145	2,520	1.32	0.85
	West of Powerline	3	3,315	2,145	2,520	1.32	0.85
	East of Powerline	3	2,115	2,255	2,520	0.84	0.89
	West of SW 30th Ave	2	2,030	2,215	1,630	1.25	1.36
	East of SW 30th Ave	2	2,020	2,295	1,630	1.24	1.41
	West of 28th Ave	2	2,020	2,295	1,630	1.24	1.41
	East of 28th Ave	2	2,070	2,230	1,630	1.27	1.37
	West of 24th Ave	2	2,070	2,230	1,630	1.27	1.37
	East of 24th Ave	2	1,940	2,160	1,630	1.19	1.33
	West of Military Trail	3	1,990	2,325	2,520	0.79	0.92
	East of Military Trail	3	2,715	2,640	2,520	1.08	1.05
	West of Newport Center Dr	3	3,525	2,950	2,520	1.40	1.17
	East of Newport Center Dr	4	2,775	3,390	3,390	0.82	1.00
	West of I-95 SB Off-Ramp	5	2,775	3,390	4,260	0.65	0.80
	East of I-95 SB Off-Ramp	5	2,400	2,700	4,260	0.56	0.63
	West of I-95 NB Off-Ramp	5	1,210	1,190	4,260	0.28	0.28
	East of I-95 NB Off-Ramp	3	1,680	1,870	2,520	0.67	0.74
	West of Natura Blvd	3	1,680	1,870	2,520	0.67	0.74
	East of Natura Blvd	3	1,535	1,790	2,520	0.61	0.71
SW 10th Street Westbound	West of Waterways	3	2,210	3,070	2,520	0.88	1.22
	East of Waterways	3	2,080	3,230	2,520	0.83	1.28
	West of Independence	3	2,080	3,230	2,520	0.83	1.28
	East of Independence	3	2,040	3,210	2,520	0.81	1.27
	West of Powerline	3	2,040	3,210	2,520	0.81	1.27
	East of Powerline	3	2,270	2,415	2,520	0.90	0.96
	West of SW 30th Ave	2	2,275	2,275	1,630	1.40	1.40
	East of SW 30th Ave	2	2,290	2,155	1,630	1.40	1.32
	West of 28th Ave	2	2,290	2,155	1,630	1.40	1.32
	East of 28th Ave	2	1,660	1,830	1,630	1.02	1.12
	West of 24th Ave	2	1,660	1,830	1,630	1.02	1.12
	East of 24th Ave	2	1,635	1,800	1,630	1.00	1.10
	West of Military Trail	2	1,725	1,890	1,630	1.06	1.16
	East of Military Trail	2	2,085	2,025	1,630	1.28	1.24
	West of Newport Center Dr	3	2,485	3,145	2,520	0.99	1.25
	East of Newport Center Dr	3	3,185	2,410	2,520	1.26	0.96
	West of I-95 SB Off-Ramp	3	3,185	2,410	2,520	1.26	0.96
	East of I-95 SB Off-Ramp	5	2,860	2,340	4,260	0.67	0.55
	West of I-95 NB Off-Ramp	5	2,860	2,340	4,260	0.67	0.55
	East of I-95 NB Off-Ramp	3	1,890	1,670	2,520	0.75	0.66
	West of Natura Blvd	3	2,180	1,990	2,520	0.87	0.79
	East of Natura Blvd	3	1,745	1,760	2,520	0.69	0.70

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.5 North Alignment

Table 14B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	2,370	930	4,200	0.56	0.22
	East of Powerline Rd to East of SW 30th Ave	2	2,370	930	4,200	0.56	0.22
	East of SW 30th Ave to East of SW 24th Ave	2	2,370	930	4,200	0.56	0.22
	East of SW 24th Ave to West of Military Trail	2	2,370	930	4,200	0.56	0.22
	ML Off Ramp West of Military Trail	1	810	310	2,200	0.37	0.14
	West of Military Trail to I-95	2	1,560	620	4,200	0.37	0.15
	ML Direct-Connect Off Ramp to I 95 NB	1	1,150	470	2,200	0.52	0.21
	ML Direct-Connect Off Ramp to I 95 SB	1	410	150	2,200	0.19	0.07
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	930	2,370	4,200	0.22	0.56
	East of Powerline Rd to West of SW 30th Ave	2	930	2,370	4,200	0.22	0.56
	West of SW 30th Ave to East of SW 28th Ave	2	930	2,370	4,200	0.22	0.56
	ML Off Ramp East of SW 28th Ave	1	440	380	2,200	0.20	0.17
	East of SW 28th Ave to West of Military Trail	3	1,370	2,750	6,300	0.22	0.44
	West of Military Trail to East of Military Trail	3	1,370	2,750	6,300	0.22	0.44
	ML On Ramp East of Military Trail	1	400	1,120	2,200	0.18	0.51
	East of Military Trail to I-95	2	970	1,630	4,200	0.23	0.39
	ML Direct-Connect On Ramp from I 95 SB	1	730	1,030	2,200	0.33	0.47
	ML Direct-Connect On Ramp from I 95 NB	1	240	600	2,200	0.11	0.27

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.6 North Alignment

Table 15A - General Use Lanes Volume to Capacity Analysis

General Use Lane Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways	3	3,810	2,350	2,520	1.51	0.93
	East of Waterways	3	4,035	2,330	2,520	1.60	0.92
	West of Independence	3	4,035	2,330	2,520	1.60	0.92
	East of Independence	3	4,055	2,285	2,520	1.61	0.91
	West of Powerline	3	4,055	2,285	2,520	1.61	0.91
	East of Powerline	3	2,855	2,395	2,520	1.13	0.95
	West of SW 30th Ave	2	2,770	2,355	1,630	1.70	1.44
	East of SW 30th Ave	2	2,760	2,435	1,630	1.69	1.49
	West of 28th Ave	2	2,760	2,435	1,630	1.69	1.49
	East of 28th Ave	2	2,810	2,370	1,630	1.72	1.45
	West of 24th Ave	2	2,810	2,370	1,630	1.72	1.45
	East of 24th Ave	2	2,680	2,300	1,630	1.64	1.41
	West of Military Trail	3	2,730	2,465	2,520	1.08	0.98
	East of Military Trail	3	3,455	2,780	2,520	1.37	1.10
	West of Newport Center Dr	3	3,455	2,780	2,520	1.37	1.10
	East of Newport Center Dr	4	2,705	3,220	3,390	0.80	0.95
	West of I-95 SB Off-Ramp	5	2,705	3,220	4,260	0.63	0.76
	East of I-95 SB Off-Ramp	5	2,330	2,520	4,260	0.55	0.59
	West of I-95 NB Off-Ramp	5	1,140	1,170	4,260	0.27	0.27
	East of I-95 NB Off-Ramp	3	1,610	1,850	2,520	0.64	0.73
	West of Natura Blvd	3	1,610	1,850	2,520	0.64	0.73
	East of Natura Blvd	3	1,465	1,770	2,520	0.58	0.70
SW 10th Street Westbound	West of Waterways	3	2,350	3,810	2,520	0.93	1.51
	East of Waterways	3	2,220	3,970	2,520	0.88	1.58
	West of Independence	3	2,220	3,970	2,520	0.88	1.58
	East of Independence	3	2,180	3,950	2,520	0.87	1.57
	West of Powerline	3	2,180	3,950	2,520	0.87	1.57
	East of Powerline	3	2,410	3,155	2,520	0.96	1.25
	West of SW 30th Ave	2	2,415	3,015	1,630	1.48	1.85
	East of SW 30th Ave	2	2,430	2,895	1,630	1.49	1.78
	West of 28th Ave	2	2,430	2,895	1,630	1.49	1.78
	East of 28th Ave	2	2,240	2,950	1,630	1.37	1.81
	West of 24th Ave	2	2,240	2,950	1,630	1.37	1.81
	East of 24th Ave	2	2,215	2,920	1,630	1.36	1.79
	West of Military Trail	2	2,305	3,010	1,630	1.41	1.85
	East of Military Trail	3	2,665	3,145	2,520	1.06	1.25
	West of Newport Center Dr	3	2,665	3,145	2,520	1.06	1.25
	East of Newport Center Dr	3	3,365	2,410	2,520	1.34	0.96
	West of I-95 SB Off-Ramp	3	3,365	2,410	2,520	1.34	0.96
	East of I-95 SB Off-Ramp	5	2,900	2,300	4,260	0.68	0.54
	West of I-95 NB Off-Ramp	5	2,900	2,300	4,260	0.68	0.54
	East of I-95 NB Off-Ramp	3	1,860	1,600	2,520	0.74	0.63
	West of Natura Blvd	3	2,150	1,920	2,520	0.85	0.76
	East of Natura Blvd	3	1,715	1,690	2,520	0.68	0.67

NOTES: 4/20/2018

(1) Capacity thresholds from FDOT 2012 Generalized LOS Peak Hour Directional Volumes Table for Urbanized Areas at LOS D for Class II arterial (35 mph or less); 5LD capacity estimated as 870 additional capacity added to 4LD capacity.

(2) V/C = Ratio of Volume to Capacity

SW 10th Street PD&E Study

2040 Build Option 3D-1.6 North Alignment

Table 15B - Managed Lanes Volume to Capacity Analysis

Managed Lane (ML) Segments		Number of Lanes	Volume		Capacity [1]	V/C [2]	
	Location Description		AM Peak	PM Peak		AM	PM
SW 10th Street Eastbound	West of Waterways to East of Powerline Rd	2	1,500	720	4,200	0.36	0.17
	East of Powerline Rd to East of SW 30th Ave	2	1,500	720	4,200	0.36	0.17
	East of SW 30th Ave to East of SW 24th Ave	2	1,500	720	4,200	0.36	0.17
	East of SW 24th Ave to West of Military Trail	2	1,500	720	4,200	0.36	0.17
	West of Military Trail to I 95	2	1,500	720	4,200	0.36	0.17
	ML Direct-Connect Off Ramp to I 95 NB	1	1,110	590	2,200	0.50	0.27
	ML Direct-Connect Off Ramp to I 95 SB	1	390	130	2,200	0.18	0.06
SW 10th Street Westbound	West of Waterways to East of Powerline Rd	2	720	1,500	4,200	0.17	0.36
	East of Powerline Rd to West of SW 30th Ave	2	720	1,500	4,200	0.17	0.36
	West of SW 30th Ave to East of SW 28th Ave	2	720	1,500	4,200	0.17	0.36
	East of SW 28th Ave to West of Military Trail	2	720	1,500	4,200	0.17	0.36
	West of Military Trail to East of Military Trail	2	720	1,500	4,200	0.17	0.36
	East of Military Trail to I-95	2	720	1,500	4,200	0.17	0.36
	ML Direct-Connect On Ramp from I 95 SB	1	560	950	2,200	0.25	0.43
	ML Direct-Connect On Ramp from I 95 NB	1	160	550	2,200	0.07	0.25

NOTES: 4/20/2018

(1) Capacity thresholds (pc/h/ln) from HCMV6.0 Exhibit 12-11 for 75 mph FFS Managed Lane Segments, and Exhibit 14-12 for Ramp Roadways.

(2) V/C = Ratio of Volume to Capacity

ATTACHMENT 4

Intersection Traffic Operations Summary Tables

Table A - Existing (2016) SW 10th Street Signalized Intersection Analysis Results - AM

Arterial	Signal Controlled Intersections	Measure of Effectiveness (MOE)	Location	AM Movement/Approach LOS (Delay)												Intersection
				Eastbound			Westbound			Northbound			Southbound			AM LOS (Delay)
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
SW 10th Street	Waterways Boulevard	LOS (Delay)	Movement		B (18.5)	A (5.8)	D (35.9)	A (4.7)		D (46.0)		A (3.4)				B (13.8)
			Approach		B (18.4)			A (6.1)			B (13.9)					
		Volume to Capacity ratio	Movement		0.9	0.01	0.47	0.43		0.66		0.23				
		Queue Length 95th (ft)	Movement		#790	8	112	193		114		22				
	Independence Drive	LOS (Delay)	Movement		A (8.1)	A (0.4)	C (28.8)	A (4.3)		D (41.0)		D (39.8)				A (7.4)
			Approach		A (8.1)			A (4.6)			D (40.2)					
		Volume to Capacity ratio	Movement		0.9	0.01	0.13	0.43		0.3		0.04				
		Queue Length 95th (ft)	Movement		#243	m0	m7	376		45		37				
	South Powerline Road (S.R. 845)	LOS (Delay)	Movement	**F (82.8)**	**E (68.2)**	C (30.6)	**F (101.4)**	**E (79.8)**	**F (83.9)**	**F (83.0)**	**E (77.6)**	**E (57.4)**	**E (75.2)**	**F (140.5)**	**F (190.9)**	**F (88.0)**
			Approach		**E (67.2)**			**F (83.8)**			**E (74.7)**			**F (143.0)**		
		Volume to Capacity ratio	Movement	0.96	1.03	0.39	0.95	0.83	0.35	0.73	0.94	0.53	0.65	1.12	0.25	
		Queue Length 95th (ft)	Movement	#602	#1163	253	m#263	582	m247	211	#591	299	161	#765	227	
	SW 28th Avenue	LOS (Delay)	Movement		D (38.1)	A (8.6)	D (45.0)	A (6.2)		**F (130.3)**		**E (77.1)**				C (29.2)
			Approach		D (37.7)			A (6.4)			**F (111.7)**					
		Volume to Capacity ratio	Movement		0.89	0.02	0.14	0.54		0.91		0.1				
		Queue Length 95th (ft)	Movement		m1380	m10	m4	278		#285		64				
	South Military Trail	LOS (Delay)	Movement	**F (95.1)**	D (51.2)	**E (58.7)**	**F (195.1)**	D (53.4)	C (34.7)	**F (81.3)**	**F (88.5)**	**F (241.7)**	**F (151.0)**	**E (57.5)**	D (52.9)	**F (85.7)**
			Approach		**E (56.4)**			**E (72.9)**			**F (146.1)**			**F (89.7)**		
		Volume to Capacity ratio	Movement	0.84	0.94	0.06	1.18	0.86	0.3	0.58	0.95	1.35	1.09	0.58	0.33	
		Queue Length 95th (ft)	Movement	m217	933	m11	#325	842	184	140	#626	#1025	#427	381	196	
	East Newport Center Drive	LOS (Delay)	Movement	**E (71.9)**	C (23.8)		**F (174.3)**	B (10.8)	B (13.4)	**E (75.0)**	**E (74.9)**	**E (72.8)**	**E (75.2)**	**E (74.5)**	**E (72.6)**	C (32.5)
			Approach		C (28.0)			C (33.6)			**E (73.6)**			**E (73.4)**		
		Volume to Capacity ratio	Movement	0.96	0.76		1.17	0.51	0.21	0.39	0.38	0.06	0.38	0.33	0.06	
		Queue Length 95th (ft)	Movement	#363	711		#621	314	37	73	72	5	58	58	0	
	I-95 Southbound On-ramp	LOS (Delay)	Movement		C (34.3)	A (0.6)	**E (65.8)**	A (0.2)								D (43.8)
			Approach		C (25.8)			B (12.8)								
		Volume to Capacity ratio	Movement		0.71	0.42	0.87	0.48								
		Queue Length 95th (ft)	Movement		541	0	m471	m0								
	I-95 Southbound Off-ramp	LOS (Delay)	Movement		A (3.4)			A (4.6)					**F (156.9)**		**F (191.3)**	
			Approach		A (3.4)			A (4.6)					**F (173.8)**			
		Volume to Capacity ratio	Movement		0.58			0.54					1.17		1.25	
		Queue Length 95th (ft)	Movement		5			m77					#795		#846	
	I-95 Northbound Ramps	LOS (Delay)	Movement		C (25.3)	A (2.5)	**F (224.5)**	C (25.5)		**F (100.7)**		**F (138.0)**				D (48.2)
			Approach		B (13.4)			D (53.3)			**F (112.3)**					
		Volume to Capacity ratio	Movement		0.54	0.75	1.3	0.7		1.02		1.08				
		Queue Length 95th (ft)	Movement		m348	m1066	m#548	m294		#546		#650				
	FAU Research Park Boulevard	LOS (Delay)	Movement	B (14.2)	B (15.8)		A (10.0)	B (17.3)	B (12.3)	**F (169.9)**	**E (65.0)**	**E (63.0)**	**F (106.5)**	**E (77.2)**	**F (83.1)**	D (38.1)
			Approach		B (15.6)			B (16.7)			**F (112.7)**			**F (89.7)**		
		Volume to Capacity ratio	Movement	0.55	0.41		0.3	0.48	0.05	1.13	0.32	0.07	0.95	0.72	0.76	
		Queue Length 95th (ft)	Movement	m136	m361		49	396	14	#355	99	58	#306	229	237	
Powerline Road (S.R. 845)	West Drive	LOS (Delay)	Movement	**F (92.7)**	**E (79.9)**		**F (88.0)**		**F (86.1)**		C (30.5)	**E (66.3)**	C (23.6)	A (7.8)		C (23.5)
			Approach		**F (85.0)**			**F (86.9)**			C (31.5)			A (8.1)		
		Volume to Capacity ratio	Movement	0.64	0.07		0.28		0.01		0.8	0.04	0.4	0.64		
		Queue Length 95th (ft)	Movement	138	63		38		0		1430	m9	21	550		

Synchro 9.2.914.6

LOS notes:

HCM 2000 level of service (LOS) and delay results from Synchro

Delay is in sec/veh units

: LOS E reflecting at capacity operations

: LOS F reflecting over capacity operations

Queue notes:

HCM methodology does not report queues, results are from Synchro outputs report

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

*Combined SB ramps intersections delay notes:

The WBT at the I-95 SB on-ramp intersection and EBT at the I-95 SB off-ramp intersection are not used in the calculation of the combined weighted intersection delay.

