

CENTRAL BUSINESS DISTRICT (CBD) TOLLING PROGRAM

Appendix 4B.6, Transportation: Highway Capacity Software Files

2023

Three highway segments were analyzed which operate at speeds of 40 mph or higher using the HCS as a screening tool at spot locations to determine if further detailed analysis was needed.

- Bayonne Bridge
- RFK Bridge Queens Leg
- New Jersey Turnpike - Eastern Spur

The results of the HCS screening analysis shown in **Table 4B.6-1** indicate that all three highways have sufficient capacity to absorb additional traffic volumes with only minor changes in density, speeds, and travel times for all tolling scenarios.

Table 4B.6-1 Summary of Highway Capacity Software Results

DIRECTION	LOCATION	HOURLY VOLUME			
		EXISTING CONDITION	NO ACTION ALTERNATIVE	CBD TOLLING ALTERNATIVE (Tolling Scenario D)	INCREMENTAL CHANGE
Hourly Volume					
Northbound	Bayonne Bridge	1,075	1,091	1,467	376
	RFK Bridge	4,452	4,575	5,083	508
	Eastern Spur I-95 (Pre-ramp)	152	152	208	56
	Merge from 495	641	660	657	-3
	Eastern Spur I-95 (Post-ramp)	793	811	865	53
Southbound	Bayonne Bridge	659	678	759	81
	RFK Bridge	4,951	5,127	5,524	396
	Eastern Spur I-95 (Pre-ramp)	1,063	1,145	1,244	98
	Diverge to 495	630	627	686	59
	Eastern Spur I-95 (Post-ramp)	433	519	558	39
Density (pc/mi/ln)					
Northbound	Bayonne Bridge	15.4	15.6	20.5	4.9
	RFK Bridge	31.1	32	35.6	3.6
	Eastern Spur I-95 (Pre-ramp)	1.4	1.4	1.8	0.4
	Merge from 495	8.2	8.4	8.6	0.2
	Eastern Spur I-95 (Post-ramp)	6.5	6.7	7.1	0.4
Southbound	Bayonne Bridge	10.5	10.8	11.8	1
	RFK Bridge	34.4	35.6	38.3	2.7
	Eastern Spur I-95 (Pre-ramp)	8.6	9.3	9.9	0.6
	Diverge to 495	4.9	5.2	5.6	0.4
	Eastern Spur I-95 (Post-ramp)	3.4	4.1	4.3	0.2

DIRECTION	LOCATION	HOURLY VOLUME			
		EXISTING CONDITION	NO ACTION ALTERNATIVE	CBD TOLLING ALTERNATIVE (Tolling Scenario D)	INCREMENTAL CHANGE
Level of Service (LOS)					
Northbound	Bayonne Bridge	B	B	C	—
	RFK Bridge	D	D	E	X
	Eastern Spur I-95 (Pre-ramp)	A	A	A	—
	Merge from 495	A	A	A	—
	Eastern Spur I-95 (Post-ramp)	A	A	A	—
Southbound	Bayonne Bridge	A	A	B	—
	RFK Bridge	D	E	E	X
	Eastern Spur I-95 (Pre-ramp)	A	A	A	—
	Diverge to 495	A	A	A	—
	Eastern Spur I-95 (Post-ramp)	A	A	A	—

HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.888	1288	4400	0.29	41.8	15.4	B

Facility Analysis Results

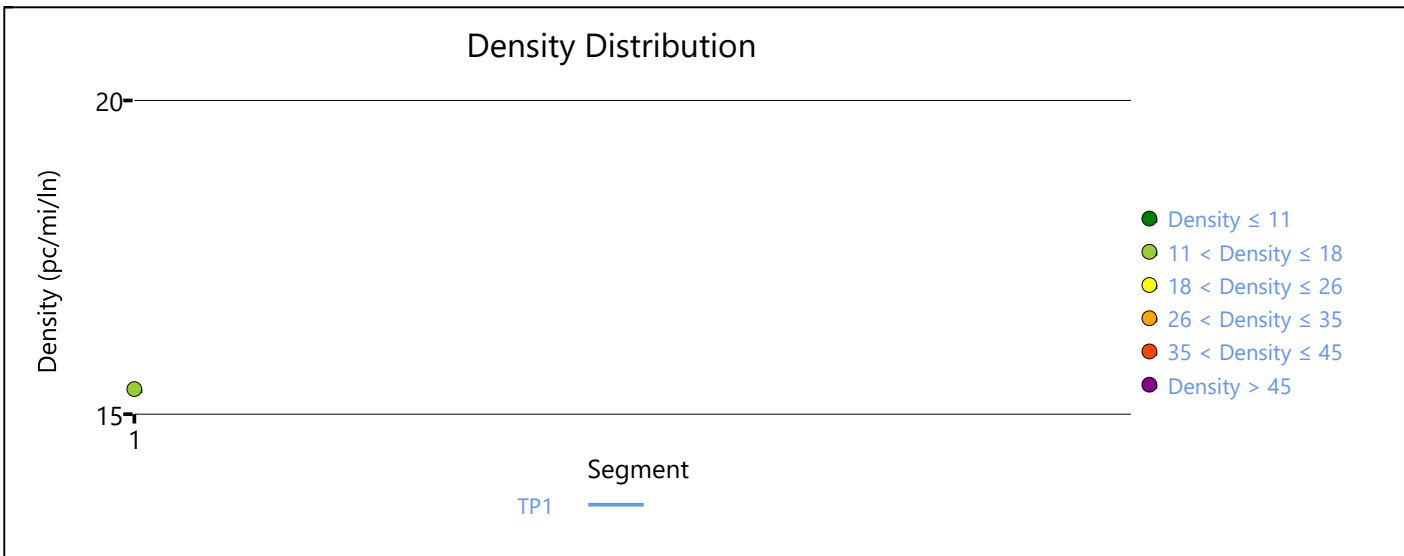
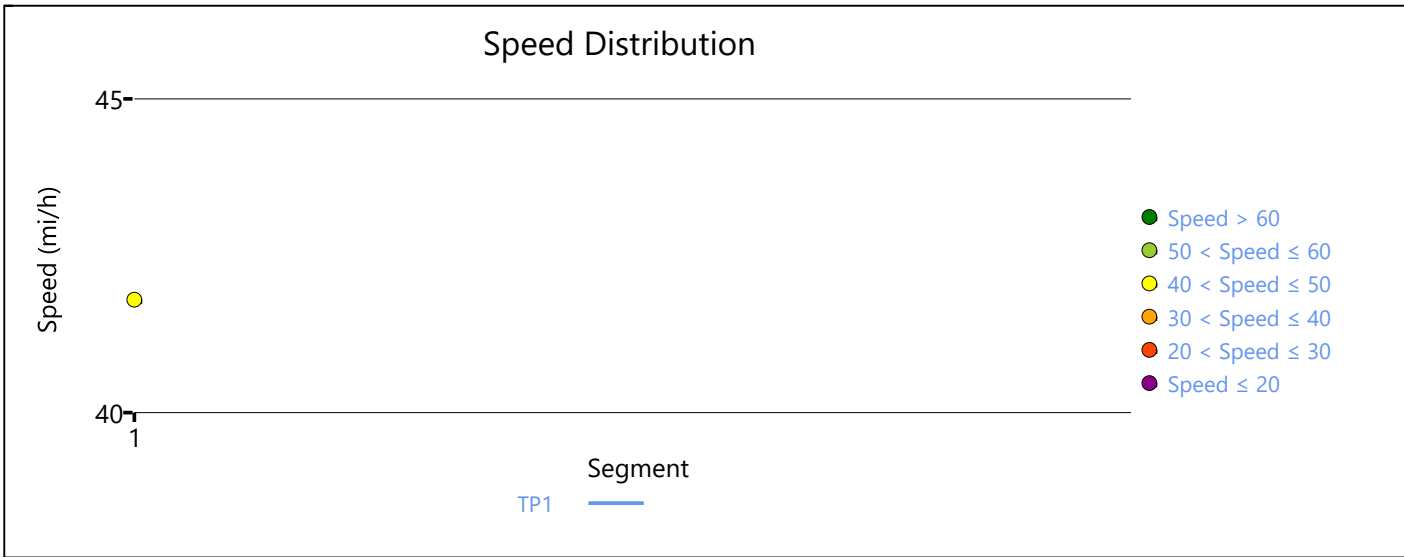
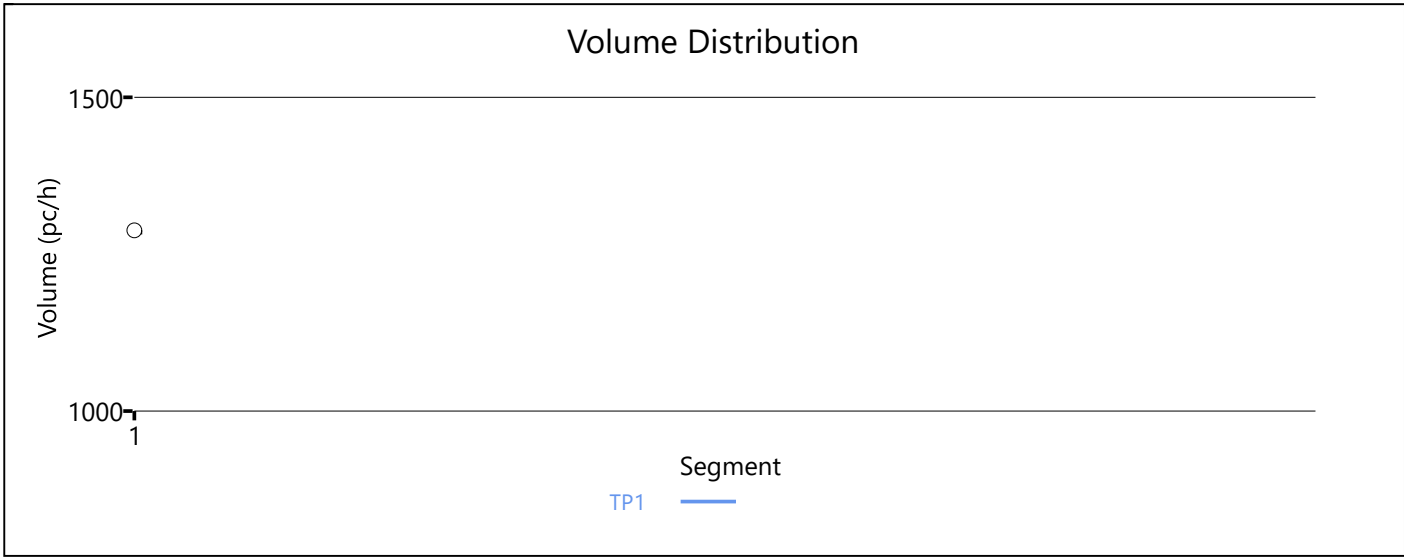
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	15.4	13.7	1.40	B

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	13.7
Average Travel Time, min	1.40	Density, pc/mi/ln	15.4

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.792	617	4400	0.14	41.8	7.4	A

Facility Analysis Results

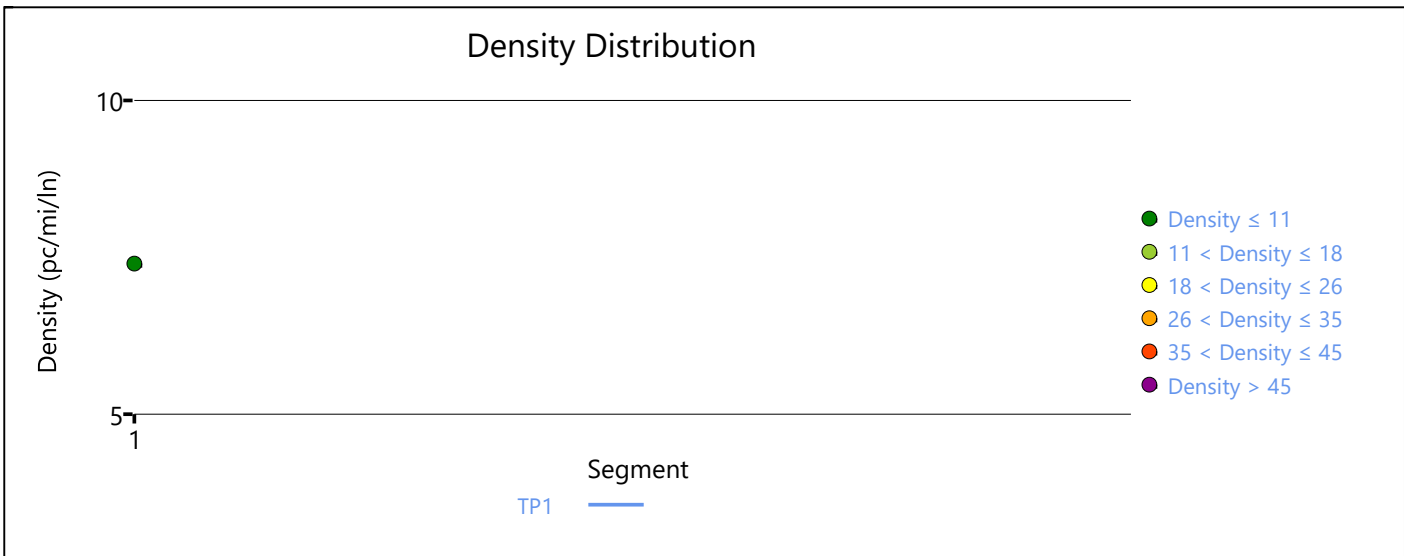
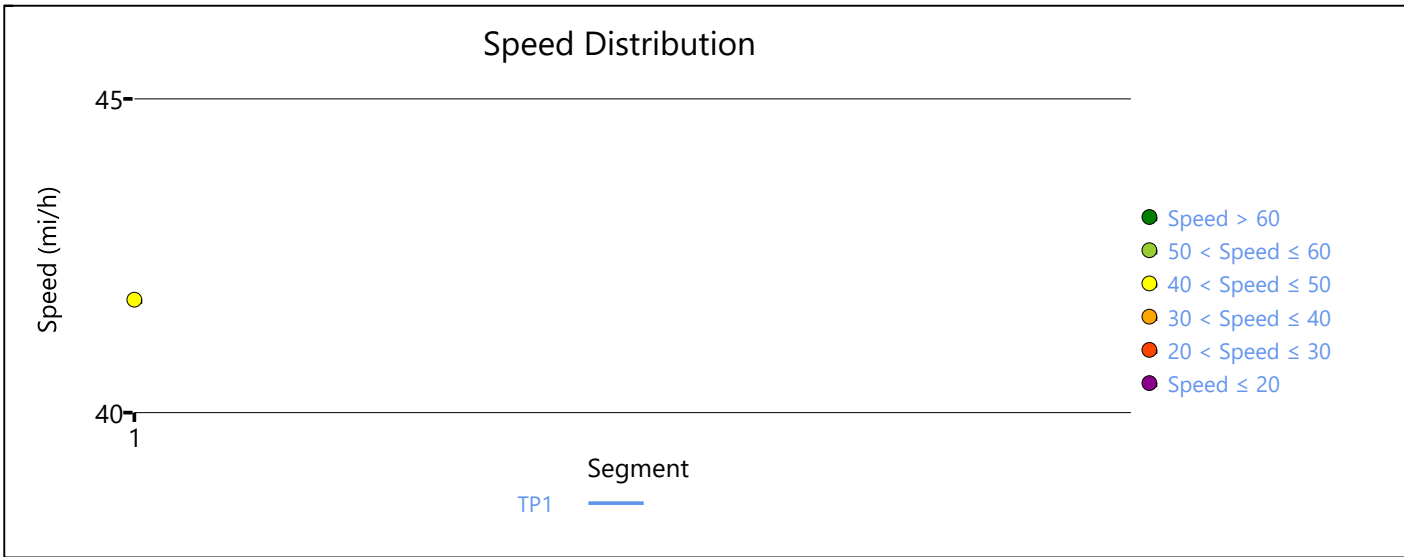
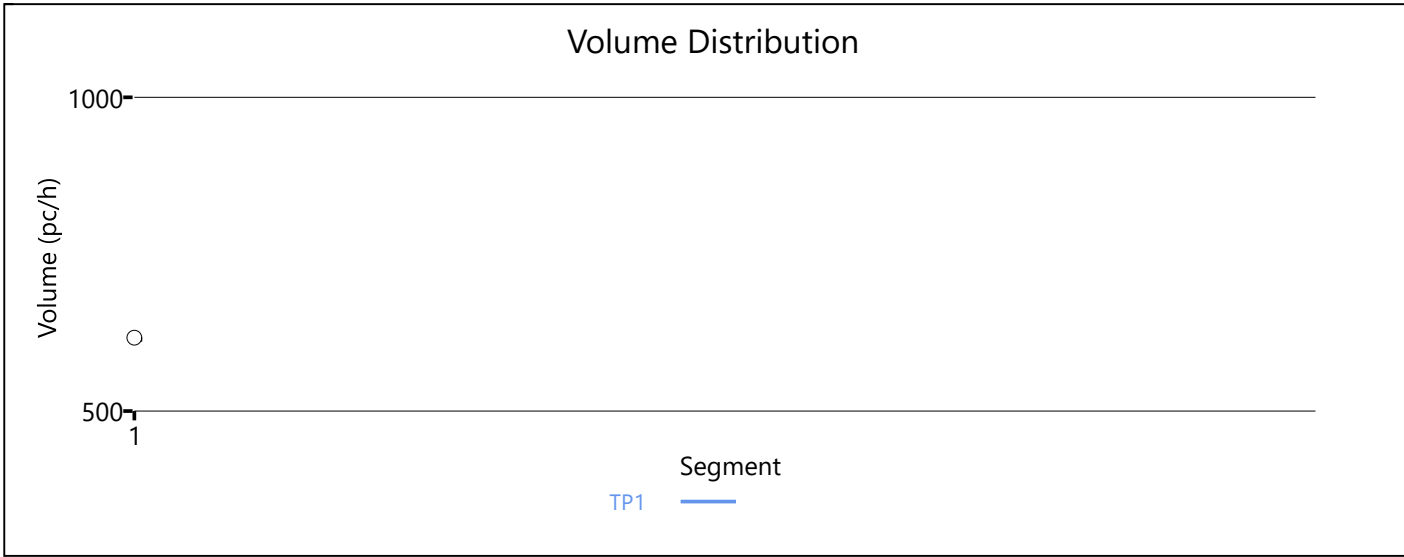
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	7.4	5.9	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	5.9
Average Travel Time, min	1.40	Density, pc/mi/ln	7.4

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Project Information

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Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.919	652	4400	0.15	41.8	7.8	A

Facility Analysis Results

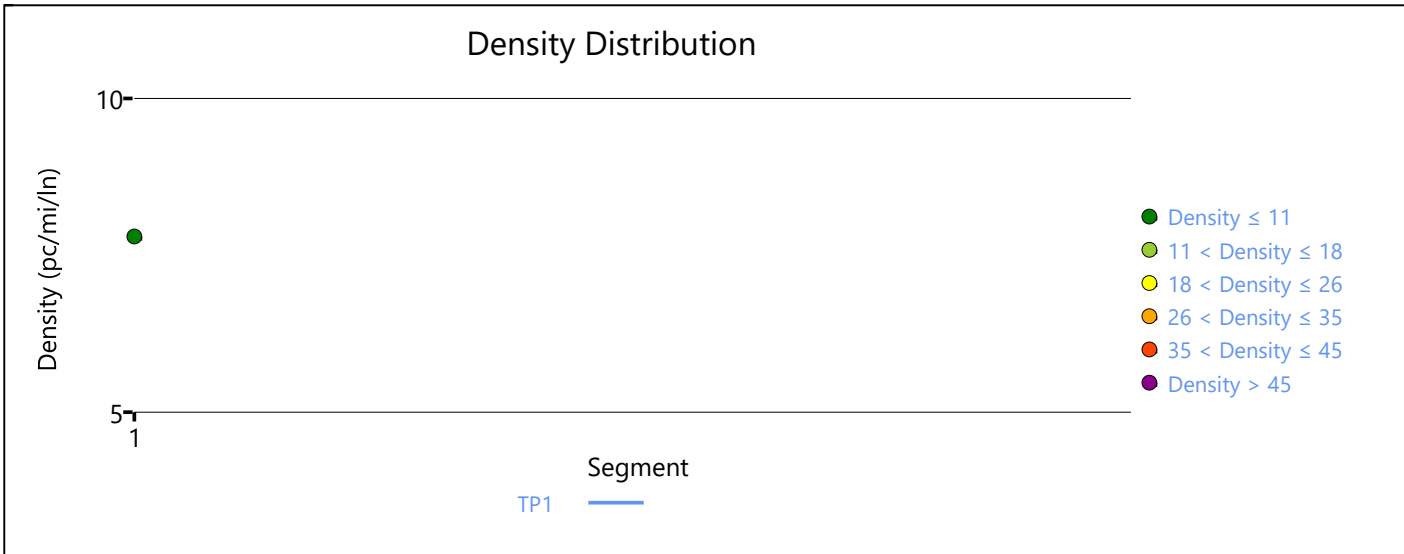
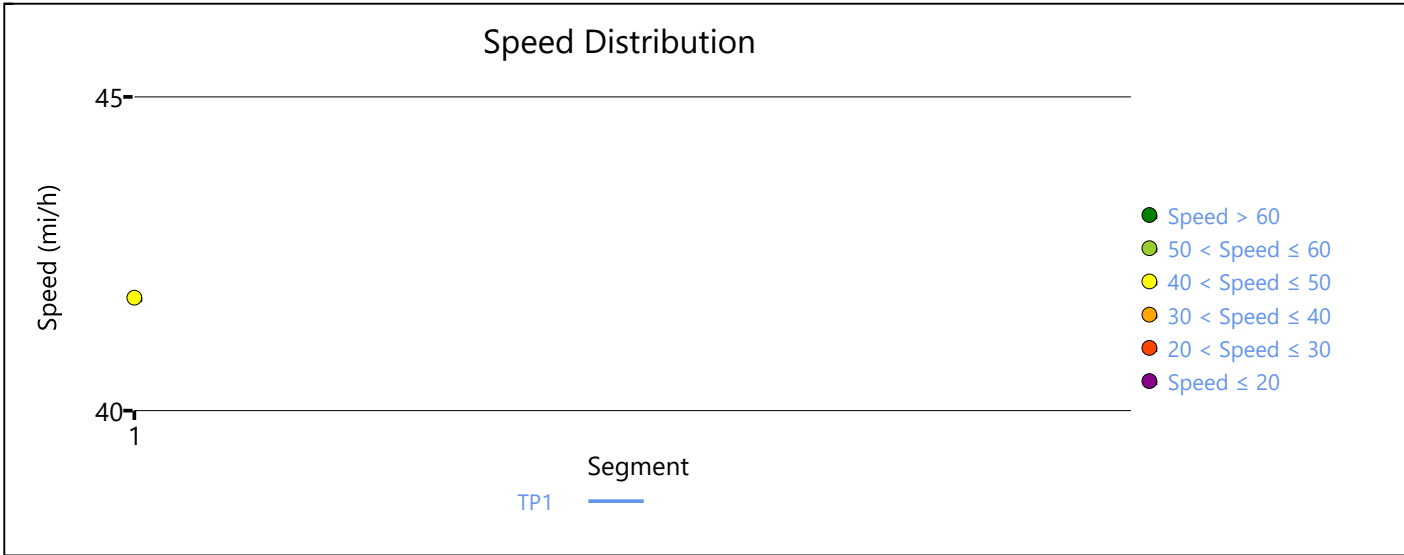
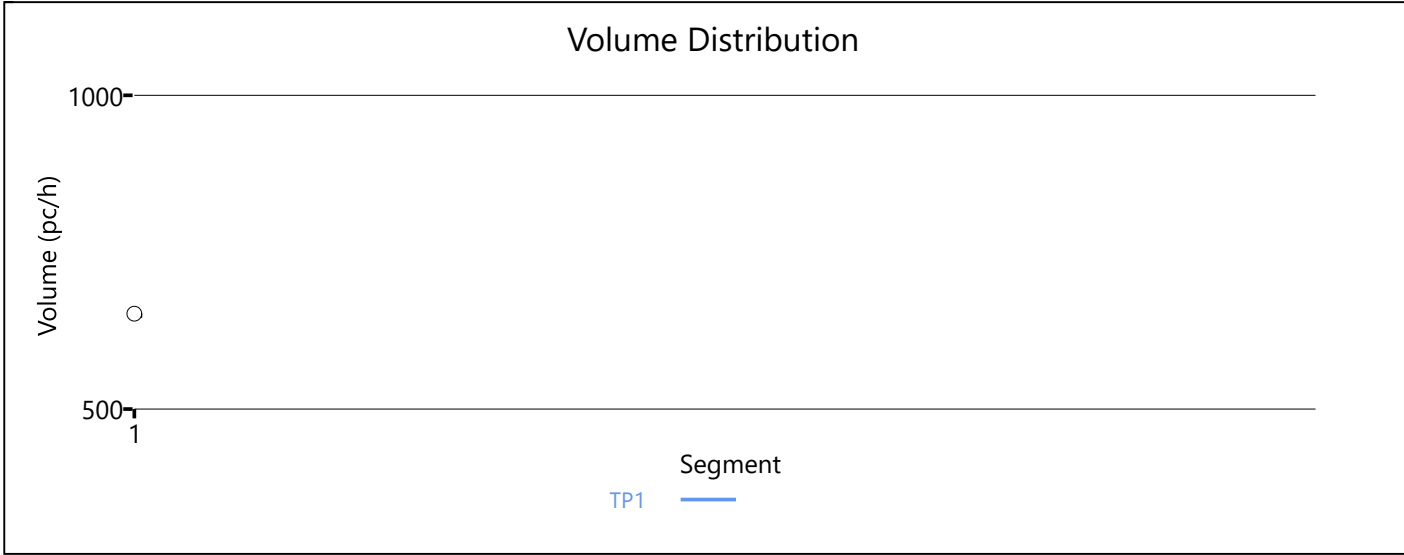
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	7.8	7.2	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	7.2
Average Travel Time, min	1.40	Density, pc/mi/ln	7.8

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Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.847	217	4400	0.05	41.8	2.6	A

Facility Analysis Results

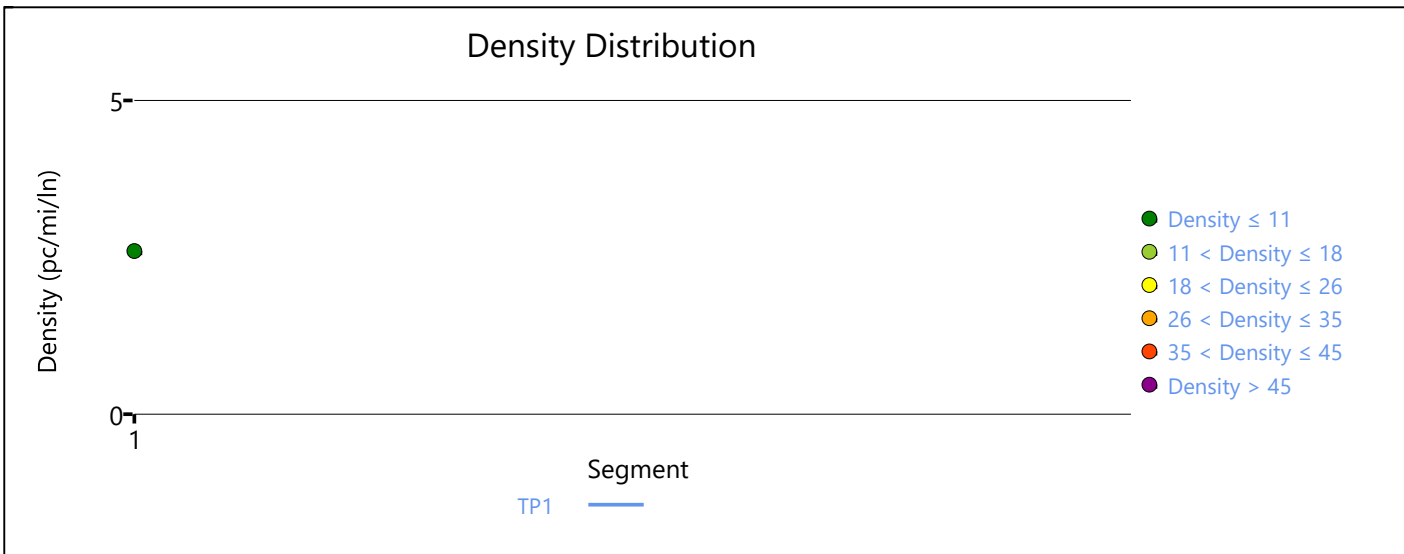
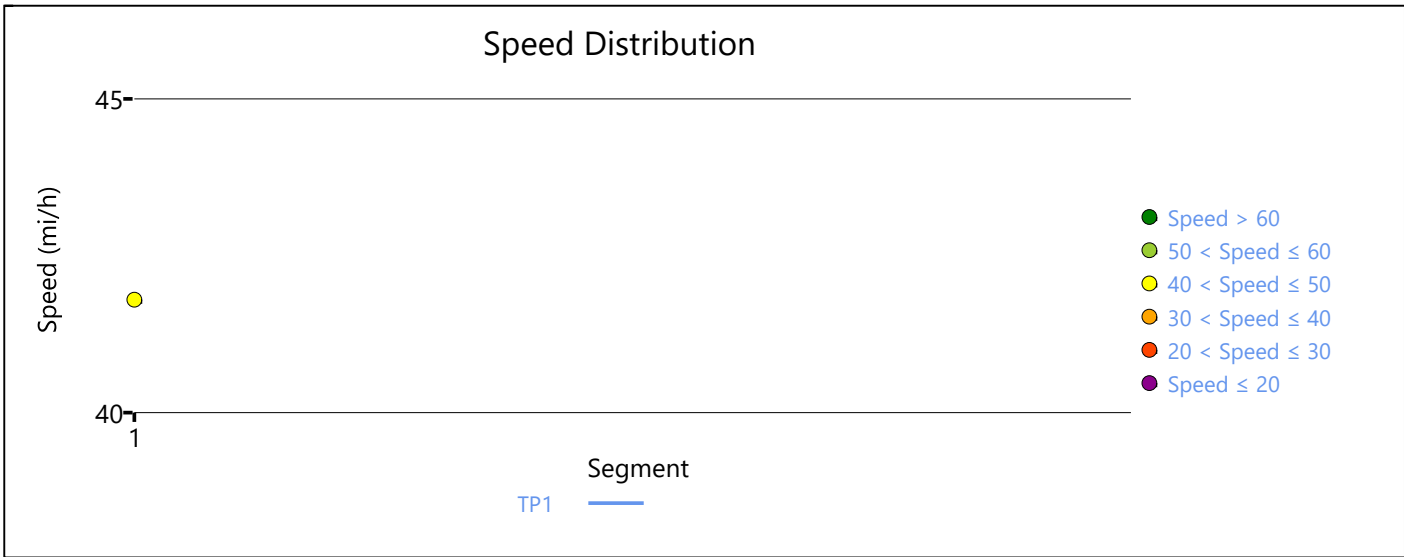
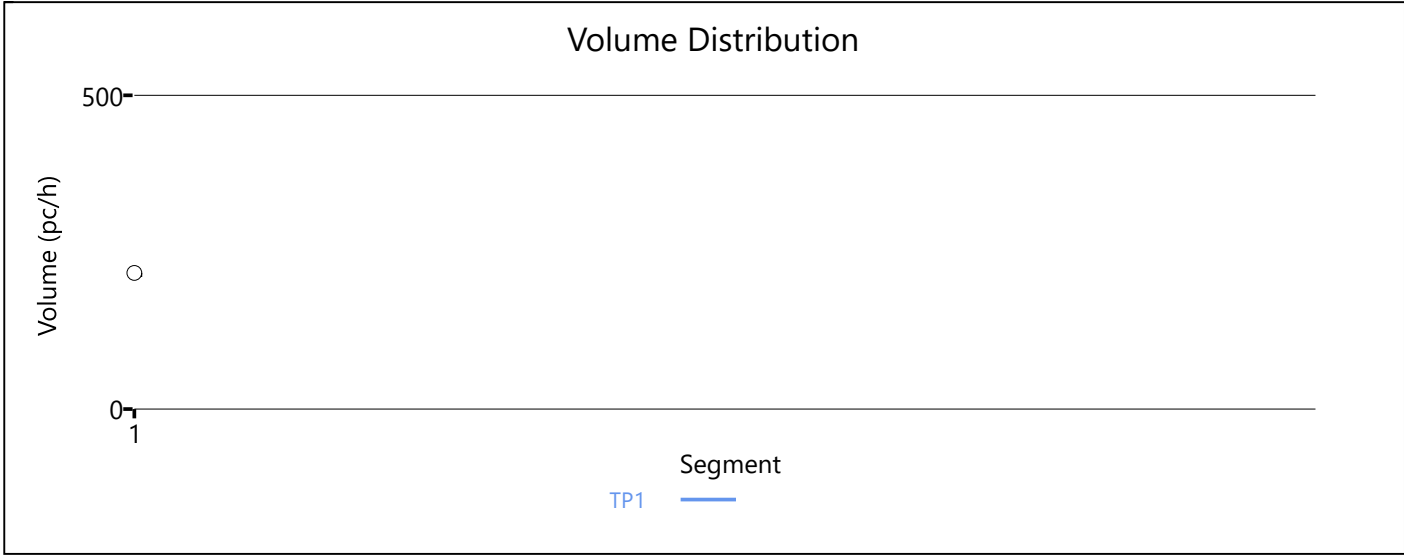
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	2.6	2.2	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	2.2
Average Travel Time, min	1.40	Density, pc/mi/ln	2.6

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Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.911	5199	8800	0.59	41.8	31.1	D

Facility Analysis Results

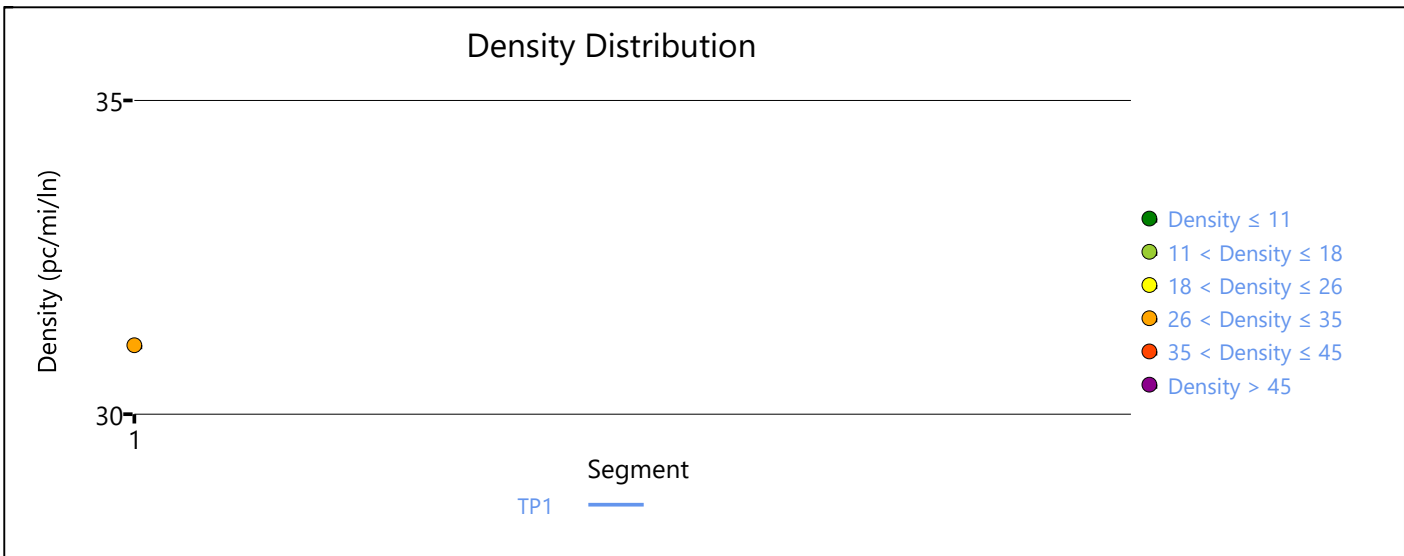
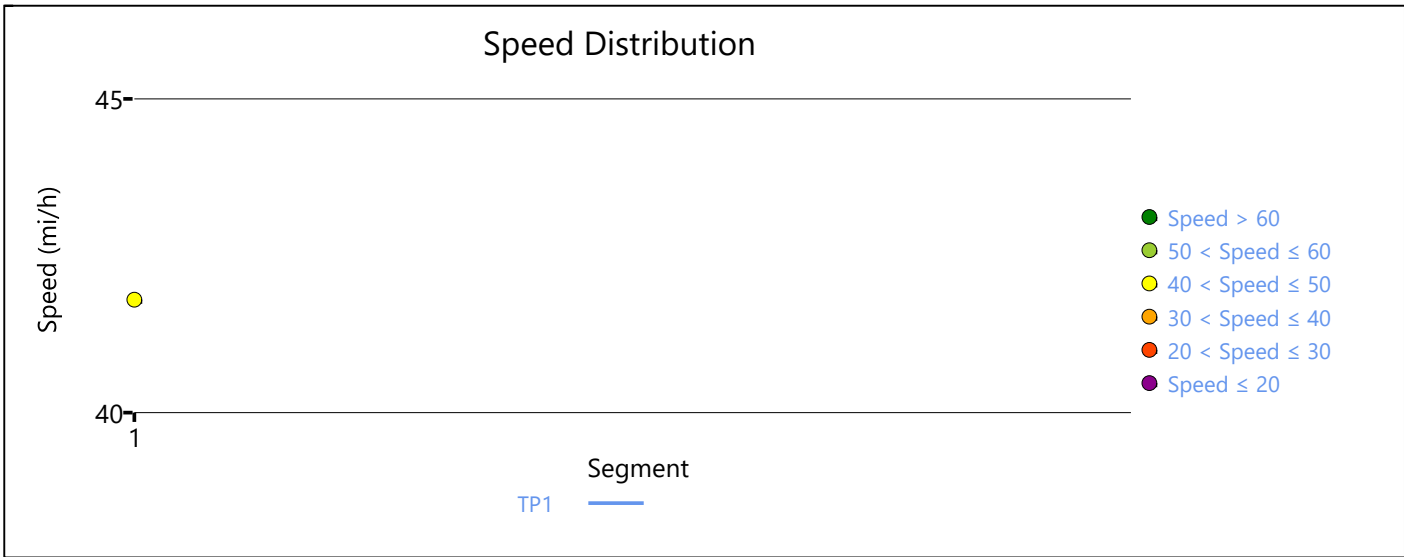
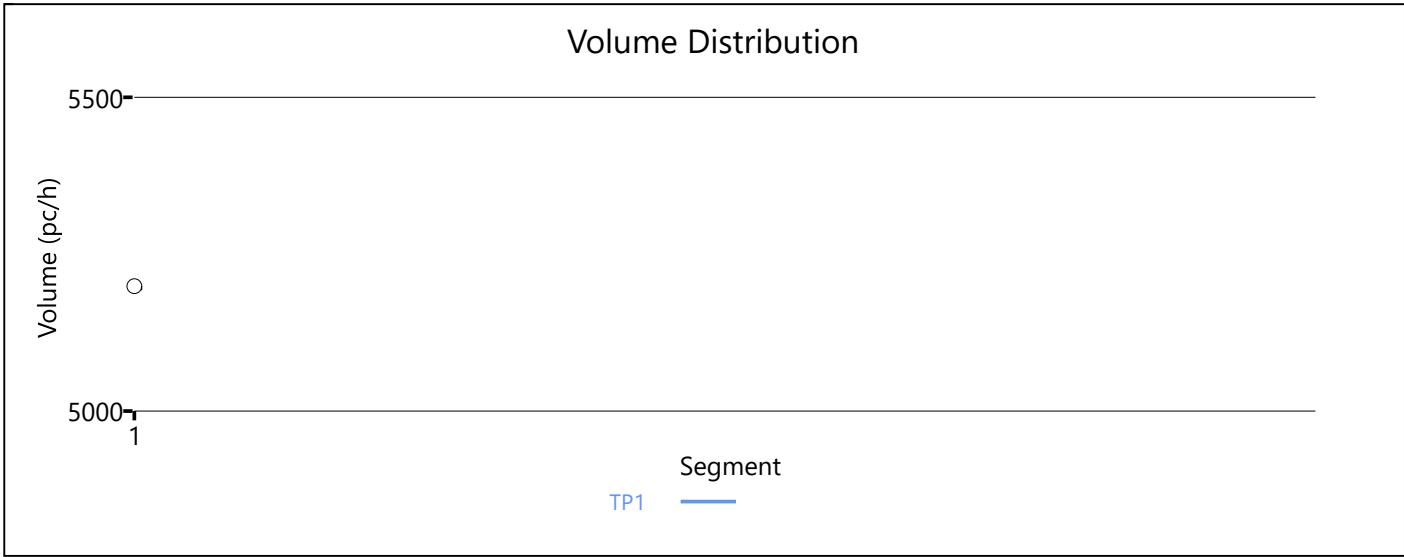
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	31.1	28.3	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	28.3
Average Travel Time, min	1.00	Density, pc/mi/ln	31.1

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Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.906	5078	8800	0.58	41.8	30.4	D

Facility Analysis Results

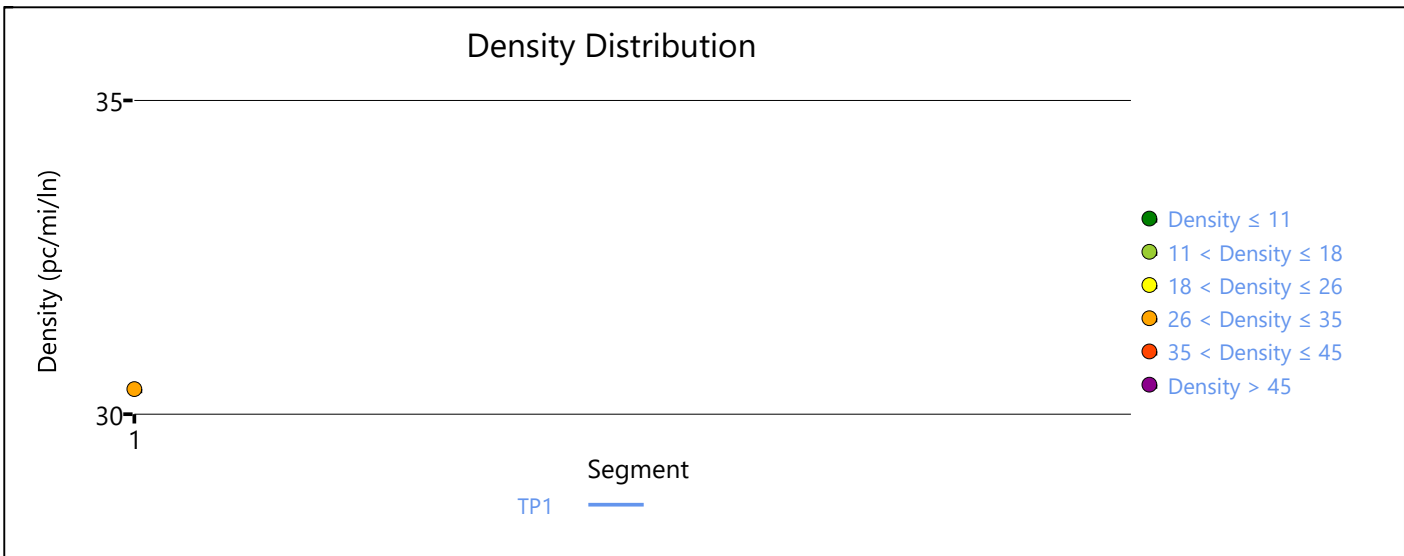
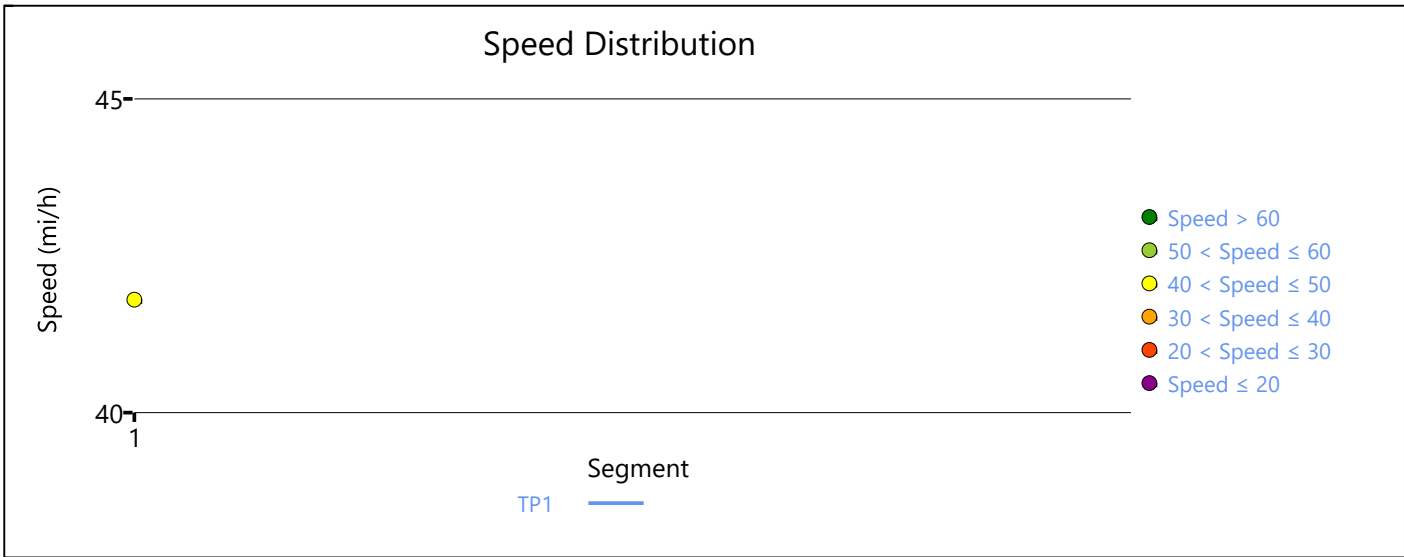
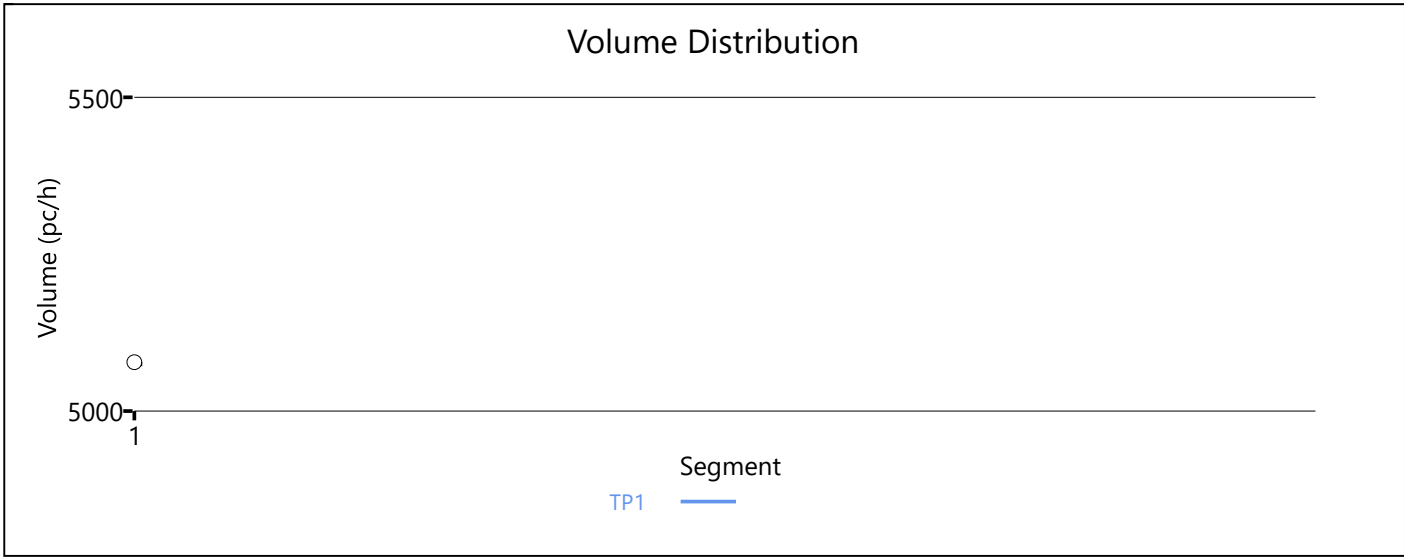
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	30.4	27.5	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	27.5
Average Travel Time, min	1.00	Density, pc/mi/ln	30.4

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Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.958	5230	8800	0.59	41.8	31.3	D

Facility Analysis Results

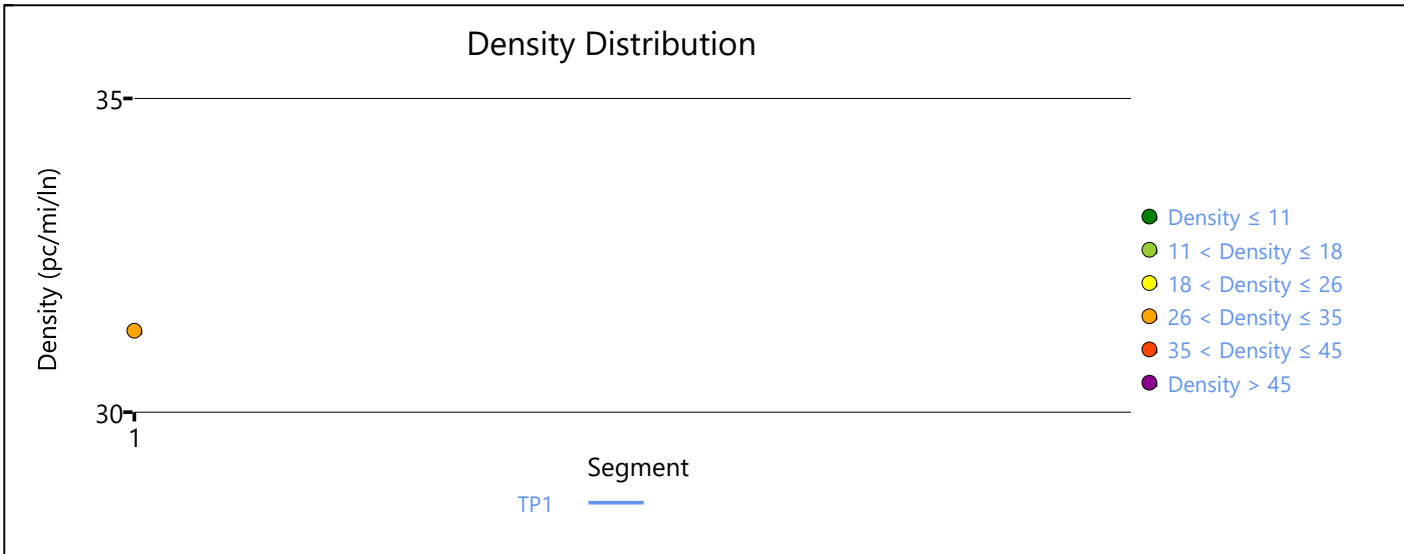
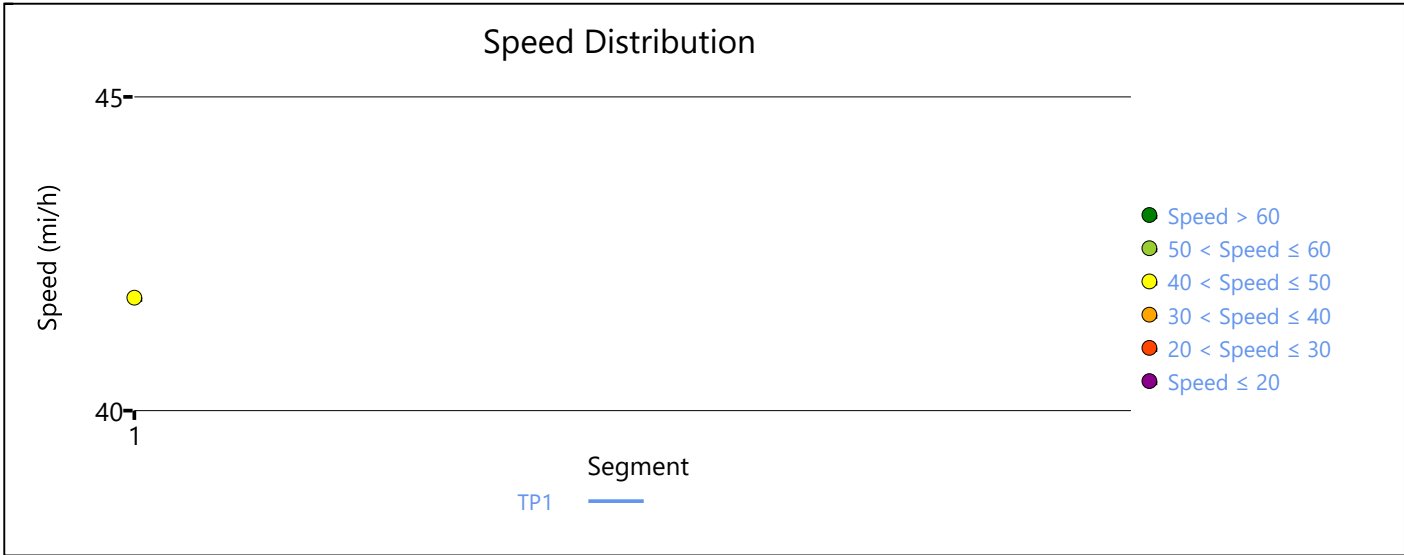
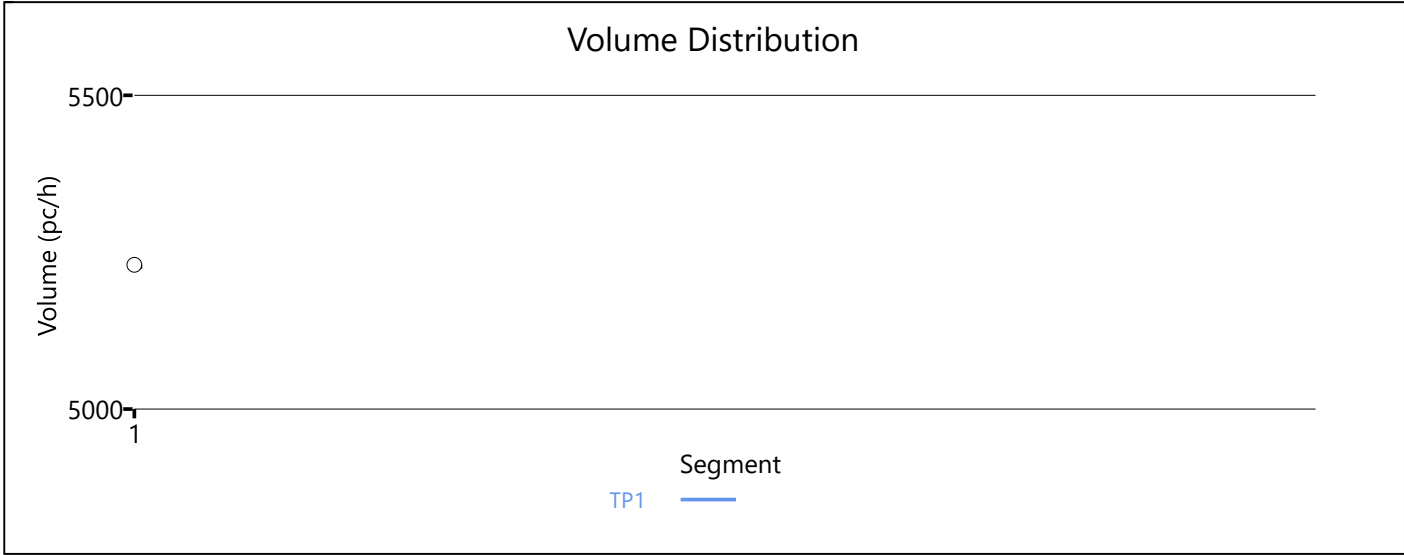
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	31.3	30.0	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	30.0
Average Travel Time, min	1.00	Density, pc/mi/ln	31.3

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HCS7 Freeway Facilities Report

Project Information

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Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.879	1025	8800	0.12	41.8	6.1	A

Facility Analysis Results

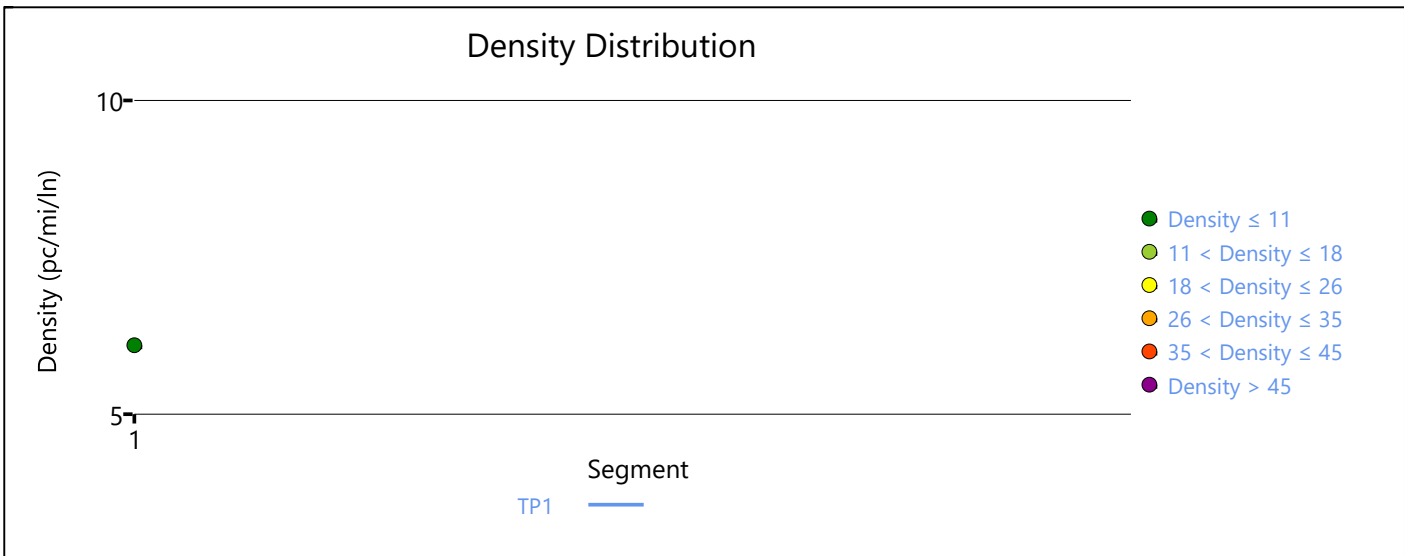
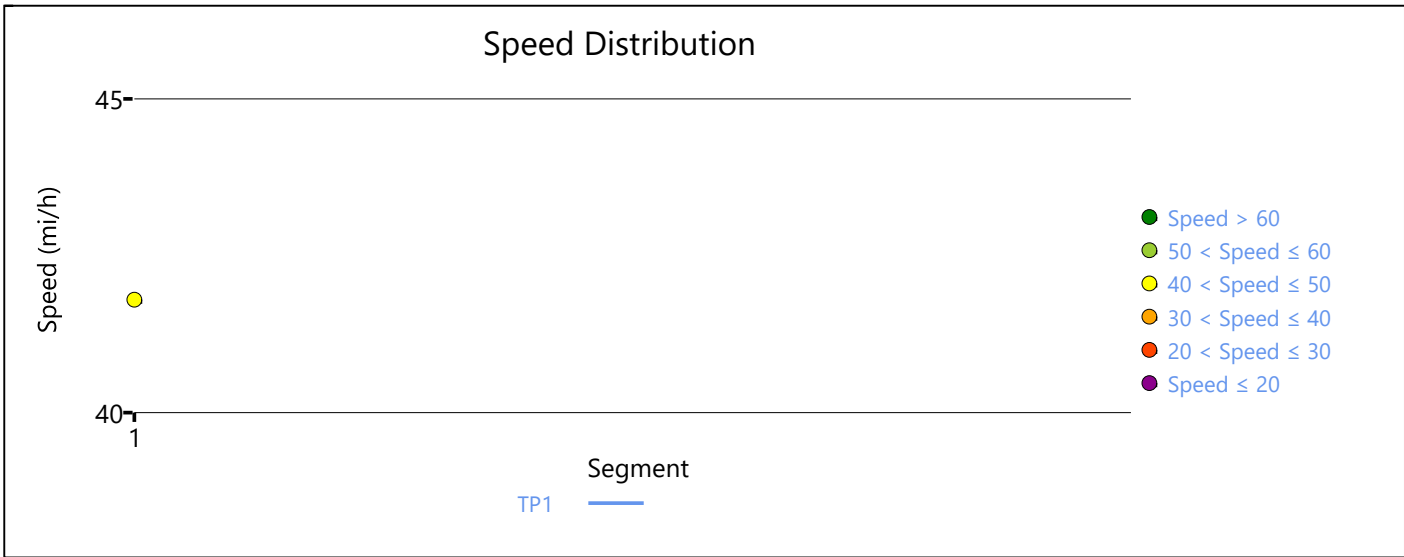
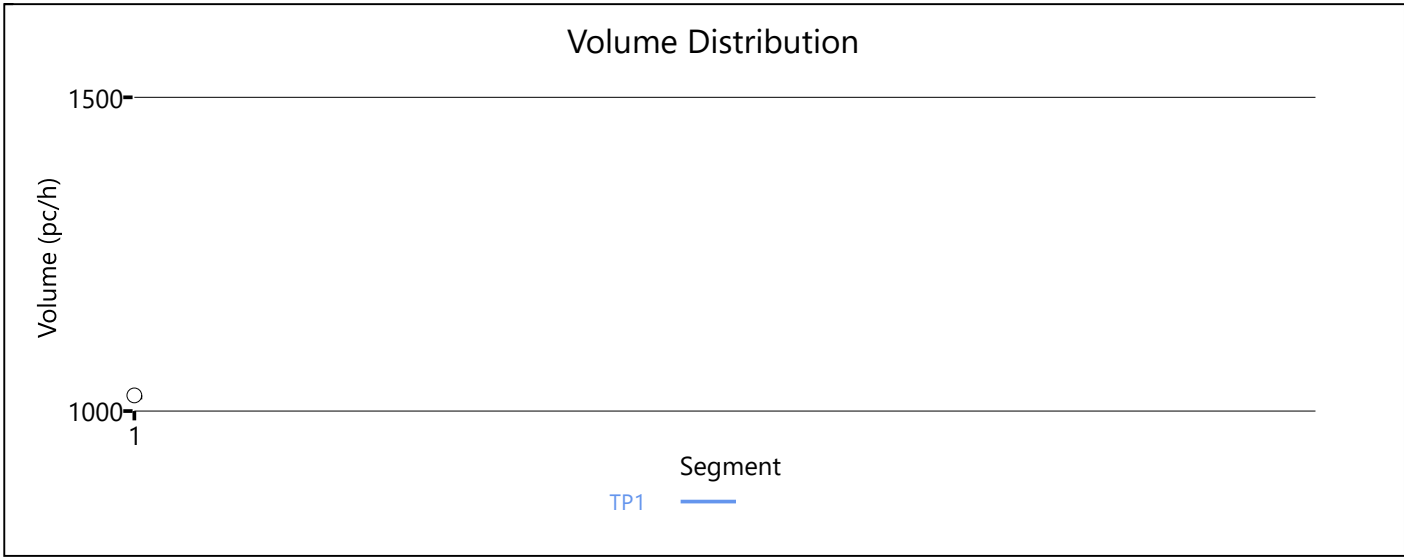
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	6.1	5.4	1.00	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	5.4
Average Travel Time, min	1.00	Density, pc/mi/ln	6.1

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Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.772	209	6654	0.03	51.8	1.4	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.772	0.849	1012	803	6750	4000	0.15	0.20	51.6	51.3	6.5	8.2	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.833	1013	6654	0.15	51.8	6.5	A

Facility Analysis Results

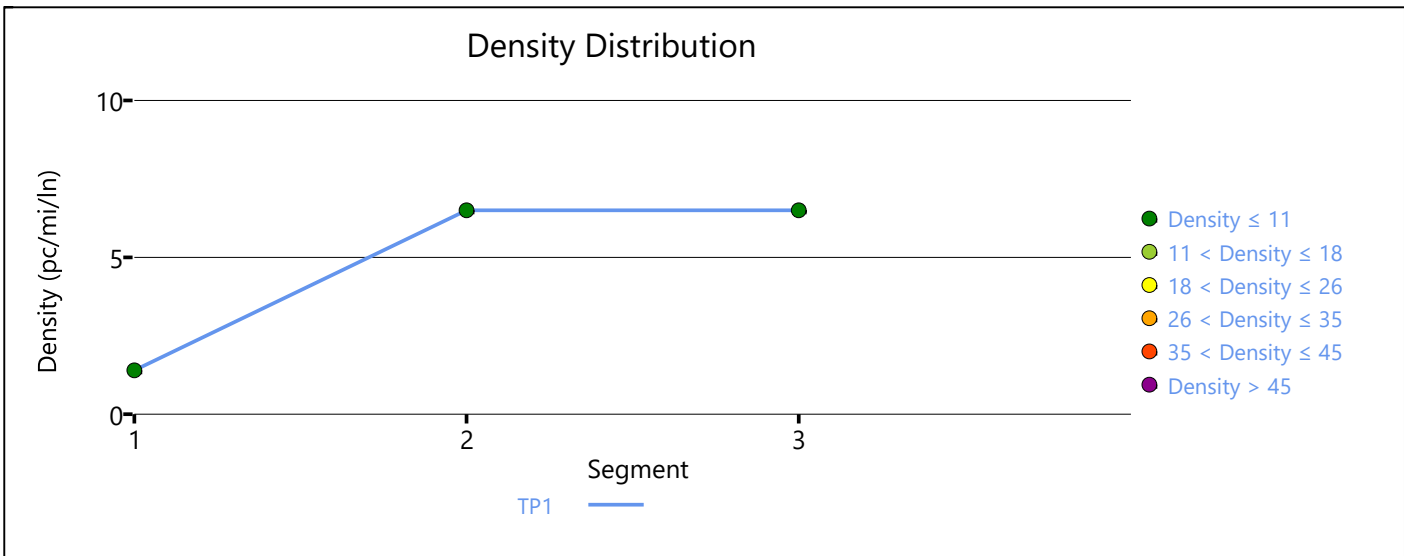
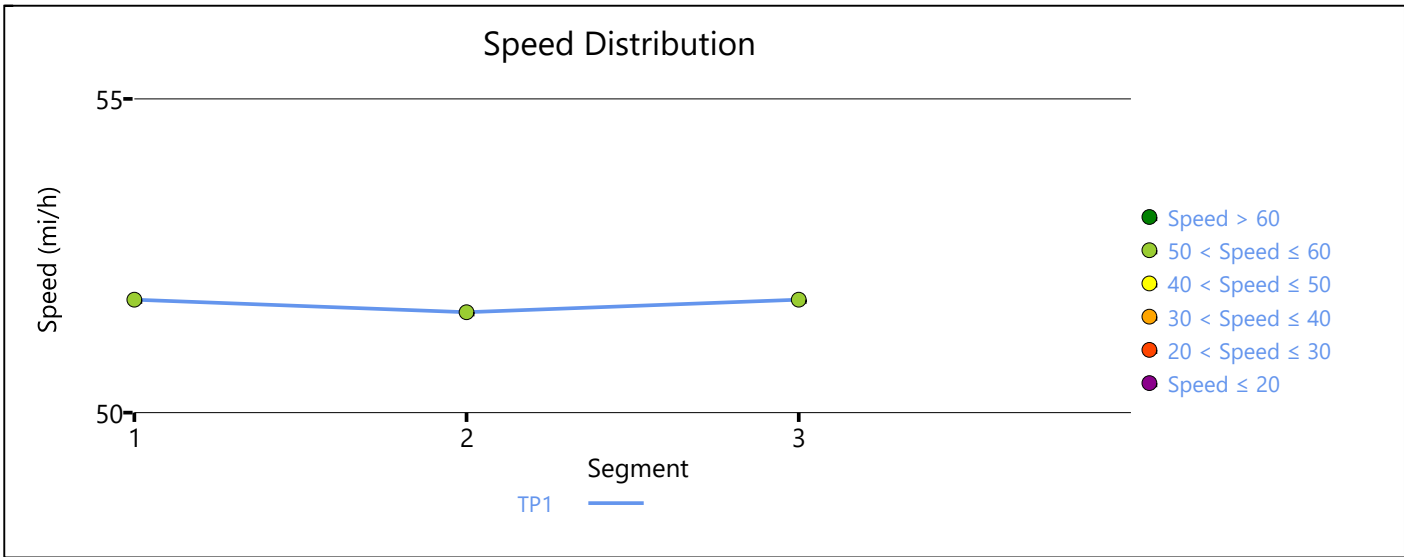
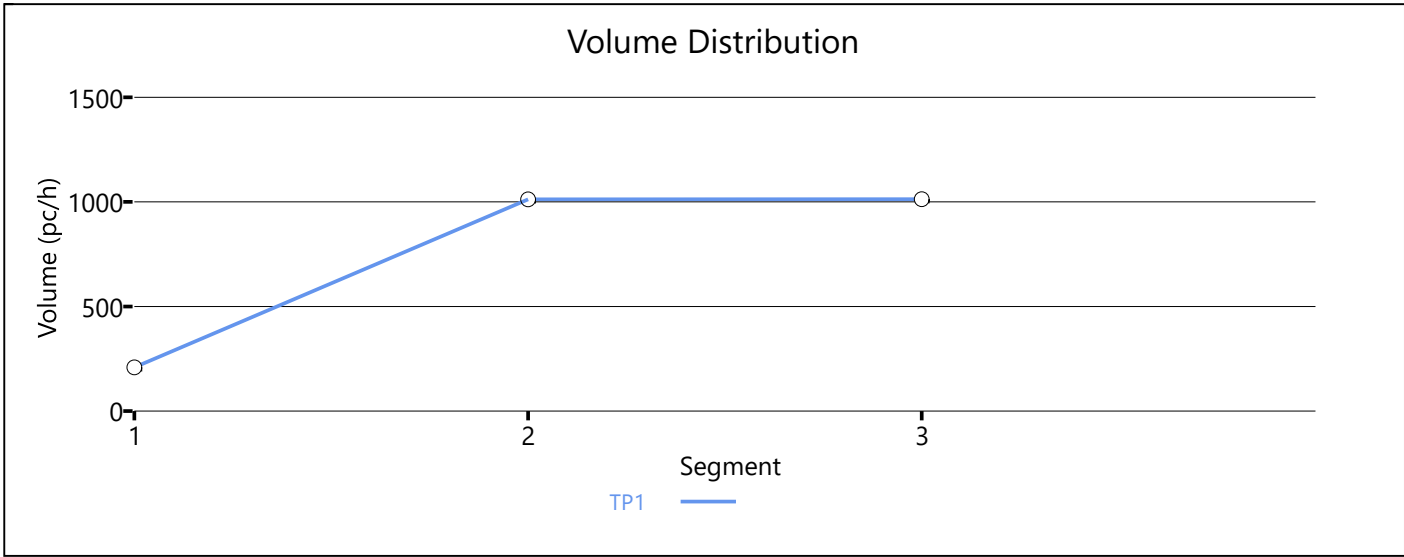
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	4.3	3.5	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	3.5
Average Travel Time, min	1.20	Density, pc/mi/ln	4.3

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Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.797	300	6654	0.05	51.8	1.9	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.797	0.801	1060	760	6750	4000	0.16	0.19	51.7	51.3	6.8	8.3	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.800	1060	6654	0.16	51.8	6.8	A