Table B - Existing (2016) SW 10th Street Signalized Intersection Analysis Results - PM

Arterial	Signal Controlled Intersections	Measure of Effectiveness (MOE)	Location	PM Movement/Approach LOS (Delay)												Intersection
				Eastbound			Westbound			Northbound			Southbound			PM LOS (Delay)
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
SW 10th S:reet	Waterways Boulevard	LOS (Delay)	Movement		B (12.0)	A (8.2)	**E (56.2)**	A (6.3)		D (47.9)		A (1.8)				B (11.6)
			Approach		B (11.9)			B (11.4)			B (11.9)					
		Volume to Capacity ratio	Movement		0.53	0.04	0.89	0.71		0.57		0.11				
		Queue Length 95th (ft)	Movement		241	17	#341	617		60		10				
	Independence Drive	LOS (Delay)	Movement		A (8.9)	A (3.6)	A (3.5)	B (10.9)		D (40.5)		D (40.3)				B (10.5)
			Approach		A (8.8)			B (10.7)			D (40.3)					
		Volume to Capacity ratio	Movement		0.47	0.02	0.25	0.8		0.1		0.04				
		Queue Length 95th (ft)	Movement		343	m6	m9	m499		21		38				
	South Powerline Road (S.R. 845)	LOS (Delay)	Movement	**F (115.4)**	D (36.3)	**E (73.3)**	**E (76.9)**	**F (125.7)**	D (48.5)	**F (155.7)**	**E (68.9)**	D (52.9)	**F (90.1)**	**E (74.7)**	**F (339.4)**	**F (109.9)**
			Approach	**E (56.5)**			**F (114.8)**			**F (88.6)**			**F (171.6)**			
		Volume to Capacity ratio	Movement	0.96	0.61	0.14	0.72	1.13	0.25	1.12	0.88	0.37	0.71	0.9	1.58	
		Queue Length 95th (ft)	Movement	#352	368	108	m207	#1272	m200	#497	#597	214	205	501	#1297	
	SW 28th Avenue	LOS (Delay)	Movement		A (6.9)	A (0.7)	A (4.6)	A (6.3)		**F (92.1)**		**F (82.2)**				A (8.0)
			Approach		A (6.6)			A (6.3)		**F (87.4)**						
		Volume to Capacity ratio	Movement		0.61	0.06	0.26	0.8		0.59		0.03				
		Queue Length 95th (ft)	Movement		218	1	m13	m1126		102		45				
	South Military Trail	LOS (Delay)	Movement	**F (194.0)**	D (39.2)	A (8.7)	**E (75.0)**	**F (173.4)**	D (52.7)	**F (101.5)**	**E (68.3)**	**E (60.1)**	**F (81.2)**	**E (67.2)**	**E (66.8)**	**F (96.2)**
			Approach	**E (61.7)**			**F (142.7)**			**E (70.3)**			**E (69.2)**			
		Volume to Capacity ratio	Movement	1.15	0.7	0.1	0.78	1.25	0.48	0.78	0.75	0.43	0.66	0.83	0.76	
		Queue Length 95th (ft)	Movement	#338	578	3	m281	#1770	m386	#144	434	230	182	556	483	
	East Newport Center Drive	LOS (Delay)	Movement	**E (62.5)**	B (15.1)		**F (95.4)**	B (19.1)	A (4.5)	**F (100.4)**	**F (102.1)**	**F (127.0)**	**E (64.9)**	**E (64.9)**	**F (111.7)**	D (38.3)
			Approach		B (16.6)			C (21.7)			**F (115.1)**			**F (101.9)**		
		Volume to Capacity ratio	Movement	0.62	0.6		0.64	0.79	0.05	0.83	0.84	0.94	0.19	0.19	0.93	
		Queue Length 95th (ft)	Movement	m86	159		175	557	5	#323	#332	#409	94	94	#458	
	I-95 Southbound On-ramp	LOS (Delay)	Movement		D (36.5)	A (0.6)	D (40.6)	A (0.2)								D (49.6)
			Approach		C (26.7)			A (8.0)								
		Volume to Capacity ratio	Movement		0.78	0.42	0.67	0.48								
		Queue Length 95th (ft)	Movement		283	m52	m422	m0								
	I-95 Southbound Off-ramp	LOS (Delay)	Movement		A (6.0)			A (7.8)					**F (183.6)**		**F (209.5)**	
			Approach		A (6.0)			A (7.8)					**F (196.3)**			
		Volume to Capacity ratio	Movement		0.53			0.51					1.22		1.28	
		Queue Length 95th (ft)	Movement		45			m88					#958		#1001	
	I-95 Northbound Ramps	LOS (Delay)	Movement		D (43.2)	A (1.1)	**E (70.6)**	C (30.2)		**F (265.1)**		**F (316.4)**				**F (95.7)**
			Approach		C (24.6)			D (37.3)		**F (281.2)**						
		Volume to Capacity ratio	Movement		0.63	0.53	0.75	0.57		1.41		1.5				
		Queue Length 95th (ft)	Movement		m508	m512	472	479		#858		#980				
	FAU Research Park Boulevard	LOS (Delay)	Movement	B (13.3)	B (18.5)		B (17.8)	B (18.9)	B (14.9)	**F (325.6)**	**E (60.2)**	**E (58.8)**	**E (75.9)**	**F (88.2)**	**F (82.2)**	D (49.0)
			Approach		B (17.8)			B (18.5)		**F (206.7)**			**F (82.1)**			
		Volume to Capacity ratio	Movement	0.61	0.49		0.66	0.41	0.07	1.52	0.22	0.06	0.82	0.86	0.8	
		Queue Length 95th (ft)	Movement	117	381		112	297	30	#456	85	48	#307	#343	#326	
Powerline Road (S.R. 845)	West Drive	LOS (Delay)	Movement	**F (87.2)**	**F (86.5)**		**F (93.0)**		**E (75.2)**		A (9.6)	A (0.1)	C (26.5)	B (10.5)		B (14.5)
			Approach	**F (86.6)**			**F (84.6)**			A (9.0)			B (11.3)			
		Volume to Capacity ratio	Movement	0.12	0.02		0.73		0.07		0.74	0.09	0.56	0.69		
		Queue Length 95th (ft)	Movement	21	0		204		62		m480	m0	85	710		

Synchro 9.2.914.6

LOS notes:

HCM 2000 level of service (LOS) and delay results from Synchro

Delay is in sec/veh units

: LOS E reflecting at capacity operations

: LOS F reflecting over capacity operations

Queue notes:

HCM methodology does not report queues, results are from Synchro outputs report

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

*Combined SB ramps intersections delay notes:

The WBT at the I-95 SB on-ramp intersection and EBT at the I-95 SB off-ramp intersection are not used in the calculation of the combined weighted intersection delay.

Table 1A - No-Build 2040 SW 10th Street Signalized Intersection Analysis Results - AM

Arterial	Signal Controlled Intersections	Measure of Effectiveness (MOE)	Location	AM Movement/Approach LOS (Delay)												Intersection
				Eastbound			Westbound			Northbound			Southbound			AM LOS (Delay)
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
SW 10th Street	Waterways Boulevard	LOS (Delay)	Movement		E (65.9)	A (9.5)	E (75.5)	B (10.6)		E (69.1)		F (105.7)				D (49.0)
			Approach	E (65.7)			B (12.9)			F (96.7)						
		Volume to Capacity ratio	Movement		1.07	0.01	0.6	0.56		0.42		0.9				
		Queue Length 95th (ft)	Movement		#1917	12	168	441		190		#403				
	Independence Drive	LOS (Delay)	Movement		C (31.9)	A (4.4)	F (422.5)	B (12.9)		F (85.0)		F (82.4)				C (27.1)
			Approach	C (31.8)			B (16.6)			F (83.3)						
		Volume to Capacity ratio	Movement		0.95	0.01	0.24	0.51		0.41		0.04				
		Queue Length 95th (ft)	Movement		m1493	m2	m9	m529		79		54				
	South Powerline Road (S.R. 845)	LOS (Delay)	Movement	F (105.0)	F (119.1)	C (27.4)	F (139.3)	F (88.3)	D (46.0)	F (90.2)	F (89.3)	E (56.5)	E (73.3)	F (169.0)	F (148.3)	F (107.0)
			Approach	F (102.9)			F (90.1)			F (83.9)			F (155.1)			
		Volume to Capacity ratio	Movement	1.07	1.16	0.6	1.02	1.05	0.42	0.84	1	0.55	0.66	1.19	0.37	
		Queue Length 95th (ft)	Movement	m#693	#1400	m245	m#298	m#822	m258	#284	#768	345	175	#856	255	
	SW 28th Avenue	LOS (Delay)	Movement		E (79.6)	A (9.8)	F (201.4)	B (19.7)		F (180.5)		E (77.9)				E (59.3)
			Approach	E (78.6)			C (21.1)			F (145.6)						
		Volume to Capacity ratio	Movement		1.05	0.03	0.18	0.67		1.08		0.24				
		Queue Length 95th (ft)	Movement		m1495	m12	m4	m863		#364		91				
	South Military Trail	LOS (Delay)	Movement	F (95.2)	E (77.2)	C (32.4)	F (262.5)	F (152.7)	F (105.6)	F (85.6)	F (267.5)	F (452.8)	F (125.7)	E (66.5)	E (59.0)	F (151.2)
			Approach	E (76.8)			F (161.8)			F (317.7)			F (85.6)			
		Volume to Capacity ratio	Movement	0.84	1.07	0.13	1.42	1.12	0.38	0.7	1.41	1.81	1.03	0.75	0.49	
		Queue Length 95th (ft)	Movement	m229	m#1179	m20	#408	#1386	437	173	#912	#1205	#464	463	275	
	East Newport Center Drive	LOS (Delay)	Movement	F (150.1)	B (19.2)		F (448.2)	B (17.3)	A (8.2)	F (84.9)	F (84.9)	F (82.1)	F (84.8)	F (84.4)	F (82.3)	D (53.0)
			Approach	C (30.5)			E (77.5)			F (83.2)			F (83.2)			
		Volume to Capacity ratio	Movement	1.14	0.86		1.76	0.69	0.3	0.44	0.45	0.07	0.4	0.37	0.08	
		Queue Length 95th (ft)	Movement	m#311	m904		#998	840	176	87	89	71	72	72	59	
	I-95 Southbound On-ramp	LOS (Delay)	Movement		E (79.9)	A (0.5)	F (226.8)	A (0.2)								E (57.2)
			Approach	E (60.4)			D (50.4)									
		Volume to Capacity ratio	Movement		0.83	0.48	1.32	0.48								
		Queue Length 95th (ft)	Movement		694	0	#1603	0								
	I-95 Southbound Off-ramp	LOS (Delay)	Movement		A (9.8)			A (7.1)					E (56.3)		A (2.2)	
			Approach	A (9.8)			A (7.1)						B (18.6)			
		Volume to Capacity ratio	Movement		0.68			0.68					0.5		0.66	
		Queue Length 95th (ft)	Movement		706			m125					286		0	
	I-95 Northbound Ramps	LOS (Delay)	Movement		C (22.6)	A (7.4)	F (275.5)	D (41.1)		F (213.6)		F (261.0)				F (81.4)
			Approach	B (14.6)			E (72.1)			F (228.3)						
		Volume to Capacity ratio	Movement		0.65	0.91	1.38	0.81		1.3		1.38				
		Queue Length 95th (ft)	Movement		591	1290	#683	784		#879		#993				
	FAU Research Park Boulevard	LOS (Delay)	Movement	F (126.4)	C (22.9)		C (23.2)	C (25.9)	B (17.3)	F (148.6)	E (58.0)	E (56.3)	E (75.3)	E (65.3)	F (118.8)	D (48.7)
			Approach	D (38.4)			C (25.3)			F (95.8)			F (93.1)			
		Volume to Capacity ratio	Movement	1.09	0.55		0.68	0.61	0.06	1.09	0.27	0.1	0.84	0.64	0.99	
		Queue Length 95th (ft)	Movement	#428	410		124	476	20	#444	117	69	#372	292	#500	
Powerline Road (S.R. 845)	West Drive	LOS (Delay)	Movement	F (91.3)	F (81.0)		F (88.0)		F (86.1)		B (18.8)	A (2.8)	D (49.5)	A (9.4)		B (17.4)
			Approach	F (84.9)			F (86.9)			B (18.5)			B (10.2)			
		Volume to Capacity ratio	Movement	0.62	0.19		0.28		0.01		0.93	0.04	0.51	0.73		
		Queue Length 95th (ft)	Movement	132	85		38		0		m1562	m0	48	732		

Synchro 9.2.914.6

LOS notes:

HCM 2000 level of service (LOS) and delay results from Synchro

Delay is in sec/veh units

: LOS E reflecting at capacity operations

: LOS F reflecting over capacity operations

Queue notes:

HCM methodology does not report queues, results are from Synchro outputs report

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

*Combined SB ramps intersections delay notes:

The WBT at the I-95 SB on-ramp intersection and EBT at the I-95 SB off-ramp intersection are not used in the calculation of the combined weighted intersection delay.