Facility Analysis Results

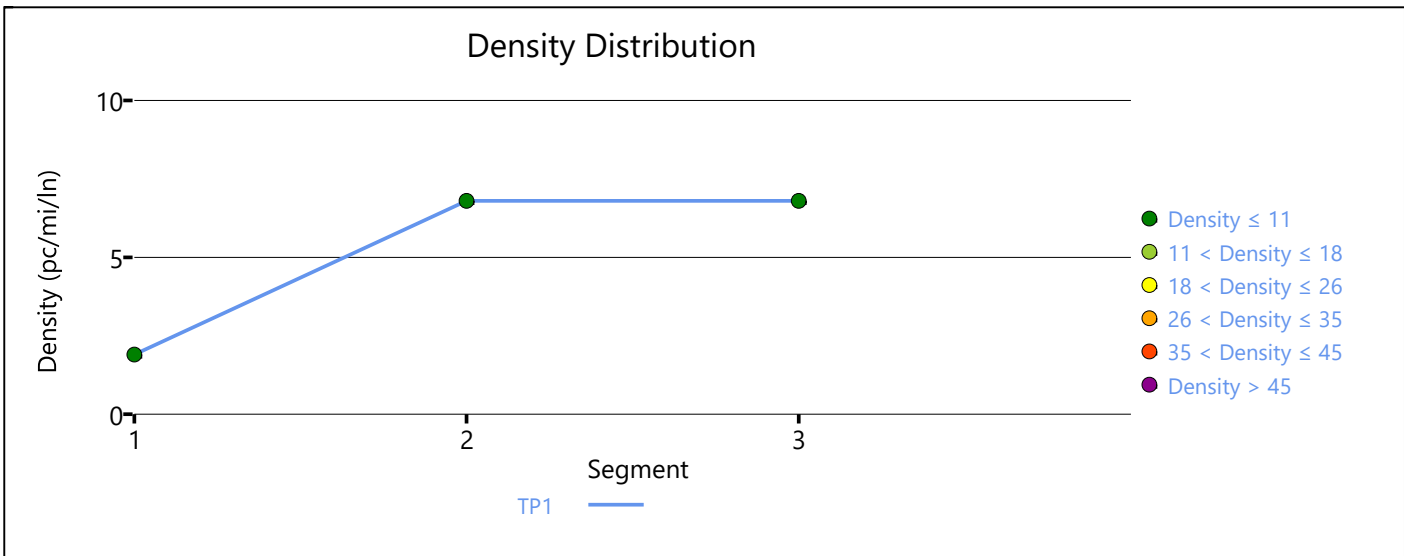
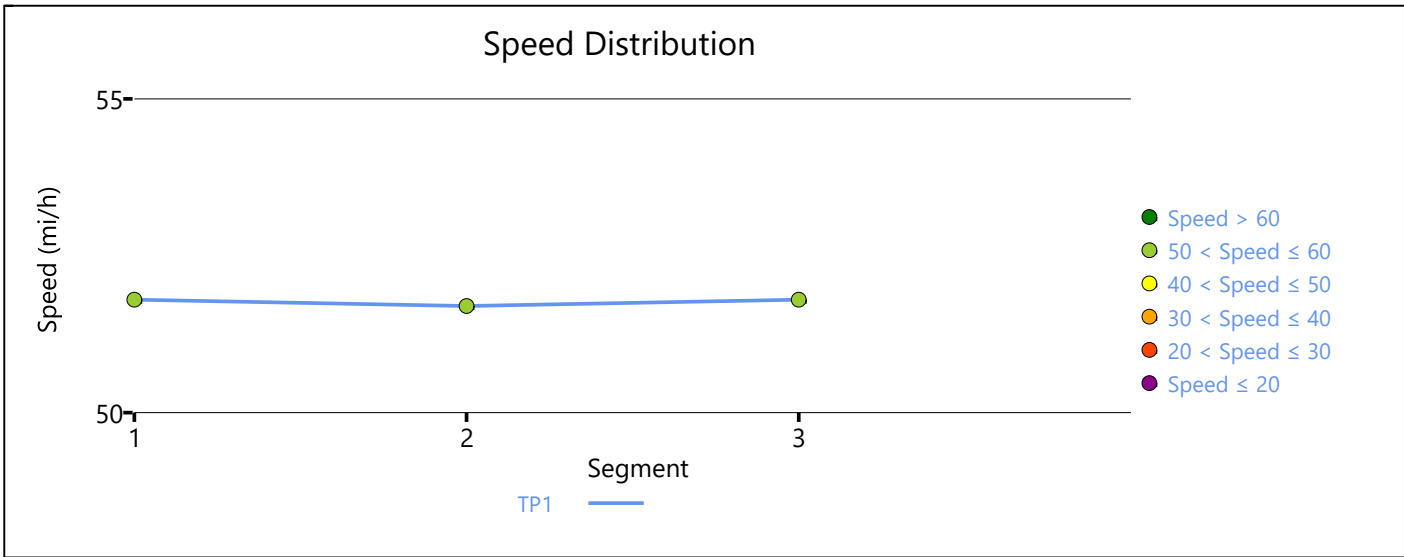
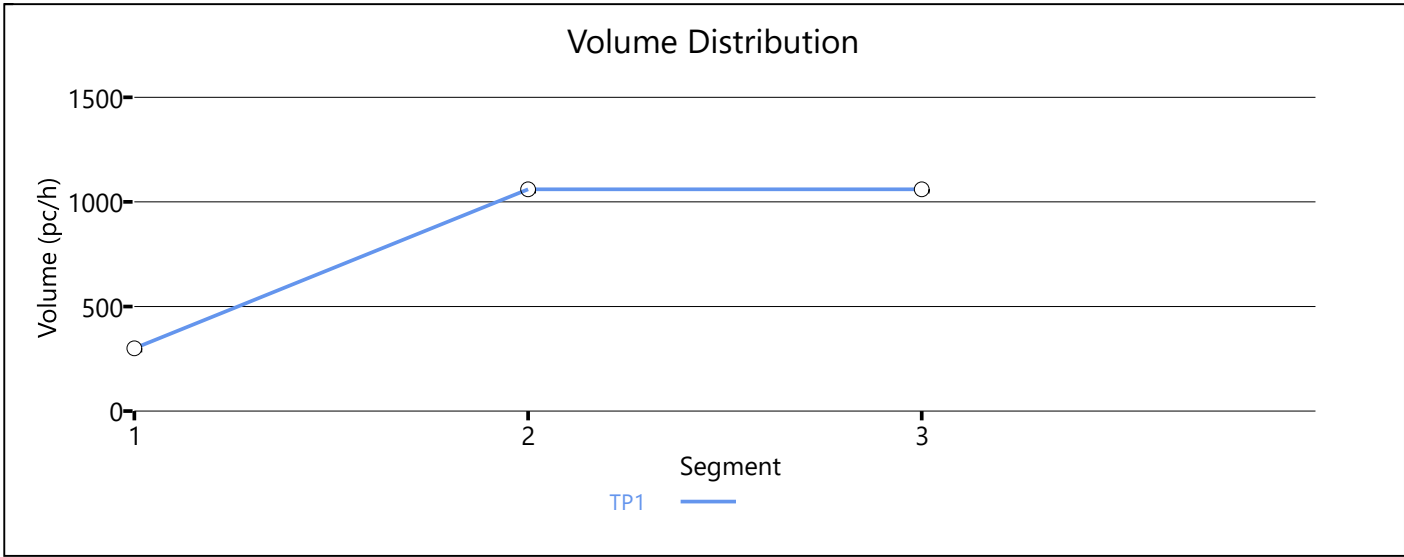
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	4.6	3.7	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	3.7
Average Travel Time, min	1.20	Density, pc/mi/ln	4.6

Messages

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Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.919	484	6654	0.07	51.8	3.1	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.919	0.923	1412	928	6750	4000	0.21	0.23	51.8	51.3	9.1	10.4	B

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.923	1410	6654	0.21	51.8	9.1	A

Facility Analysis Results

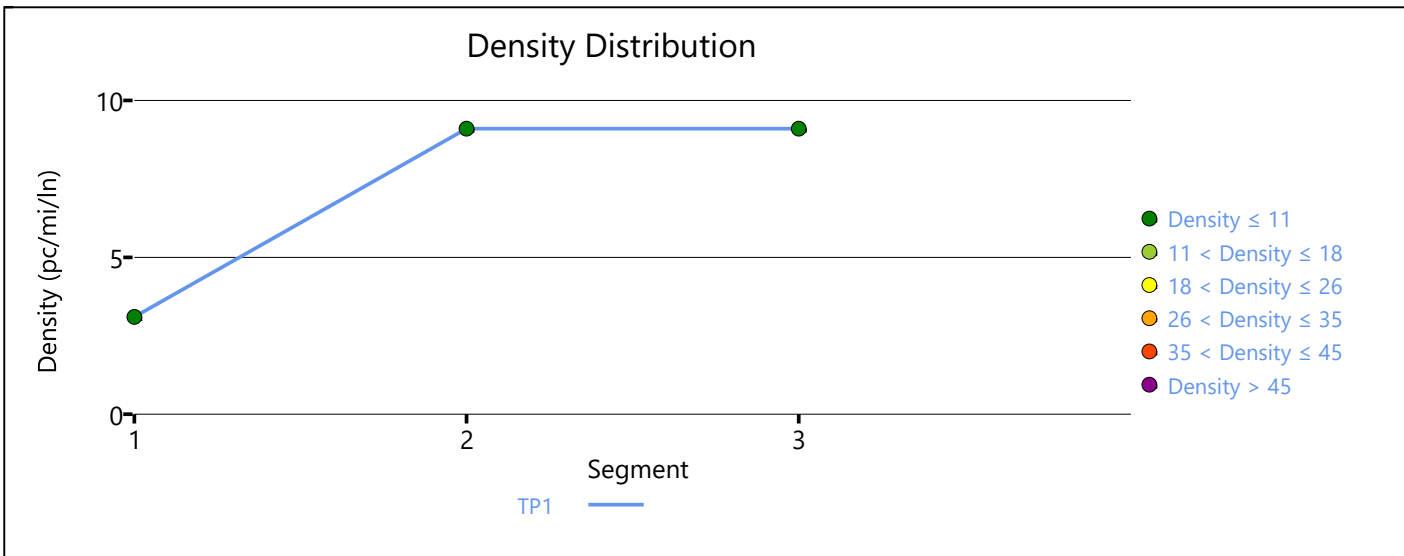
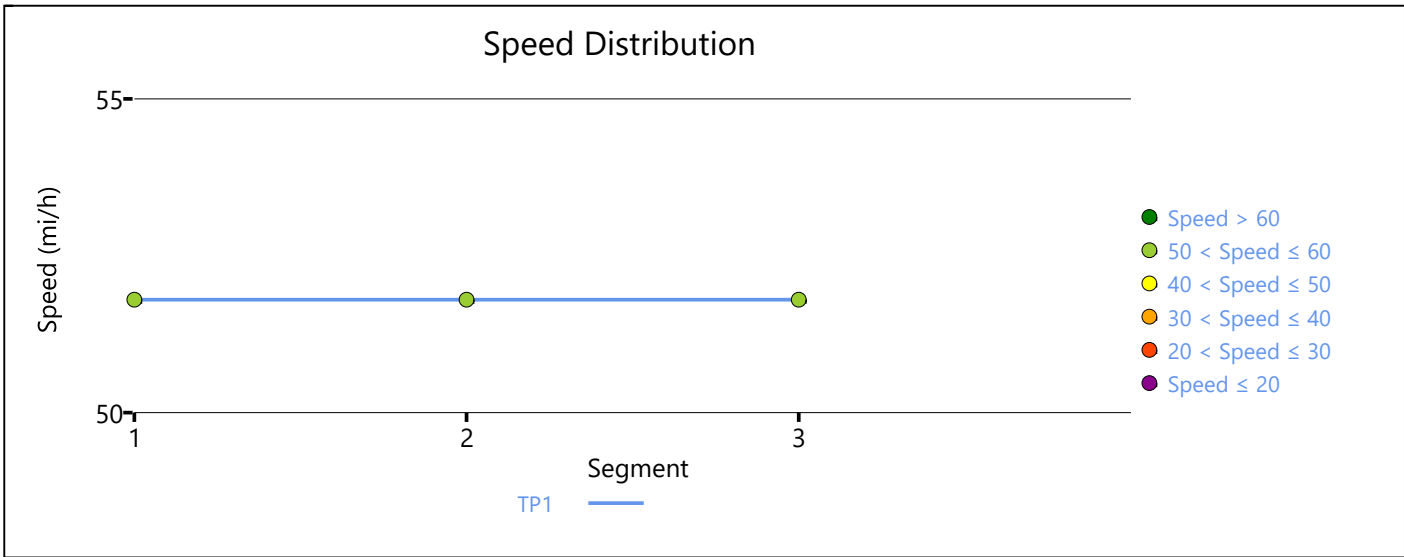
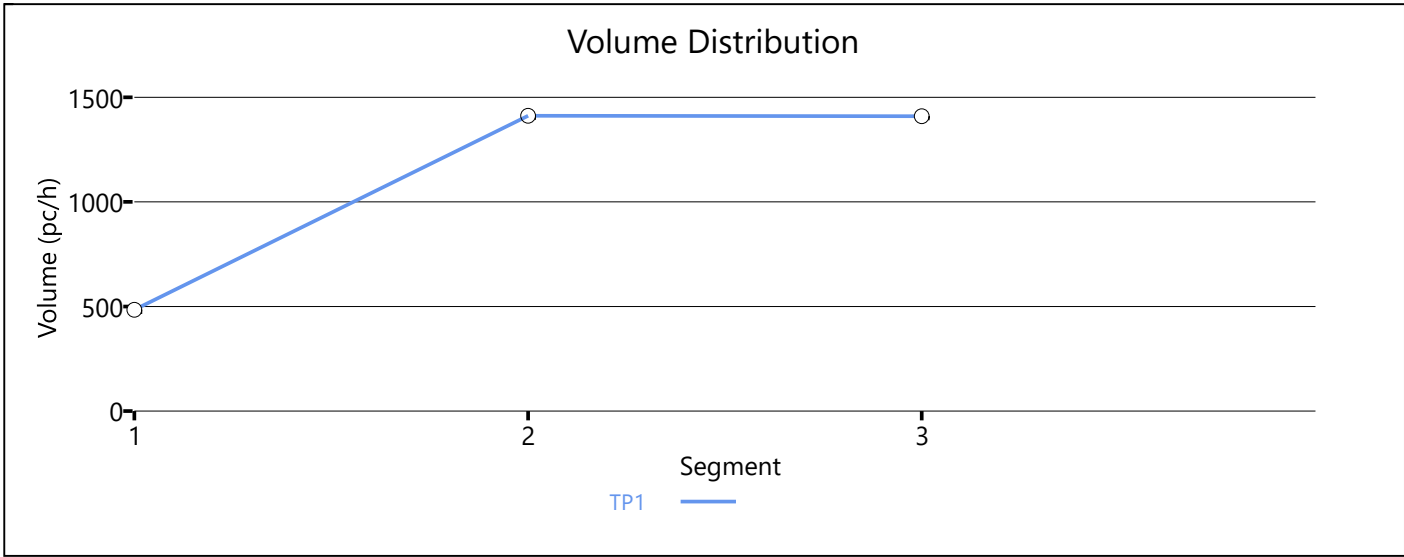
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	6.5	5.9	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	5.9
Average Travel Time, min	1.20	Density, pc/mi/ln	6.5

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.723	22	6654	0.00	51.8	0.1	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.723	0.888	431	409	6750	4000	0.06	0.10	51.4	51.3	2.8	4.5	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.880	430	6654	0.06	51.8	2.8	A

Facility Analysis Results

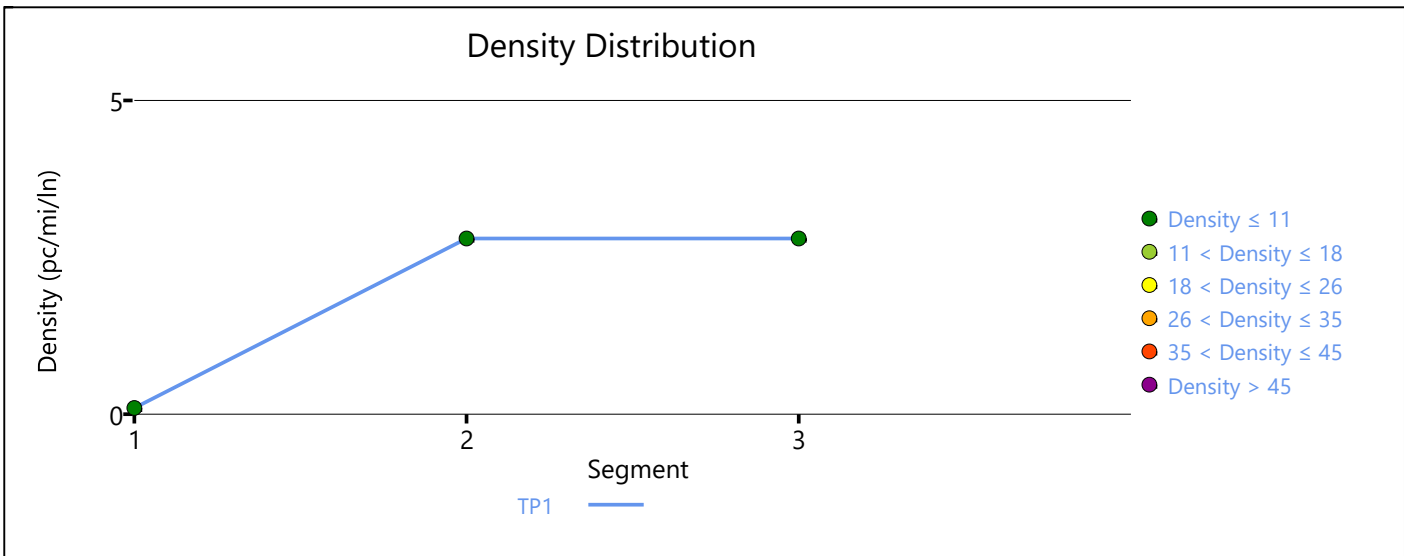
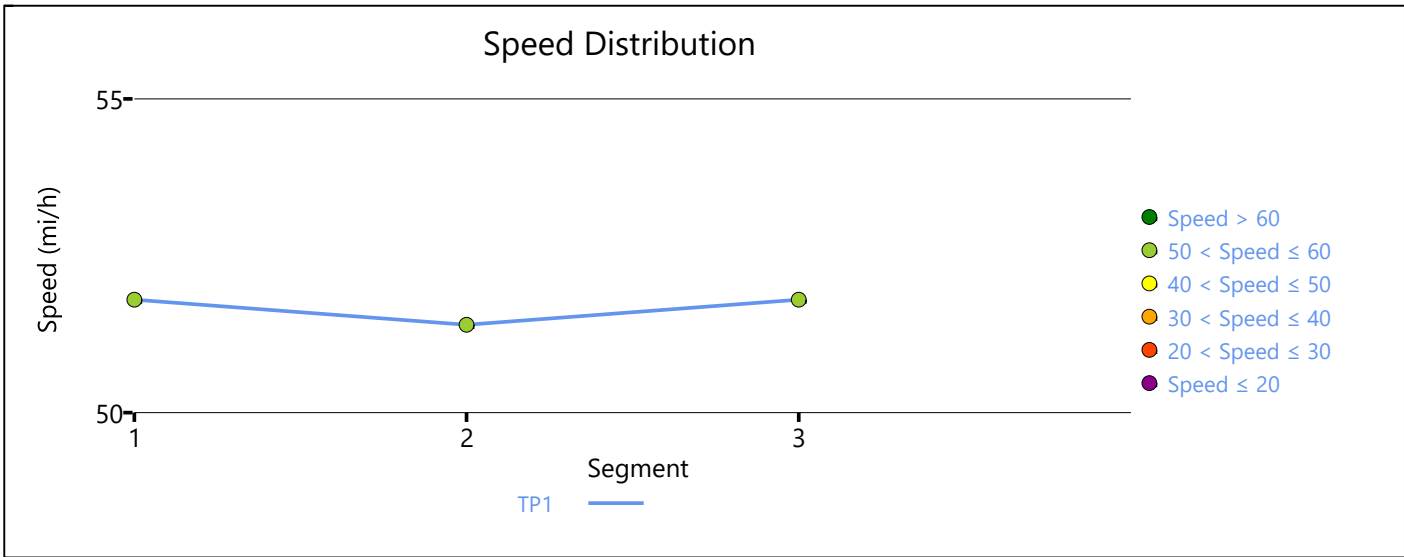
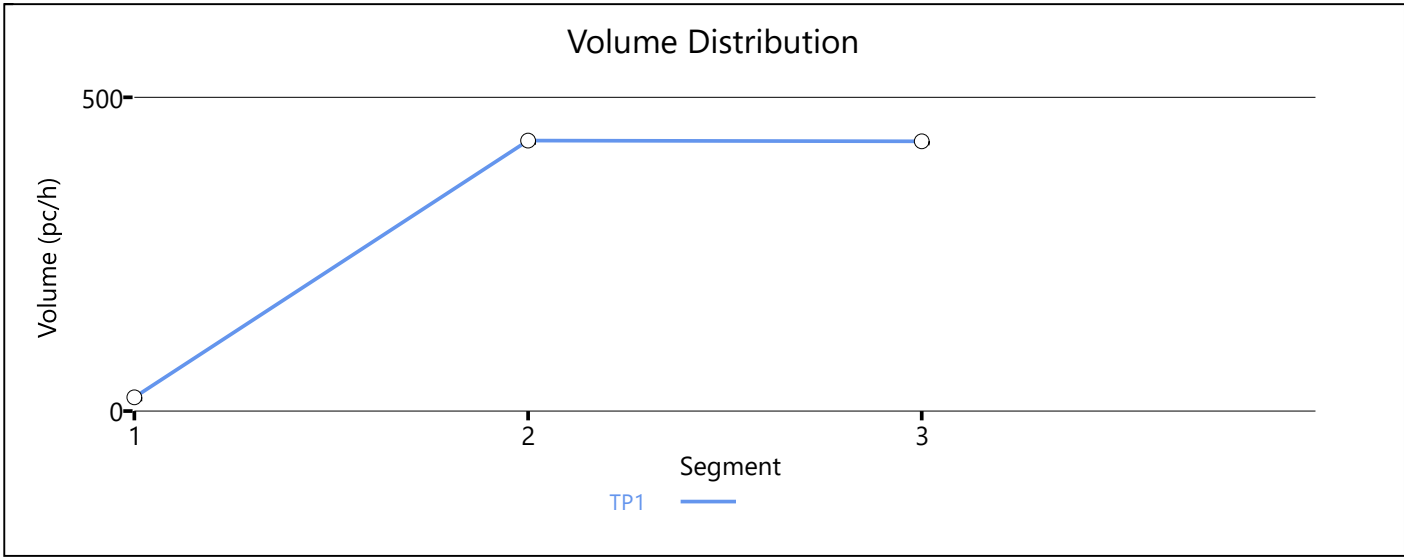
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.7	1.6	1.4	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.7	Density, veh/mi/ln	1.4
Average Travel Time, min	1.20	Density, pc/mi/ln	1.6

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Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.797	880	4400	0.20	41.8	10.5	A

Facility Analysis Results

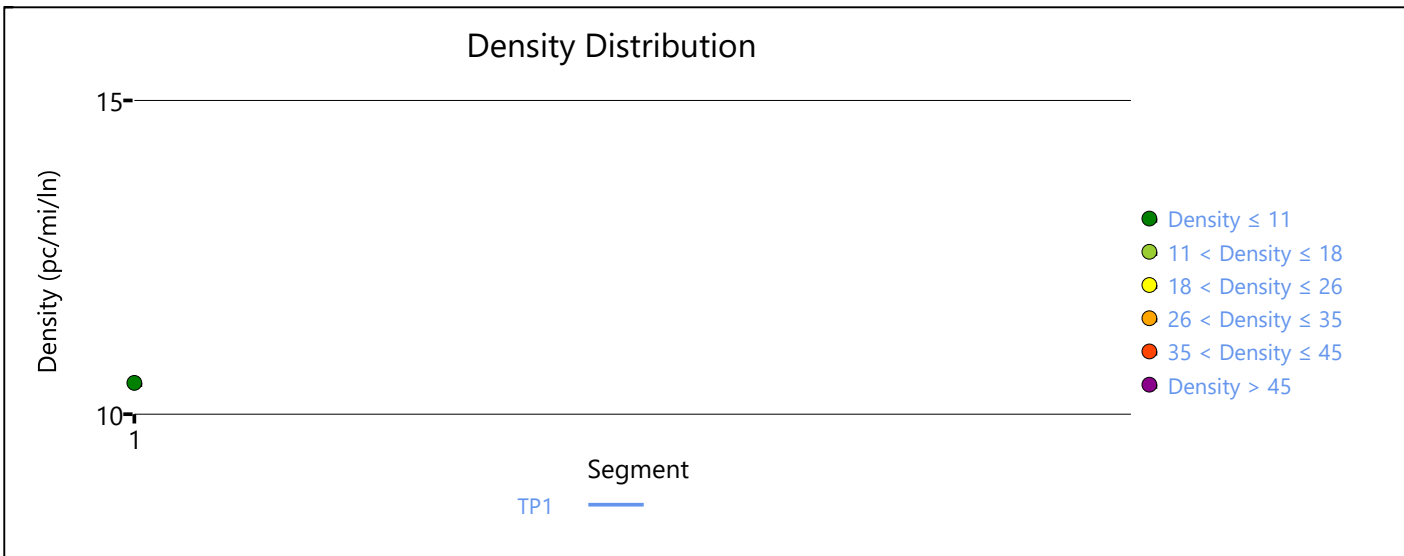
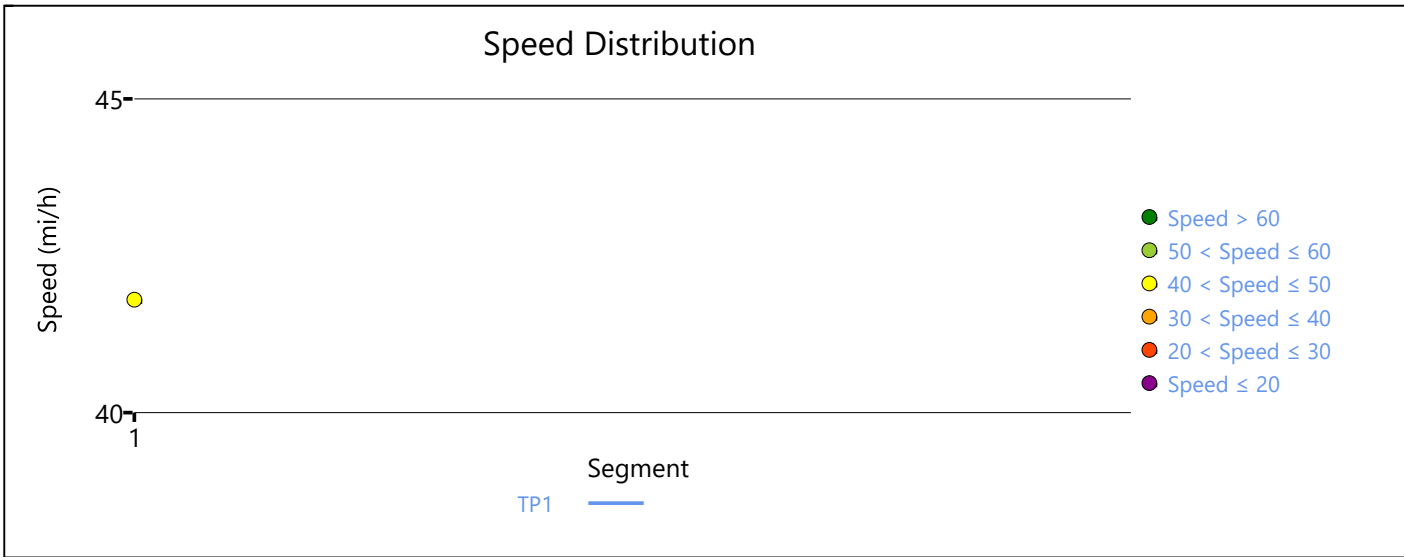
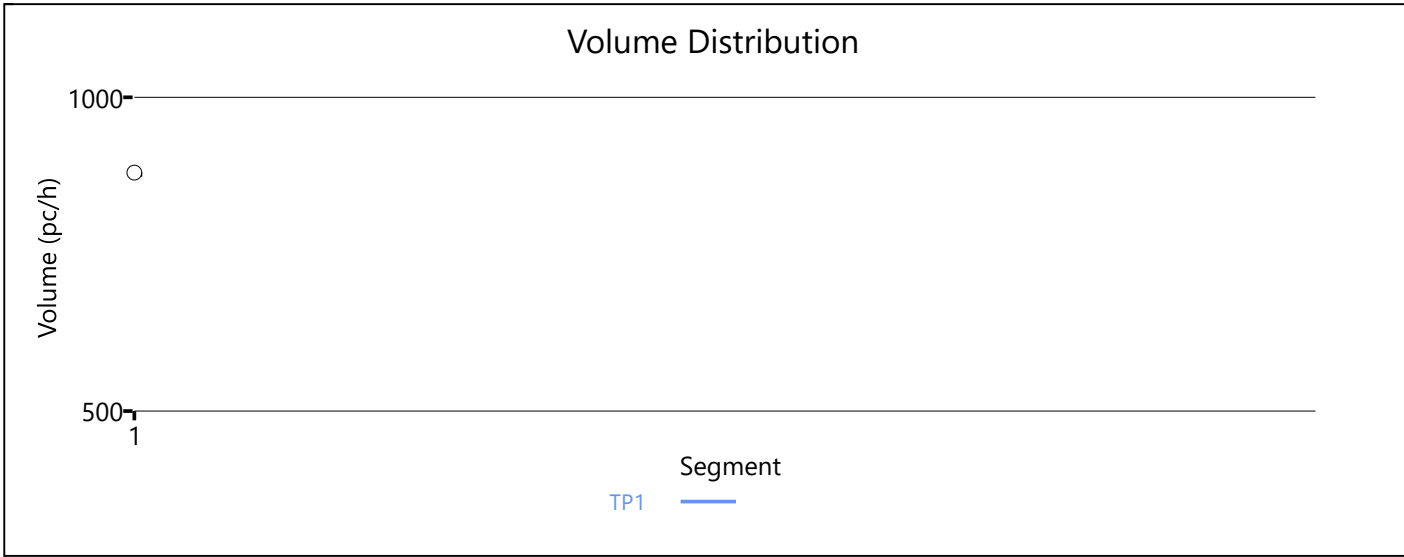
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	10.5	8.4	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	8.4
Average Travel Time, min	1.40	Density, pc/mi/ln	10.5

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Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.773	815	4400	0.19	41.8	9.8	A

Facility Analysis Results

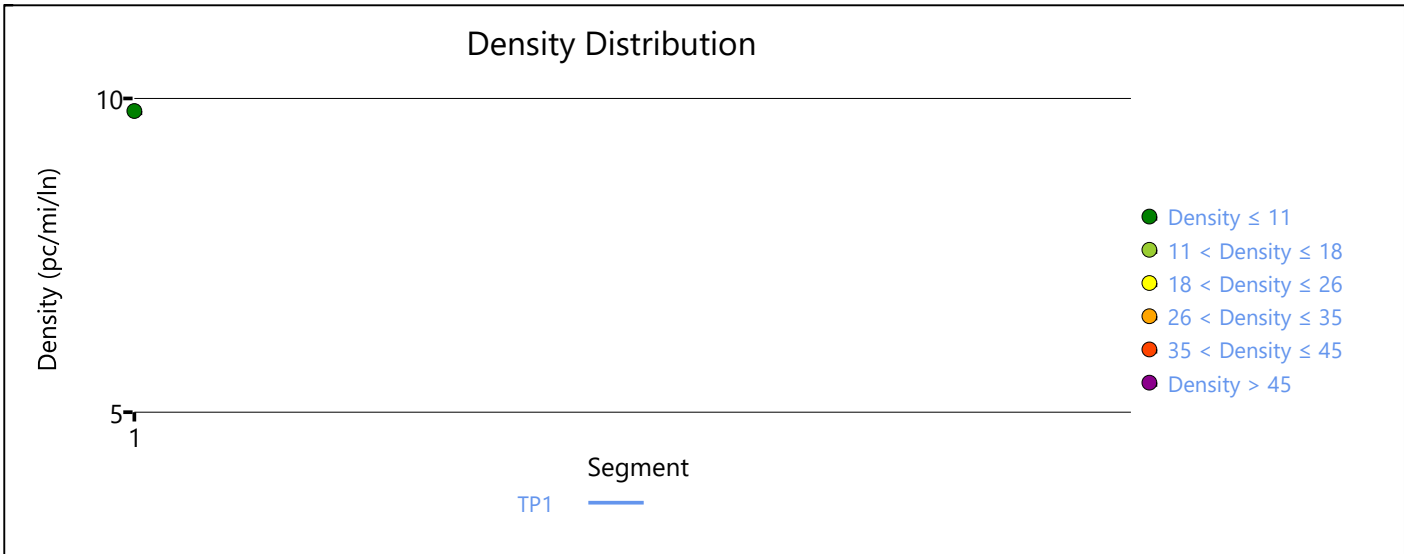
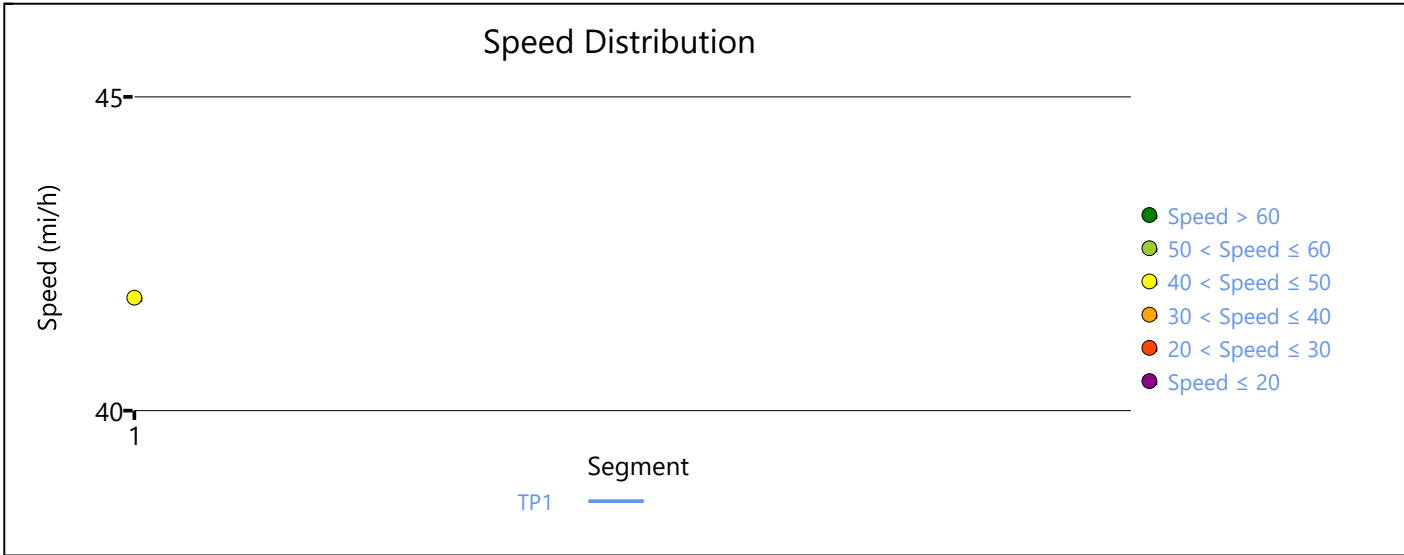
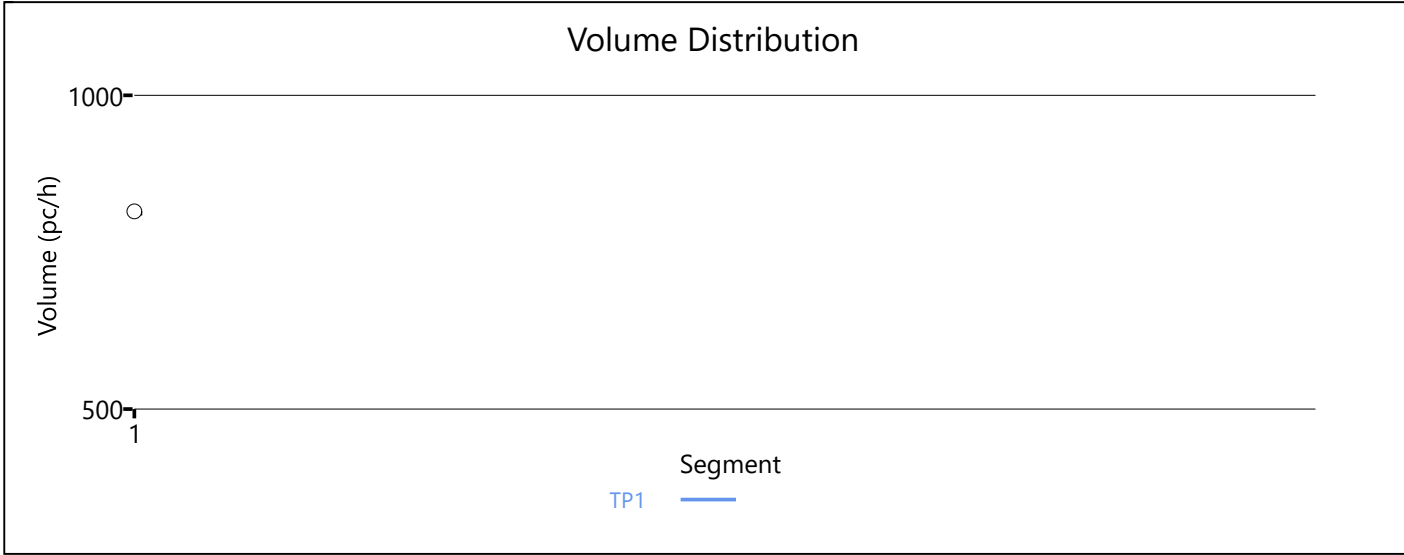
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	9.8	7.6	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	7.6
Average Travel Time, min	1.40	Density, pc/mi/ln	9.8

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Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.896	939	4400	0.21	41.8	11.2	B

Facility Analysis Results

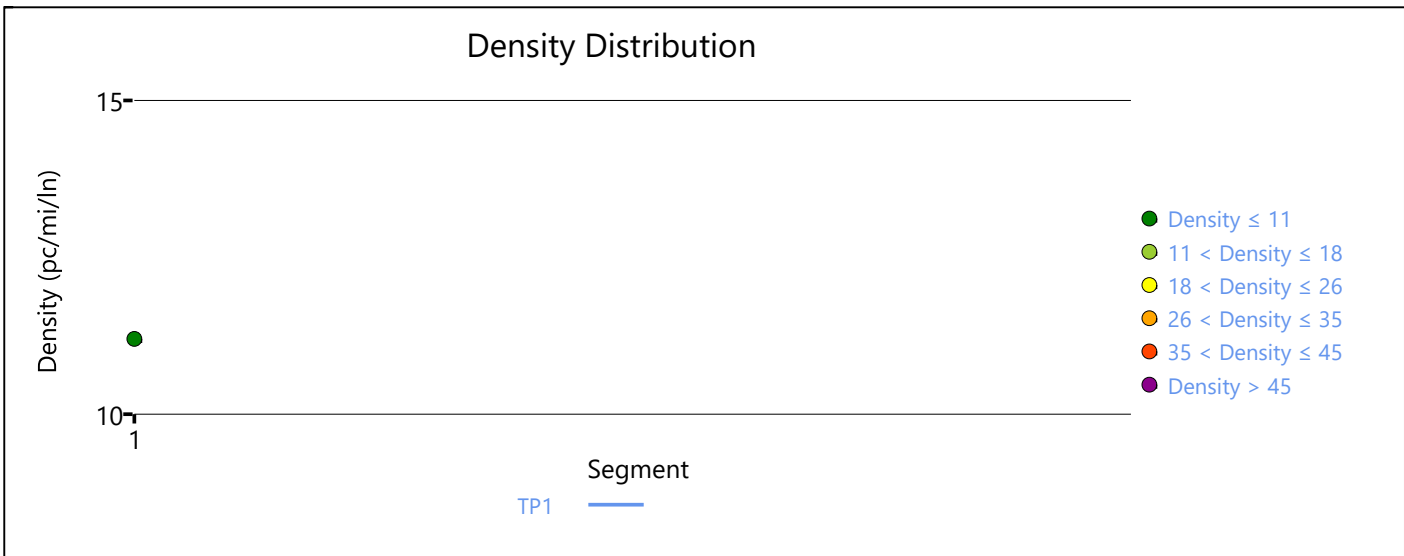
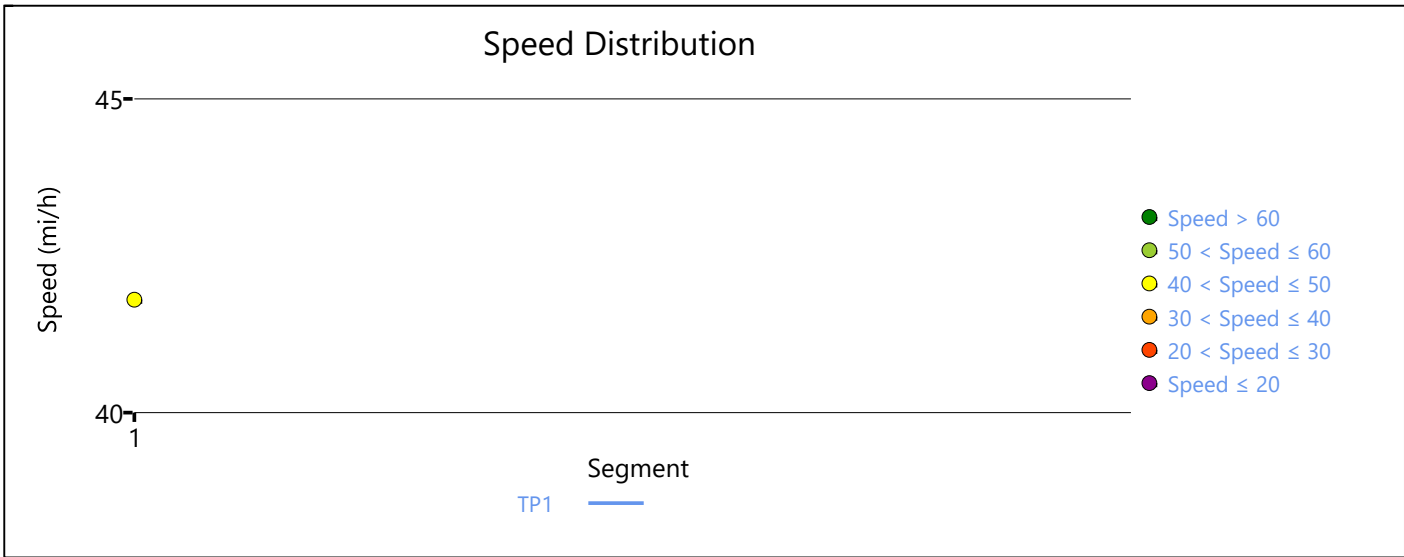
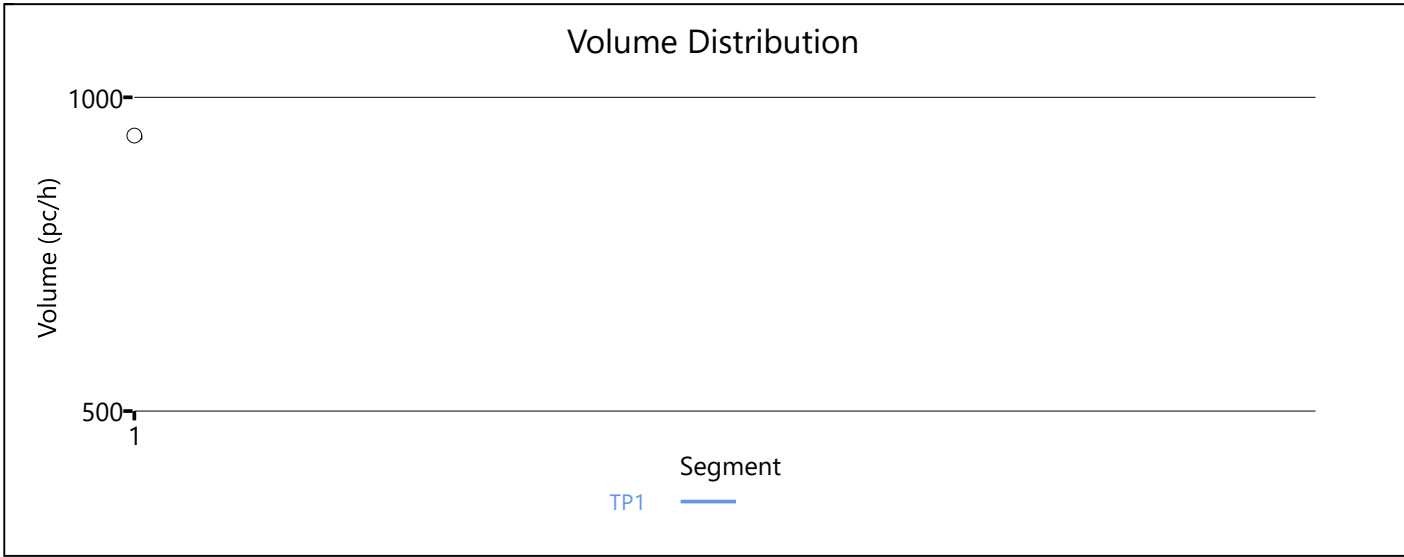
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	11.2	10.0	1.40	B

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	10.0
Average Travel Time, min	1.40	Density, pc/mi/ln	11.2

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Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.812	271	4400	0.06	41.8	3.3	A

Facility Analysis Results

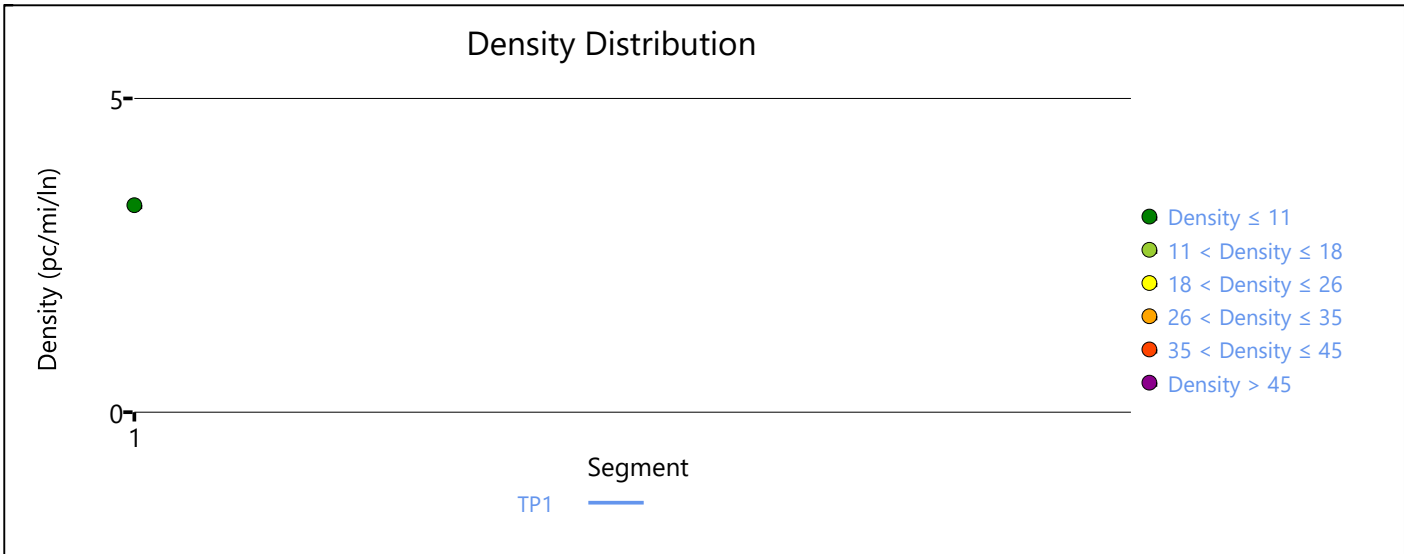
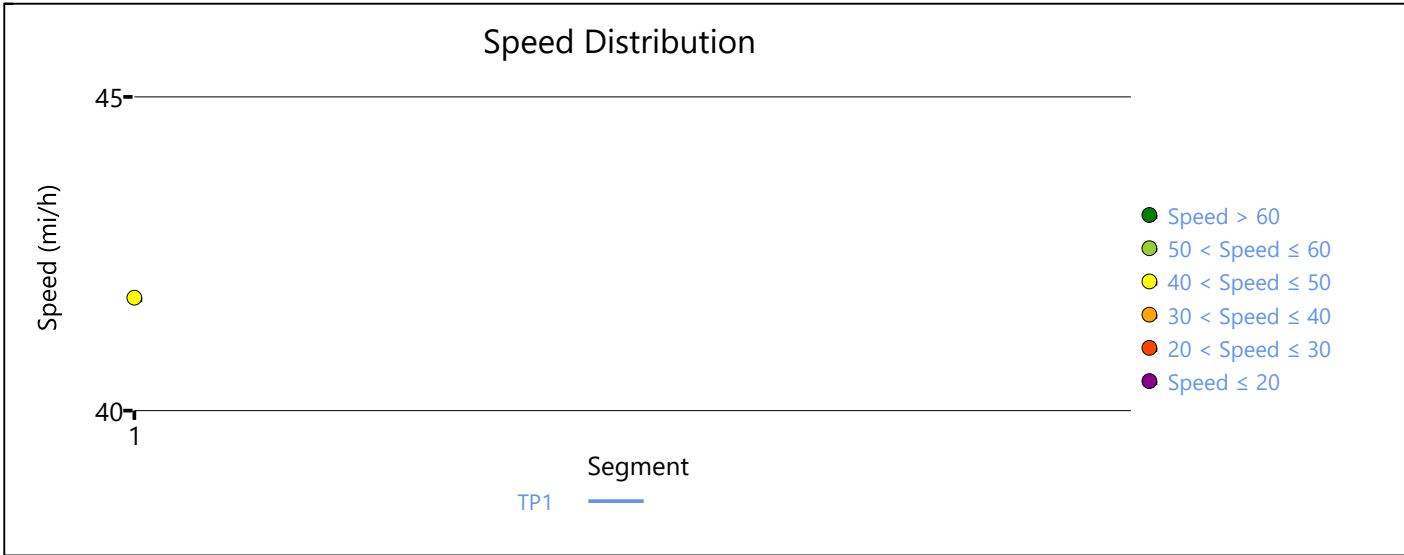
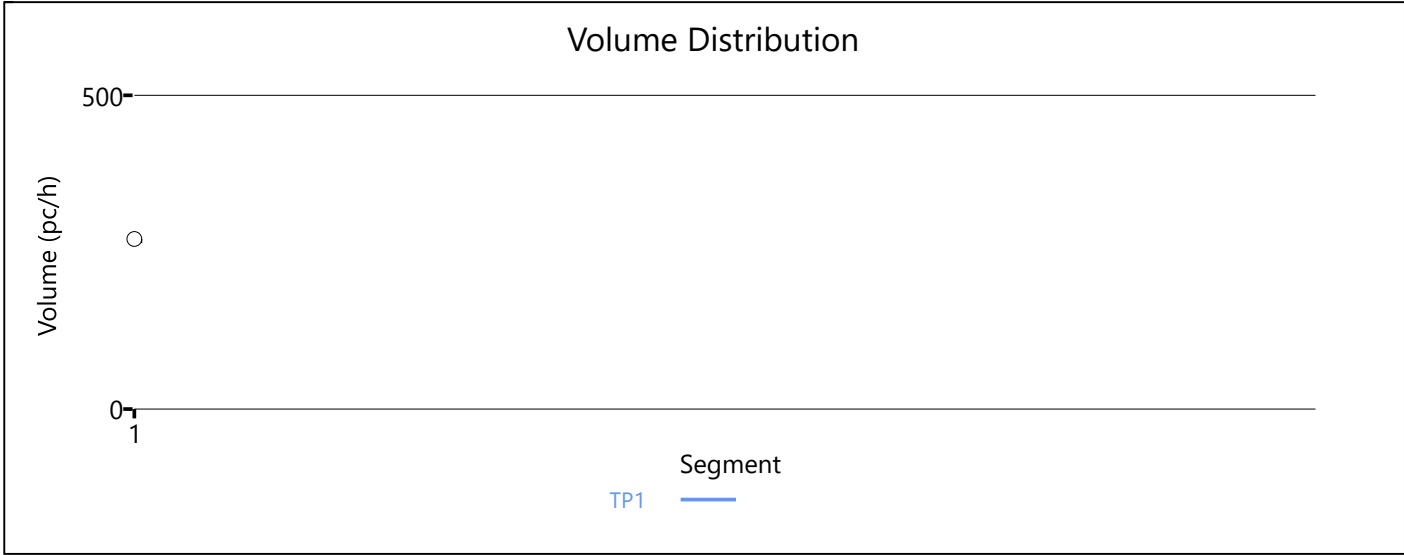
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	3.3	2.7	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	2.7
Average Travel Time, min	1.40	Density, pc/mi/ln	3.3

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.917	5744	8800	0.65	41.8	34.4	D

Facility Analysis Results

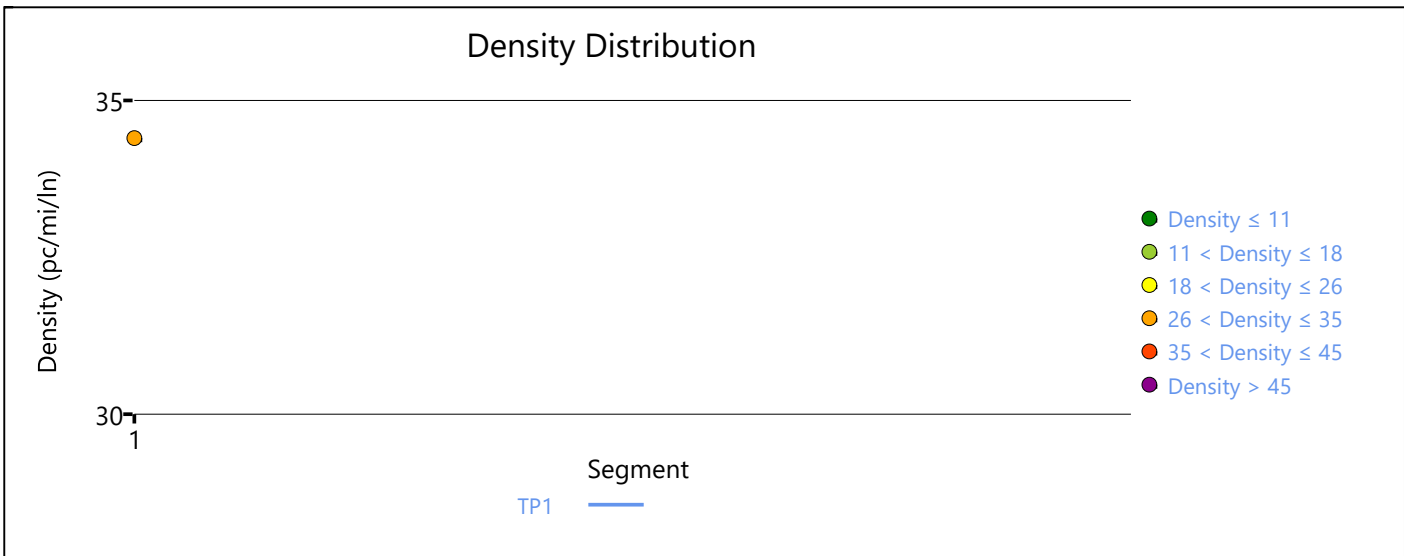
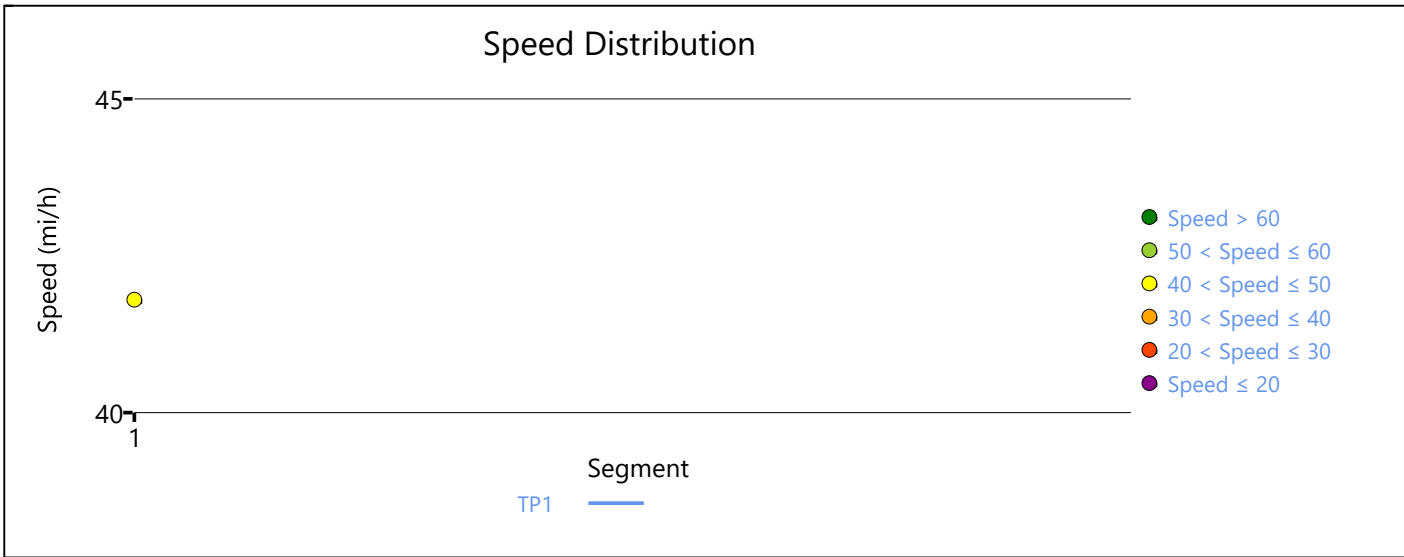
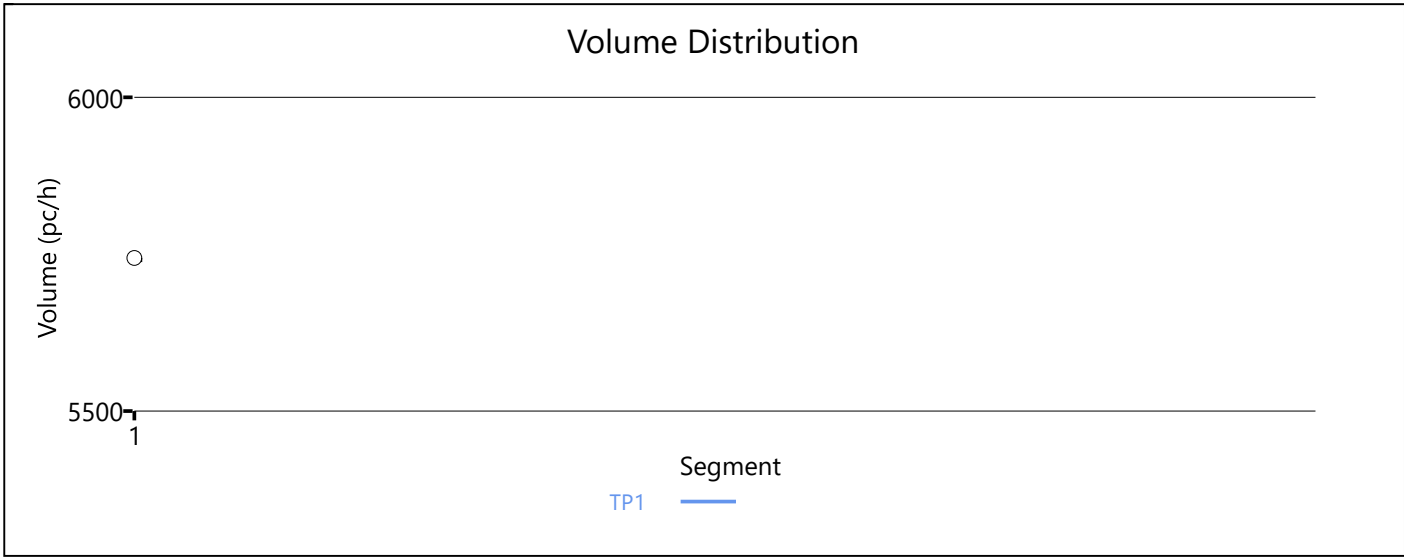
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	34.4	31.5	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	31.5
Average Travel Time, min	1.00	Density, pc/mi/ln	34.4

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.883	4132	8800	0.47	41.8	24.7	C

Facility Analysis Results

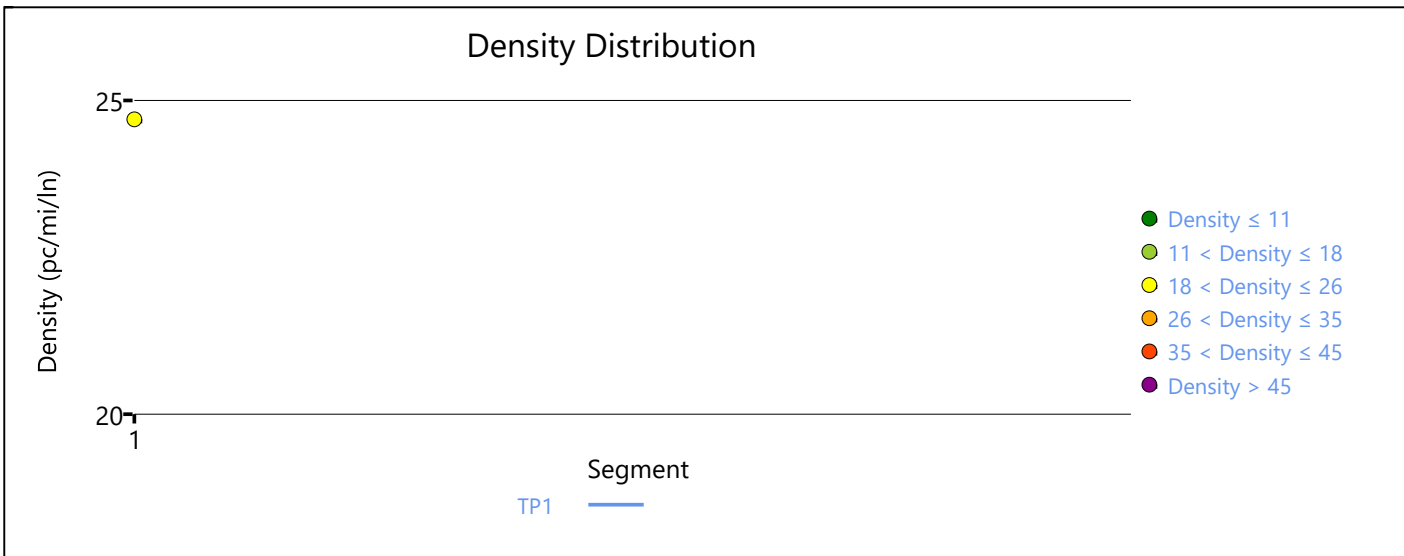
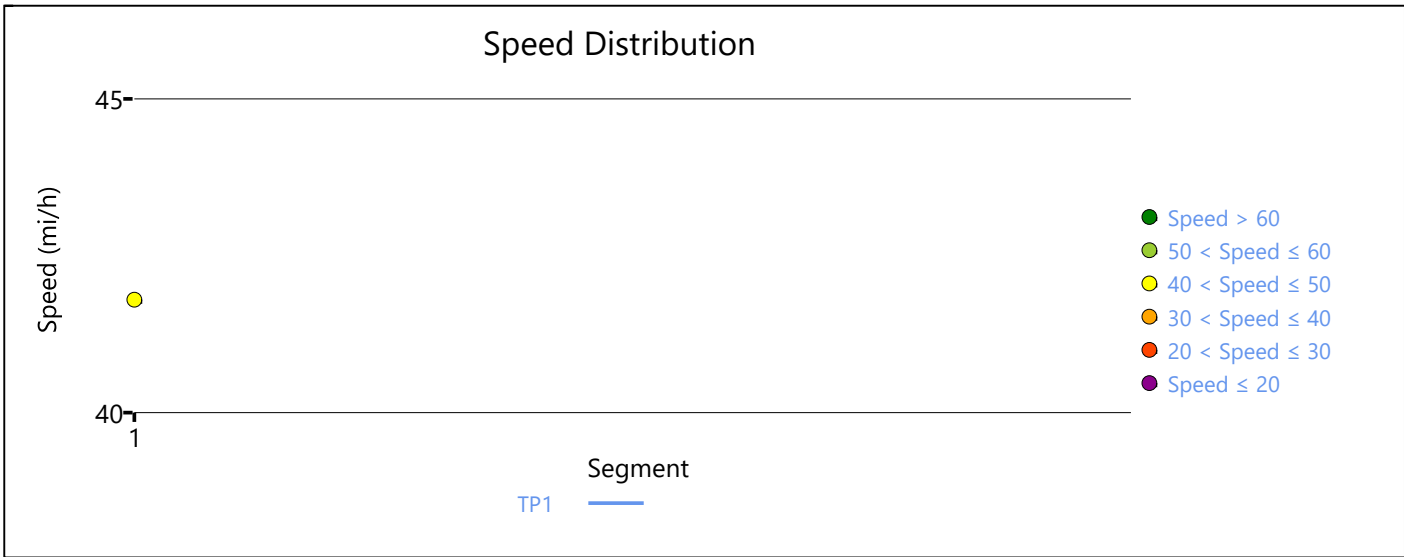
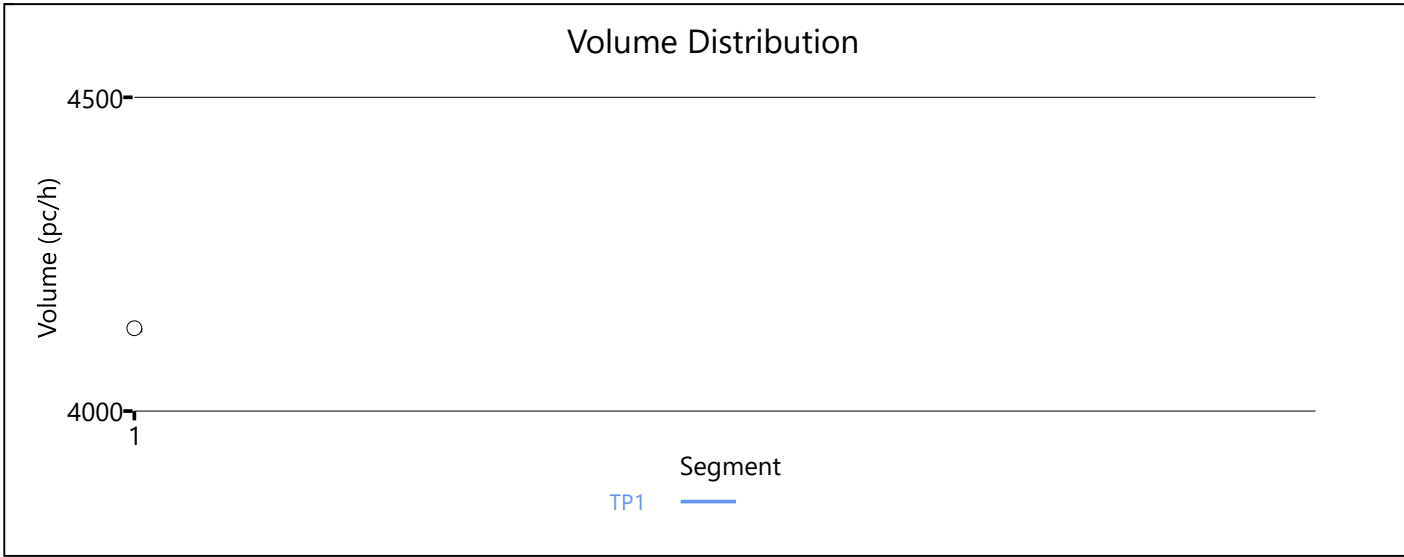
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	24.7	21.8	1.00	C

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	21.8
Average Travel Time, min	1.00	Density, pc/mi/ln	24.7

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.949	4662	8800	0.53	41.8	27.9	D

Facility Analysis Results

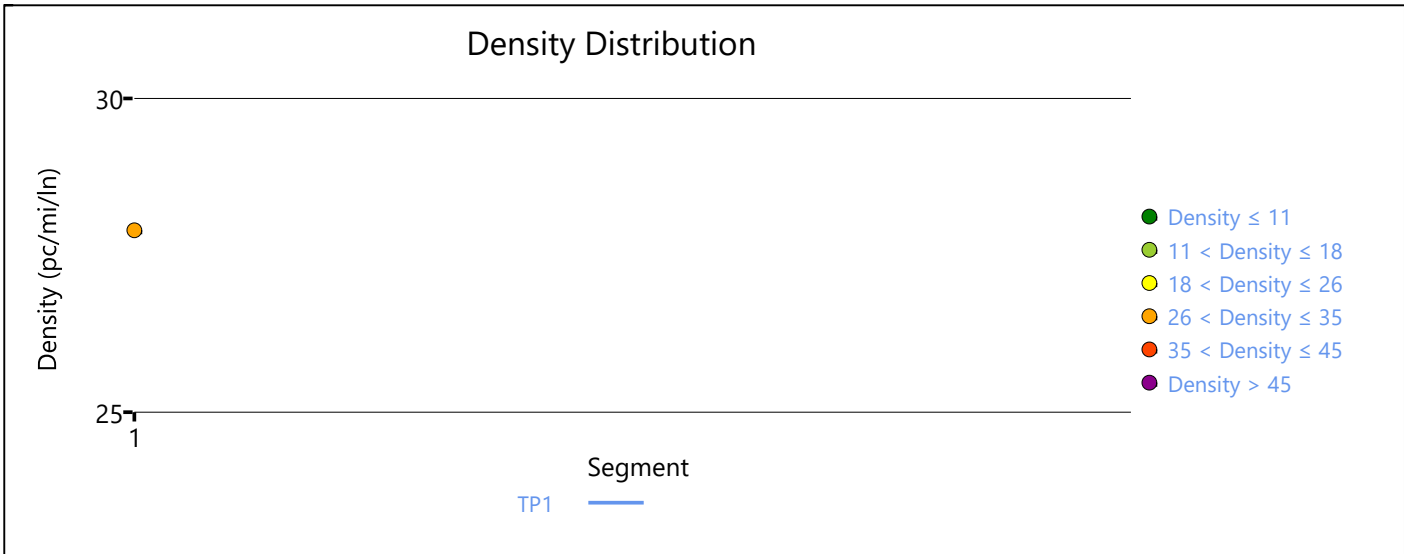
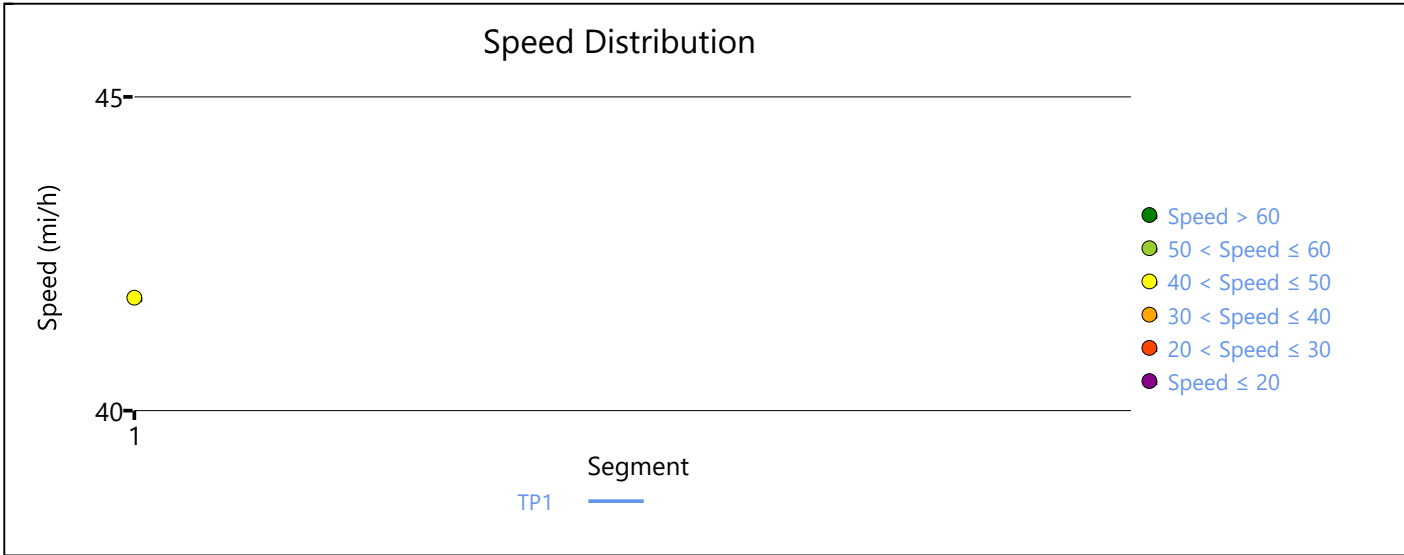
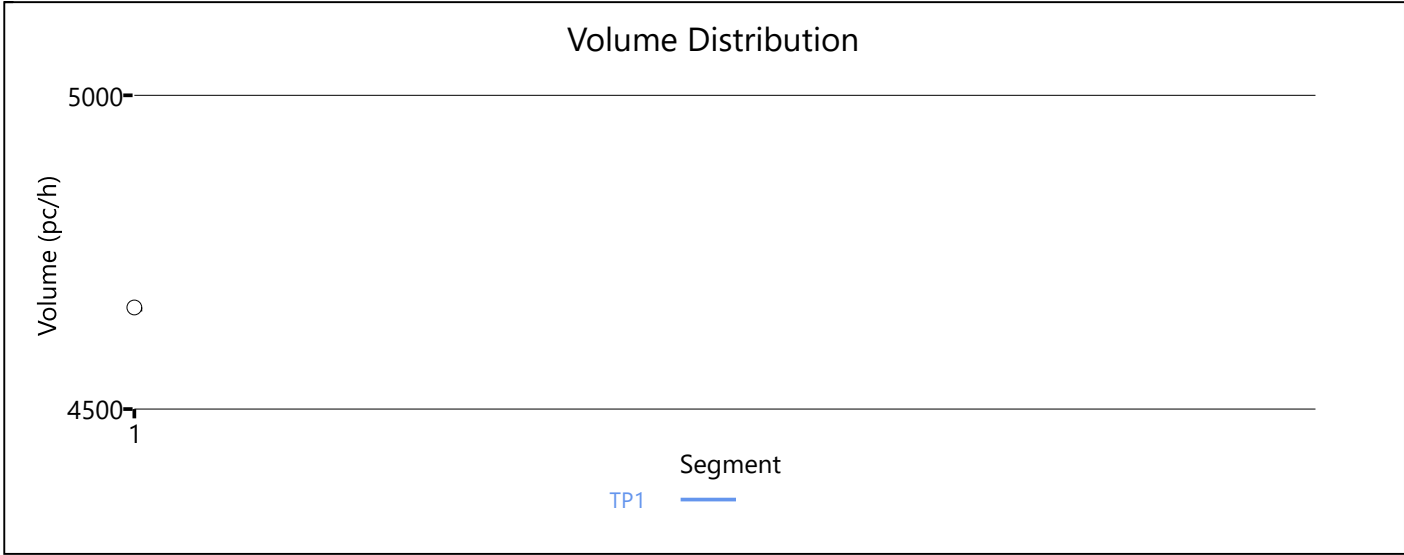
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	27.9	26.5	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	26.5
Average Travel Time, min	1.00	Density, pc/mi/ln	27.9