Table 1B - No Build 2040 SW 10th Street Signalized Intersection Analysis Results - PM

Arterial	Signal Controlled Intersections	Measure of Effectiveness (MOE)	Location	PM Movement/Approach LOS (Delay)												Intersection
				Eastbound			Westbound			Northbound			Southbound			PM LOS (Delay)
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
SW 10th Street	Waterways Boulevard	LOS (Delay)	Movement		B (19.7)	B (10.6)	F (101.7)	A (5.9)		F (84.5)		F (81.4)				B (18.3)
			Approach		B (19.4)			B (14.2)			F (82.1)					
		Volume to Capacity ratio	Movement		0.68	0.05	0.99	0.8		0.51		0.11				
		Queue Length 95th (ft)	Movement		671	32	m#551	473		102		82				
	Independence Drive	LOS (Delay)	Movement		A (1.9)	A (0.4)	C (22.7)	B (12.0)		F (84.2)		F (83.5)				A (9.1)
			Approach		A (1.9)			B (12.2)			F (83.6)					
		Volume to Capacity ratio	Movement		0.59	0.02	0.44	0.87		0.16		0.04				
		Queue Length 95th (ft)	Movement		67	m1	m3	m116		37		54				
	South Powerline Road (S.R. 845)	LOS (Delay)	Movement	F (224.8)	D (48.3)	D (49.1)	E (74.1)	F (158.9)	D (48.6)	F (252.4)	F (91.6)	D (54.6)	F (100.8)	F (83.3)	F (497.5)	F (146.5)
			Approach		F (84.2)			F (137.5)			F (129.8)			F (241.9)		
		Volume to Capacity ratio	Movement	1.26	0.83	0.33	0.8	1.21	0.41	1.36	1.01	0.45	0.74	0.98	1.95	
		Queue Length 95th (ft)	Movement	#519	544	174	m226	m#1387	m244	#645	#751	261	m214	#621	#1672	
	SW 28th Avenue	LOS (Delay)	Movement		B (11.7)	A (0.1)	D (47.0)	D (40.2)		F (87.5)		F (80.2)				C (28.7)
			Approach		B (11.1)			D (40.4)			F (84.4)					
		Volume to Capacity ratio	Movement		0.79	0.07	0.44	0.98		0.57		0.03				
		Queue Length 95th (ft)	Movement		516	m0	m8	m1285		121		44				
	South Military Trail	LOS (Delay)	Movement	F (314.4)	E (61.2)	C (23.6)	E (78.7)	F (342.0)	E (55.4)	F (92.2)	E (68.3)	E (61.8)	F (85.3)	F (92.3)	F (96.5)	F (157.2)
			Approach		F (97.7)			F (263.3)			E (70.4)			F (92.5)		
		Volume to Capacity ratio	Movement	1.44	1.01	0.15	0.91	1.63	0.66	0.78	0.8	0.6	0.75	0.99	0.96	
		Queue Length 95th (ft)	Movement	#452	#958	m31	m291	m#2176	m338	#191	507	351	217	#758	#731	
	East Newport Center Drive	LOS (Delay)	Movement	F (83.0)	B (16.6)		F (208.8)	D (51.2)	B (14.8)	F (113.5)	F (115.7)	F (406.9)	E (65.1)	E (65.1)	F (262.3)	F (81.8)
			Approach		B (18.7)			E (57.5)			F (275.4)			F (215.5)		
		Volume to Capacity ratio	Movement	0.73	0.76		1.15	1.02	0.11	0.91	0.92	1.68	0.22	0.23	1.36	
		Queue Length 95th (ft)	Movement	m78	m229		#380	#1358	34	#408	#416	#824	122	123	#727	
	I-95 Southbound On-ramp	LOS (Delay)	Movement		F (88.5)	A (0.5)	F (101.0)	A (0.2)								D (45.3)
			Approach		E (66.3)			C (22.6)								
		Volume to Capacity ratio	Movement		1	0.48	1.03	0.48								
		Queue Length 95th (ft)	Movement		m625	m0	#843	0								
	I-95 Southbound Off-ramp	LOS (Delay)	Movement		B (12.6)			A (9.9)					D (54.0)		A (4.1)	
			Approach		B (12.6)			A (9.9)					B (14.4)			
		Volume to Capacity ratio	Movement		0.66			0.63					0.36		0.79	
		Queue Length 95th (ft)	Movement		m661			m151					205		0	
	I-95 Northbound Ramps	LOS (Delay)	Movement		D (52.5)	A (1.7)	E (75.3)	C (32.6)		F (441.1)		F (501.6)				F (148.4)
			Approach		C (31.5)			D (39.6)			F (460.0)					
		Volume to Capacity ratio	Movement		0.88	0.67	0.81	0.66		1.8		1.92				
		Queue Length 95th (ft)	Movement		818	380	#528	590		#1186		#1305				
	FAU Research Park Boulevard	LOS (Delay)	Movement	D (40.1)	C (29.1)		F (147.0)	C (23.2)	B (17.6)	F (567.3)	E (57.8)	E (56.1)	E (77.2)	F (113.1)	F (136.8)	E (79.2)
			Approach		C (30.4)			D (40.0)			F (321.3)			F (113.6)		
		Volume to Capacity ratio	Movement	0.87	0.72		1.11	0.49	0.09	2.08	0.25	0.09	0.85	0.99	1.05	
		Queue Length 95th (ft)	Movement	#272	601		#417	353	39	#655	107	63	#391	#531	#542	
Powerline Road (S.R. 845)	West Drive	LOS (Delay)	Movement	F (85.1)	F (85.6)		F (93.7)		E (74.5)		C (26.3)	A (0.2)	F (81.2)	B (15.7)		C (25.2)
			Approach		F (85.5)			F (84.7)			C (24.9)			B (18.6)		
		Volume to Capacity ratio	Movement	0.08	0.14		0.75		0.11		0.94	0.08	0.76	0.82		
		Queue Length 95th (ft)	Movement	21	47		220		72		m#714	m0	140	1101		

Synchro 9.2.914.6

LOS notes:

HCM 2000 level of service (LOS) and delay results from Synchro

Delay is in sec/veh units

: LOS E reflecting at capacity operations

: LOS F reflecting over capacity operations

Queue notes:

HCM methodology does not report queues, results are from Synchro outputs report

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

*Combined SB ramps intersections delay notes:

The WBT at the I-95 SB on-ramp intersection and EBT at the I-95 SB off-ramp intersection are not used in the calculation of the combined weighted intersection delay.

Table 2A - Partial-Build 2040 - SW 10th Street Signalized Intersection Analysis Results - AM

Arterial	Signal Controlled Intersections	Measure of Effectiveness (MOE)	Location	AM Movement/Approach LOS (Delay)												Intersection
				Eastbound			Westbound			Northbound			Southbound			
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	AM LOS (Delay)
SW 10th Street	Waterways Boulevard	LOS (Delay)	Movement		F (88.4)	A (2.6)	F (170.1)	A (3.5)		F (262.5)		F (307.8)				E (71.8)
			Approach	F (87.9)			A (7.0)			F (286.4)						
		Volume to Capacity ratio	Movement		1.17	0.02	0.93	0.69		1.32		1.43				
		Queue Length 95th (ft)	Movement		m517	m0	m#152	m347		#522		#536				
	Independence Drive	LOS (Delay)	Movement		F (194.7)	A (0.1)	F (427.8)	A (8.8)		F (224.3)		F (84.5)				F (134.9)
			Approach	F (194.4)			B (11.8)			F (177.2)						
		Volume to Capacity ratio	Movement		1.42	0.01	0.25	0.64		1.07		0.08				
		Queue Length 95th (ft)	Movement		m#2784	m0	m4	m725		#194		45				
	South Powerline Road (S.R. 845)	LOS (Delay)	Movement	F (96.9)	F (110.4)	B (13.5)	F (204.0)	E (55.9)	D (43.5)	F (190.8)	F (120.6)	F (81.5)	F (102.3)	F (211.0)	C (30.3)	F (99.8)
			Approach	F (90.6)			E (73.0)			F (130.6)			F (138.8)			
		Volume to Capacity ratio	Movement	1.06	1.19	0.54	1.23	0.93	0.73	1.19	1.06	0.86	0.89	1.3	0.48	
		Queue Length 95th (ft)	Movement	m384	m761	m170	m#232	m804	m577	#334	#565	502	#161	#666	316	
	SW 28th Avenue	LOS (Delay)	Movement		F (212.1)	A (0.0)	F (255.8)	B (17.3)		F (276.2)		F (104.4)				F (139.8)
			Approach	F (208.1)			C (29.8)			F (215.9)						
		Volume to Capacity ratio	Movement		1.45	0.06	1.28	0.87		1.35		0.79				
		Queue Length 95th (ft)	Movement		m#2797	m0	m#300	742		#496		#241				
	South Military Trail	LOS (Delay)	Movement	E (70.6)	F (105.7)	B (11.4)	E (56.0)	C (30.6)	A (2.0)	F (84.1)	F (190.5)	F (153.1)	F (174.5)	E (75.9)	E (62.9)	F (88.7)
			Approach	F (94.4)			C (27.4)			F (160.6)			F (108.3)			
		Volume to Capacity ratio	Movement	0.8	1.14	0.18	0.62	0.77	0.64	0.69	1.23	1.17	1.17	0.83	0.43	
		Queue Length 95th (ft)	Movement	m168	m637	m23	m247	460	7	#193	#695	#856	#500	438	213	
	East Newport Center Drive	LOS (Delay)	Movement	E (65.3)	B (10.1)		E (79.0)	B (18.3)	A (3.2)	F (84.9)	F (82.1)	F (81.9)	F (96.1)	F (82.3)	F (80.4)	C (23.9)
			Approach	B (16.1)			C (24.7)			F (83.1)			F (85.3)			
		Volume to Capacity ratio	Movement	0.69	0.83		0.82	0.8	0.25	0.52	0.12	0.08	0.65	0.31	0.07	
		Queue Length 95th (ft)	Movement	m210	m305		m312	m741	m2	85	37	72	122	87	30	
	I-95 Southbound Ramps	LOS (Delay)	Movement		E (65.5)	A (0.5)	F (91.3)	A (6.1)					D (45.8)		F (92.1)	D (45.5)
			Approach	D (48.7)			C (28.8)						E (77.1)			
		Volume to Capacity ratio	Movement		0.98	0.46	0.86	0.75					0.39		1.01	
		Queue Length 95th (ft)	Movement		#658	0	m411	m143					265		#816	
	I-95 Northbound Ramps	LOS (Delay)	Movement		A (0.6)	A (0.2)		B (10.2)	A (0.1)	F (96.0)		E (71.2)				C (23.2)
			Approach	A (0.4)			A (9.0)			F (87.5)						
		Volume to Capacity ratio	Movement		0.41	0.34		0.39	0.19	0.98		0.71				
		Queue Length 95th (ft)	Movement		m9	m11		235	m0	#496		300				
	FAU Research Park Boulevard	LOS (Delay)	Movement	E (63.5)	C (20.1)	B (20.0)	F (102.3)	D (46.7)	C (29.6)	E (79.7)	E (59.0)	E (56.9)	E (59.9)	E (77.4)	F (106.6)	D (50.5)
			Approach	C (27.1)			D (51.7)			E (68.5)			F (86.0)			
		Volume to Capacity ratio	Movement	0.86	0.66	0.24	0.88	0.79	0.06	0.95	0.28	0.12	0.69	0.7	0.91	
		Queue Length 95th (ft)	Movement	#275	278	57	#392	763	15	#481	147	68	306	325	#427	
Powerline Road (S.R. 845)	West Drive	LOS (Delay)	Movement	F (91.3)	F (81.0)		F (88.0)		F (86.1)		F (80.7)	F (143.7)	E (59.2)	A (7.7)		D (54.3)
			Approach	F (84.9)			F (86.9)			F (81.9)			A (8.9)			
		Volume to Capacity ratio	Movement	0.62	0.19		0.28		0.01		1.08	0.04	0.51	0.65		
		Queue Length 95th (ft)	Movement	132	85		38		0		m#1935	m3	48	553		

Synchro 9.2.914.6

LOS notes:

HCM 2000 level of service (LOS) and delay results from Synchro

Delay is in sec/veh units

: LOS E reflecting at capacity operations

: LOS F reflecting over capacity operations

Queue notes:

HCM methodology does not report queues, results are from Synchro outputs report

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

Table 2B- Partial-Build 2040 - SW 10th Street Signalized Intersection Analysis Results - PM

Arterial	Signal Controlled Intersections	Measure of Effectiveness (MOE)	Location	PM Movement/Approach LOS (Delay)												Intersection
				Eastbound			Westbound			Northbound			Southbound			
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	PM LOS (Delay)
SW 10th Street	Waterways Boulevard	LOS (Delay)	Movement		B (10.6)	A (3.3)	**E (71.3)**	**F (123.2)**		**F (318.8)**		**F (84.6)**				**F (84.9)**
			Approach		B (10.3)			**F (120.9)**			**F (170.3)**					
		Volume to Capacity ratio	Movement		0.67	0.09	0.9	1.26		1.34		0.09				
		Queue Length 95th (ft)	Movement		412	m8	m229	m840		#246		#100				
	Independence Drive	LOS (Delay)	Movement		A (3.5)	A (0.0)	C (22.0)	**F (155.5)**		**F (88.7)**		**F (86.0)**				**F (102.6)**
			Approach		A (3.4)			**F (154.4)**			**F (86.8)**					
		Volume to Capacity ratio	Movement		0.73	0.03	0.52	1.31		0.45		0.13				
		Queue Length 95th (ft)	Movement		97	m0	m3	m403		60		57				
	South Powerline Road (S.R. 845)	LOS (Delay)	Movement	**E (79.6)**	B (17.1)	A (1.1)	**E (76.1)**	**F (284.9)**	C (32.2)	**F (326.8)**	**F (104.3)**	**E (62.4)**	**F (99.1)**	**F (250.8)**	**F (396.6)**	**F (194.0)**
			Approach		C (27.3)			**F (232.1)**			**F (206.7)**			**F (308.0)**		
		Volume to Capacity ratio	Movement	0.58	0.79	0.23	0.75	1.51	0.54	1.54	0.99	0.71	1.01	1.39	1.78	
		Queue Length 95th (ft)	Movement	263	669	27	m145	m#1427	m223	#770	#456	429	m206	m#430	m#1510	
	SW 28th Avenue	LOS (Delay)	Movement		D (42.5)	A (0.1)	**F (150.7)**	**F (123.4)**		**F (343.3)**		**F (104.4)**				**F (92.0)**
			Approach		D (40.2)			**F (124.9)**			**F (234.8)**					
		Volume to Capacity ratio	Movement		1.06	0.11	1.09	1.23		1.41		0.66				
		Queue Length 95th (ft)	Movement		m#2098	m0	m#262	m#2656		#269		#141				
	South Military Trail	LOS (Delay)	Movement	**F (157.0)**	**E (65.6)**	B (14.7)	**F (101.4)**	**F (87.9)**	C (21.3)	**F (161.6)**	**E (78.6)**	D (49.8)	**E (77.5)**	**E (63.7)**	**F (183.9)**	**F (85.3)**
			Approach		**E (75.1)**			**E (78.7)**			**F (86.9)**			**F (108.7)**		
		Volume to Capacity ratio	Movement	1.14	1.03	0.19	1.06	1.1	0.59	1.08	0.83	0.57	0.79	0.81	1.23	
		Queue Length 95th (ft)	Movement	m#268	m798	m49	m#338	m#1052	m185	#290	407	407	#372	568	#1078	
	East Newport Center Drive	LOS (Delay)	Movement	**F (82.3)**	C (22.8)		**F (130.8)**	**E (62.3)**	A (6.5)	**E (68.6)**	**E (58.1)**	**F (182.4)**	**E (65.8)**	**F (185.0)**	**F (92.8)**	**E (62.9)**
			Approach		C (25.0)			**E (63.2)**			**F (127.2)**			**F (124.0)**		
		Volume to Capacity ratio	Movement	0.9	0.97		0.88	1.06	0.09	0.67	0.04	1.18	0.52	1.16	0.84	
		Queue Length 95th (ft)	Movement	m#69	m541		m#131	#1229	m12	329	40	#768	252	#598	#400	
	I-95 Southbound Ramps	LOS (Delay)	Movement		C (27.3)	A (0.4)	**E (55.5)**	B (19.1)					D (53.8)		**F (88.5)**	C (32.2)
			Approach		C (20.4)			C (29.7)						**E (77.7)**		
		Volume to Capacity ratio	Movement		0.94	0.54	0.81	0.57					0.35		0.96	
		Queue Length 95th (ft)	Movement		m580	m9	m296	622					206		#614	
	I-95 Northbound Ramps	LOS (Delay)	Movement		A (0.3)	A (0.2)		A (5.4)	A (0.2)	**F (81.6)**		**F (92.3)**				C (23.4)
			Approach		A (0.3)			A (4.6)			**F (86.2)**					
		Volume to Capacity ratio	Movement		0.44	0.39		0.33	0.21	0.91		0.95				
		Queue Length 95th (ft)	Movement		m6	m46		m115	m0	#464		#478				
	FAU Research Park Boulevard	LOS (Delay)	Movement	**F (89.9)**	D (40.7)	B (19.6)	**F (114.8)**	D (42.5)	C (31.2)	**F (117.7)**	**E (61.0)**	**E (59.1)**	D (54.1)	**F (118.7)**	**F (88.4)**	**E (59.9)**
			Approach		D (44.5)			D (54.1)			**F (84.8)**			**F (88.7)**		
		Volume to Capacity ratio	Movement	0.78	0.97	0.28	0.98	0.66	0.12	1.03	0.28	0.14	0.64	0.98	0.83	
		Queue Length 95th (ft)	Movement	m219	m#790	m80	#601	560	76	#563	152	80	341	#605	#450	
Powerline Road (S.R. 845)	West Drive	LOS (Delay)	Movement	**F (85.1)**	**F (85.6)**		**F (93.1)**		**E (75.5)**		D (37.7)	C (23.7)	D (50.3)	D (49.7)		D (46.2)
			Approach		**F (85.5)**			**F (84.8)**			D (36.8)			D (49.7)		
		Volume to Capacity ratio	Movement	0.08	0.14		0.72		0.06		0.81	0.08	0.67	1.04		
		Queue Length 95th (ft)	Movement	21	47		199		59		m911	m35	118	#2124		

Synchro 9.2.914.6

LOS notes:

HCM 2000 level of service (LOS) and delay results from Synchro

Delay is in sec/veh units

: LOS E reflecting at capacity operations

: LOS F reflecting over capacity operations

Queue notes:

HCM methodology does not report queues, results are from Synchro outputs report

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

Table C-1
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
Center Alignment 3D-1.1 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3180	2170	22	22	C	C	1248	803	34	32	C	C
	EBR	1	30	130	7	12	A	B	m1	m32				
	WBL	1	80	280	129	87	F	F	m128	m300				
	NBL	1	190	95	94	96	F	F	329	187				
	NBR	1	255	110	111	77	F	E	#380	68				
Independence Dr. (Unsignalized)	EBT	3	3425	2210	-	-	-	-	-	-	-	-	-	-
	EBR	1	30	95	-	-	-	-	-	-				
	WBT	3	2190	3395	-	-	-	-	-	-				
	NBR	1	90	70	47	19	E	C	69	20				
Powerline Rd (Signalized)	EBL*	3	1045	525	89	105	F	F	m#572	#319	60	71	E	E
	EBT	3	1690	1415	32	37	C	D	667	657				
	EBR	2	780	340	23	23	C	C	m382	153				
	WBL*	3	410	490	91	86	F	F	m181	m169				
	WBT	3	1330	1645	55	49	E	D	m596	m501				
	WBR	1	615	430	57	19	E	B	m676	m172				
	NBL	3	390	770	96	100	F	F	#232	#436				
	NBT	3	1225	1175	73	62	E	E	#682	563				
	NBR	1	285	385	53	54	D	D	230	352				
	SBL	3	250	470	86	83	F	F	m140	m254				
	SBT	3	1290	910	67	65	E	E	m595	m419				
	SBR	2	410	935	47	167	D	F	m138	m#836				
SW 30th Ave (Unsignalized)	EBT	2	2160	2365	-	-	-	-	-	-	-	-	-	-
	EBR	1	150	30	-	-	-	-	-	-				
	WBT	2	2445	2465	-	-	-	-	-	-				
	NBR	1	125	260	55	369	F	F	103	474				
SW 28th Ave (Signalized)	EBU	1	145	190	170	209	F	F	m#314	m#436	89	100	F	F
	EBT	2	3130	2610	119	41	F	D	#2597	#1965				
	EBR	1	80	175	1	1	A	A	m6	m3				
	WBU	1	115	110	232	68	F	E	m#244	m132				
	WBL	1	30	170	100	102	F	F	m52	m205				
	WBT	2	2430	3250	29	148	C	F	#1738	m#2267				
	NBL	1	220	115	215	110	F	F	#524	#247				
	NBR	1	130	110	95	90	F	F	#267	#183				
SW 24th Ave (Unsignalized)	EBT	2	3185	2705	-	-	-	-	-	-	-	-	-	-
	EBR	1	190	125	-	-	-	-	-	-				
	WBT	3	2575	3530	-	-	-	-	-	-				
	NBR	1	85	85	204	85	F	F	152	99				
Military Trail (Signalized)	EBL*	2	380	410	99	185	F	F	m217	m#338	115	96	F	F
	EBT	3	2145	1780	135	69	F	E	m#866	m#859				
	EBR	1	155	195	20	35	B	C	m19	m52				
	WBL	2	340	525	213	154	F	F	#406	m#398				
	WBT	3	1545	2140	70	85	E	F	#563	m#1071				
	WBR	1	500	550	67	14	E	B	399	m232				
	NBL	2	200	315	85	217	F	F	179	#367				
	NBT	2	670	585	59	74	E	E	484	460				
	NBR	1	690	400	246	81	F	F	#1249	#499				
	SBL	2	500	450	216	108	F	F	#540	#421				
	SBT	2	530	830	49	72	D	E	357	633				
	SBR	1	340	645	50	187	D	F	318	#1066				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and through lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table C-2
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
Center Alignment 3D-1.2 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3180	2170	22	22	C	C	1248	803	34	32	C	C
	EBR	1	30	130	7	12	A	B	m1	m32				
	WBL	1	80	280	129	87	F	F	m127	m300				
	NBL	1	190	95	94	96	F	F	329	187				
	NBR	1	255	110	111	77	F	E	#380	68				
Independence Dr. (Unsignalized)	EBT	3	3425	2210	-	-	-	-	-	-	-	-	-	-
	EBR	1	30	95	-	-	-	-	-	-				
	WBT	3	2190	3395	-	-	-	-	-	-				
	NBR	1	90	70	47	19	E	C	69	20				
Powerline Rd (Signalized)	EBL*	3	1045	525	89	105	F	F	m#572	#319	60	71	E	E
	EBT	3	1690	1415	32	37	C	D	667	657				
	EBR	2	780	340	23	23	C	C	m382	153				
	WBL*	3	410	490	96	89	F	F	m196	m206				
	WBT	3	1330	1645	56	52	E	D	m653	m660				
	WBR	1	615	430	58	19	E	B	m749	m233				
	NBL	3	390	770	96	100	F	F	#232	#436				
	NBT	3	1225	1175	73	62	E	E	#682	563				
	NBR	1	285	385	53	54	D	D	230	352				
	SBL	3	250	470	95	84	F	F	145	m255				
	SBT	3	1290	910	66	65	E	E	609	m419				
	SBR	2	410	935	44	166	D	F	121	m#826				
SW 30th Ave (Unsignalized)	EBT	2	2160	2335	-	-	-	-	-	-	-	-	-	-
	EBR	1	150	60	-	-	-	-	-	-				
	WBT	2	2445	2465	-	-	-	-	-	-				
	NBR	1	125	260	55	351	F	F	103	465				
SW 28th Ave (Signalized)	EBU	1	145	190	147	157	F	F	m#302	m#400	85	49	F	D
	EBT	2	3130	2580	118	37	F	D	#2597	#1925				
	EBR	1	80	175	2	1	A	A	m7	m5				
	WBU	1	115	110	219	67	F	E	m#219	m162				
	WBL	1	30	170	91	129	F	F	m52	m#276				
	WBT	2	2240	2610	17	45	B	D	m368	m#1797				
	NBL	1	220	115	215	110	F	F	#524	#247				
	NBR	1	130	110	95	90	F	F	#267	#183				
SW 24th Ave (Unsignalized)	EBT	2	3185	2675	-	-	-	-	-	-	-	-	-	-
	EBR	1	190	125	-	-	-	-	-	-				
	WBT	3	2385	2890	-	-	-	-	-	-				
	NBR	1	85	85	204	80	F	F	152	96				
Military Trail (Signalized)	EBL*	2	380	410	193	138	F	F	m#243	m#321	127	81	F	F
	EBT	3	2145	1780	131	62	F	E	m#865	m853				
	EBR	1	155	195	21	40	C	D	m28	m54				
	WBL	2	340	525	212	71	F	E	#404	m308				
	WBT	2	1355	1500	123	85	F	F	#1164	m979				
	WBR	1	500	550	66	56	E	E	411	m471				
	NBL	2	200	315	85	159	F	F	179	#343				
	NBT	2	670	585	59	99	E	F	484	#528				
	NBR	1	690	400	250	103	F	F	#1261	#525				
	SBL	2	500	450	216	108	F	F	#540	#421				
	SBT	2	530	830	49	115	D	F	357	#750				
	SBR	1	340	645	0	1	A	A	0	0				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and through lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table C-3
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
Center Alignment 3D-1.3 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3040	2080	21	21	C	C	1150	775	32	33	C	C
	EBR	1	30	130	7	12	A	B	m1	34				
	WBL	1	80	280	113	91	F	F	m129	m296				
	NBL	1	190	95	91	93	F	F	324	184				
	NBR	1	255	110	106	77	F	E	#358	67				
Independence Dr. (Unsignalized)	EBT	3	3285	2120	-	-	-	-	-	-	-	-	-	-
	EBR	1	30	95	-	-	-	-	-	-				
	WBT	3	2100	3255	-	-	-	-	-	-				
	NBR	1	90	70	41	18	E	C	62	19				
Powerline Rd (Signalized)	EBL*	3	1015	495	83	102	F	F	#561	#302	62	69	E	E
	EBT	3	1590	1365	36	49	D	D	630	671				
	EBR	2	770	330	35	22	D	C	360	157				
	WBL*	3	420	490	81	93	F	F	#248	#278				
	WBT	3	1300	1525	65	83	E	F	619	#810				
	WBR	1	625	430	67	38	E	D	#870	444				
	NBL	3	360	760	95	97	F	F	#215	#425				
	NBT	3	1225	1175	79	52	E	D	#682	526				
	NBR	1	275	355	53	45	D	D	193	272				
	SBL	3	240	440	90	87	F	F	139	m246				
	SBT	3	1290	910	60	53	E	D	578	378				
	SBR	2	380	925	42	90	D	F	109	#486				
SW 30th Ave (Unsignalized)	EBT	2	2040	2225	-	-	-	-	-	-	-	-	-	-
	EBR	1	150	60	-	-	-	-	-	-				
	WBT	3	2435	2345	-	-	-	-	-	-				
	NBR	1	125	260	45	288	E	F	88	427				
SW 28th Ave (Signalized)	EBU	1	145	190	2	1	A	A	m23	m14	27 27	24 24	C C	C C
	EBT	2	1940	2120	16	14	B	B	1240	541				
	EBR	1	80	175	1	0	A	A	m1	m0				
	WBU	1	115	110	68	66	E	E	m167	m161				
	WBL	1	30	170	49	84	D	F	m50	m259				
	WBT	2	0	0	0	0	0	0	0	0				
	NBL	1	220	115	100	110	F	F	#372	#247				
	NBR	1	130	110	70	79	E	E	177	130				
SW 24th Ave (Unsignalized)	EBT	2	1995	2215	-	-	-	-	-	-	-	-	-	-
	EBR	1	190	125	-	-	-	-	-	-				
	WBT	3	2215	2320	-	-	-	-	-	-				
	NBR	1	85	85	31	41	D	E	45	57				
Military Trail (Signalized)	EBL*	2	350	380	117	85	F	F	m#341	m297	72	52	E	D
	EBT	2	215	340	54	45	D	D	m154	m208				
	EBR	1	145	185	117	42	F	D	m75	m30				
	WBL	2	340	495	98	53	F	D	258	m284				
	WBT	2	1245	990	54	35	D	C	#997	m618				
	WBR	1	500	540	17	23	B	C	190	m416				
	NBL	2	170	285	85	95	F	F	157	#264				
	NBT	2	670	585	76	70	E	E	523	449				
	NBR	1	680	390	116	57	F	E	#709	101				
	SBL	2	490	440	109	88	F	F	#455	#370				
	SBT	2	530	830	51	73	D	E	363	628				
	SBR	1	310	615	0	1	A	A	0	0				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and through lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table C-4
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
Center Alignment 3D-1.4 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3180	2170	22	22	C	C	1248	803	34	32	C	C
	EBR	1	30	130	7	12	A	B	m1	m62				
	WBL	1	80	280	129	87	F	F	m127	m300				
	NBL	1	190	95	94	96	F	F	329	187				
	NBR	1	255	110	111	77	F	E	#380	68				
Independence Dr. (Unsignalized)	EBT	3	3425	2210	-	-	-	-	-	-	-	-	-	-
	EBR	1	30	95	-	-	-	-	-	-				
	WBT	3	2190	3395	-	-	-	-	-	-				
	NBR	1	90	70	47	19	E	C	69	20				
Powerline Rd (Signalized)	EBL*	3	1045	525	89	105	F	F	m#572	#319	62	76	E	E
	EBT	3	1690	1415	32	37	C	D	667	657				
	EBR	2	780	340	23	23	C	C	m382	153				
	WBL*	3	410	490	105	92	F	F	m#240	#278				
	WBT	3	1330	1645	64	71	E	E	m582	#832				
	WBR	1	615	430	62	37	E	D	m767	438				
	NBL	3	390	770	96	100	F	F	#232	#436				
	NBT	3	1225	1175	73	62	E	E	#682	563				
	NBR	1	285	385	53	54	D	D	230	352				
	SBL	3	250	470	95	83	F	F	145	m253				
	SBT	3	1290	910	66	65	E	E	609	m419				
	SBR	2	410	935	44	167	D	F	121	m#860				
SW 30th Ave (Unsignalized)	EBT	2	2160	2335	-	-	-	-	-	-	-	-	-	-
	EBR	1	150	60	-	-	-	-	-	-				
	WBT	3	2475	2465	-	-	-	-	-	-				
	NBR	1	125	260	55	351	F	F	103	465				
SW 28th Ave (Signalized)	EBU	1	85	190	1	1	A	A	m12	m13	122	46	F	D
	EBT	2	3190	2580	124	42	F	D	#2691	#1950				
	EBR	1	80	175	2	1	A	A	m8	m5				
	WBU	1	25	110	93	76	F	E	m48	m186				
	WBL	1	30	170	93	116	F	F	m57	m#324				
	WBT	2	0	0	0	0	0	0	0	0				
	NBL	1	220	115	215	110	F	F	#524	#247				
	NBR	1	130	110	80	86	F	F	197	168				
SW 24th Ave (Unsignalized)	EBT	2	3155	2675	-	-	-	-	-	-	-	-	-	-
	EBR	1	190	125	-	-	-	-	-	-				
	WBT	3	2225	2440	-	-	-	-	-	-				
	NBR	1	85	85	193	80	F	F	149	96				
Military Trail (Signalized)	EBL*	2	380	410	96	90	F	F	m217	m270	147	91	F	F
	EBT	3	2665	2230	195	106	F	F	m#1241	m#1167				
	EBR	1	155	195	18	17	B	B	m30	m46				
	WBL	2	340	525	244	125	F	F	#412	m#428				
	WBT	2	1195	1100	74	54	E	D	#915	m718				
	WBR	1	500	550	69	63	E	E	430	m540				
	NBL	2	200	315	85	159	F	F	179	#343				
	NBT	2	670	585	66	108	E	F	503	#541				
	NBR	1	690	400	323	92	F	F	#1329	#469				
	SBL	2	500	450	241	120	F	F	#552	#433				
	SBT	2	530	830	55	134	D	F	375	#776				
	SBR	1	340	645	0	1	A	A	0	0				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and through lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table C-5
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
Center Alignment 3D-1.5 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3040	2080	21	21	C	C	1150	775	33	33	C	C
	EBR	1	30	130	7	12	A	B	m1	34				
	WBL	1	80	280	129	91	F	F	m127	m307				
	NBL	1	190	95	91	93	F	F	324	184				
	NBR	1	255	110	106	77	F	E	#358	67				
Independence Dr. (Unsignalized)	EBT	3	3285	2120	-	-	-	-	-	-	-	-	-	-
	EBR	1	30	95	-	-	-	-	-	-				
	WBT	3	2100	3255	-	-	-	-	-	-				
	NBR	1	90	70	41	18	E	C	62	19				
Powerline Rd (Signalized)	EBL*	3	1015	495	80	102	E	F	#549	#302	61	70	E	E
	EBT	3	1590	1365	34	40	C	D	641	644				
	EBR	2	770	330	25	25	C	C	414	157				
	WBL*	3	420	490	99	94	F	F	#250	#279				
	WBT	3	1300	1525	68	66	E	E	#671	739				
	WBR	1	625	430	65	34	E	C	839	415				
	NBL	3	360	760	95	97	F	F	#215	#425				
	NBT	3	1225	1175	76	57	E	E	#670	549				
	NBR	1	275	355	53	49	D	D	189	297				
	SBL	3	240	440	92	84	F	F	141	m242				
	SBT	3	1290	910	59	60	E	E	569	403				
	SBR	2	380	925	42	131	D	F	111	#691				
SW 30th Ave (Unsignalized)	EBT	2	2040	2225	-	-	-	-	-	-	-	-	-	-
	EBR	1	150	60	-	-	-	-	-	-				
	WBT	3	2435	2345	-	-	-	-	-	-				
	NBR	1	125	260	45	288	E	F	88	427				
SW 28th Ave (Signalized)	EBU	1	145	190	2	1	A	A	m20	m21	31	26	C	C
	EBT	2	1940	2120	18	14	B	B	239	493				
	EBR	1	80	175	1	1	A	A	m1	m1				
	WBU	1	115	110	117	85	F	F	m171	m190				
	WBL	1	30	170	107	103	F	F	m53	m285				
	WBT	2	0	0	0	0	0	0	0	0				
	NBL	1	220	115	100	110	F	F	#372	#247				
	NBR	1	130	110	70	79	E	E	177	130				
SW 24th Ave (Unsignalized)	EBT	2	1995	2215	-	-	-	-	-	-	-	-	-	-
	EBR	1	190	125	-	-	-	-	-	-				
	WBT	3	2215	2320	-	-	-	-	-	-				
	NBR	1	85	85	31	41	D	E	45	57				
Military Trail (Signalized)	EBL*	2	350	380	153	86	F	F	m#363	m286	87	68	F	E
	EBT	3	1545	1810	54	59	D	E	#805	#958				
	EBR	1	145	185	22	17	C	B	m40	m74				
	WBL	2	340	495	121	100	F	F	#357	m#393				
	WBT	2	1245	990	97	56	F	E	#1094	m661				
	WBR	1	500	540	49	62	D	E	641	m662				
	NBL	2	170	285	85	128	F	F	157	#301				
	NBT	2	670	585	57	79	E	E	475	#469				
	NBR	1	680	390	183	50	F	D	#1114	446				
	SBL	2	490	440	164	113	F	F	#503	#418				
	SBT	2	530	830	45	93	D	F	338	#712				
	SBR	1	310	615	0	1	A	A	0	0				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and through lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table C-6
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
Center Alignment 3D-1.6 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3780	2220	54	22	D	C	m1212	836	63	32	E	C
	EBR	1	30	130	6	12	A	B	m0	m30				
	WBL	1	80	280	120	82	F	F	m128	m249				
	NBL	1	190	95	108	96	F	F	#393	187				
	NBR	1	255	110	147	77	F	E	#455	68				
Independence Dr. (Unsignalized)	EBT	3	4025	2260	-	-	-	-	-	-	-	-	-	-
	EBR	1	30	95	-	-	-	-	-	-				
	WBT	3	2240	3995	-	-	-	-	-	-				
	NBR	1	90	70	89	19	F	C	107	21				
Powerline Rd (Signalized)	EBL*	3	1015	495	70	176	E	F	m411	#339	66	96	E	F
	EBT	3	2330	1505	41	31	D	C	m895	664				
	EBR	2	770	330	23	18	C	B	m239	114				
	WBL*	3	420	490	140	84	F	F	m#277	258				
	WBT	3	1440	2265	58	100	E	F	m642	#1230				
	WBR	1	625	430	62	25	E	C	m829	354				
	NBL	3	360	760	122	145	F	F	#239	#474				
	NBT	3	1225	1175	92	73	F	E	#708	587				
	NBR	1	275	355	57	59	E	E	264	353				
	SBL	3	240	440	94	94	F	F	139	m#261				
	SBT	3	1290	910	83	71	F	E	#700	443				
	SBR	2	380	925	45	244	D	F	117	#936				
SW 30th Ave (Unsignalized)	EBT	2	2780	2365	-	-	-	-	-	-	-	-	-	-
	EBR	1	150	60	-	-	-	-	-	-				
	WBT	2	2575	3085	-	-	-	-	-	-				
	NBR	1	125	260	190	369	F	F	200	474				
SW 28th Ave (Signalized)	EBU	1	145	190	1	1	A	A	m10	m23	59	28	E	C
	EBT	2	2680	2260	49	18	D	B	m#1899	546				
	EBR	1	80	175	0	1	A	A	m0	m1				
	WBU	1	115	110	174	89	F	F	m#187	m129				
	WBL	1	30	170	99	95	F	F	m46	m202				
	WBT	2	0	0	0	0	0	0	0	0				
	NBL	1	220	115	170	110	F	F	#500	#247				
	NBR	1	130	110	83	81	F	F	#236	152				
SW 24th Ave (Unsignalized)	EBT	2	2735	2355	-	-	-	-	-	-	-	-	-	-
	EBR	1	190	125	-	-	-	-	-	-				
	WBT	2	2355	3060	-	-	-	-	-	-				
	NBR	1	85	85	89	49	F	E	102	67				
Military Trail (Signalized)	EBL*	2	350	380	134	158	F	F	m#246	m#348	116	99	F	F
	EBT	3	2285	1950	141	103	F	F	m#1201	#1132				
	EBR	1	145	185	19	20	B	C	m31	m57				
	WBL	2	340	495	240	130	F	F	#403	m#392				
	WBT	3	1825	2110	58	97	E	F	#970	m#1073				
	WBR	1	500	540	26	32	C	C	193	m454				
	NBL	2	170	285	85	149	F	F	157	#312				
	NBT	2	670	585	62	72	E	E	492	456				
	NBR	1	680	390	262	82	F	F	#1252	#520				
	SBL	2	490	440	231	103	F	F	#539	#406				
	SBT	2	530	830	50	72	D	E	360	633				
	SBR	1	310	615	49	159	D	F	280	#986				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and thru lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table N-1
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
North Alignment 3D-1.1 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3180	2170	22	20	C	B	1274	791	33	31	C	C
	EBR	1	30	130	7	11	A	B	m1	m32				
	WBL	1	60	255	118	95	F	F	#127	395				
	NBL	1	190	95	89	93	F	F	324	184				
	NBR	1	255	110	109	77	F	E	#375	67				
Independence Dr (Signalized)	EBT	3	3425	2210	3	6	A	A	76	420	7	5	A	A
	EBR	1	10	70	0	6	A	A	m0	m22				
	WBL	1	20	25	58	96	E	F	m29	m32				
	WBT	3	2110	3325	10	2	A	A	551	m121				
	NBL	1	60	45	94	96	F	F	131	104				
	NBR	1	30	25	80	83	F	F	40	37				
Powerline Rd (Signalized)	EBL	3	1050	505	89	89	F	F	#570	#302	59	69	E	E
	EBT	3	1625	1390	35	48	D	D	669	586				
	EBR	2	780	340	14	29	B	C	300	185				
	WBL*	3	320	355	109	89	F	F	m141	m172				
	WBT	3	1310	1610	49	49	D	D	m565	#818				
	WBR	1	655	430	49	21	D	C	m751	m374				
	NBL	3	390	770	96	100	F	F	#232	#436				
	NBT	3	1235	1180	81	61	F	E	#680	566				
	NBR	1	275	380	54	54	D	D	205	363				
	SBL	3	250	555	92	92	F	F	150	m286				
	SBT	3	1295	920	62	56	E	E	589	m410				
	SBR	2	430	970	46	145	D	F	140	m#641				
SW 30th Ave (Unsignalized)	EBT	2	3145	2645	-	-	-	-	-	-	-	-	-	-
	EBR	1	75	30	-	-	-	-	-	-				
	WBL	1	75	30	197	40	F	E	137	22				
	WBT	2	1785	1865	-	-	-	-	-	-				
	NBR	1	65	110	$	$	F	F	$$	$$				
	NBL	1	60	150										
SW 28th Ave (Signalized)	EBL	1	537	439	108	142	F	F	#939	#846	50	33	D	C
	EBT	2	2593	2141	38	12	D	B	#1926	222				
	EBR	1	80	175	1	1	A	A	m1	m7				
	WBL	1	30	170	94	81	F	F	m52	m193				
	WBT	2	1662	1792	46	13	D	B	#1283	m198				
	WBR	1	328	1078	4	50	A	D	m51	m95				
	NBT**	1	233	126	138	97	F	F	#495	#252				
	NBR	1	117	99	71	76	E	E	108	65				
SW 24th Ave (Unsignalized)	EBT	2	2545	2135	-	-	-	-	-	-	-	-	-	-
	EBR	1	165	105	-	-	-	-	-	-				
	WBL	1	25	20	40	25	E	C	18	8				
	WBT	2	1970	2990	-	-	-	-	-	-				
	NBL	1	50	50	$	$	F	F	$$	$$				
	NBR	1	35	35	39	27	E	D	24	17				
Military Trail (Signalized)	EBL	2	330	360	117	209	F	F	m#238	m#370	113	96	F	F
	EBT	3	2145	1780	129	83	F	F	m#1204	#1017				
	EBR	1	155	195	27	56	C	E	m39	m66				
	WBL	2	340	525	213	148	F	F	#403	m301				
	WBT	3	1545	2140	63	77	E	E	616	m839				
	WBR	1	500	550	63	13	E	B	380	m154				
	NBL	2	200	315	85	217	F	F	179	#367				
	NBT	2	670	585	59	73	E	E	484	460				
	NBR	1	690	400	249	77	F	E	#1258	#472				
	SBL	2	500	450	216	95	F	F	#540	#397				
	SBT	2	530	830	49	67	D	E	357	623				
	SBR	1	340	645	50	185	D	F	324	#1099				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.
2) * Shared left and U turn lane
** Shared left and through lane
3) Signalized Intersection Notes:
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
4) Unsignalized Intersection Notes:
$ Delay exceeds 300seconds
$$ Queue can not be calculated