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.896	989	8800	0.11	41.8	5.9	A

Facility Analysis Results

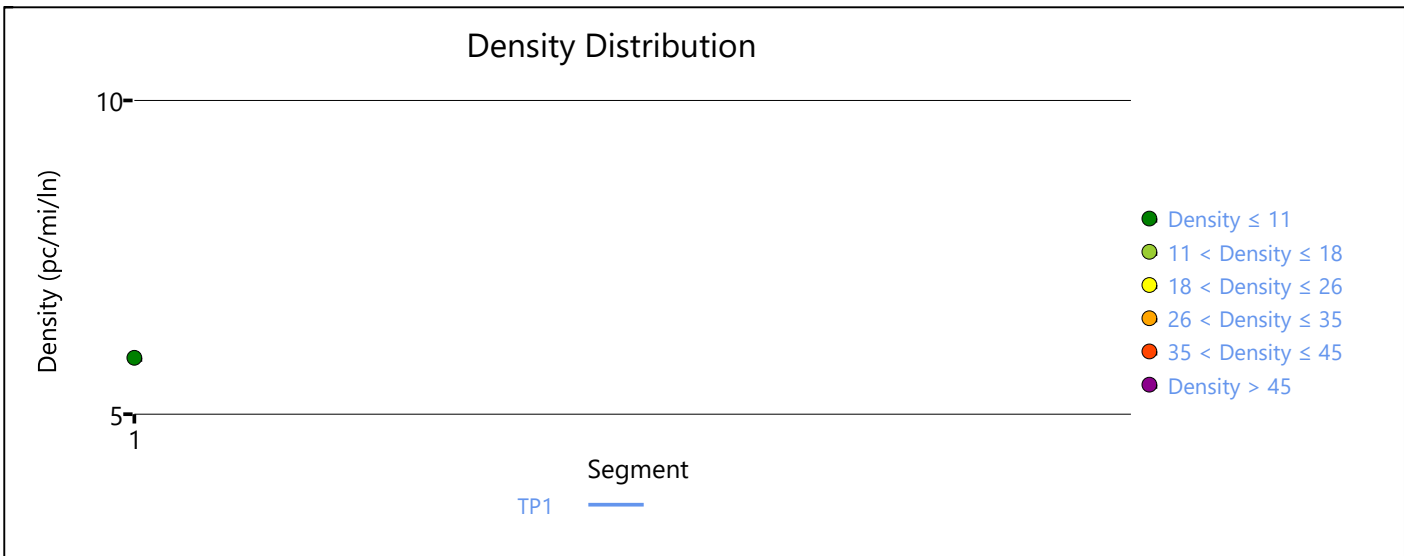
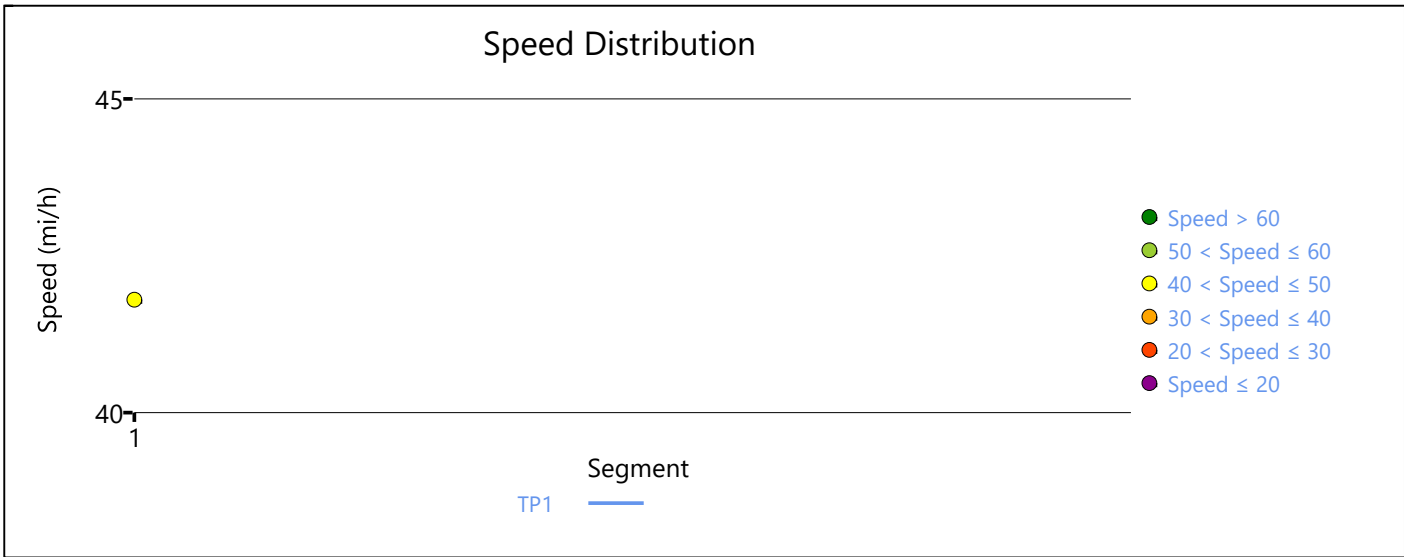
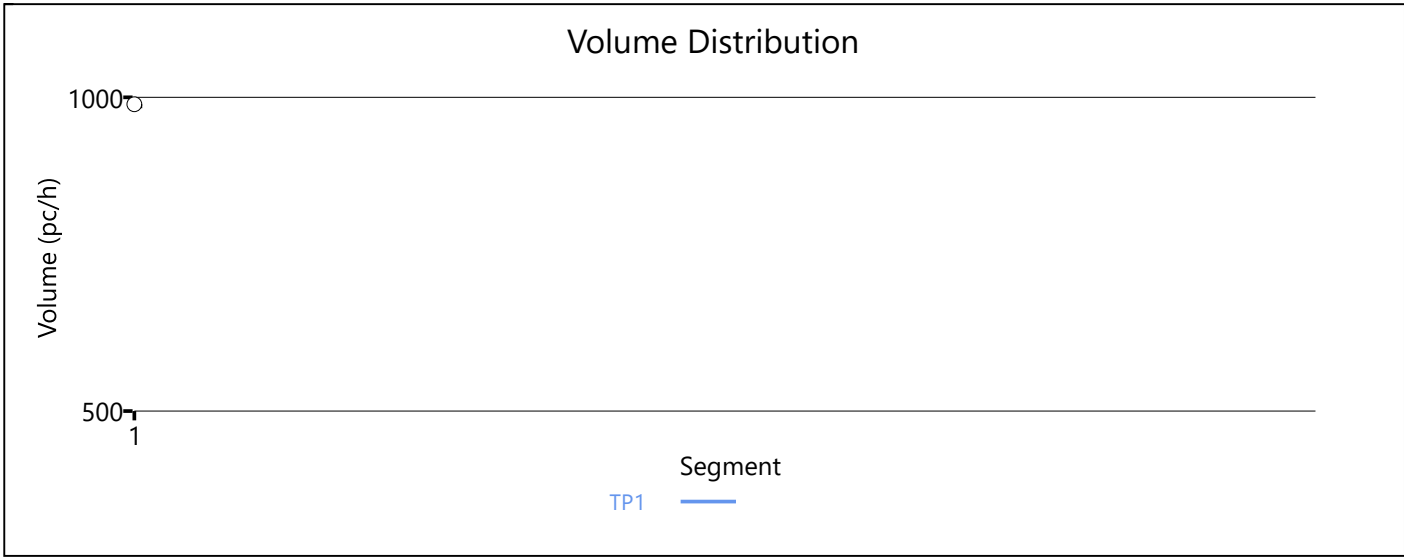
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	5.9	5.3	1.00	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	5.3
Average Travel Time, min	1.00	Density, pc/mi/ln	5.9

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Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.846	1337	6654	0.20	51.8	8.6	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.846	0.829	1337	808	6750	4200	0.20	0.19	54.9	55.0	8.1	8.1	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.873	528	6654	0.08	51.8	3.4	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.8	6.6	5.6	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	52.8	Density, veh/mi/ln	5.6
Average Travel Time, min	1.50	Density, pc/mi/ln	6.6

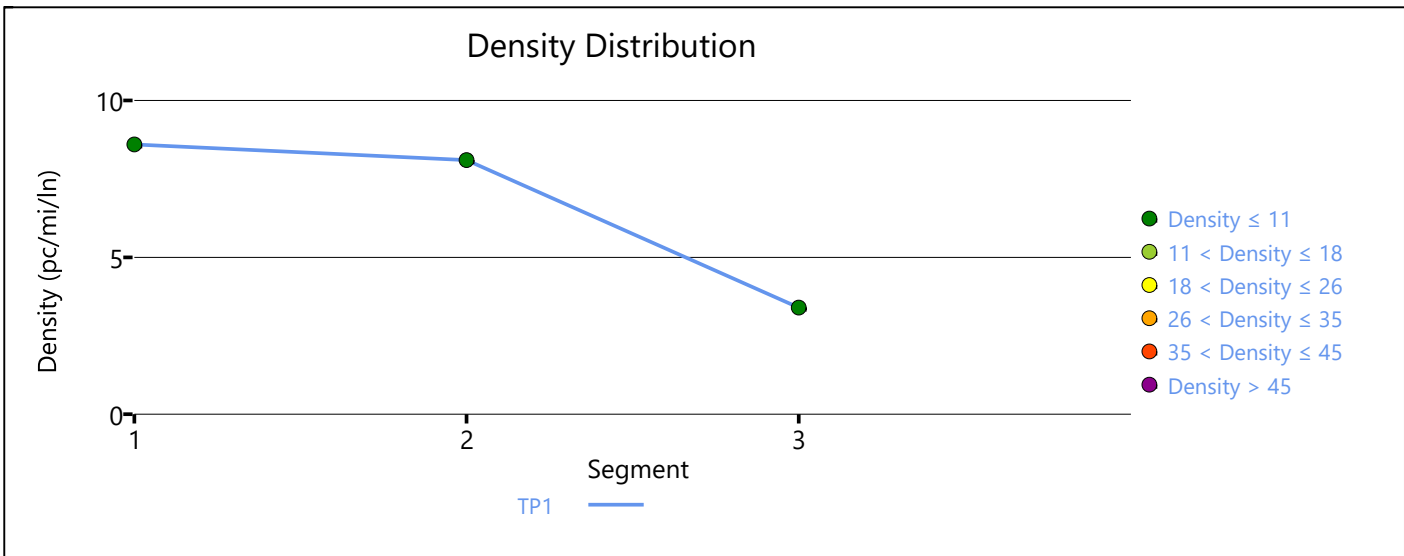
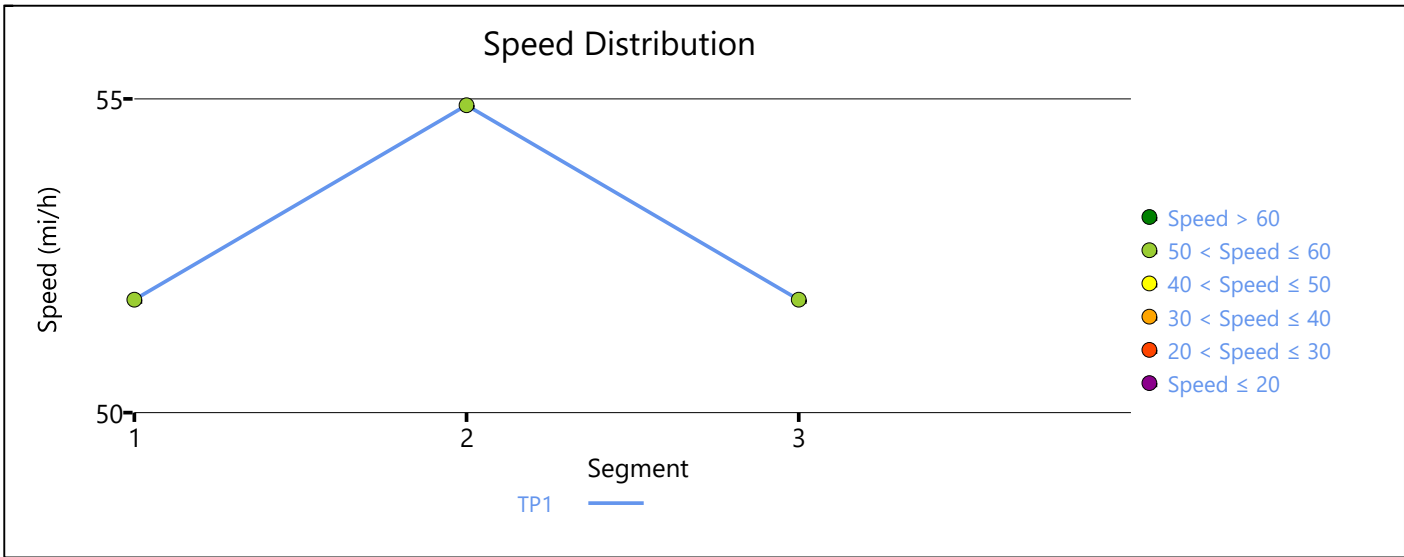
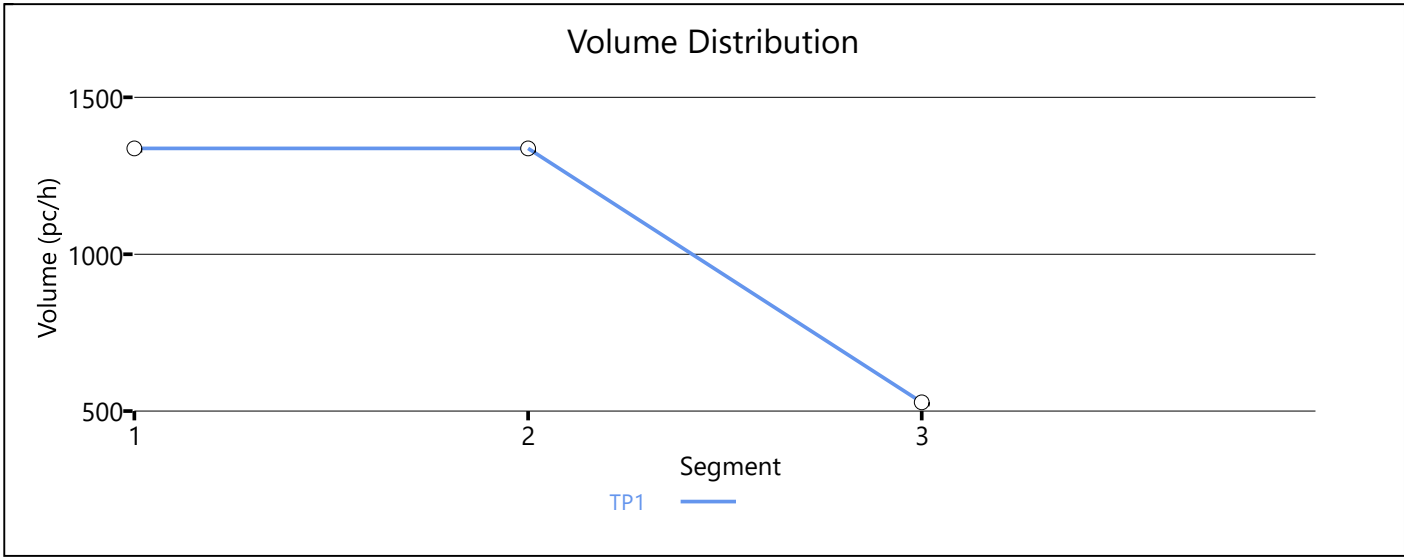
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.810	835	6654	0.13	51.8	5.4	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.810	0.817	835	776	6750	4200	0.12	0.18	54.9	55.0	5.1	5.1	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.715	60	6654	0.01	51.8	0.4	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	3.5	2.8	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	2.8
Average Travel Time, min	1.50	Density, pc/mi/ln	3.5

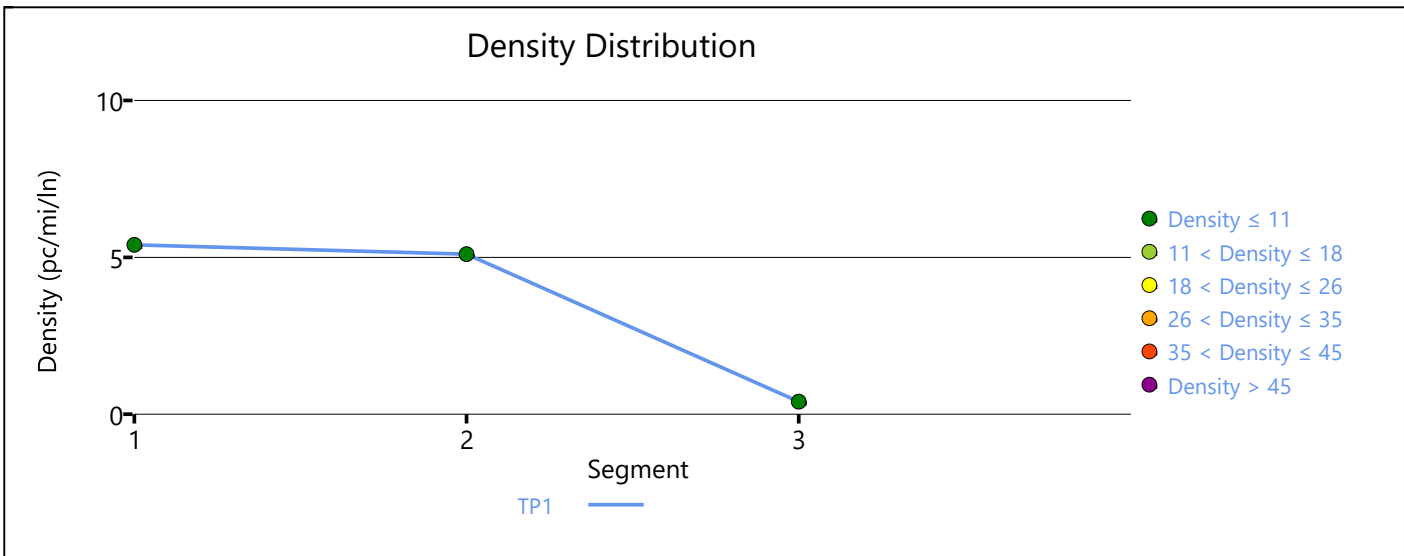
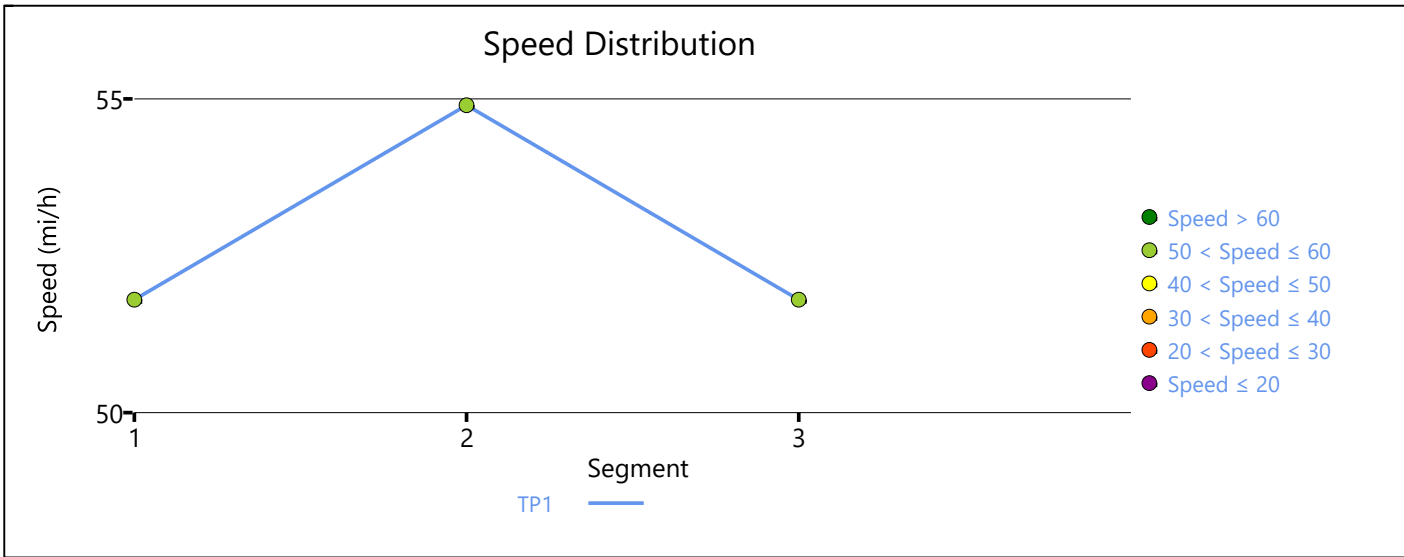
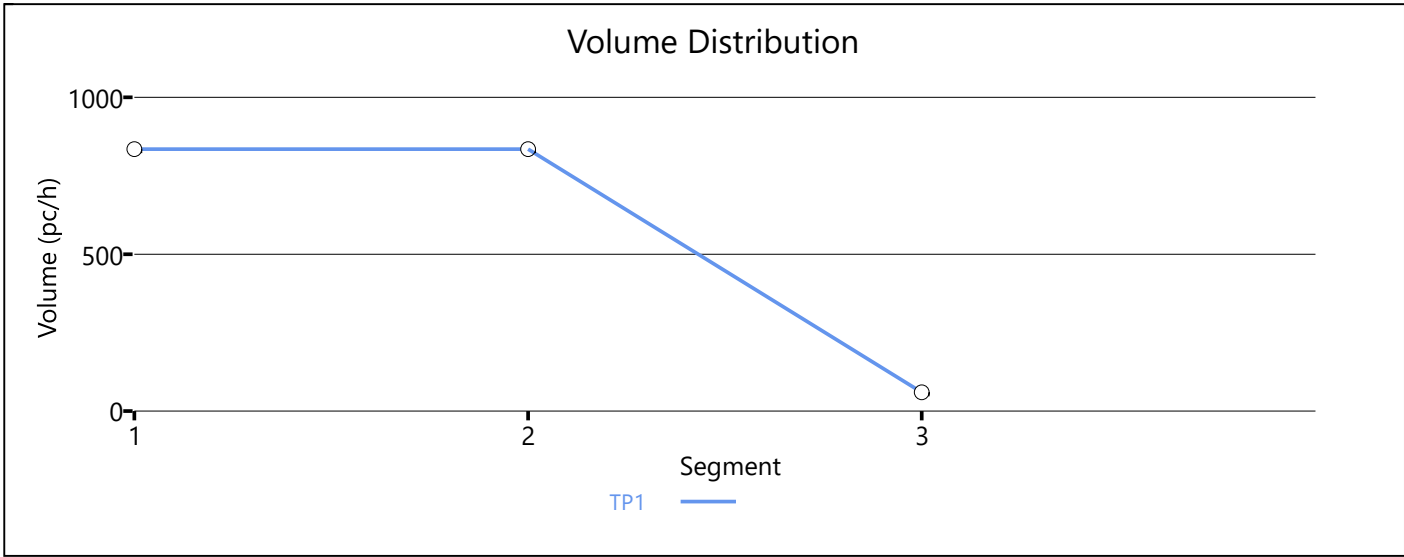
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.921	925	6654	0.14	51.8	5.9	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.921	0.926	925	874	6750	4200	0.14	0.21	54.9	55.0	5.6	5.6	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.822	52	6654	0.01	51.8	0.3	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	3.8	3.4	1.50	A

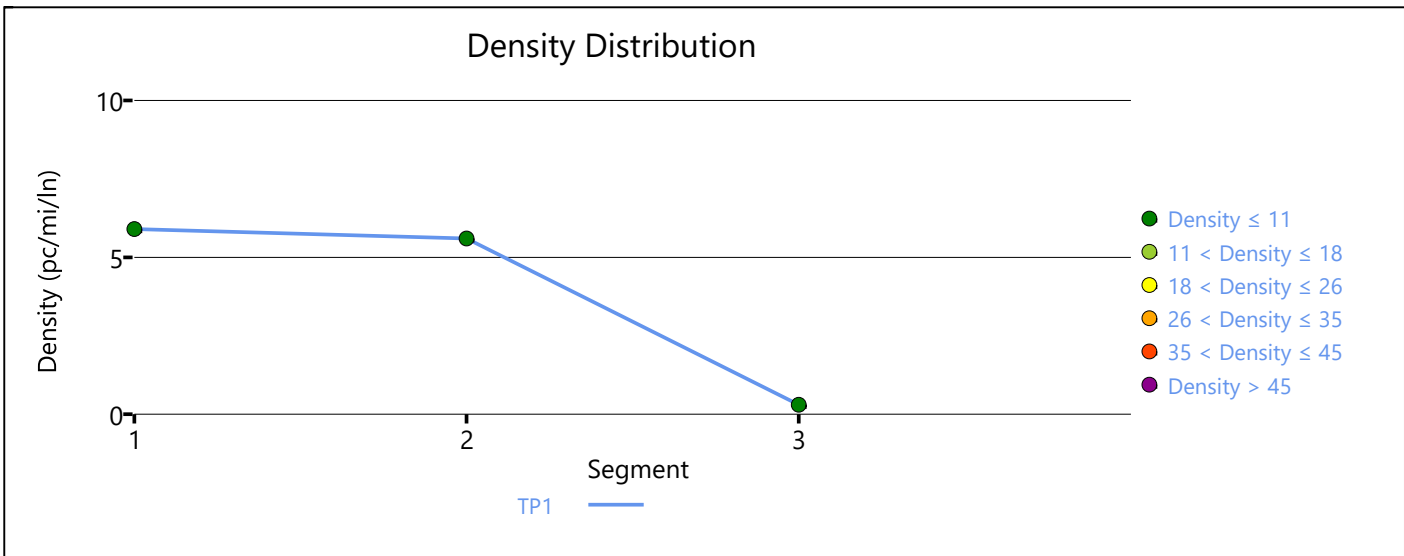
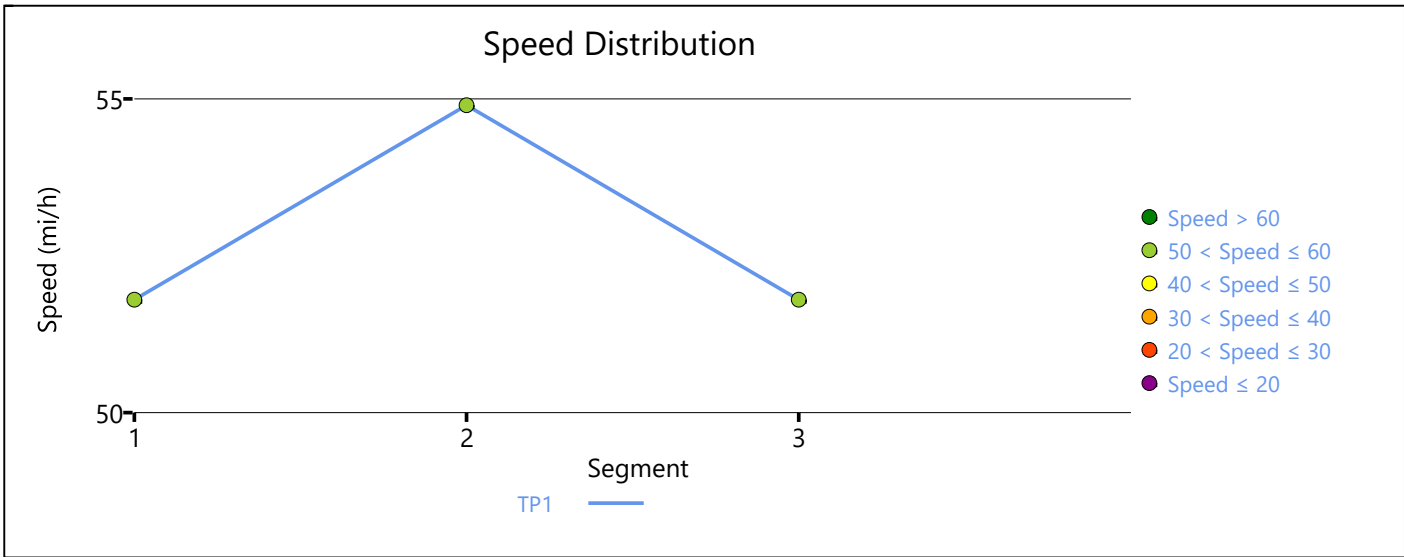
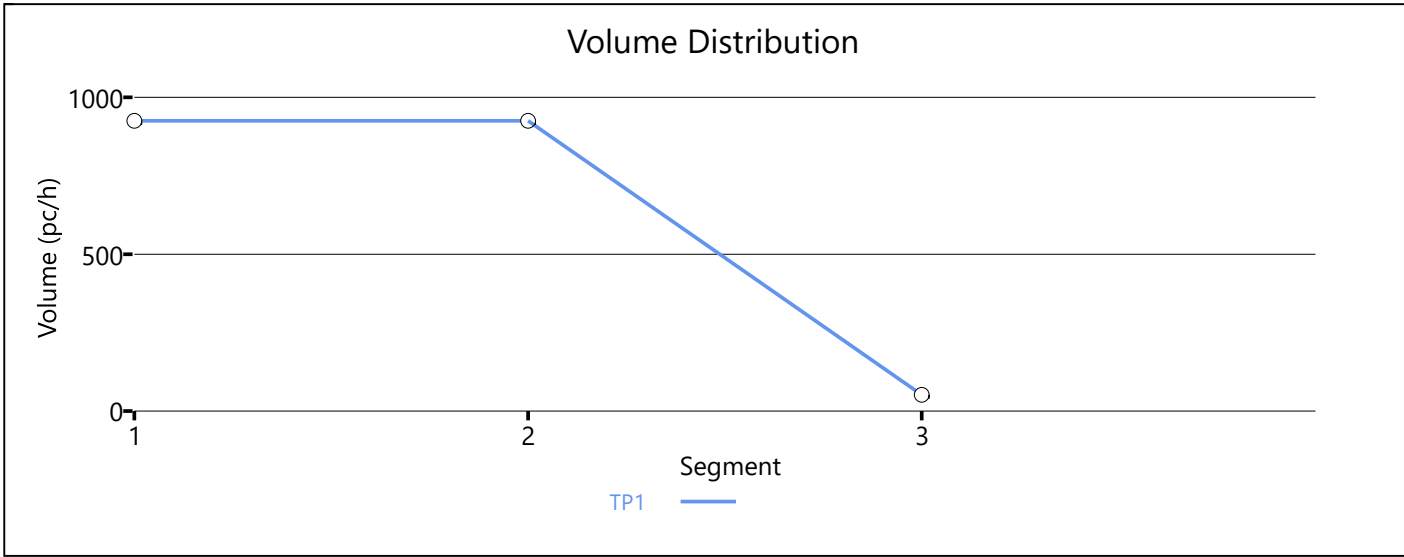
Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	3.4
Average Travel Time, min	1.50	Density, pc/mi/ln	3.8

Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2	Length of accel/decel lane is longer than 1500 feet for segment 2.
Comments	



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	Existing
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.891	414	6654	0.06	51.8	2.7	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.891	0.899	414	395	6750	4200	0.06	0.09	54.9	55.0	2.5	2.5	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.734	19	6654	0.00	51.8	0.1	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	1.7	1.5	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	1.5
Average Travel Time, min	1.50	Density, pc/mi/ln	1.7

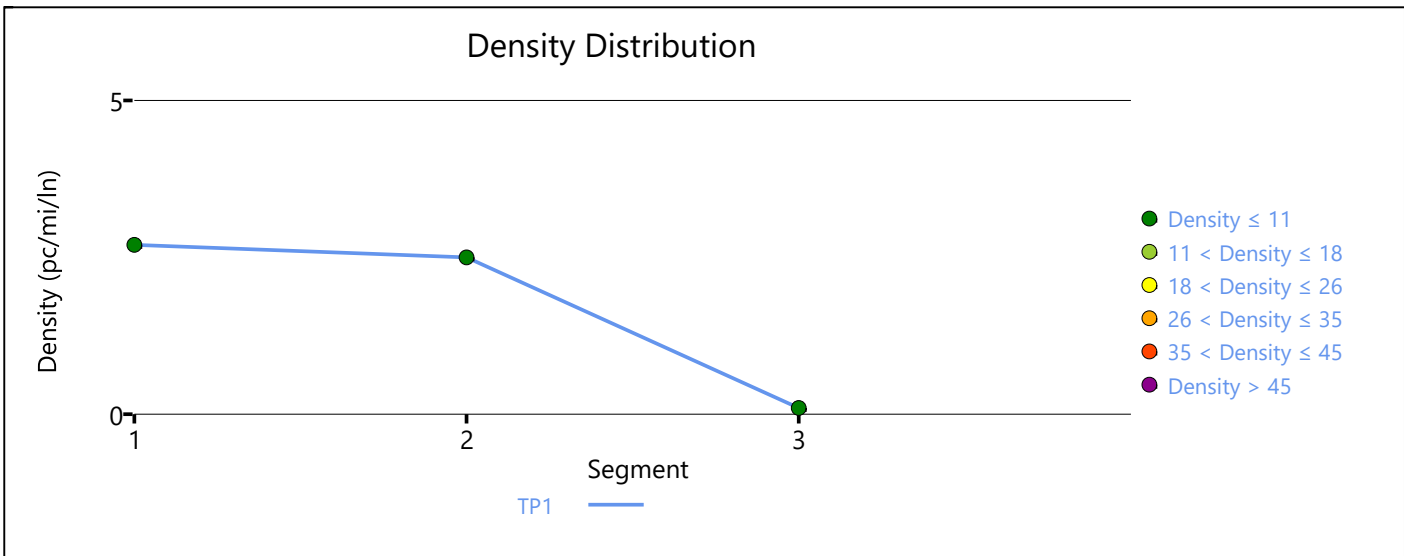
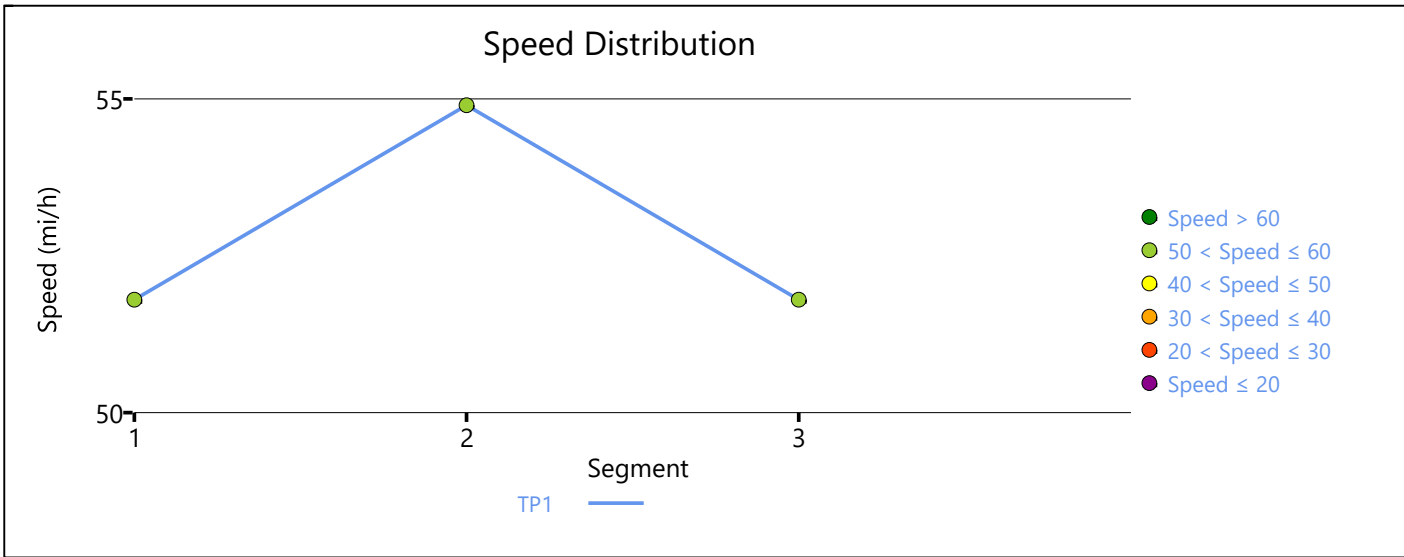
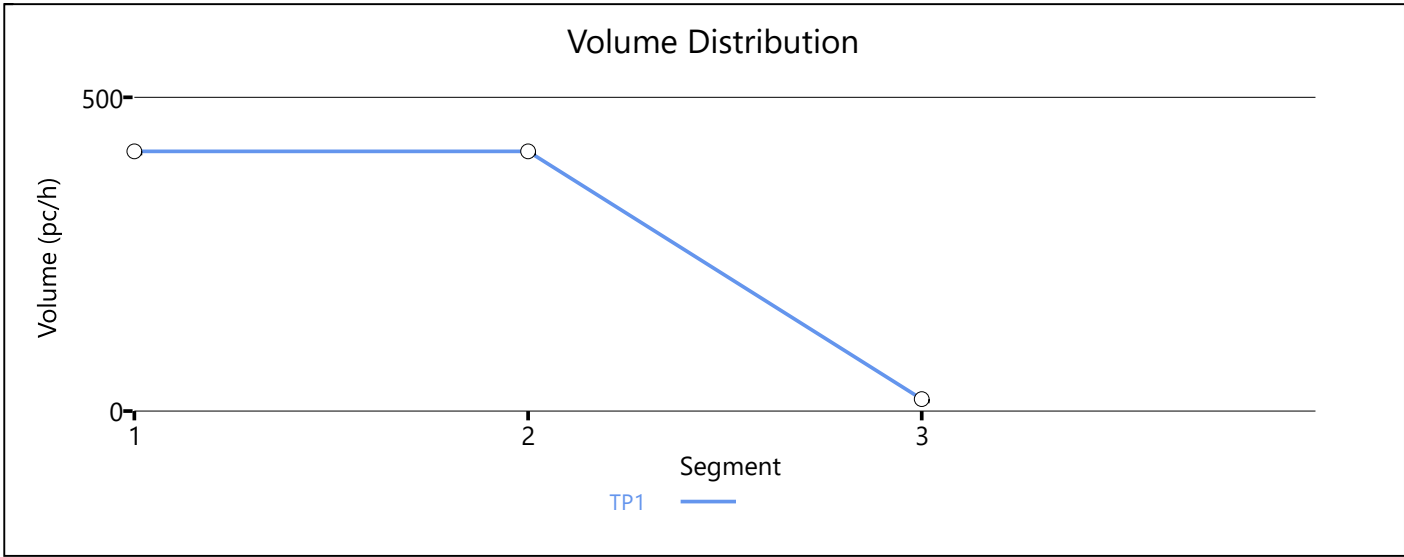
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.888	1307	4400	0.30	41.8	15.6	B