Table N-2
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
North Alignment 3D-1.2 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3180	2170	22	20	C	B	1274	791	33	31	C	C
	EBR	1	30	130	7	11	A	B	m1	m32				
	WBL	1	60	255	118	96	F	F	#127	383				
	NBL	1	190	95	89	93	F	F	324	184				
	NBR	1	255	110	109	77	F	E	#375	67				
Independence Dr. (Signalized)	EBT	3	3425	2210	3	8	A	A	76	573	7	6	A	A
	EBR	1	10	70	0	9	A	A	m0	m31				
	WBL	1	20	25	58	90	E	F	m29	m32				
	WBT	3	2110	3325	10	3	A	A	551	m172				
	NBL	1	60	45	94	96	F	F	131	104				
	NBR	1	30	25	80	83	F	F	40	37				
Powerline Rd (signalized)	EBL	3	1050	505	89	104	#REF!	#REF!	#570	#314	59	68	E	E
	EBT	3	1625	1390	35	45	D	D	669	540				
	EBR	2	780	340	14	23	B	C	300	143				
	WBL*	3	320	355	109	101	F	F	m141	m171				
	WBT	3	1310	1610	49	51	D	D	m565	#830				
	WBR	1	655	430	49	19	D	B	m751	m318				
	NBL	3	390	770	96	121	F	F	#232	#460				
	NBT	3	1235	1180	81	59	F	E	#680	561				
	NBR	1	275	380	54	54	D	D	205	394				
	SBL	3	250	555	92	79	F	E	150	m295				
	SBT	3	1295	920	62	58	E	E	589	m392				
	SBR	2	430	970	46	116	D	F	140	m#839				
SW 30th Ave (Unsignalized)	EBT	2	3145	2645	-	-	-	-	-	-	-	-	-	-
	EBR	1	75	30	-	-	-	-	-	-				
	WBL	1	75	30	197	40	F	E	137	22				
	WBT	2	1785	1865	-	-	-	-	-	-				
	NBR	1	65	110	$	$	F	F	$$	$$				
	NBL	1	60	150										
SW 28th Ave (Signalized)	EBL	1	537	439	108	110	F	F	#939	#749	52	30	D	C
	EBT	2	2593	2141	38	13	D	B	#1926	1113				
	EBR	1	80	175	1	1	A	A	m1	m8				
	WBL	1	30	170	92	92	F	F	m54	m237				
	WBT	2	1662	1792	47	28	D	C	#1282	m1138				
	WBR	1	138	438	2	6	A	A	m8	m42				
	NBT**	1	233	126	138	97	F	F	#495	#252				
	NBR	1	117	99	71	76	E	E	108	65				
	SBT	0	0	0	0	0	0	0	0	0				
	SBR	0	0	0	0	0	0	0	0	0				
SW 24th Ave (Unsignalized)	EBT	2	2545	2135	-	-	-	-	-	-	-	-	-	-
	EBR	1	165	105	-	-	-	-	-	-				
	WBL	1	25	20	40	25	E	C	18	8				
	WBT	2	1780	2350	-	-	-	-	-	-				
	NBL	1	50	50	$	$	F	F	$$	$$				
	NBR	1	35	35	39	27	E	D	24	17				
Military Trail (Signalized)	EBL	2	330	360	88	93	F	F	m220	m#278	113	85	F	F
	EBT	3	2145	1780	129	75	F	E	m#1204	#995				
	EBR	1	155	195	27	39	C	D	m39	m56				
	WBL	2	340	525	208	115	F	F	#403	m273				
	WBT	3	1355	1500	62	57	E	E	536	m564				
	WBR	1	500	550	70	68	E	E	417	m372				
	NBL	2	200	315	85	159	F	F	179	#343				
	NBT	2	670	585	59	73	E	E	484	460				
	NBR	1	690	400	246	73	F	E	#1249	#415				
	SBL	2	500	450	216	95	F	F	#540	#397				
	SBT	2	530	830	49	72	D	E	357	633				
	SBR	1	340	645	49	164	D	F	317	#1000				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and through lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table N-3
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
North Alignment 3D-1.3 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3040	2080	20	19	C	B	1173	742	31	30	C	C
	EBR	1	30	130	7	11	A	B	m1	33				
	WBL	1	60	255	114	87	F	F	#127	378				
	NBL	1	190	95	86	93	F	F	320	184				
	NBR	1	255	110	103	77	F	E	#353	67				
Independence Dr. (Signalized)	EBT	3	3285	2120	3	1	A	A	69	6	6	5	A	A
	EBR	1	10	70	0	0	A	A	m0	m0				
	WBL	1	20	25	50	71	D	E	m30	m29				
	WBT	3	2020	3185	7	6	A	A	418	m516				
	NBL	1	60	45	94	94	F	F	131	103				
	NBR	1	30	25	80	82	F	F	40	37				
Powerline Rd (signalized)	EBL	3	955	450	90	109	F	F	#518	#273	58	65	E	E
	EBT	3	1590	1365	36	45	D	D	654	631				
	EBR	2	770	330	15	13	B	B	294	89				
	WBL*	3	345	460	93	104	F	F	m172	#278				
	WBT	3	1300	1525	62	65	E	E	m#669	#780				
	WBR	1	625	430	39	29	D	C	m513	315				
	NBL	3	360	760	95	97	F	F	#215	#425				
	NBT	3	1225	1175	74	51	E	D	#670	526				
	NBR	1	275	355	52	45	D	D	195	294				
	SBL	3	240	440	94	84	F	F	145	240				
	SBT	3	1290	910	58	55	E	D	548	373				
	SBR	2	380	925	43	91	D	F	118	#545				
SW 30th Ave (Unsignalized)	EBT	2	625	715	-	-	-	-	-	-	-	-	-	-
	EBR	1	75	30	-	-	-	-	-	-				
	WBL	1	75	30	10	10	A	A	8	3				
	WBT	2	2215	2125	-	-	-	-	-	-				
	NBR	1	65	110	48	403	E	F	91	492				
	NBL	1	60	150										
SW 28th Ave (Signalized)	EBT	2	610	650	47	38	D	D	440	m484	51	45	D	D
	EBR	1	80	175	108	69	F	E	m67	m148				
	WBL*	1	20	170	109	79	F	E	m32	m255				
	WBT	2	1640	1660	26	26	C	C	m1155	1178				
	NBL	1	220	115	113	103	F	F	#439	#219				
	NBR	1	130	110	67	76	E	E	69	68				
	SBT**	1	5	5	50	53	D	D	27	27				
	SBR	1	430	370	98	87	F	F	#674	493				
SW 24th Ave (Unsignalized)	EBT	2	575	655	-	-	-	-	-	-	-	-	-	-
	EBR	1	170	110	-	-	-	-	-	-				
	WBL	1	25	20	10	10	A	A	2	2				
	WBT	2	1610	1780	-	-	-	-	-	-				
	NBL	1	50	50	66	101	F	F	54	72				
	NBR	1	35	35	11	11	B	B	4	5				
Military Trail (Signalized)	EBL	2	300	330	134	106	F	F	#300	#298	71	55	E	E
	EBT	2	215	340	26	32	C	C	147	145				
	EBR	1	145	185	173	24	F	C	97	10				
	WBL	2	340	495	96	56	F	E	268	m300				
	WBT	2	1245	990	50	47	D	D	#984	m691				
	WBR	1	500	540	17	45	B	D	73	m513				
	NBL	2	170	285	85	91	F	F	157	#252				
	NBT	2	670	585	73	68	E	E	520	446				
	NBR	1	680	390	118	58	F	E	#732	141				
	SBL	2	490	440	109	86	F	F	#455	354				
	SBT	2	530	830	50	71	D	E	360	623				
	SBR	1	310	615	0	1	A	A	0	0				

4/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.
2) * Shared left and U turn lane
** Shared left and through lane
3) Signalized Intersection Notes:
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
4) Unsignalized Intersection Notes:
$ Delay exceeds 300seconds
$$ Queue can not be calculated

Table N-4
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
North Alignment 3D-1.4 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3180	2170	22	20	C	B	1274	791	33	31	C	C
	EBR	1	30	130	7	11	A	B	m1	m32				
	WBL	1	60	255	118	96	F	F	#127	383				
	NBL	1	190	95	89	93	F	F	324	184				
	NBR	1	255	110	109	77	F	E	#375	67				
Independence Dr. (Signalized)	EBT	3	3425	2210	3	8	A	A	76	573	7	6	A	A
	EBR	1	10	70	0	9	A	A	m0	m31				
	WBL	1	20	25	58	90	E	F	m29	m32				
	WBT	3	2110	3325	10	3	A	A	551	m167				
	NBL	1	60	45	94	96	F	F	131	104				
	NBR	1	30	25	80	83	F	F	40	37				
Powerline Rd (signalized)	EBL	3	1050	505	89	90	F	F	#570	#302	63	72	E	E
	EBT	3	1625	1390	35	45	D	D	669	540				
	EBR	2	780	340	14	23	B	C	300	143				
	WBL*	3	320	355	93	80	F	E	m167	190				
	WBT	3	1310	1610	72	67	E	E	m#660	#829				
	WBR	1	655	430	73	37	E	D	m#887	462				
	NBL	3	390	770	96	100	F	F	#232	#436				
	NBT	3	1235	1180	81	61	F	E	#680	566				
	NBR	1	275	380	54	54	D	D	205	363				
	SBL	3	250	555	91	92	F	F	150	m286				
	SBT	3	1295	920	62	56	E	E	589	m410				
	SBR	2	430	970	47	145	D	F	143	m#641				
SW 30th Ave (Unsignalized)	EBT	3	3145	2645	-	-	-	-	-	-	-	-	-	-
	EBR	1	75	30	-	-	-	-	-	-				
	WBL	1	75	30	197	40	F	E	137	22				
	WBT	2	1785	1915	-	-	-	-	-	-				
	NBR	1	65	110	$	$	F	F	$$	$$				
	NBL	1	60	150										
SW 28th Ave (Signalized)	EBL	0	0	0	0	0	0	0	0	0	79	33	E	C
	EBT	2	3130	2580	103	43	F	D	#2556	#1938				
	EBR	1	80	175	1	1	A	A	m4	m5				
	WBL*	1	30	170	90	112	F	F	m59	m#279				
	WBT	2	1640	1830	5	6	A	A	135	m197				
	NBT*	1	0	0	308	110	F	F	#560	#247				
	NBL		220	115										
	NBR	1	130	110	80	76	E	E	166	68				
	SBT	0	0	0	0	0	0	0	0	0				
	SBR	0	0	0	0	0	0	0	0	0				
SW 24th Ave (Unsignalized)	EBT	2	3095	2585	-	-	-	-	-	-	-	-	-	-
	EBR	1	165	105	-	-	-	-	-	-				
	WBL	1	25	20	76	37	F	E	33	14				
	WBT	2	1620	1950	-	-	-	-	-	-				
	NBL	1	50	50	$	$	F	F	$$	$$				
	NBR	1	35	35	70	40	F	E	41	25				
Military Trail (Signalized)	EBL	2	330	360	81	92	F	F	m188	m233	145	107	F	F
	EBT	3	2695	2230	185	102	F	F	m#1301	m#1151				
	EBR	1	155	195	19	22	B	C	m30	m42				
	WBL	2	340	525	243	164	F	F	#414	m#376				
	WBT	3	1195	1100	53	44	D	D	423	m446				
	WBR	1	500	550	63	60	E	E	388	m446				
	NBL	2	200	315	85	217	F	F	179	#367				
	NBT	2	670	585	69	92	E	F	512	#515				
	NBR	1	690	400	353	93	F	F	#1351	#500				
	SBL	2	500	450	241	120	F	F	#552	#433				
	SBT	2	530	830	56	100	E	F	381	#725				
	SBR	1	340	645	57	225	E	F	359	#1054				

2/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.

2) * Shared left and U turn lane

** Shared left and thru lane

3) Signalized Intersection Notes:

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4) Unsignalized Intersection Notes:

$ Delay exceeds 300seconds

$$ Queue can not be calculated

Table N-5
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
North Alignment 3D-1.5 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3040	2080	20	19	C	B	1173	742	31	30	C	C
	EBR	1	30	130	7	11	A	B	m1	33				
	WBL	1	60	255	112	85	F	F	#127	377				
	NBL	1	190	95	86	93	F	F	320	184				
	NBR	1	255	110	103	77	F	E	#353	67				
Independence Dr. (Signalized)	EBT	3	3285	2120	3	1	A	A	69	6	6	4	A	A
	EBR	1	10	70	0	0	A	A	m0	m0				
	WBL	1	20	25	52	76	D	E	m31	m29				
	WBT	3	2020	3185	7	4	A	A	393	m550				
	NBL	1	60	45	94	94	F	F	131	103				
	NBR	1	30	25	80	82	F	F	40	37				
Powerline Rd (signalized)	EBL	3	955	450	90	111	F	F	#518	#273	60	67	E	E
	EBT	3	1590	1365	36	39	D	D	654	574				
	EBR	2	770	330	16	12	B	B	294	79				
	WBL*	3	345	460	82	84	F	F	m172	#233				
	WBT	3	1300	1525	66	53	E	D	m620	m682				
	WBR	1	625	430	66	34	E	C	m766	m443				
	NBL	3	360	760	95	97	F	F	#215	#425				
	NBT	3	1225	1175	74	56	E	E	#670	545				
	NBR	1	275	355	52	49	D	D	195	311				
	SBL	3	240	440	94	83	F	F	145	241				
	SBT	3	1290	910	58	61	E	E	548	398				
	SBR	2	380	925	43	128	D	F	118	#724				
SW 30th Ave (Unsignalized)	EBT	2	1955	2185	-	-	-	-	-	-	-	-	-	-
	EBR	1	75	30	-	-	-	-	-	-				
	WBL	1	75	30	26	25	D	D	33	13				
	WBT	2	2215	2125	-	-	-	-	-	-				
	NBR	1	65	110	$	$	F	F	$$	$$				
	NBL	1	60	150										
SW 28th Ave (Signalized)	EBT	2	1940	2120	55	93	D	F	#1544	#1744	54	70	D	E
	EBR	1	80	175	0	3	A	A	m0	m22				
	WBL*	1	30	170	147	173	F	F	m50	m#378				
	WBT	2	1630	1660	7	5	A	A	m91	m149				
	NBL	1	220	115	170	110	F	F	#500	#247				
	NBR	1	130	110	71	76	E	E	71	68				
	SBT**	1	10	10	56	62	E	E	29	30				
	SBR	1	440	380	170	199	F	F	#787	#700				
SW 24th Ave (Unsignalized)	EBT	2	1905	2125	-	-	-	-	-	-	-	-	-	-
	EBR	1	165	105	-	-	-	-	-	-				
	WBL	1	25	20	22	24	C	C	9	8				
	WBT	2	1610	1780	-	-	-	-	-	-				
	NBL	1	50	50	$	$	F	F	$$	$$				
	NBR	1	35	35	23	27	C	D	13	16				
Military Trail (Signalized)	EBL	2	300	330	230	98	F	F	m#251	m189	92	64	F	E
	EBT	3	1545	1810	39	38	D	D	m631	m628				
	EBR	1	145	185	25	15	C	B	m28	m24				
	WBL	2	340	495	160	90	F	F	#377	m#390				
	WBT	2	1245	990	105	56	F	E	#1049	m654				
	WBR	1	500	540	63	69	E	E	386	m528				
	NBL	2	170	285	85	128	F	F	157	#301				
	NBT	2	670	585	53	79	D	E	460	#469				
	NBR	1	680	390	182	73	F	E	#1185	375				
	SBL	2	490	440	184	113	F	F	#515	#418				
	SBT	2	530	830	42	93	D	F	329	#712				
	SBR	1	310	615	0	1	A	A	0	0				

4/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.
2) * Shared left and U turn lane
** Shared left and thru lane
3) Signalized Intersection Notes:
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
4) Unsignalized Intersection Notes:
$ Delay exceeds 300seconds
$$ Queue can not be calculated

Table N-6
SW 10th Street Connector PD&E Study
Tier 2 Analysis - Year 2040 - Intersection LOS Summary
North Alignment 3D-1.6 Build Alternative

SW 10th Street Intersection	Movement	Number Of Lanes	Volume		Movement Delay (sec)		Movement LOS		Movement 95th %ile Queue Length(ft)		Intersection Delay (sec)		Intersection LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Waterways Blvd (Signalized)	EBT	3	3780	2220	56	22	E	C	m1241	861	63	30	E	C
	EBR	1	30	130	7	12	A	B	m0	m27				
	WBL	1	60	255	113	71	F	E	m125	m348				
	NBL	1	190	95	99	97	F	F	#381	191				
	NBR	1	255	110	132	77	F	E	#443	69				
Independence Dr. (Signalized)	EBT	3	4025	2260	12	1	B	A	m129	25	13	9	B	A
	EBR	1	10	70	0	0	A	A	m0	m0				
	WBL	1	20	25	66	77	E	E	m30	m27				
	WBT	3	2160	3925	9	12	A	B	m608	m302				
	NBL	1	60	45	114	113	F	F	#158	#112				
	NBR	1	30	25	82	83	F	F	41	37				
Powerline Rd (signalized)	EBL	3	955	450	81	188	F	F	m421	#336	62	101	E	F
	EBT	3	2330	1505	46	50	D	D	m#1133	531				
	EBR	2	770	330	11	45	B	D	m209	173				
	WBL*	3	345	460	135	91	F	F	m#228	m217				
	WBT	3	1440	2265	45	110	D	F	m653	m#1274				
	WBR	1	625	430	45	35	D	D	m809	m272				
	NBL	3	360	760	122	178	F	F	#239	#508				
	NBT	3	1225	1175	82	69	F	E	#695	596				
	NBR	1	275	355	56	62	E	E	276	460				
	SBL	3	240	440	99	94	F	F	145	#273				
	SBT	3	1290	910	77	69	E	E	#687	443				
	SBR	2	380	925	46	199	D	F	120	#910				
SW 30th Ave (Unsignalized)	EBT	2	2695	2325	-	-	-	-	-	-	-	-	-	-
	EBR	1	75	30	-	-	-	-	-	-				
	WBL	1	75	30	77	31	F	D	84	17				
	WBT	2	2355	2865	-	-	-	-	-	-				
	NBR	1	65	110	$	$	F	F	$$	$$				
	NBL	1	60	150										
SW 28th Ave (Signalized)	EBT	2	2680	2260	49	39	D	D	m#1953	1640	39	35	D	C
	EBR	1	80	175	0	7	A	A	m1	m50				
	WBL*	1	30	170	102	108	F	F	m49	m163				
	WBT	2	2210	2780	15	24	B	C	m486	m645				
	NBL	1	220	115	153	112	F	F	#488	#256				
	NBR	1	130	110	73	77	E	E	153	80				
SW 24th Ave (Unsignalized)	EBT	2	2645	2265	-	-	-	-	-	-	-	-	-	-
	EBR	1	165	105	-	-	-	-	-	-				
	WBL	1	25	20	44	30	E	D	20	11				
	WBT	2	2190	2900	-	-	-	-	-	-				
	NBL	1	50	50	$	$	F	F	$$	$$				
	NBR	1	35	35	43	32	E	D	27	21				
Military Trail (Signalized)	EBL	2	300	330	125	149	F	F	m#209	m#290	113	92	F	F
	EBT	3	2285	1950	138	91	F	F	m#1235	#1119				
	EBR	1	145	185	22	26	C	C	m33	m42				
	WBL	2	340	495	242	122	F	F	#404	m#392				
	WBT	3	1825	2110	49	76	D	E	#954	m#1009				
	WBR	1	500	540	24	31	C	C	168	m457				
	NBL	2	170	285	85	174	F	F	157	#324				
	NBT	2	670	585	62	72	E	E	492	456				
	NBR	1	680	390	264	79	F	E	#1257	#498				
	SBL	2	490	440	231	113	F	F	#539	#418				
	SBT	2	530	830	50	72	D	E	360	633				
	SBR	1	310	615	49	171	D	F	283	#1020				

4/12/2018

NOTES:

1) All performance measures are reported using HCM 2000 methodology from Synchro 9 software.
2) * Shared left and U turn
** Share left and thru lane
3) Signalized Intersection Notes:
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
4) Unsignalized Intersection Notes:
$ Delay exceeds 300seconds
$$ Queue can not be calculated

AECOM RESULTS 3/1/2018

Intersection Analysis Results (Build Base)