Facility Analysis Results

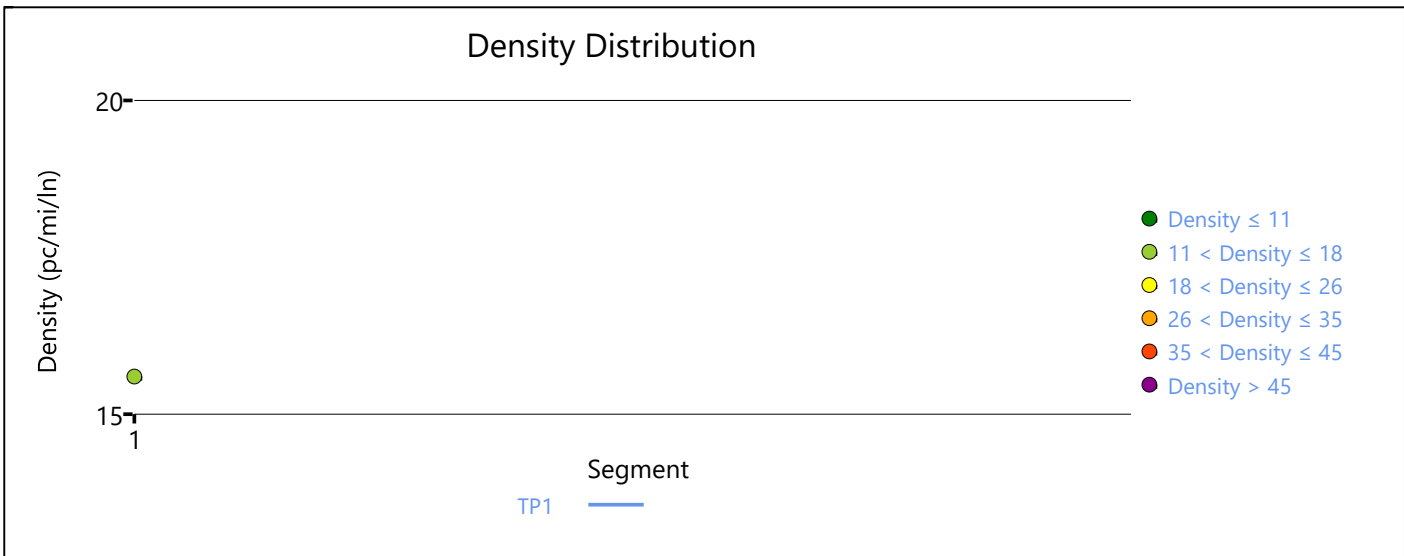
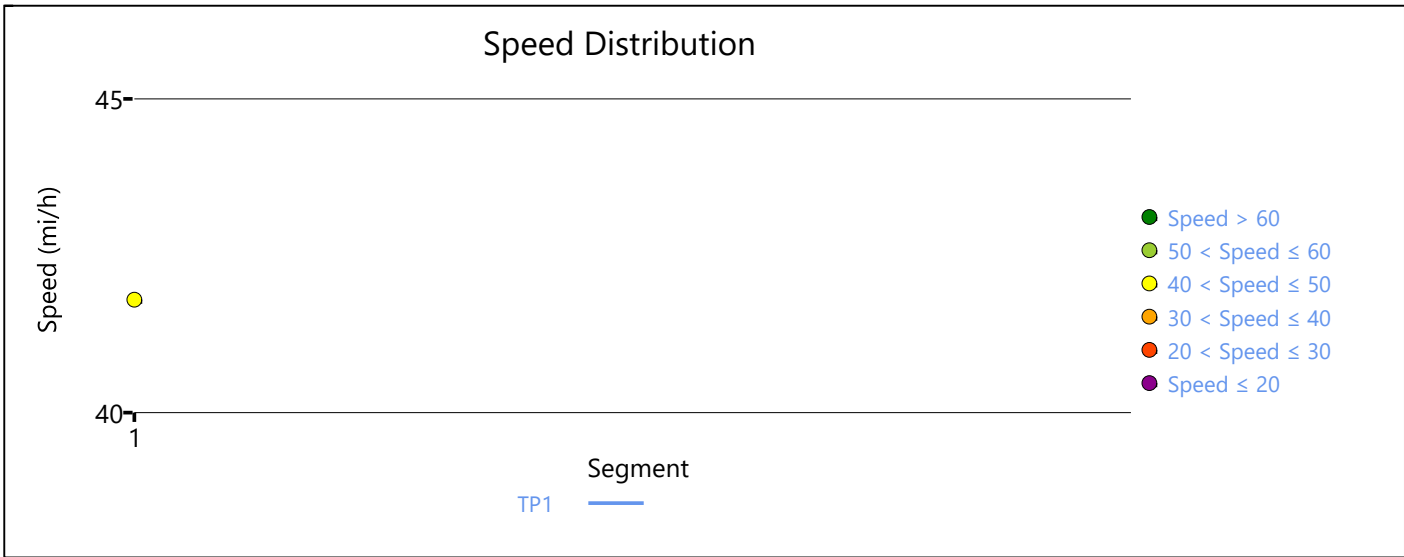
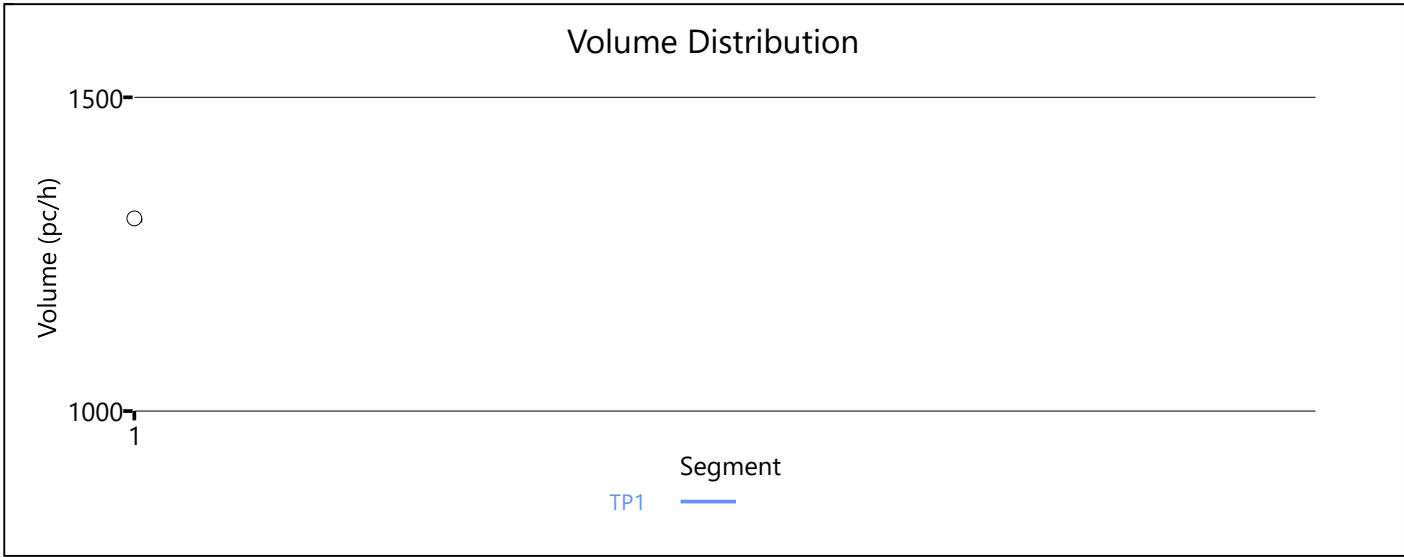
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	15.6	13.9	1.40	B

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	13.9
Average Travel Time, min	1.40	Density, pc/mi/ln	15.6

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.792	583	4400	0.13	41.8	7.0	A

Facility Analysis Results

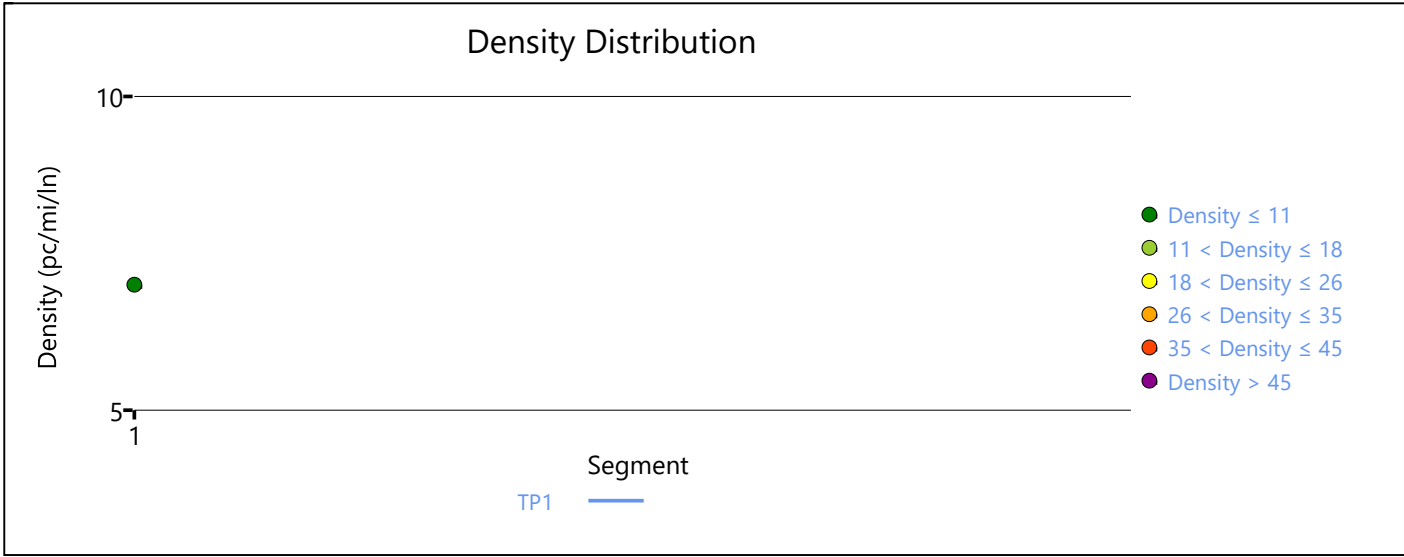
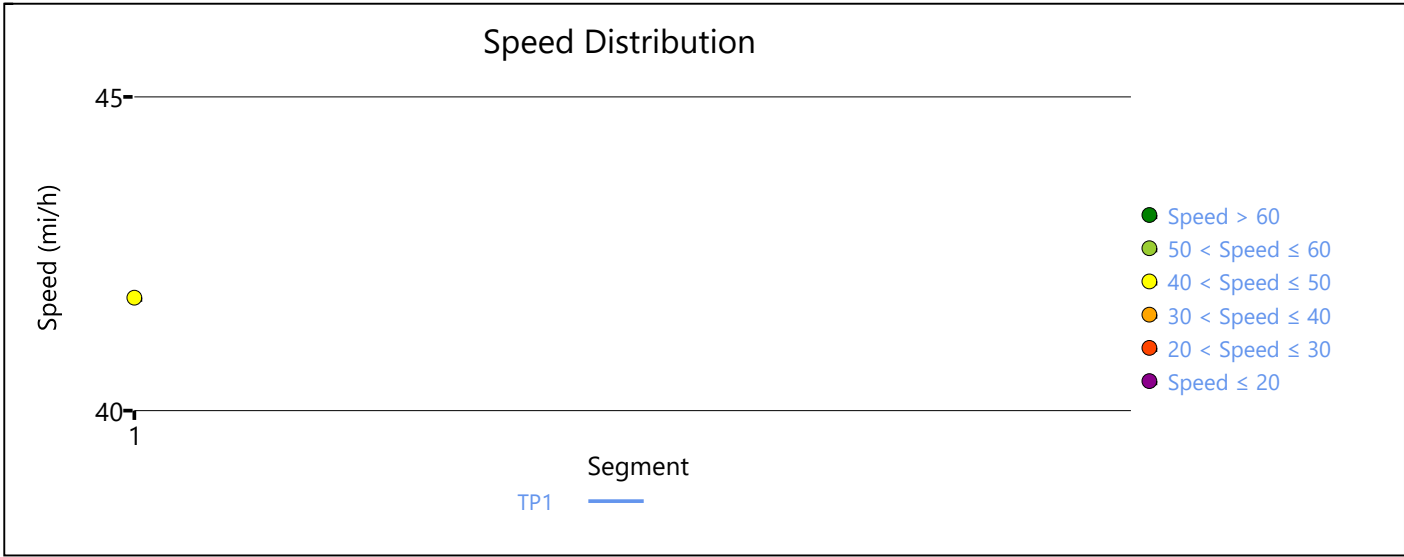
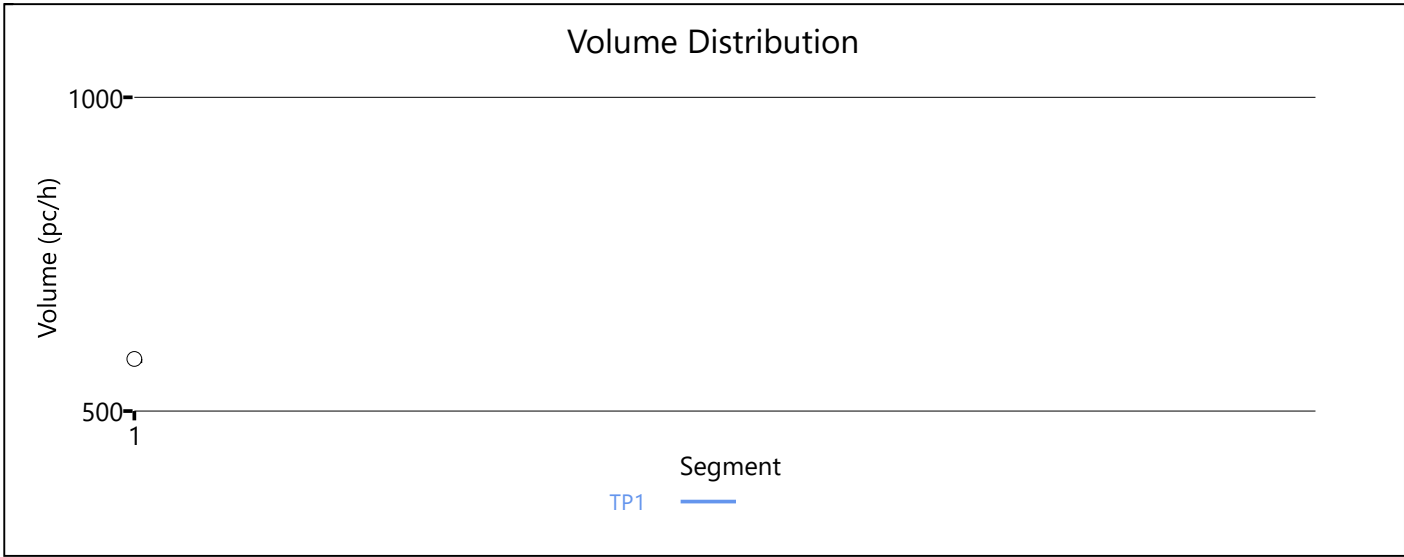
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	7.0	5.5	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	5.5
Average Travel Time, min	1.40	Density, pc/mi/ln	7.0

Messages

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.919	660	4400	0.15	41.8	7.9	A

Facility Analysis Results

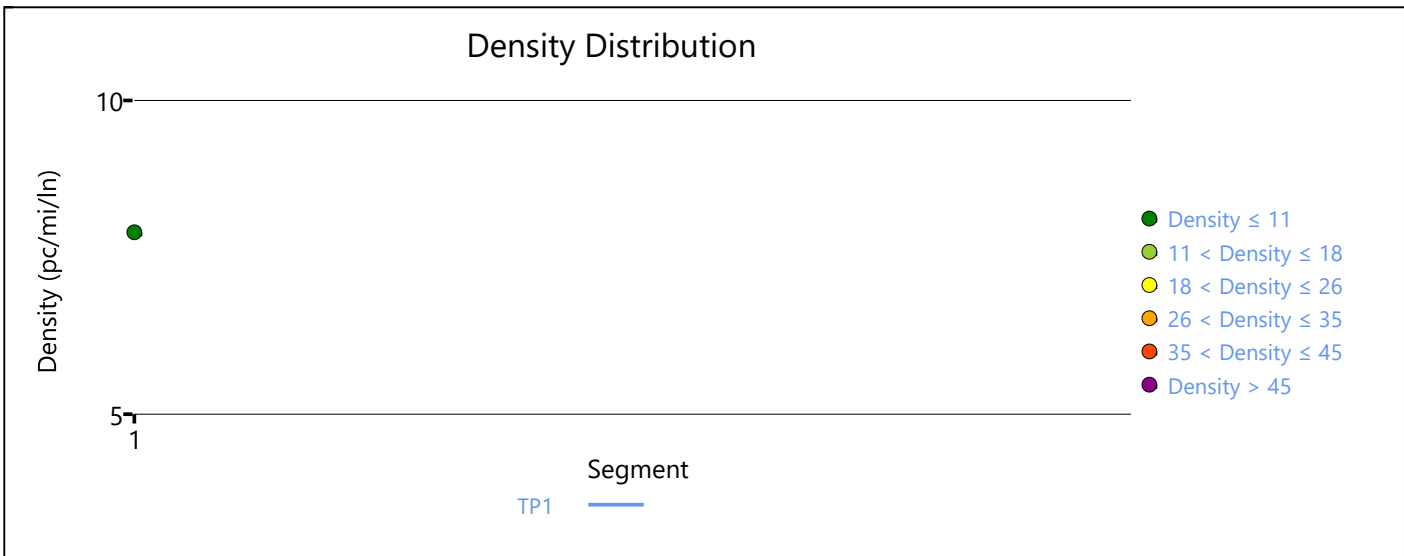
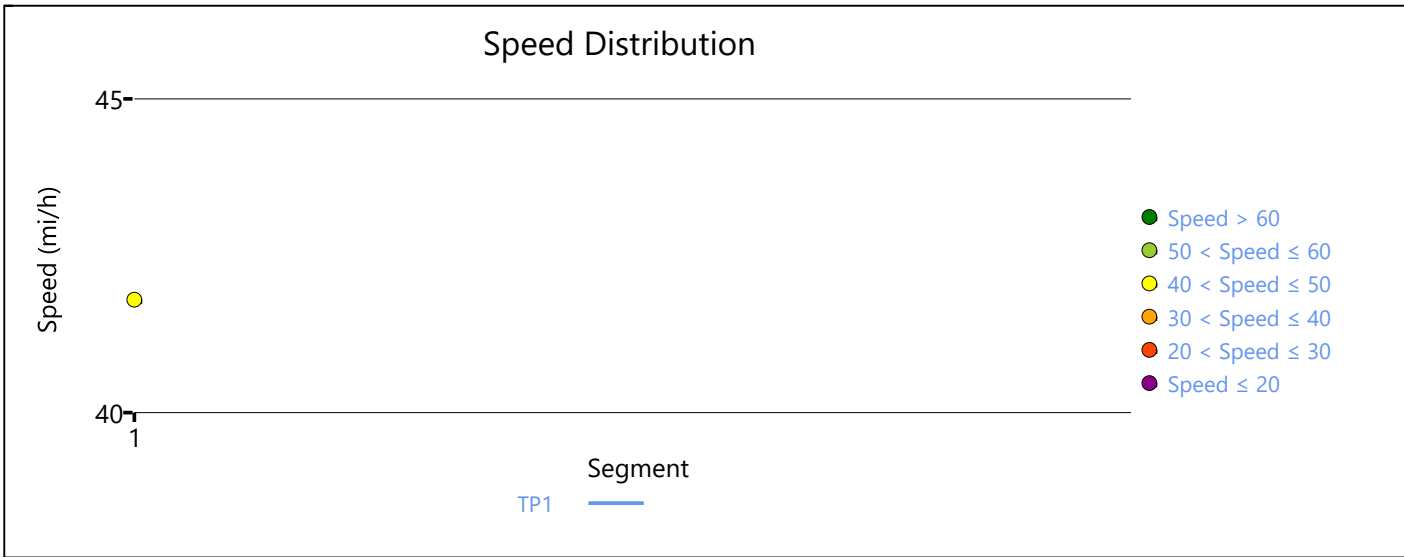
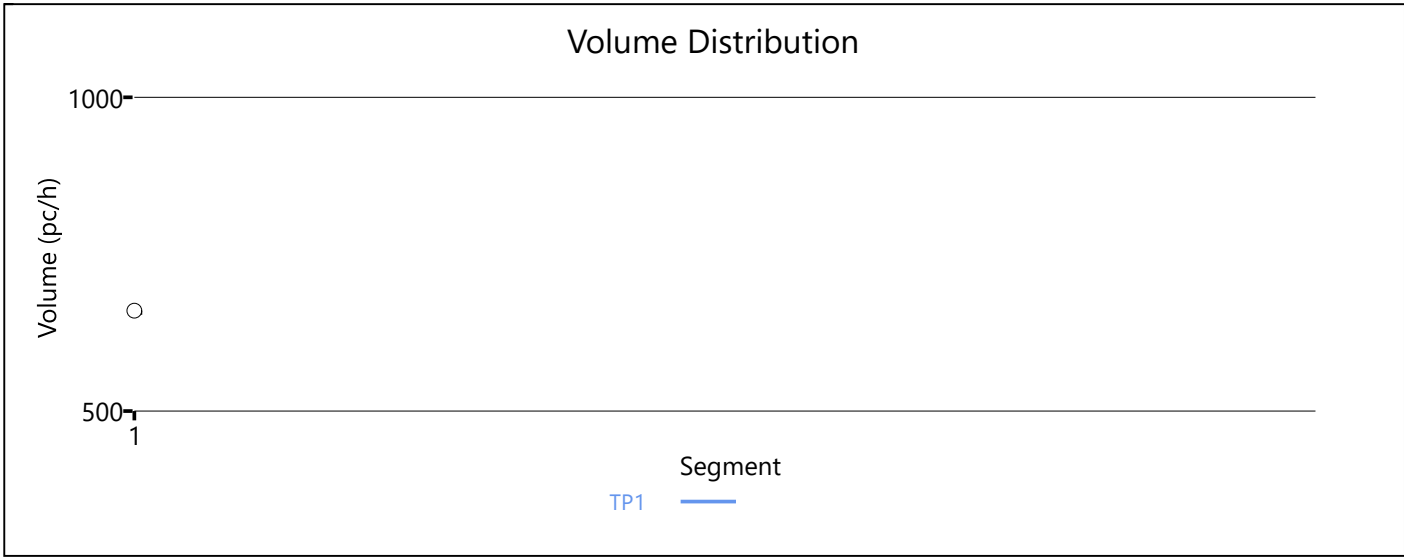
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	7.9	7.3	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	7.3
Average Travel Time, min	1.40	Density, pc/mi/ln	7.9

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.847	220	4400	0.05	41.8	2.6	A

Facility Analysis Results

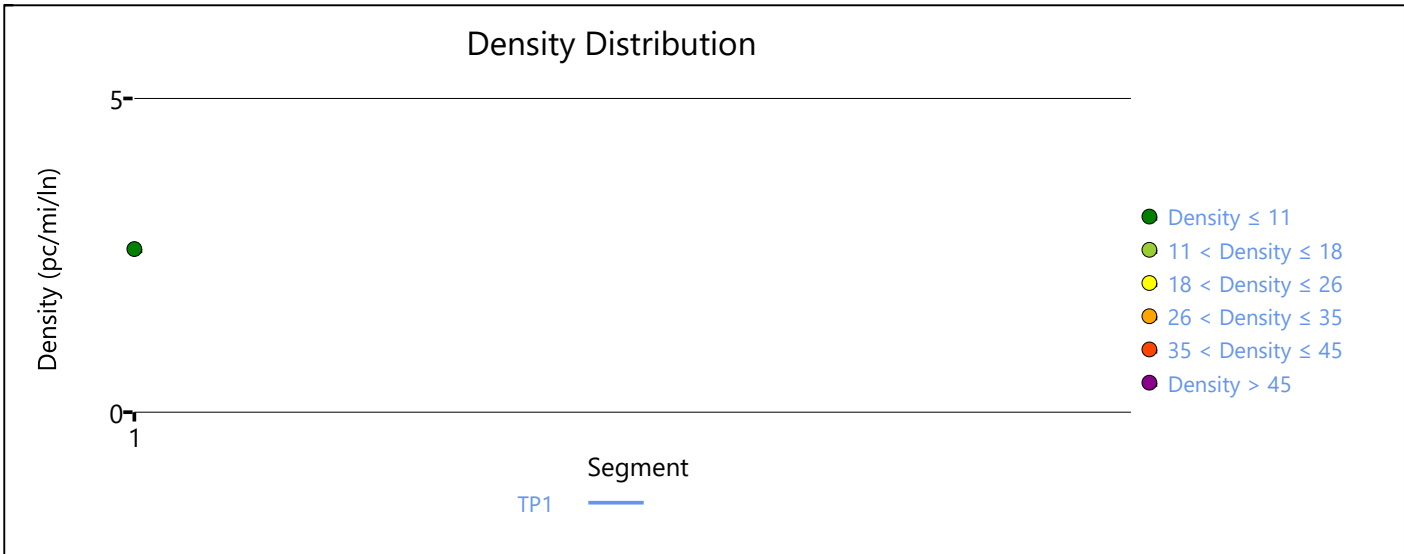
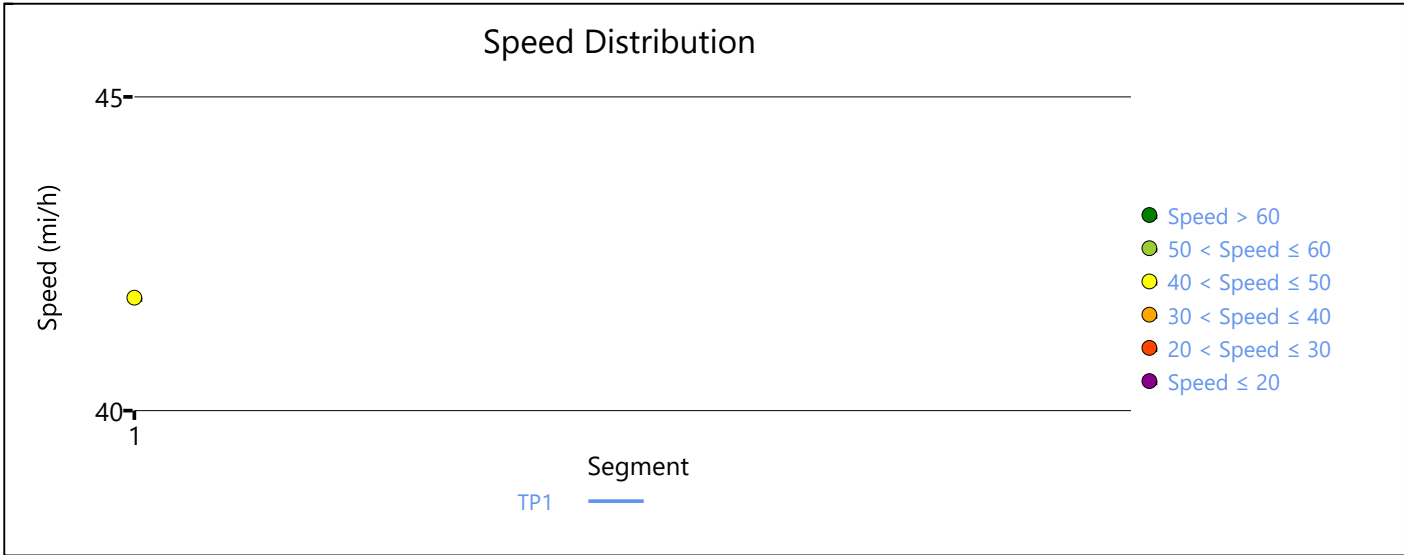
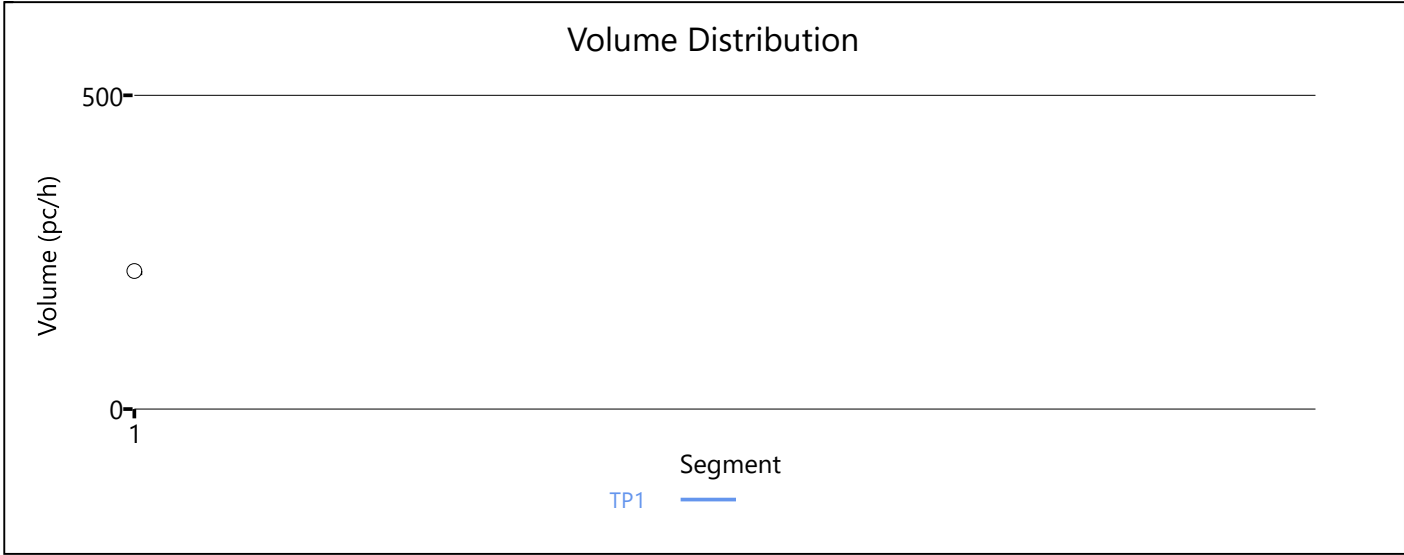
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	2.6	2.2	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	2.2
Average Travel Time, min	1.40	Density, pc/mi/ln	2.6

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.911	5343	8800	0.61	41.8	32.0	D