SW 10th Street Intersection			Newport Center Drive		I-95 Southbound Ramps		I-95 Northbound Ramps		FAU Research Park Boulevard		Total
Center Concepts	**Signalized or Unsignalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Delay (sec)**
			LOS	**Delay (sec)**	**LOS**	**Delay (sec)**	**LOS**	**Delay (sec)**	**LOS**	**Delay (sec)**	
Build Concept Center 3D-1.1	Intersection	AM	C	21	B	18	B	19	D	50	
	LOS	PM	C	31	B	19	B	20	E	56	
	Total AM + PM Delay			52		37		38		106	233
Build Concept Center 3D-1.2	Intersection	AM	C	23	B	18	B	19	D	50	
	LOS	PM	E	72	B	16	C	20	E	56	
	Total AM + PM Delay			95		33		39		106	273
Build Concept Center 3D-1.3	Intersection	AM	C	24	B	19	C	22	D	49	
	LOS	PM	E	74	B	14	C	21	D	54	
	Total AM + PM Delay			98		34		43		102	276
Build Concept Center 3D-1.4	Intersection	AM	C	23	B	18	B	19	D	50	
	LOS	PM	F	85	B	17	C	21	E	55	
	Total AM + PM Delay			108		35		41		105	289
Build Concept Center 3D-1.5	Intersection	AM	C	32	B	18	C	21	D	48	
	LOS	PM	F	83	B	15	D	46	D	53	
	Total AM + PM Delay			115		34		67		101	317
Build Concept Center 3D-1.6	Intersection	AM	C	23	B	18	C	22	D	48	
	LOS	PM	D	36	B	17	C	21	D	53	
	Total AM + PM Delay			59		34		42		101	236
North Concepts	**Signalized or Unsignalized**		**Signalized**		**Signalized**		**Signalized**		**Signalized**		**Delay (sec)**
			LOS	**Delay (sec)**	**LOS**	**Delay (sec)**	**LOS**	**Delay (sec)**	**LOS**	**Delay (sec)**	
Build Concept North 3D-1.1	Intersection	AM	C	21	B	18	B	19	D	51	
	LOS	PM	C	30	B	18	B	20	E	56	
	Total AM + PM Delay			52		36		39		106	232
Build Concept North 3D-1.2	Intersection	AM	C	23	B	18	B	19	D	50	
	LOS	PM	E	72	B	15	C	21	E	56	
	Total AM + PM Delay			95		33		39		106	273
Build Concept North 3D-1.3	Intersection	AM	C	29	B	18	C	23	D	48	
	LOS	PM	E	73	B	14	C	21	D	53	
	Total AM + PM Delay			102		32		44		101	279
Build Concept North 3D-1.4	Intersection	AM	C	23	B	18	B	20	D	50	
	LOS	PM	F	85	B	17	B	20	E	61	
	Total AM + PM Delay			107		35		39		112	293
Build Concept North 3D-1.5	Intersection	AM	C	28	B	19	C	21	D	48	
	LOS	PM	F	87	B	15	D	46	D	53	
	Total AM + PM Delay			115		34		67		101	317
Build Concept North 3D-1.6	Intersection	AM	C	23	B	17	C	22	D	48	
	LOS	PM	D	42	B	16	C	21	D	55	
	Total AM + PM Delay			65		33		43		103	245

ATTACHMENT 5

HCS Freeway Analysis of Build Concepts

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1070	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	550	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2630		1070		550		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	692		282		145		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2768	1126	579	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 2768$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2768	4800	No
$v_{FO} = v - v_{FR}$	1642	4800	No
v_R	1126	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2768 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2768	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.399

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1560	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	550	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1070	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1560	550	1070	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	411	145	282	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1642	579	1126	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1642 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		2221	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		Yes	
If yes, v_{12A}	= 1642		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2221	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{12} + 0.0078\, v_{12} - 0.00627\, L_A =$ 13.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.222
Space mean speed in ramp influence area,	S_R = 63.8 mph
Space mean speed in outer lanes,	S_0 = N/A mph
Space mean speed for all vehicles,	S = 63.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	2110	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	555	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1111	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1111	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1140	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	300	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	600	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	600	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Egress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1140	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	440	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	350	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4986	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1140		440		350		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	300		116		92		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1200	463	368	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD}$ = 1200 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1200	4800	No
$v_{FO} = v - v_{FR}$	737	4800	No
v_R	463	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1200 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1200	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 7.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.340

Space mean speed in ramp influence area, S_R = 60.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.5 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	700	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	184	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.3	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	700	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	440	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4986	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	700	350	440	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	184	92	116	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	737	368	463	pcph

Estimation of V12 Merge Areas

$L_{EQ} =$ (Equation 13-6 or 13-7)

$P_{FM} = 1.000$ Using Equation 0

$v_{12} = v_F (P_{FM}) = 737$ pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		1105	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 737$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1105	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 4.5$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	$M_S = 0.198$
Space mean speed in ramp influence area,	$S_R = 64.5$ mph
Space mean speed in outer lanes,	$S_0 =$ N/A mph
Space mean speed for all vehicles,	$S = 64.5$ mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1050	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	450	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1050		350		450		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	276		92		118		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1105	368	474	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 1105$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1105	4800	No
$v_{FO} = v - v_R$	737	4800	No
v_R	368	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1105 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1105	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 7.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 60.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.7 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	700	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	184	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.3	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	700	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	450	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	350	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	700	450	350	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	184	118	92	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	737	474	368	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 737 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		1211	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 737 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1211	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{12} - 0.00627\, L_A =$ 5.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.199	
Space mean speed in ramp influence area,	S_R = 64.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 64.4	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1150	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	303	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	605	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	605	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1920	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	505	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1011	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1011	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	14.4	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Egress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1920	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	380	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1090	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4986	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1920		380		1090		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	505		100		287		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2021	400	1147	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 2021$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2021	4800	No
$v_{FO} = v - v_{FR}$	1621	4800	No
v_R	400	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2021 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2021	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 15.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.334

Space mean speed in ramp influence area, S_R = 60.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.6 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1540	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	405	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	811	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	811	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.6	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1540	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	1090	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	380	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4986	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1540	1090	380	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	405	287	100	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1621	1147	400	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1621 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		2768	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 1621 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2768	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{12} - 0.00627\, L_A =$ 17.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.248	
Space mean speed in ramp influence area,	S_R = 63.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 63.1	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1070	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	550	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2630	1070	550	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	692	282	145	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2768	1126	579	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD}$ = 2768 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2768	4800	No
$v_{FO} = v - v_{FR}$	1642	4800	No
v_R	1126	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2768 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2768	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.399

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1560	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	550	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1070	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1560	550	1070	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	411	145	282	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1642	579	1126	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1642 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		2221	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 1642 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2221	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{12} - 0.00627\, L_A =$ 13.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.222	
Space mean speed in ramp influence area,	S_R = 63.8	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 63.8	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2110	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	555	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1111	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1111	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	950	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	250	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	500	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	500	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.1	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	570	320	380	60	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	150	84	100	16	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	600	337	400	63	pc/h

Volume ratio, VR 0.526

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	737	lc/h
Weaving lane changes, LCW	1016	lc/h
Non-weaving vehicle index, INW	153	
Non-weaving lane change, LCNW	952	lc/h
Total lane changes, LCALL	1968	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.183	
Average weaving speed, SW	61.5	mi/h
Average non-weaving speed, SNW	62.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	61.9	mi/h
Weaving segment density, D	7.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.307	
Weaving segment flow rate, v	1400	veh/h
Weaving segment capacity, cW	4559	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8137	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1974	c
		Maximum	Analyzed	
v/c ratio		1.00	0.307	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	890	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	234	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	468	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	468	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	6.7	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	890	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	160	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	440	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4986	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	890	160	440	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	234	42	116	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	937	168	463	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 937 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		1105	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{av34} /2	12	No	
If yes, v_{12A} = 937			(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1105	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 4.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.198	
Space mean speed in ramp influence area,	S_R = 64.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 64.5	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1050	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	450	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1050		350		450		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	276		92		118		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1105	368	474	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 1105$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1105	4800	No
$v_{FO} = v - v_{FR}$	737	4800	No
v_R	368	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1105 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1105	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 7.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 60.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.7 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	700	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	184	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.3	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	700	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	450	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	350	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4888	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	700	450	350	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	184	118	92	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	737	474	368	pcph

Estimation of V12 Merge Areas

$L_{EQ} =$ (Equation 13-6 or 13-7)

$P_{FM} =$ 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 737 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		1211	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 737 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1211	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 5.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.199
Space mean speed in ramp influence area,	S_R = 64.4 mph
Space mean speed in outer lanes,	S_0 = N/A mph
Space mean speed for all vehicles,	S = 64.4 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1150	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	303	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	605	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	605	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1660	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	437	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	874	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	874	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.5	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1420	760	240	140	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	374	200	63	37	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1495	800	253	147	pc/h

Volume ratio, VR 0.391

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1053	lc/h
Weaving lane changes, LCW	1332	lc/h
Non-weaving vehicle index, INW	380	
Non-weaving lane change, LCNW	1153	lc/h
Total lane changes, LCALL	2485	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.220	
Average weaving speed, SW	60.1	mi/h
Average non-weaving speed, SNW	58.1	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	58.9	mi/h
Weaving segment density, D	15.3	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.439	
Weaving segment flow rate, v	2695	veh/h
Weaving segment capacity, cW	6142	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6577	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2093	c
		Maximum	Analyzed	
v/c ratio		1.00	0.439	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2180	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	574	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1147	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1147	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	16.4	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2180	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	450	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	380	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4986	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2180	450	380	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	574	118	100	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2295	474	400	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 2295 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		2769	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2295 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2769	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 17.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.248
Space mean speed in ramp influence area,	S_R = 63.1 mph
Space mean speed in outer lanes,	S_0 = N/A mph
Space mean speed for all vehicles,	S = 63.1 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	1422	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1470	640	900	690	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	387	168	237	182	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1547	674	947	726	pc/h

Volume ratio, VR 0.416

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1621	lc/h
Weaving lane changes, LCW	1817	lc/h
Non-weaving vehicle index, INW	291	
Non-weaving lane change, LCNW	661	lc/h
Total lane changes, LCALL	2478	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.350	
Average weaving speed, SW	55.7	mi/h
Average non-weaving speed, SNW	52.1	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	53.6	mi/h
Weaving segment density, D	24.2	pc/mi/ln
Level of service, LOS	C	
Weaving segment v/c ratio	0.676	
Weaving segment flow rate, v	3895	veh/h
Weaving segment capacity, cW	5765	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6864	1422	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1984	c
		Maximum	Analyzed	
v/c ratio		1.00	0.676	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	2110	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	555	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1111	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1111	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	970	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	255	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	511	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	511	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.3	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	590	340	380	60	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	155	89	100	16	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	621	358	400	63	pc/h

Volume ratio, VR 0.526

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	758	lc/h
Weaving lane changes, LCW	1037	lc/h
Non-weaving vehicle index, INW	158	
Non-weaving lane change, LCNW	956	lc/h
Total lane changes, LCALL	1993	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.185	
Average weaving speed, SW	61.4	mi/h
Average non-weaving speed, SNW	62.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	61.8	mi/h
Weaving segment density, D	7.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.316	
Weaving segment flow rate, v	1443	veh/h
Weaving segment capacity, cW	4566	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8128	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1975	c
		Maximum	Analyzed	
v/c ratio		1.00	0.316	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	1422	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	620	450	310	1020	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	163	118	82	268	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	653	474	326	1074	pc/h

Volume ratio, VR 0.317

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	800	lc/h
Weaving lane changes, LCW	996	lc/h
Non-weaving vehicle index, INW	221	
Non-weaving lane change, LCNW	549	lc/h
Total lane changes, LCALL	1545	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.241	
Average weaving speed, SW	59.3	mi/h
Average non-weaving speed, SNW	60.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	59.9	mi/h
Weaving segment density, D	14.1	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.407	
Weaving segment flow rate, v	2527	veh/h
Weaving segment capacity, cW	6204	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5762	1422	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2068	c
		Maximum	Analyzed	
v/c ratio		1.00	0.407	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	1070	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	282	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	563	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	563	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.0	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	1630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	429	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	858	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	858	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.3	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1420	950	210	170	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	374	250	55	45	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1495	1000	221	179	pc/h

Volume ratio, VR 0.422

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1221	lc/h
Weaving lane changes, LCW	1500	lc/h
Non-weaving vehicle index, INW	387	
Non-weaving lane change, LCNW	1160	lc/h
Total lane changes, LCALL	2660	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.232	
Average weaving speed, SW	59.6	mi/h
Average non-weaving speed, SNW	56.6	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	57.8	mi/h
Weaving segment density, D	16.7	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.509	
Weaving segment flow rate, v	2895	veh/h
Weaving segment capacity, cW	5690	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6926	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2067	c
		Maximum	Analyzed	
v/c ratio		1.00	0.509	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1070	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2630		1070			vph
Peak-hour factor, PHF	0.95		0.95			
Peak 15-min volume, v15	692		282			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2768	1126	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD}$ = 2768 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2768	4800	No
$v_{FO} = v - v_R$	1642	4800	No
v_R	1126	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2768 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2768	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.399

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
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Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	680	370	370	70	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	179	97	97	18	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	716	389	389	74	pc/h

Volume ratio, VR 0.496

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	778	lc/h
Weaving lane changes, LCW	1057	lc/h
Non-weaving vehicle index, INW	183	
Non-weaving lane change, LCNW	978	lc/h
Total lane changes, LCALL	2035	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.188	
Average weaving speed, SW	61.3	mi/h
Average non-weaving speed, SNW	61.9	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	61.6	mi/h
Weaving segment density, D	8.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.324	
Weaving segment flow rate, v	1569	veh/h
Weaving segment capacity, cW	4837	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7782	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2001	c
		Maximum	Analyzed	
v/c ratio		1.00	0.324	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1050	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1050		350			vph
Peak-hour factor, PHF	0.95		0.95			
Peak 15-min volume, v15	276		92			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1105	368	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 1105$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1105	4800	No
$v_{FO} = v - v_{FR}$	737	4800	No
v_R	368	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1105 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1105	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 7.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 60.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.7 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	700	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	184	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.3	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1960	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	516	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1032	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1032	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	14.7	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1780	850	180	150	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	468	224	47	39	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1874	895	189	158	pc/h

Volume ratio, VR 0.348

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1084	lc/h
Weaving lane changes, LCW	1363	lc/h
Non-weaving vehicle index, INW	470	
Non-weaving lane change, LCNW	1234	lc/h
Total lane changes, LCALL	2597	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.228	
Average weaving speed, SW	59.8	mi/h
Average non-weaving speed, SNW	57.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	58.1	mi/h
Weaving segment density, D	17.9	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.488	
Weaving segment flow rate, v	3116	veh/h
Weaving segment capacity, cW	6390	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6103	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2130	c
		Maximum	Analyzed	
v/c ratio		1.00	0.488	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2370	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	810	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2370		810			vph
Peak-hour factor, PHF	0.95		0.95			
Peak 15-min volume, v15	624		213			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2495	853	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD}$ = 2495 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2495	4800	No
$v_{FO} = v - v_{FR}$	1642	4800	No
v_R	853	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2495 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2495	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.375

Space mean speed in ramp influence area, S_R = 59.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 59.5 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	970	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	255	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	511	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	511	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.3	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	590	340	380	60	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	155	89	100	16	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	621	358	400	63	pc/h

Volume ratio, VR 0.526

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	758	lc/h
Weaving lane changes, LCW	1037	lc/h
Non-weaving vehicle index, INW	158	
Non-weaving lane change, LCNW	956	lc/h
Total lane changes, LCALL	1993	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.185	
Average weaving speed, SW	61.4	mi/h
Average non-weaving speed, SNW	62.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	61.8	mi/h
Weaving segment density, D	7.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.316	
Weaving segment flow rate, v	1443	veh/h
Weaving segment capacity, cW	4566	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8128	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1975	c
		Maximum	Analyzed	
v/c ratio		1.00	0.316	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	930	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	310	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	930		310			vph
Peak-hour factor, PHF	0.95		0.95			
Peak 15-min volume, v15	245		82			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	979	326	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD}$ = 979 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	979	4800	No
$v_{FO} = v - v_F - v_R$	653	4800	No
v_R	326	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 979 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	979	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 6.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.327

Space mean speed in ramp influence area, S_R = 60.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	620	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	163	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	326	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	326	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	4.7	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	1630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	429	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	858	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	858	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.3	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress to Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2570	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1420	950	210	170	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	374	250	55	45	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1495	1000	221	179	pc/h

Volume ratio, VR 0.422

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1221	lc/h
Weaving lane changes, LCW	1500	lc/h
Non-weaving vehicle index, INW	387	
Non-weaving lane change, LCNW	1160	lc/h
Total lane changes, LCALL	2660	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.232	
Average weaving speed, SW	59.6	mi/h
Average non-weaving speed, SNW	56.6	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	57.8	mi/h
Weaving segment density, D	16.7	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.509	
Weaving segment flow rate, v	2895	veh/h
Weaving segment capacity, cW	5690	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6926	2570	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2067	c
		Maximum	Analyzed	
v/c ratio		1.00	0.509	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	1500	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	395	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	789	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	789	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.3	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	720	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	189	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	379	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	379	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.4	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	720	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	189	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	379	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	379	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.4	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E Center Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	1500	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	395	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	789	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	789	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.3	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1070	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	550	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2630		1070		550		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	692		282		145		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2768	1126	579 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 2768$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2768	4800	No
$v_{FO} = v - v_{FR}$	1642	4800	No
v_R	1126	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2768 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2768	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.399

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1560	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	550	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1070	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1560	550	1070	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	411	145	282	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1642	579	1126	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1642 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		2221	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 1642 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2418	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.230	
Space mean speed in ramp influence area,	S_R = 63.6	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 63.6	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	2110	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	555	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1111	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1111	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1140	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	300	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	600	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	600	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Powerline
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	644	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	700	350	440	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	184	92	116	0	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	737	368	463	0	pc/h

Volume ratio, VR	0.530	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	831	lc/h
Weaving lane changes, LCW	940	lc/h
Non-weaving vehicle index, INW	43	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	940	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.305	
Average weaving speed, SW	57.2	mi/h
Average non-weaving speed, SNW	61.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	59.1	mi/h
Weaving segment density, D	8.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.346	
Weaving segment flow rate, v	1569	veh/h
Weaving segment capacity, cW	4529	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8179	644	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1824	c
		Maximum	Analyzed	
v/c ratio		1.00	0.346	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1050	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	450	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1050		350		450		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	276		92		118		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1105	368	474	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 1105$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1105	4800	No
$v_{FO} = v - v_{FR}$	737	4800	No
v_R	368	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1105 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1105	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 7.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 60.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.7 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	700	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	184	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.3	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	700	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	450	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	350	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	700	450	350	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	184	118	92	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	737	474	368	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 737 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		1211	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{av34} /2	12	No	
If yes, v_{12A} = 737			(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1299	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 5.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.200	
Space mean speed in ramp influence area,	S_R = 64.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 64.4	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1150	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	303	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	605	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	605	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	1920	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	505	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1011	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1011	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	14.4	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Powerline
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	644	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1540	1090	380	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	405	287	100	0	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1621	1147	400	0	pc/h

Volume ratio, VR 0.488

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1547	lc/h
Weaving lane changes, LCW	1656	lc/h
Non-weaving vehicle index, INW	94	
Non-weaving lane change, LCNW	105	lc/h
Total lane changes, LCALL	1761	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.500	
Average weaving speed, SW	51.7	mi/h
Average non-weaving speed, SNW	53.8	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	52.7	mi/h
Weaving segment density, D	20.0+	pc/mi/ln
Level of service, LOS	C	
Weaving segment v/c ratio	0.645	
Weaving segment flow rate, v	3169	veh/h
Weaving segment capacity, cW	4915	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7690	644	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1861	c
		Maximum	Analyzed	
v/c ratio		1.00	0.645	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.1

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1070	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	550	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2630	1070	550	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	692	282	145	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2768	1126	579	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2768 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2768	4800	No
$v_{FO} = v_F - v_R$	1642	4800	No
v_R	1126	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2768 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2768	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.399	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.8	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1560	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	550	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1070	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1560	550	1070	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	411	145	282	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1642	579	1126	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1642 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2221	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No

If yes, v_{12A} = 1642 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2418	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 13.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.230	
Space mean speed in ramp influence area,	S_R = 63.6	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 63.6	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2110	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	555	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1111	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1111	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	950	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	250	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	500	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	500	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.1	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	950	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	380	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	160	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5253	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	950	380	160	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	250	100	42	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1000	400	168	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1000 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1400	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No

If yes, v_{12A} = 1000 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1520	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{12} - 0.00627\, L_A$ = 6.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.204	
Space mean speed in ramp influence area,	S_R = 64.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 64.3	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1330	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	350	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	700	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	700	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	10.0	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Powerline
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	644	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	890	160	440	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	234	42	116	0	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	937	168	463	0	pc/h

Volume ratio, VR	0.402	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	631	lc/h
Weaving lane changes, LCW	740	lc/h
Non-weaving vehicle index, INW	54	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	740	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.252	
Average weaving speed, SW	58.9	mi/h
Average non-weaving speed, SNW	62.9	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	61.3	mi/h
Weaving segment density, D	8.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.270	
Weaving segment flow rate, v	1569	veh/h
Weaving segment capacity, cW	5808	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6708	644	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1936	c
		Maximum	Analyzed	
v/c ratio		1.00	0.270	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1050	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	450	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1050		350		450		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	276		92		118		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1105	368	474	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 1105$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1105	4800	No
$v_{FO} = v - v_R$	737	4800	No
v_R	368	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1105 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1105	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 7.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 60.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.7 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	700	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	184	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.3	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Ingress W/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	700	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	450	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	350	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5728	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	700	450	350	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	184	118	92	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	737	474	368	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 737 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		1211	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{av34} /2		No	

If yes, v_{12A} = 737 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1299	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 5.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.200	
Space mean speed in ramp influence area,	S_R = 64.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 64.4	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Ingress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1150	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	303	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	605	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	605	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	1660	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	437	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	874	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	874	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.5	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1660	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	900	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	450	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5253	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1660	900	450	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	437	237	118	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1747	947	474	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1747 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		2694	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 1747 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2903	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 16.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.257	
Space mean speed in ramp influence area,	S_R = 62.8	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 62.8	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	674	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1347	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1347	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	2	
Density, D	19.3	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Powerline
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	644	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	2180	450	380	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	574	118	100	0	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	2295	474	400	0	pc/h

Volume ratio, VR 0.276

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	874	lc/h
Weaving lane changes, LCW	983	lc/h
Non-weaving vehicle index, INW	133	
Non-weaving lane change, LCNW	244	lc/h
Total lane changes, LCALL	1227	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.376	
Average weaving speed, SW	55.0	mi/h
Average non-weaving speed, SNW	58.6	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	57.6	mi/h
Weaving segment density, D	18.3	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.517	
Weaving segment flow rate, v	3169	veh/h
Weaving segment capacity, cW	6126	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5326	644	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2042	c
		Maximum	Analyzed	
v/c ratio		1.00	0.517	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.2

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Weaving Location:	Ingress to Egress e_o Powerlin
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	3923	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1470	640	900	690	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	387	168	237	182	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1547	674	947	726	pc/h

Volume ratio, VR	0.416	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1621	lc/h
Weaving lane changes, LCW	1974	lc/h
Non-weaving vehicle index, INW	803	
Non-weaving lane change, LCNW	2017	lc/h
Total lane changes, LCALL	3991	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.229	
Average weaving speed, SW	59.7	mi/h
Average non-weaving speed, SNW	52.1	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	55.0	mi/h
Weaving segment density, D	23.6	pc/mi/ln
Level of service, LOS	C	
Weaving segment v/c ratio	0.676	
Weaving segment flow rate, v	3895	veh/h
Weaving segment capacity, cW	5765	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6864	3923	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2175	c
		Maximum	Analyzed	
v/c ratio		1.00	0.676	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
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Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	2110	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	555	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1111	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1111	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	970	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	255	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	511	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	511	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.3	pc/mi/ln
Level of service, LOS	A	

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Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2325	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	590	340	380	60	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	155	89	100	16	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	621	358	400	63	pc/h

Volume ratio, VR 0.526

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	758	lc/h
Weaving lane changes, LCW	1022	lc/h
Non-weaving vehicle index, INW	143	
Non-weaving lane change, LCNW	823	lc/h
Total lane changes, LCALL	1845	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.188	
Average weaving speed, SW	61.3	mi/h
Average non-weaving speed, SNW	62.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	61.7	mi/h
Weaving segment density, D	7.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.316	
Weaving segment flow rate, v	1443	veh/h
Weaving segment capacity, cW	4566	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8128	2325	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1956	c
		Maximum	Analyzed	
v/c ratio		1.00	0.316	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
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Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	1070	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	282	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	563	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	563	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	8.0	pc/mi/ln
Level of service, LOS	A	

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E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	1630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	429	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	858	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	858	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.3	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Weaving Location:	Ingress to Egress e_o Powerlin
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	3923	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	620	450	310	1020	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	163	118	82	268	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	653	474	326	1074	pc/h

Volume ratio, VR 0.317

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	800	lc/h
Weaving lane changes, LCW	1153	lc/h
Non-weaving vehicle index, INW	610	
Non-weaving lane change, LCNW	1904	lc/h
Total lane changes, LCALL	3057	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.186	
Average weaving speed, SW	61.4	mi/h
Average non-weaving speed, SNW	60.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	60.6	mi/h
Weaving segment density, D	13.9	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.373	
Weaving segment flow rate, v	2527	veh/h
Weaving segment capacity, cW	6777	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5762	3923	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2259	c
		Maximum	Analyzed	
v/c ratio		1.00	0.373	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

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Phone: Fax:
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Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.3

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2325	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1420	950	210	170	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	374	250	55	45	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1495	1000	221	179	pc/h

Volume ratio, VR 0.422

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1221	lc/h
Weaving lane changes, LCW	1485	lc/h
Non-weaving vehicle index, INW	350	
Non-weaving lane change, LCNW	1027	lc/h
Total lane changes, LCALL	2512	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.240	
Average weaving speed, SW	59.3	mi/h
Average non-weaving speed, SNW	56.6	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	57.7	mi/h
Weaving segment density, D	16.7	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.509	
Weaving segment flow rate, v	2895	veh/h
Weaving segment capacity, cW	5690	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6926	2325	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2048	c
		Maximum	Analyzed	
v/c ratio		1.00	0.509	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1070	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2630		1070			vph
Peak-hour factor, PHF	0.95		0.95			
Peak 15-min volume, v15	692		282			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2768	1126	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 2768$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2768	4800	No
$v_{FO} = v - v_F - v_R$	1642	4800	No
v_R	1126	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2768 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2768	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.399

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1050	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	440	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	440	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5897	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1050	440	440	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	276	116	116	v
Trucks and buses	0	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1105	463	463	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 1105 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		1568	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 1105 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1700	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 8.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.207	
Space mean speed in ramp influence area,	S_R = 64.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 64.2	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1490	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	392	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	784	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	784	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.2	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1490	vph

Off Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	440	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	440	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5897	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1490		440		440		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	392		116		116		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1568	463	463	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD}$ = 1568 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1568	4800	No
$v_{FO} = v - v_{FR}$	1105	4800	No
v_R	463	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1568 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1568	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 11.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.340

Space mean speed in ramp influence area, S_R = 60.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.5 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1050	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	276	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	553	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1050	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp	0	vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1050		350		0		vph
Peak-hour factor, PHF	0.95		0.95		0.94		
Peak 15-min volume, v15	276		92		0		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level				
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1105	368	0	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 1105$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1105	4800	No
$v_{FO} = v - v_{FR}$	737	4800	No
v_R	368	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1105 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1105	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 7.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 60.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.7 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	700	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	184	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.3	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	1960	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	516	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1032	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1032	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	14.7	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/20/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Ingress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	1960	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	1000	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	330	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5897	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1960		1000		330	vph
Peak-hour factor, PHF	0.95		0.95		0.95	
Peak 15-min volume, v15	516		263		87	v
Trucks and buses	0		0		0	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	
Heavy vehicle adjustment, fHV	1.000		1.000		1.000	
Driver population factor, fP	1.00		1.00		1.00	
Flow rate, vp	2063		1053		347	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 2063 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		3116	4800	No
v_3 or v_{av34}		0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2063 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3363	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 19.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 61.6	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 61.6	mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Ingress/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	2960	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	779	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1558	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1558	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.5	mi/h
Number of lanes, N	2	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Junction:	Egress E/O Powerline Rd
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2960	vph

Off Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	330	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1000	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5897	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2960		330		1000		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	779		87		263		v
Trucks and buses	0		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	1.000	1.000	1.000
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3116	347	1053 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 3116$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3116	4800	No
$v_{FO} = v - v_R$	2769	4800	No
v_R	347	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3116 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3116	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 24.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.329

Space mean speed in ramp influence area, S_R = 60.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.4

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	692	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	2370	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	810	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2370		810			vph
Peak-hour factor, PHF	0.95		0.95			
Peak 15-min volume, v15	624		213			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2495	853	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD} = 2495$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2495	4800	No
$v_{FO} = v - v_{FR}$	1642	4800	No
v_R	853	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2495 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2495	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.375

Space mean speed in ramp influence area, S_R = 59.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 59.5 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	1560	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	411	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	821	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	821	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	970	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	255	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	511	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	511	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.3	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	AM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2325	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	590	340	380	60	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	155	89	100	16	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	621	358	400	63	pc/h

Volume ratio, VR 0.526

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	758	lc/h
Weaving lane changes, LCW	1022	lc/h
Non-weaving vehicle index, INW	143	
Non-weaving lane change, LCNW	823	lc/h
Total lane changes, LCALL	1845	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.188	
Average weaving speed, SW	61.3	mi/h
Average non-weaving speed, SNW	62.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	61.7	mi/h
Weaving segment density, D	7.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.316	
Weaving segment flow rate, v	1443	veh/h
Weaving segment capacity, cW	4566	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8128	2325	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	1956	c
		Maximum	Analyzed	
v/c ratio		1.00	0.316	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/Egress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	930	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	245	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	489	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	489	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date performed:	2/19/2018
Analysis time period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL EB
Junction:	Egress E/O Military Trail
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	930	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	310	vph
Length of first accel/decel lane	740	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	930		310			vph
Peak-hour factor, PHF	0.95		0.95			
Peak 15-min volume, v15	245		82			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	979	326	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v - v_F) P_{FD}$ = 979 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	979	4800	No
$v_{FO} = v - v_F - v_R$	653	4800	No
v_R	326	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 979 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	979	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 6.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.327

Space mean speed in ramp influence area, S_R = 60.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.8 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Egress/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	620	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	163	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	326	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	326	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	4.7	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Ingress
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	1630	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	429	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	858	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	858	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Freeway Weaving Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency/Co.:	RS&H
Date Performed:	2/13/2018
Analysis Time Period:	PM Peak
Freeway/Dir of Travel:	SW 10th St EL WB
Weaving Location:	Ingress to Egress at Military
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	2325	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1420	950	210	170	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	374	250	55	45	
Trucks and buses	0	0	0	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	1.000	1.000	1.000	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1495	1000	221	179	pc/h

Volume ratio, VR 0.422

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.9	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1221	lc/h
Weaving lane changes, LCW	1485	lc/h
Non-weaving vehicle index, INW	350	
Non-weaving lane change, LCNW	1027	lc/h
Total lane changes, LCALL	2512	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.240	
Average weaving speed, SW	59.3	mi/h
Average non-weaving speed, SNW	56.6	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	57.7	mi/h
Weaving segment density, D	16.7	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.509	
Weaving segment flow rate, v	2895	veh/h
Weaving segment capacity, cW	5690	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6926	2325	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2400	2048	c
		Maximum	Analyzed	
v/c ratio		1.00	0.509	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	Egress/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.5

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	624	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	1500	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	395	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	789	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	789	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.3	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	AM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	720	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	189	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	379	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	379	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.4	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL EB
From/To:	Turnpike/I-95
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	720	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	189	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	379	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	379	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	5.4	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RS&H
Agency or Company:	RS&H
Date Performed:	2/19/2018
Analysis Time Period:	PM Peak
Freeway/Direction:	SW 10th St EL WB
From/To:	I-95/Turnpike
Jurisdiction:	D4
Analysis Year:	2040
Description:	SR 826/SW 10th St PD&E North Alignment 3D-1.6

Flow Inputs and Adjustments

Volume, V	1500	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	395	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	789	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	789	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	11.3	pc/mi/ln
Level of service, LOS	B	