Facility Analysis Results

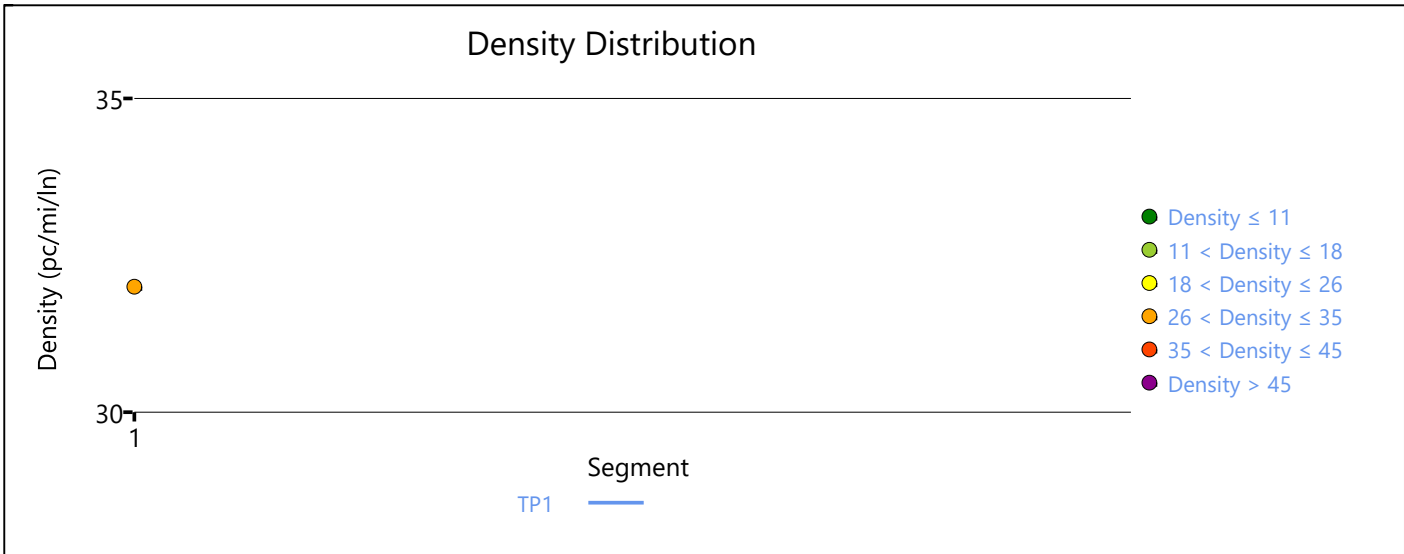
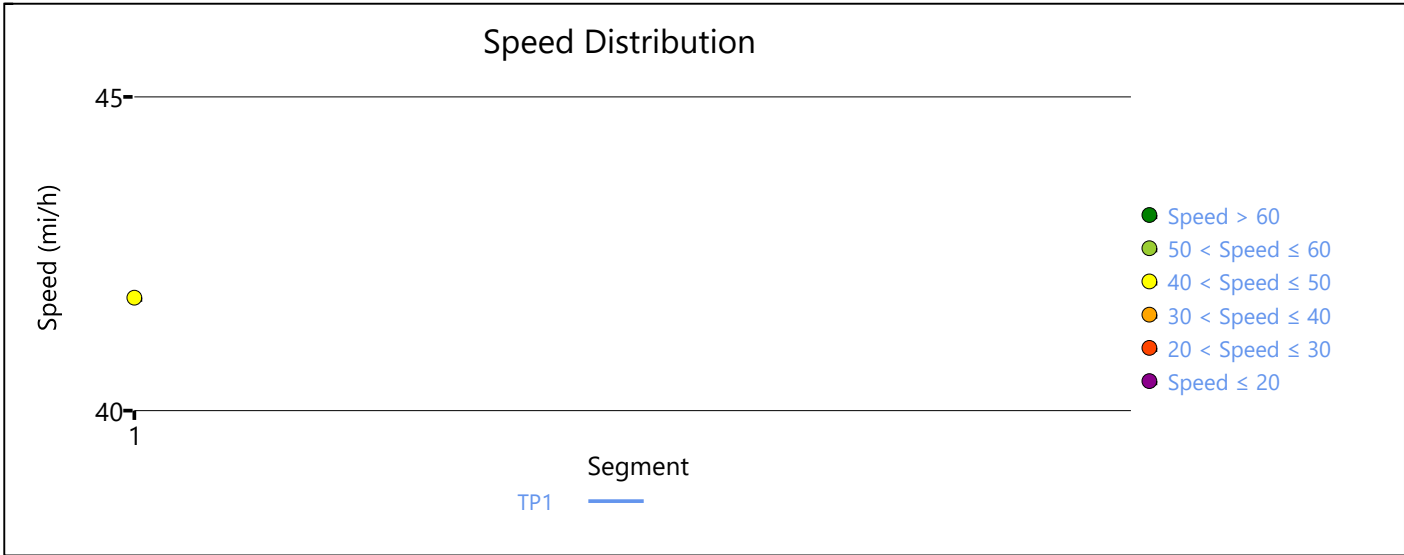
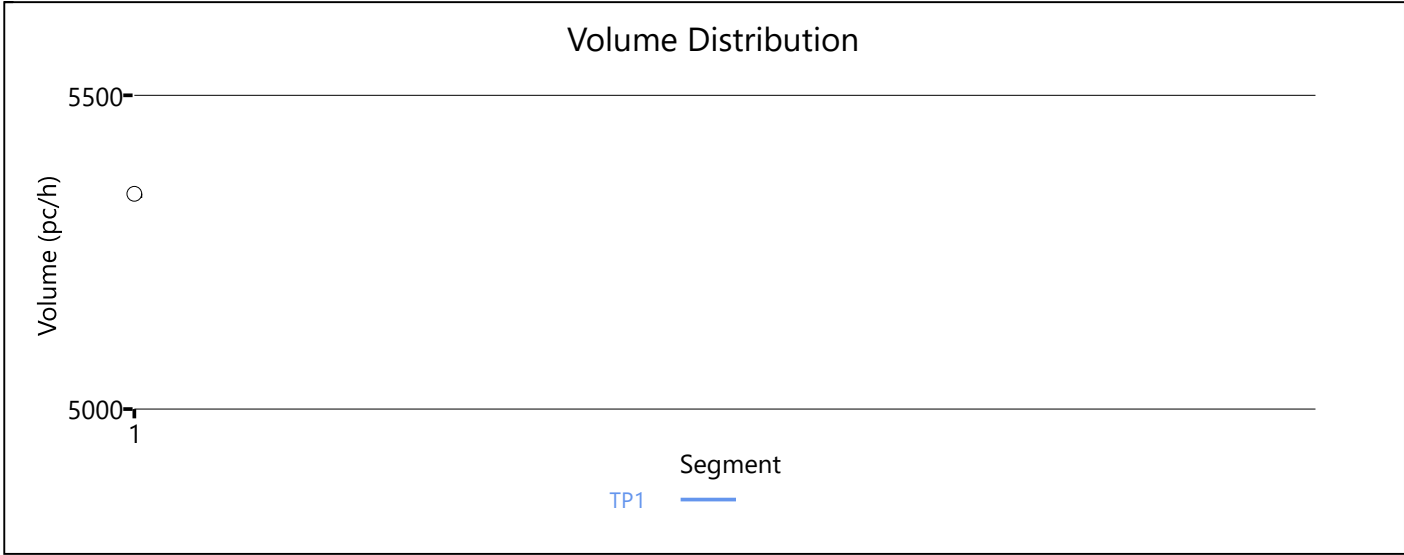
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	32.0	29.2	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	29.2
Average Travel Time, min	1.00	Density, pc/mi/ln	32.0

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.906	5144	8800	0.58	41.8	30.8	D

Facility Analysis Results

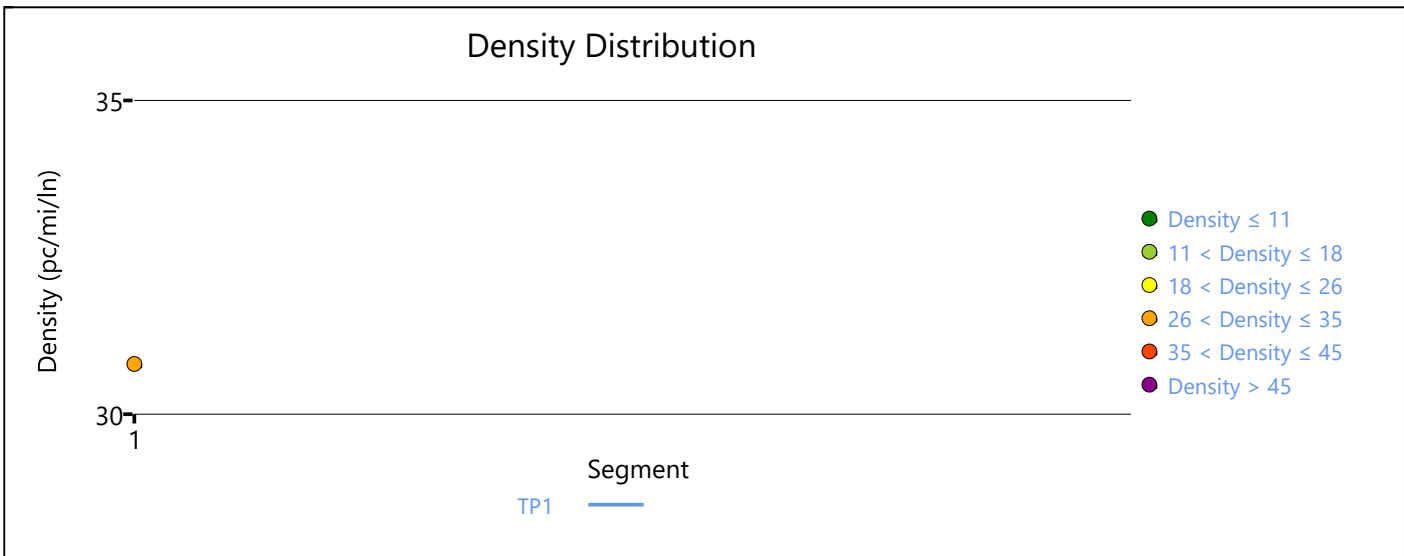
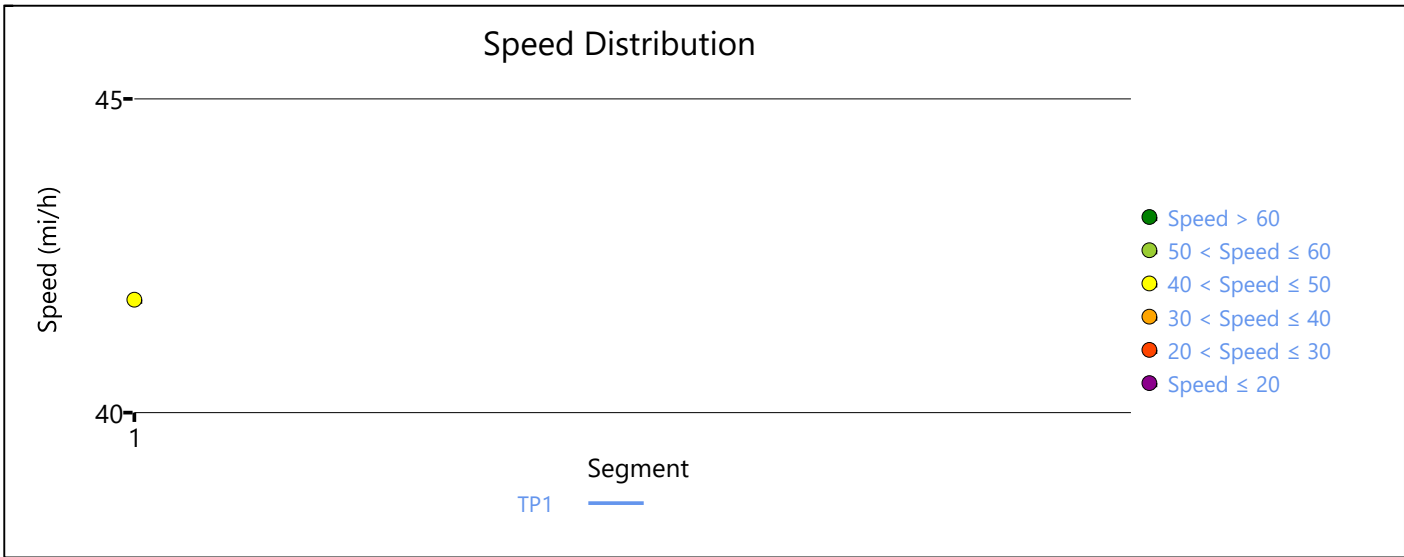
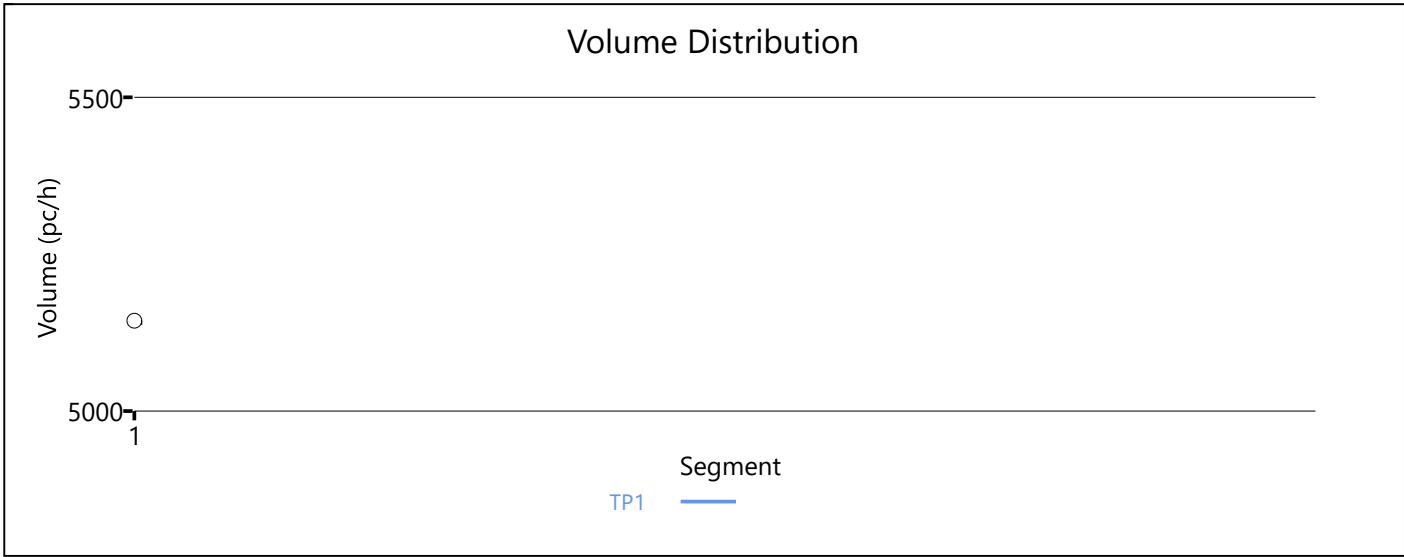
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	30.8	27.9	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	27.9
Average Travel Time, min	1.00	Density, pc/mi/ln	30.8

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.958	5224	8800	0.59	41.8	31.2	D

Facility Analysis Results

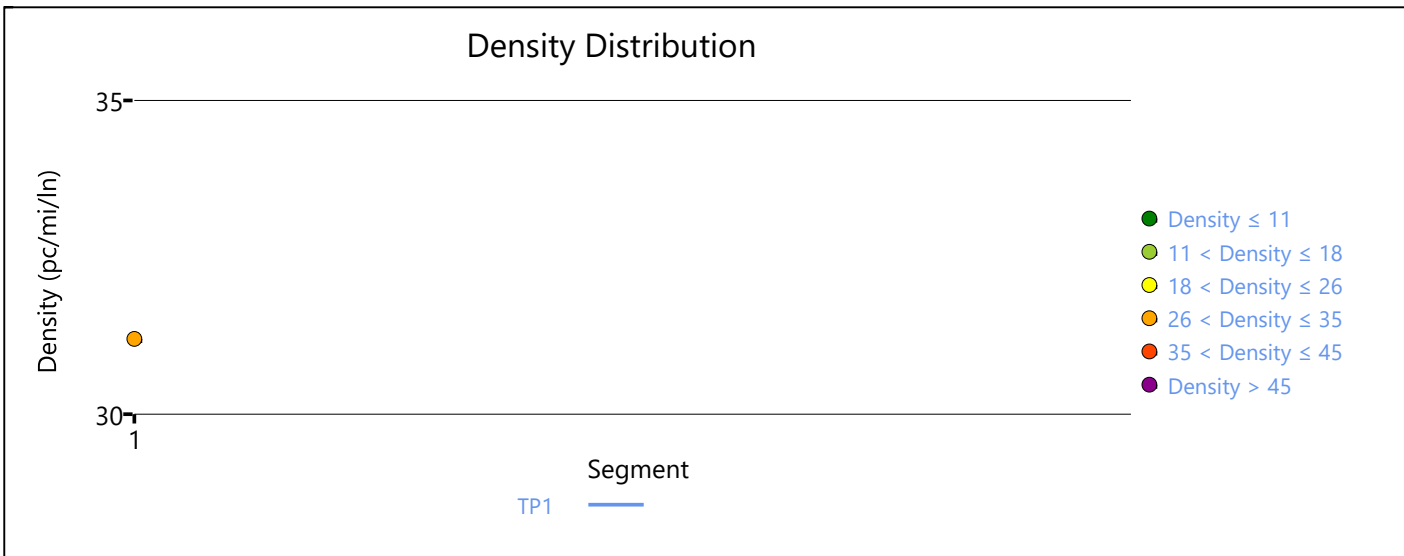
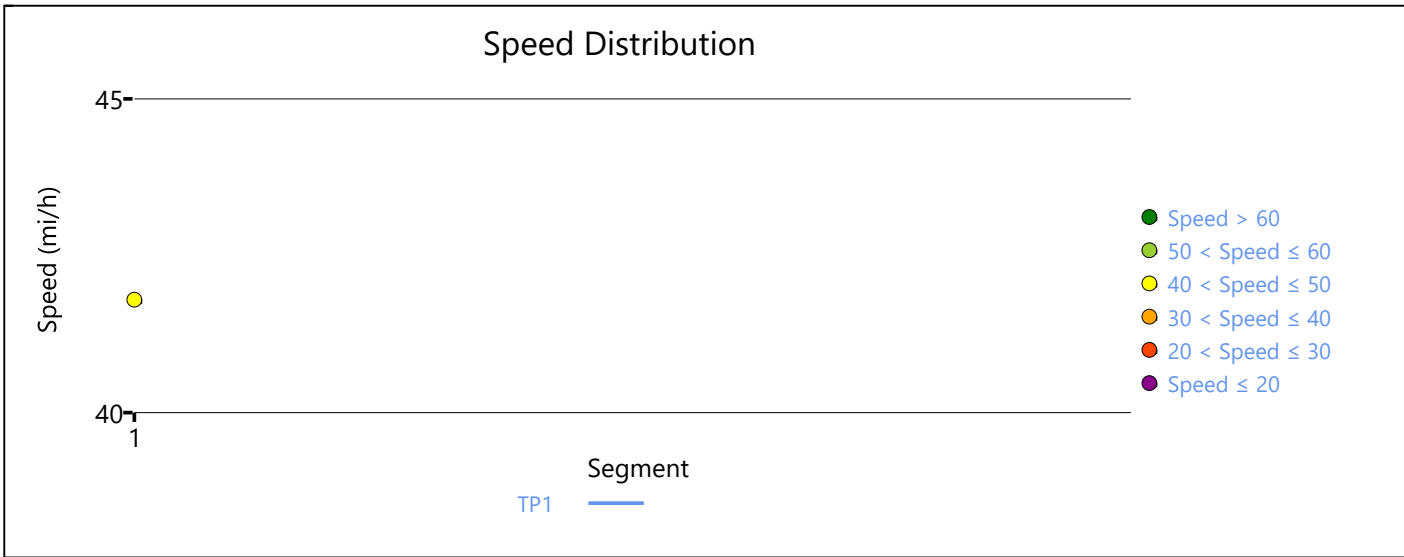
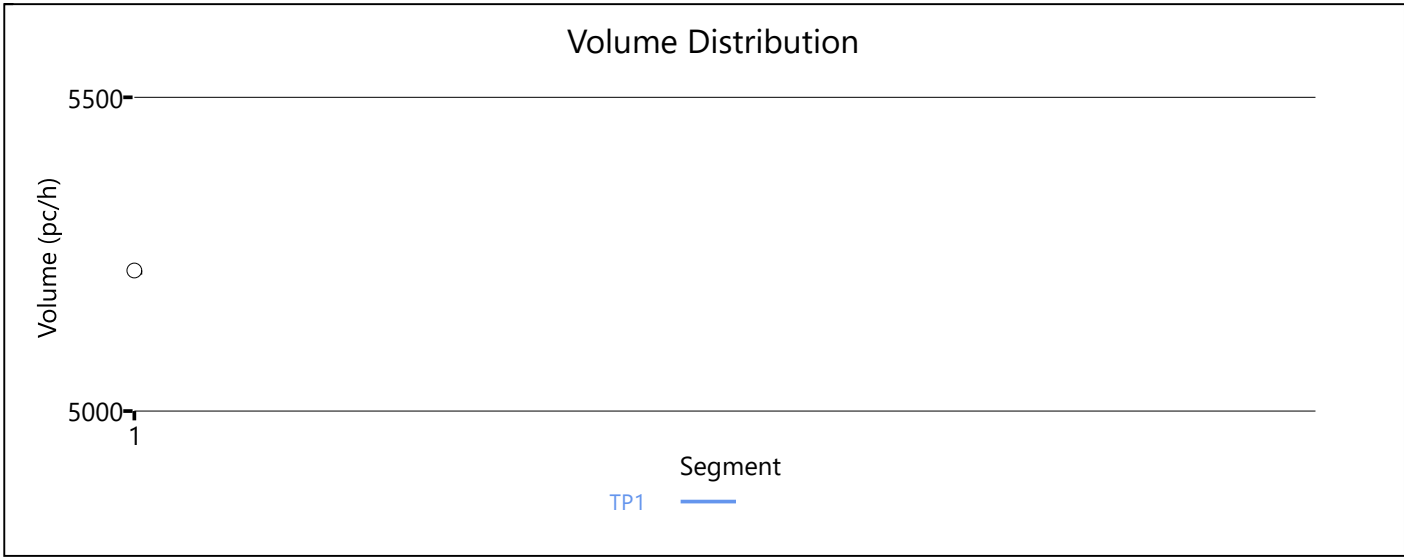
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	31.2	29.9	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	29.9
Average Travel Time, min	1.00	Density, pc/mi/ln	31.2

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.879	1048	8800	0.12	41.8	6.3	A

Facility Analysis Results

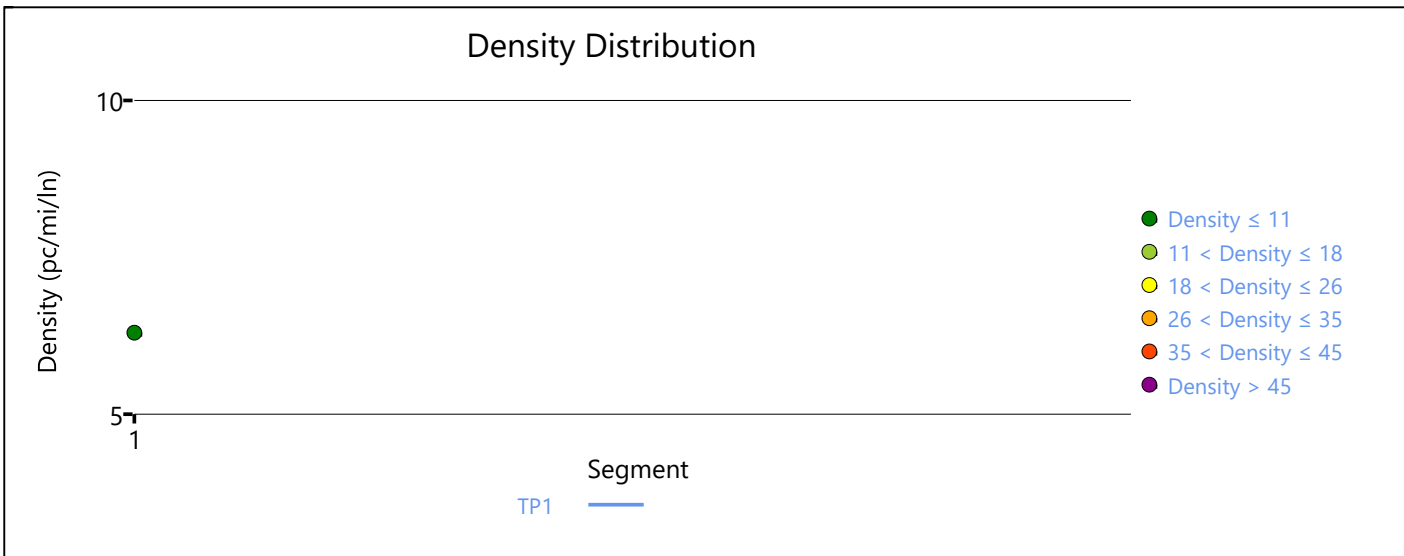
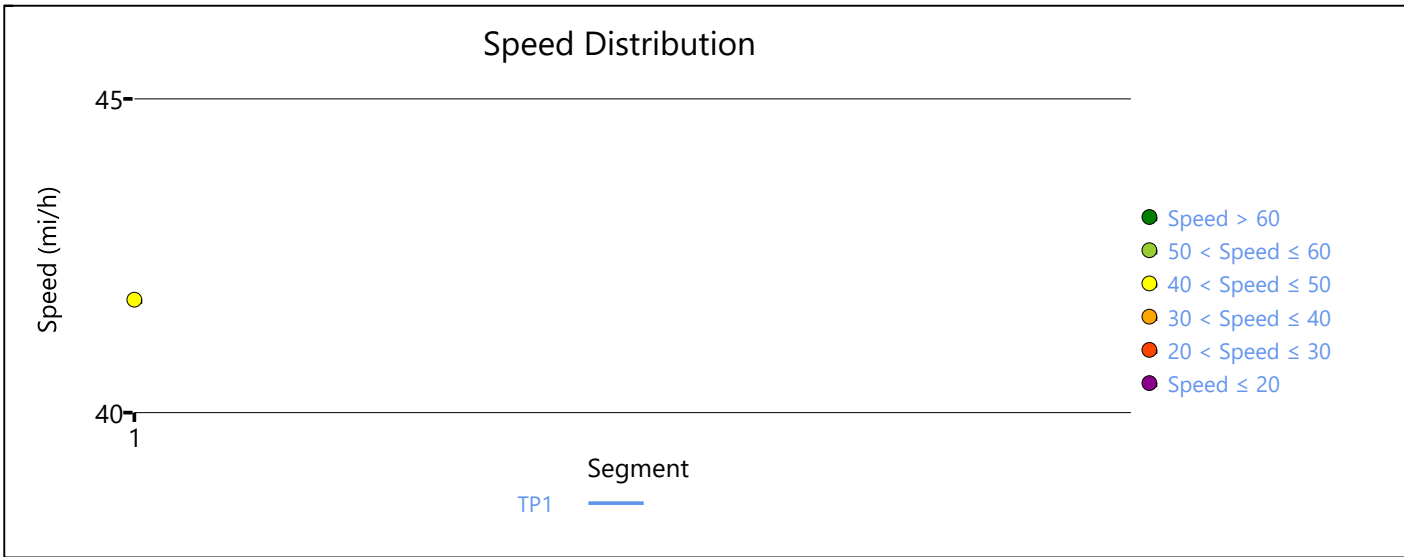
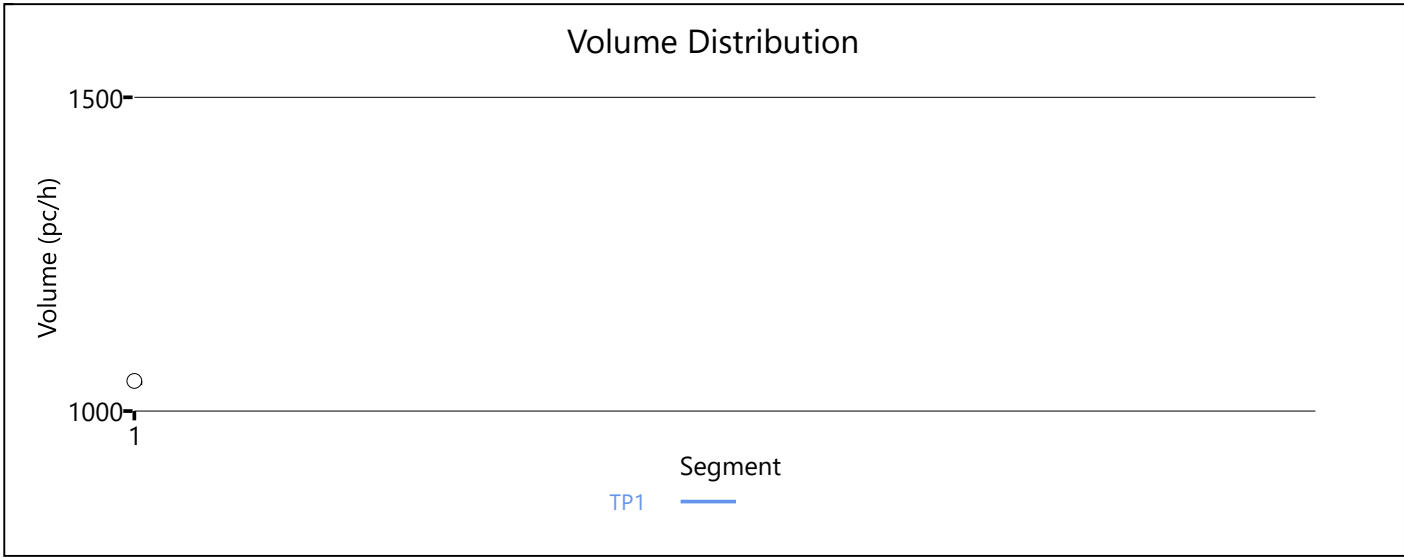
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	6.3	5.5	1.00	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	5.5
Average Travel Time, min	1.00	Density, pc/mi/ln	6.3

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	No Build
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.772	209	6654	0.03	51.8	1.4	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.772	0.849	1036	827	6750	4000	0.15	0.21	51.6	51.3	6.7	8.4	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.833	1037	6654	0.16	51.8	6.7	A

Facility Analysis Results

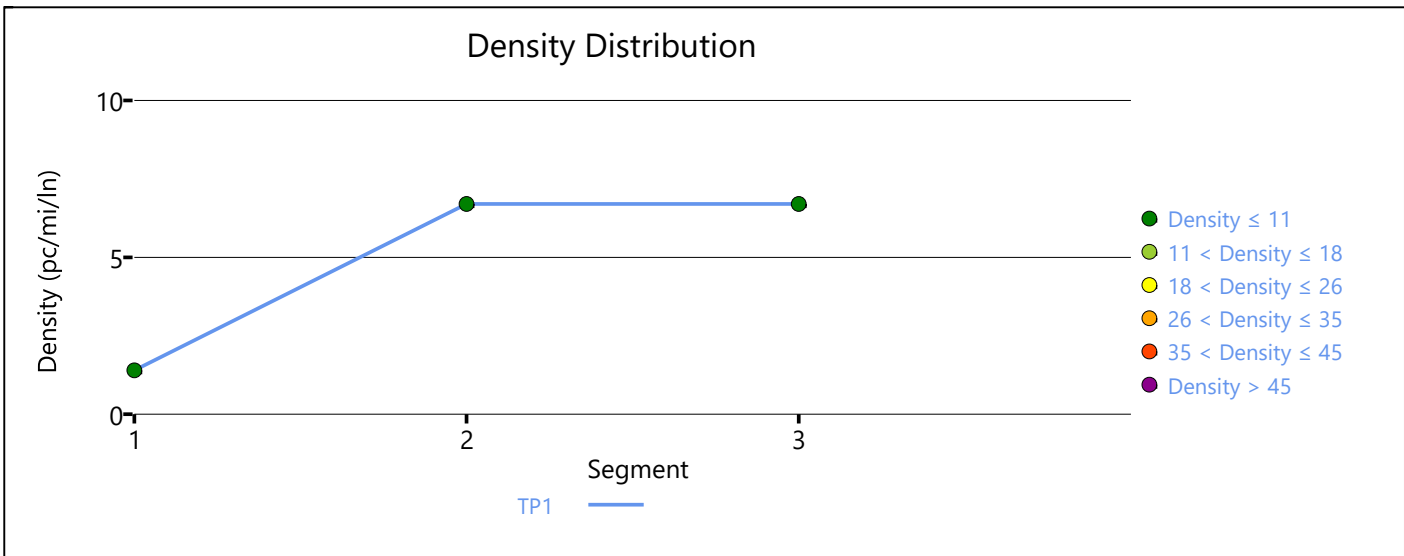
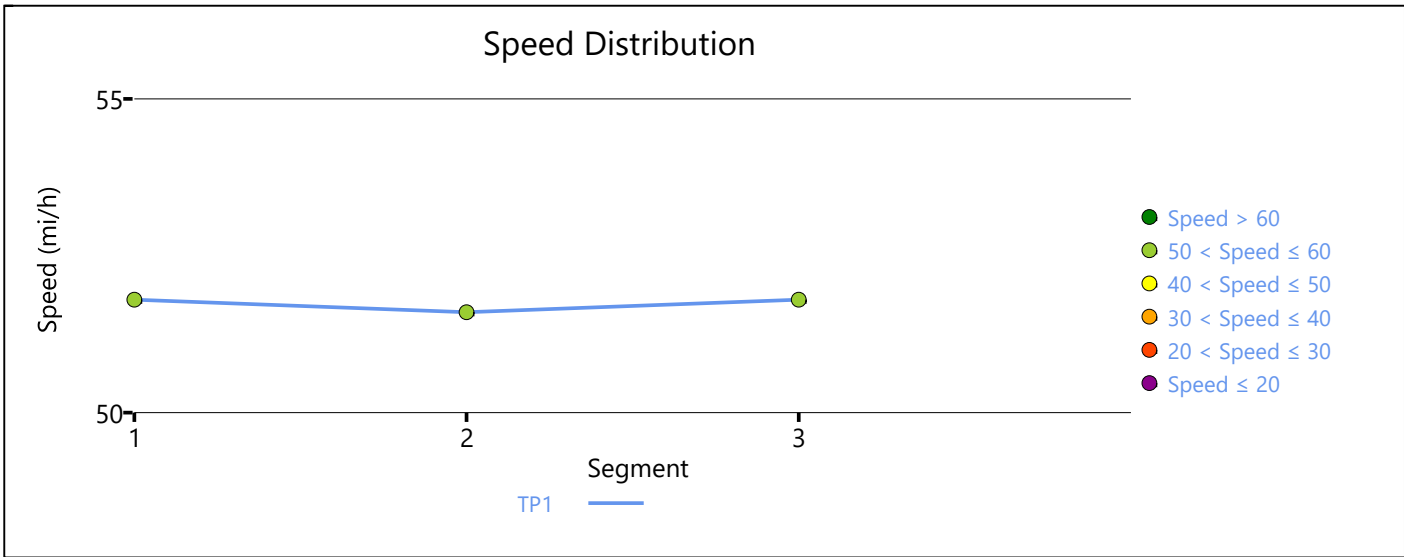
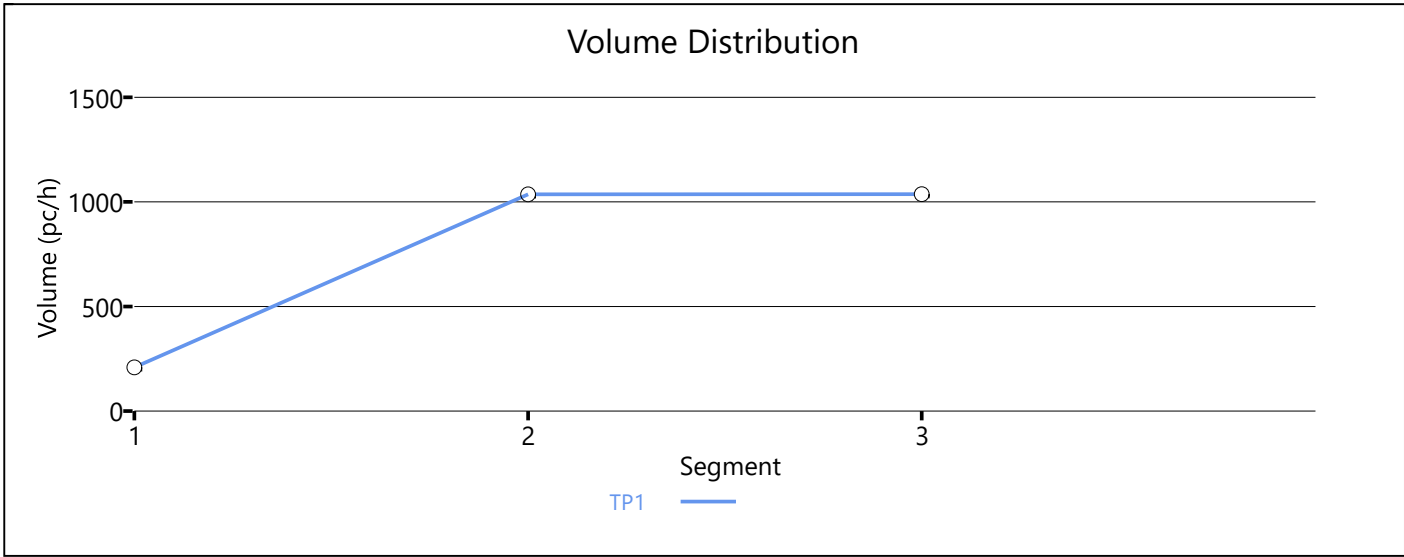
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	4.4	3.6	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	3.6
Average Travel Time, min	1.20	Density, pc/mi/ln	4.4

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	No Build
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.797	260	6654	0.04	51.8	1.7	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.797	0.801	1016	756	6750	4000	0.15	0.19	51.7	51.3	6.6	8.1	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.800	1016	6654	0.15	51.8	6.5	A

Facility Analysis Results

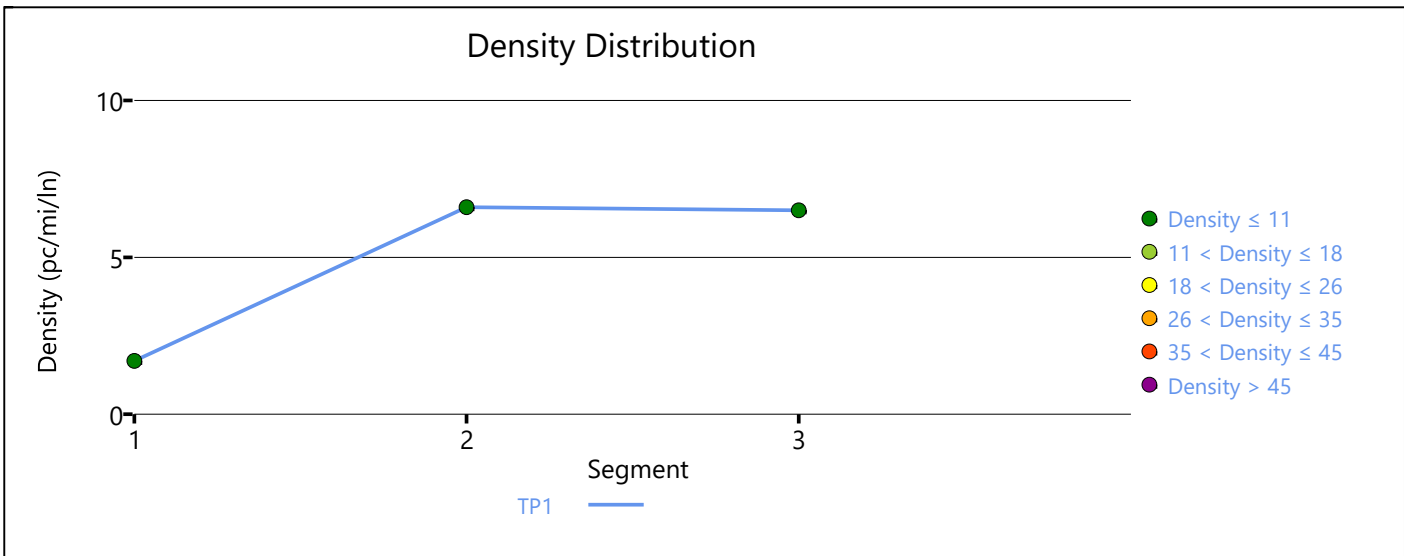
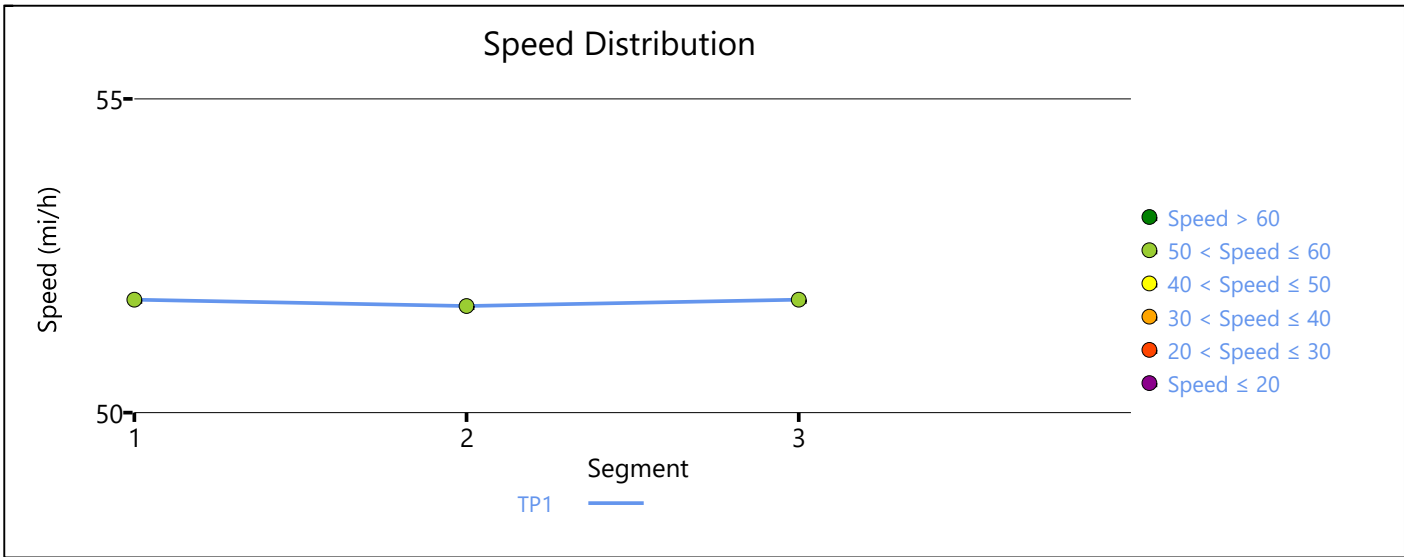
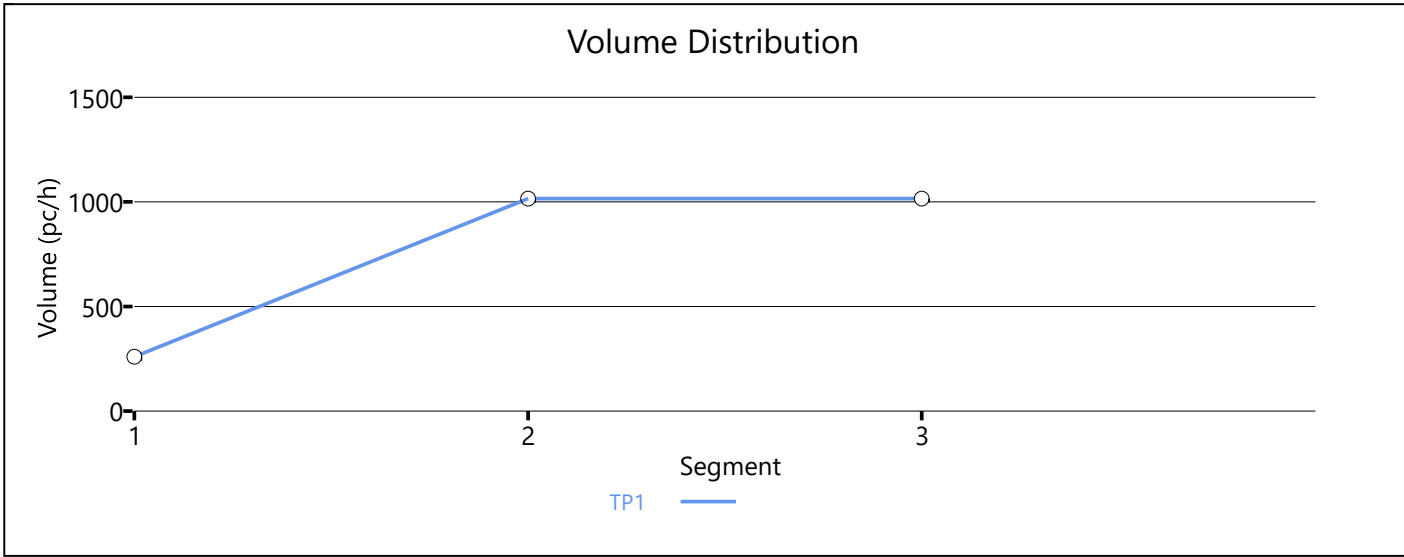
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	4.4	3.5	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	3.5
Average Travel Time, min	1.20	Density, pc/mi/ln	4.4

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	No Build
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.919	505	6654	0.08	51.8	3.2	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.919	0.923	1433	928	6750	4000	0.21	0.23	51.8	51.3	9.2	10.5	B

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.923	1430	6654	0.21	51.8	9.2	A

Facility Analysis Results

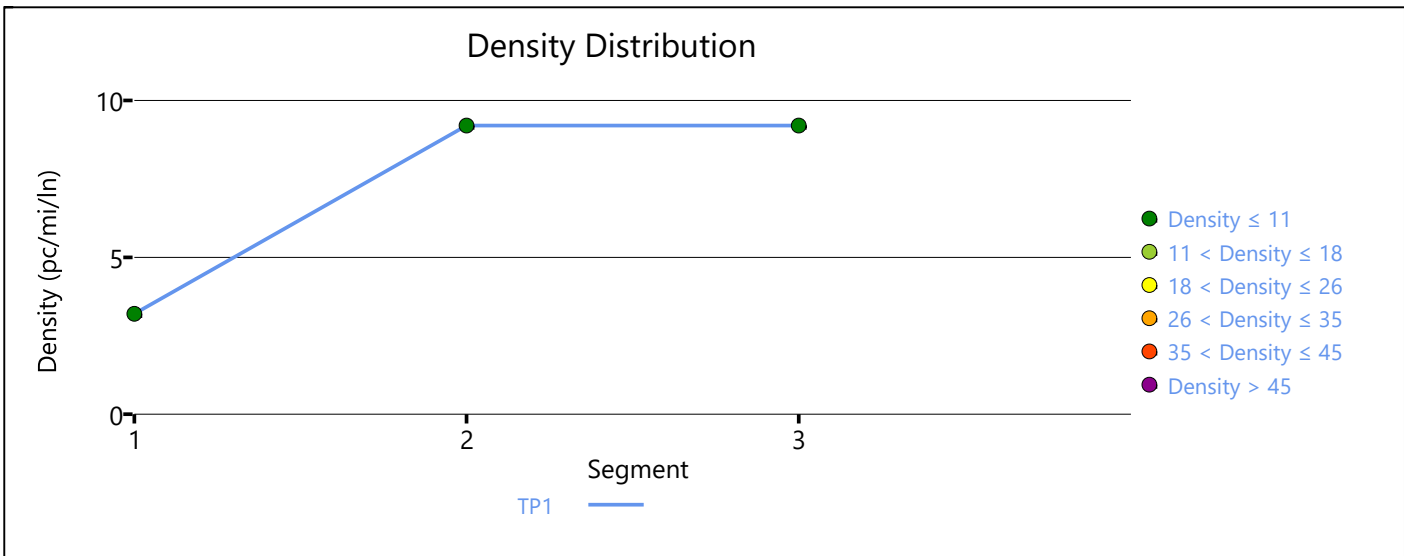
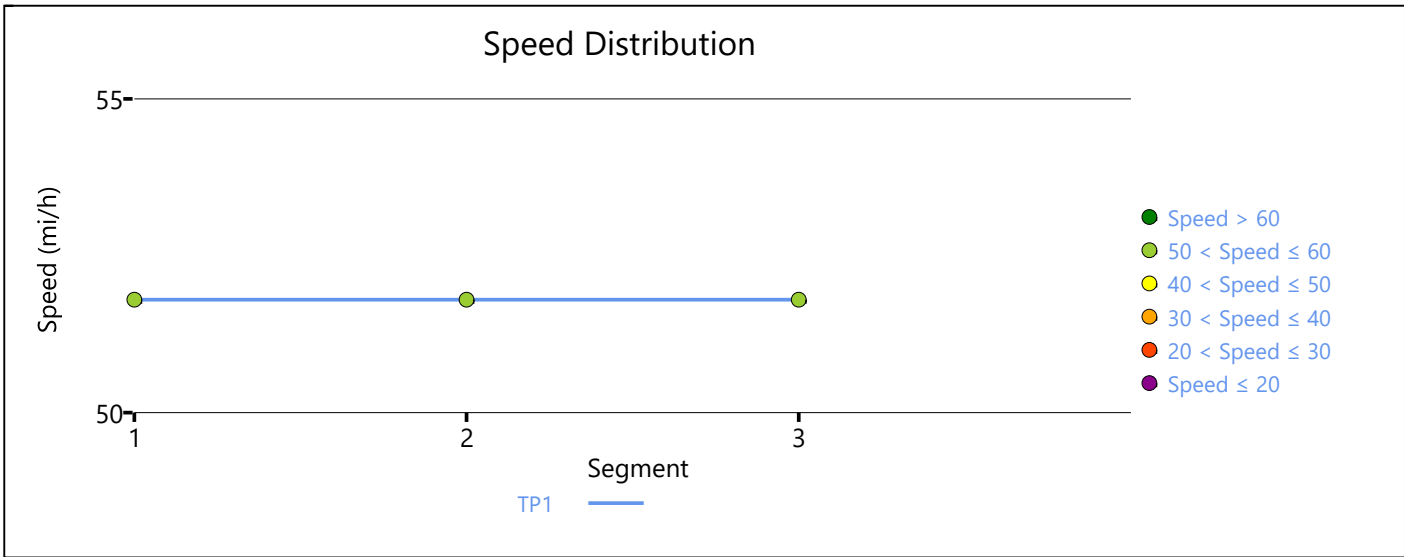
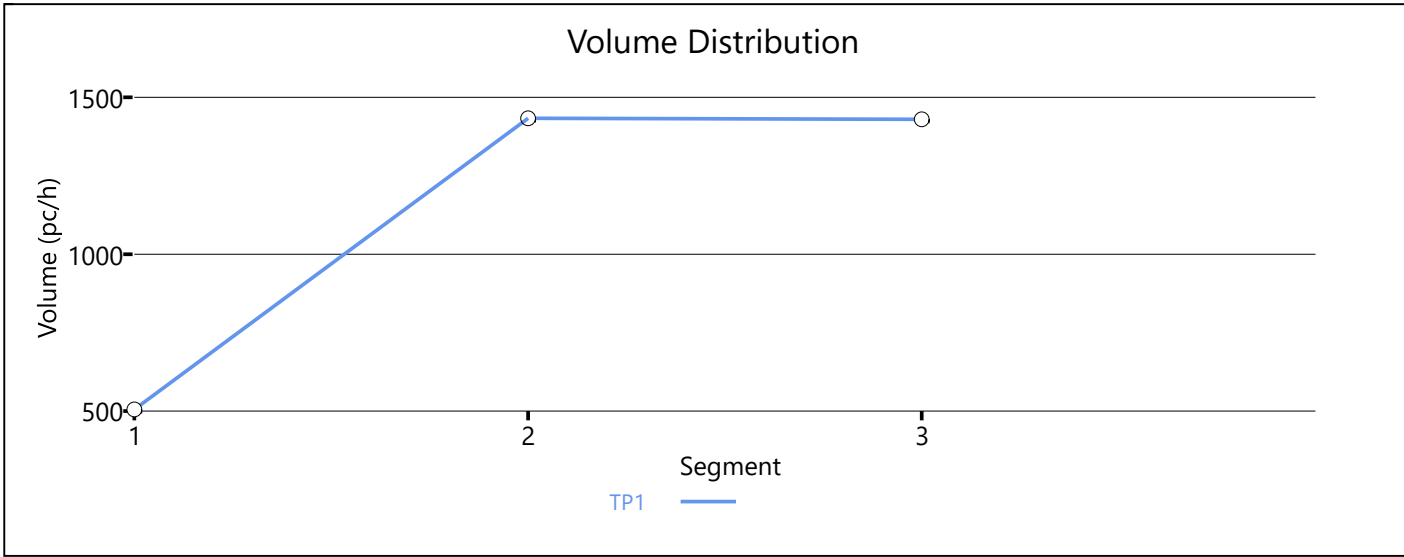
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	6.6	6.0	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	6.0
Average Travel Time, min	1.20	Density, pc/mi/ln	6.6

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	No Build
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.723	24	6654	0.00	51.8	0.2	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.723	0.888	435	411	6750	4000	0.06	0.10	51.4	51.3	2.8	4.5	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.880	434	6654	0.07	51.8	2.8	A

Facility Analysis Results

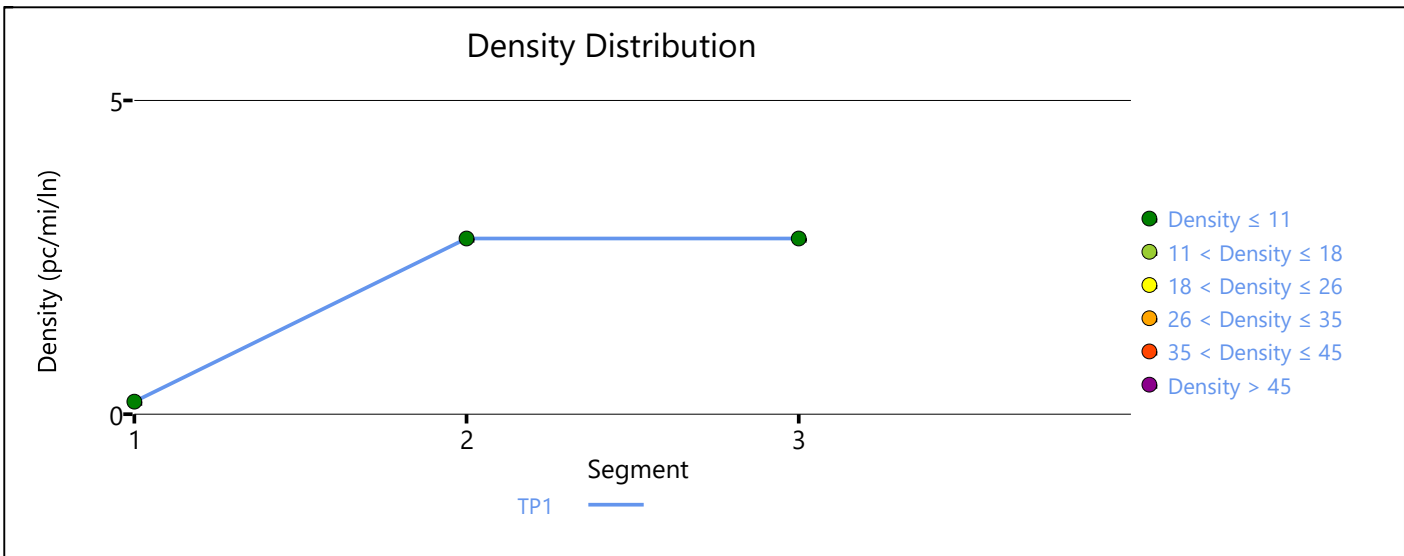
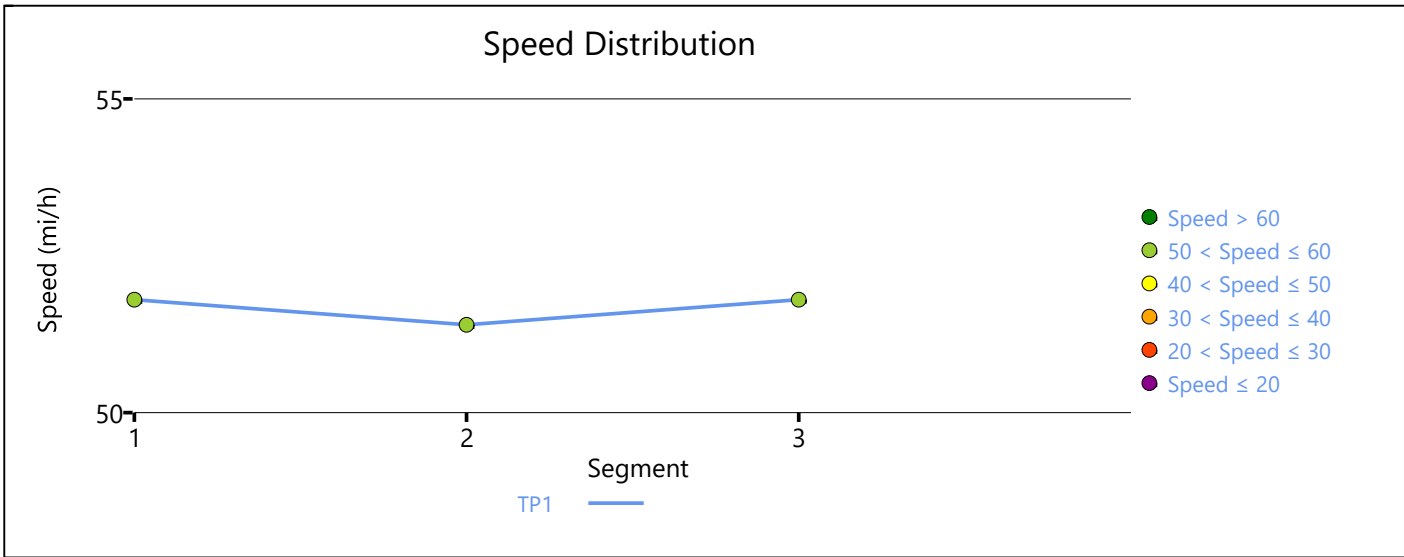
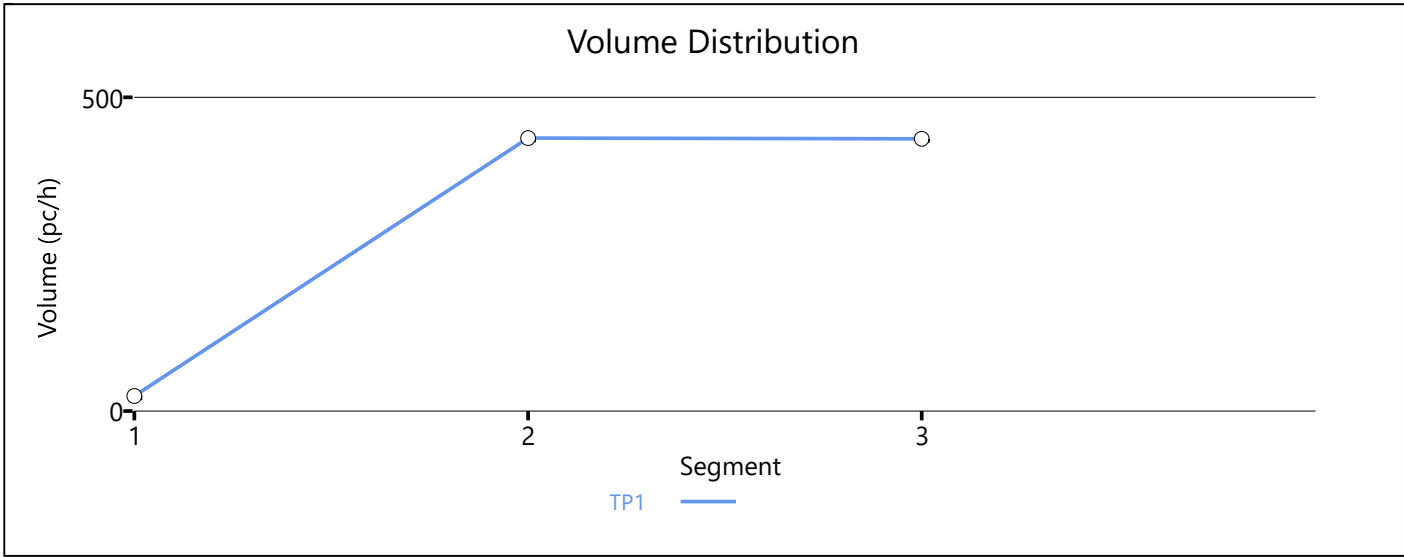
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.7	1.7	1.4	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.7	Density, veh/mi/ln	1.4
Average Travel Time, min	1.20	Density, pc/mi/ln	1.7

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Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.797	905	4400	0.21	41.8	10.8	A

Facility Analysis Results

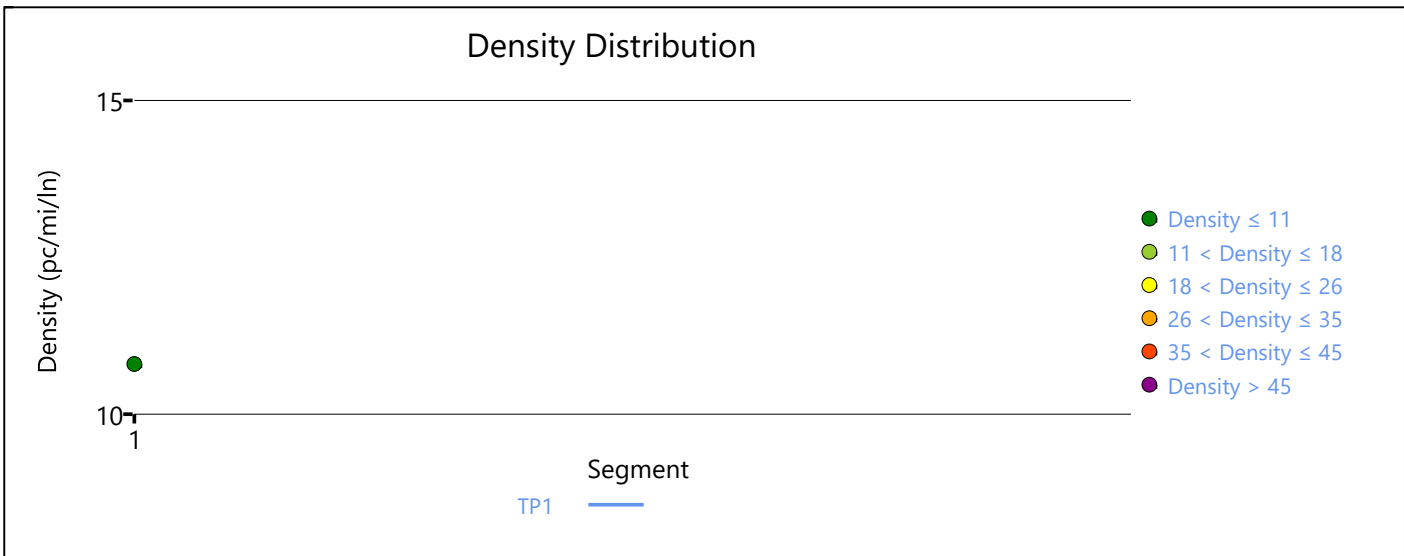
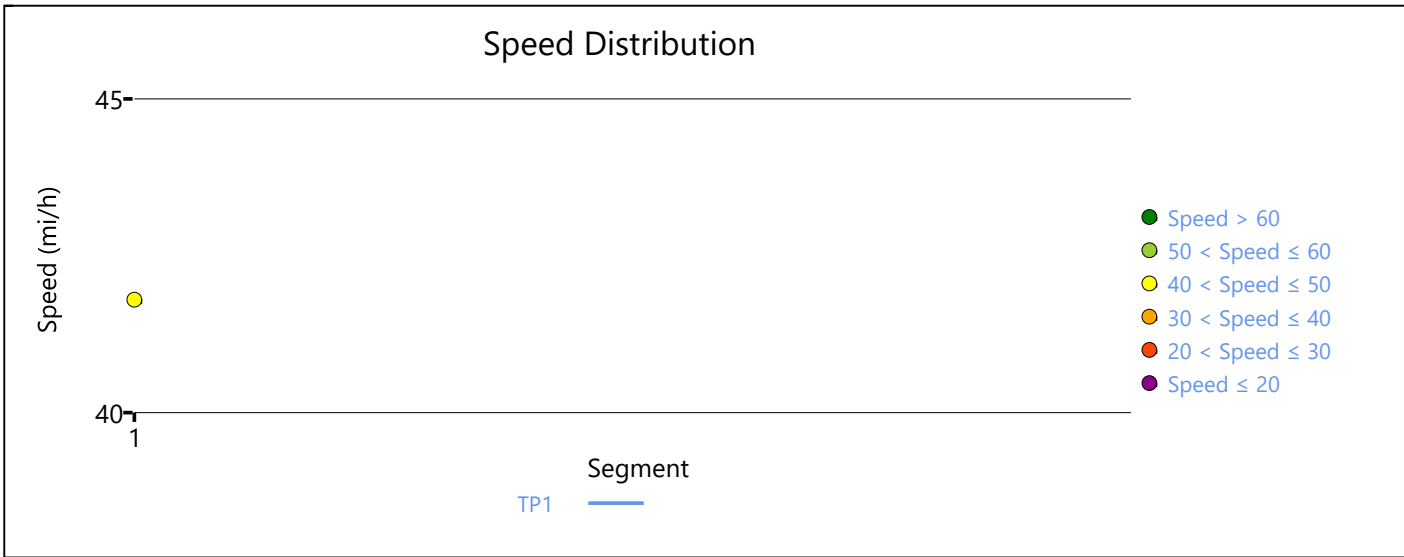
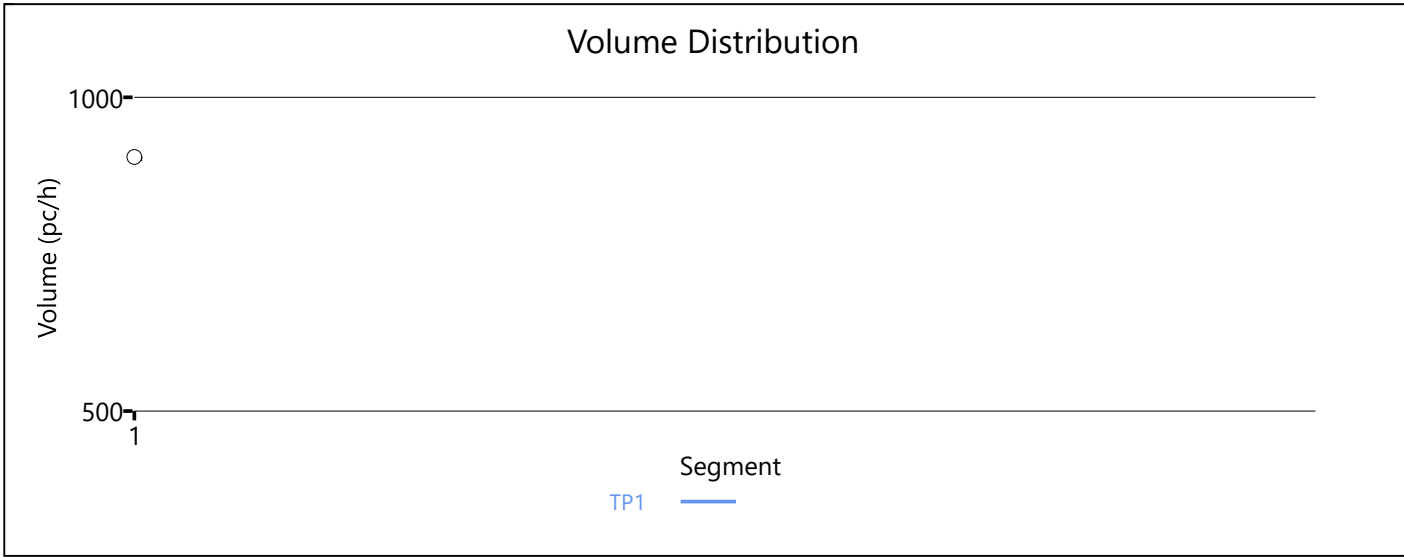
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	10.8	8.6	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	8.6
Average Travel Time, min	1.40	Density, pc/mi/ln	10.8

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.773	805	4400	0.18	41.8	9.6	A

Facility Analysis Results

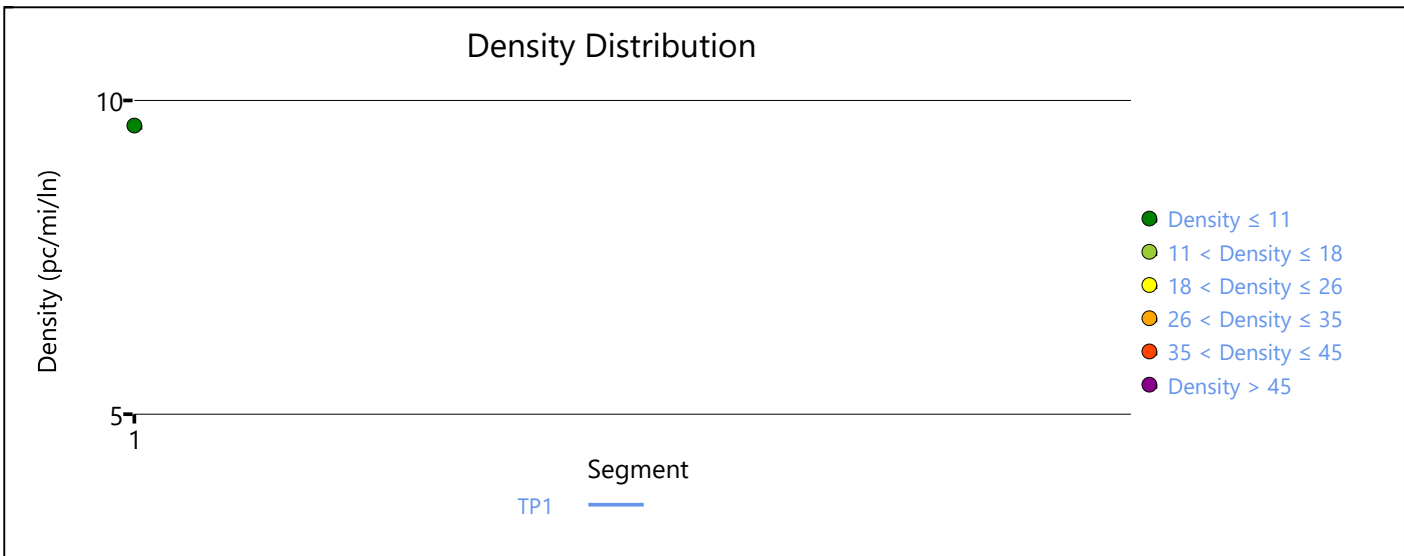
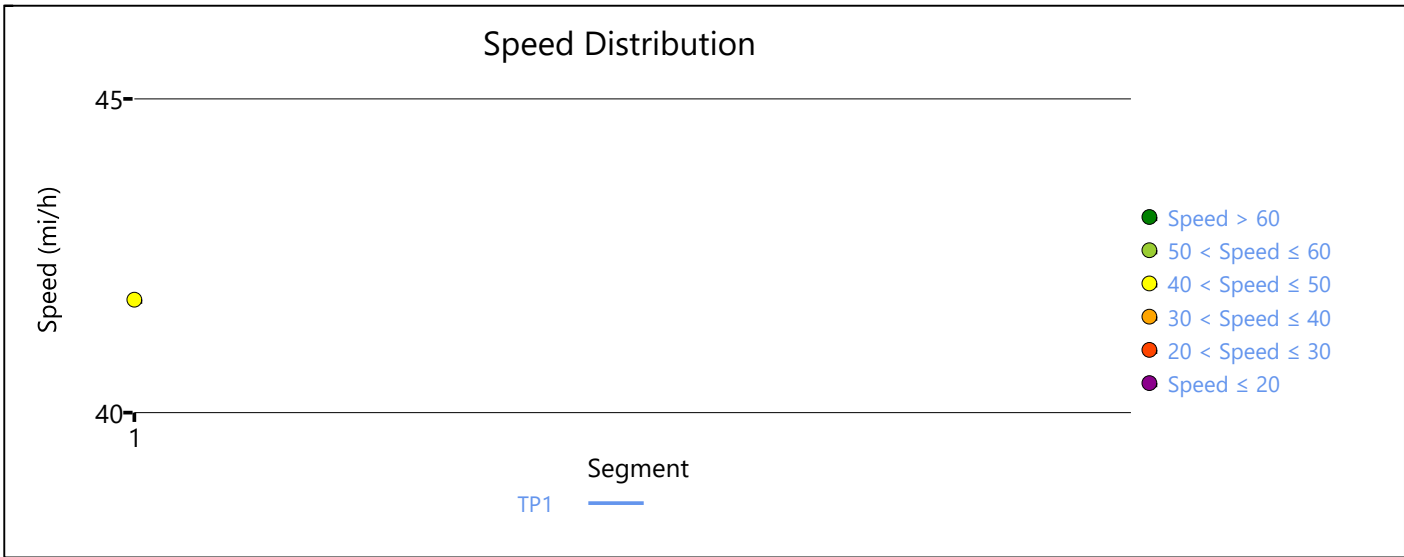
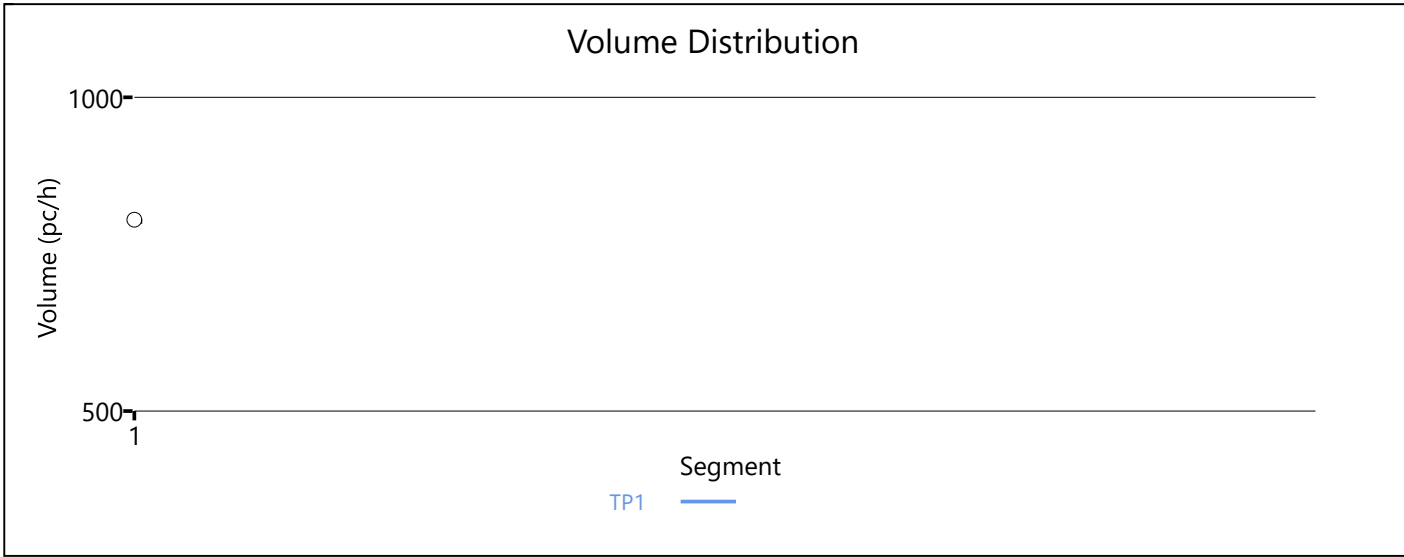
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	9.6	7.4	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	7.4
Average Travel Time, min	1.40	Density, pc/mi/ln	9.6

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.896	966	4400	0.22	41.8	11.6	B

Facility Analysis Results

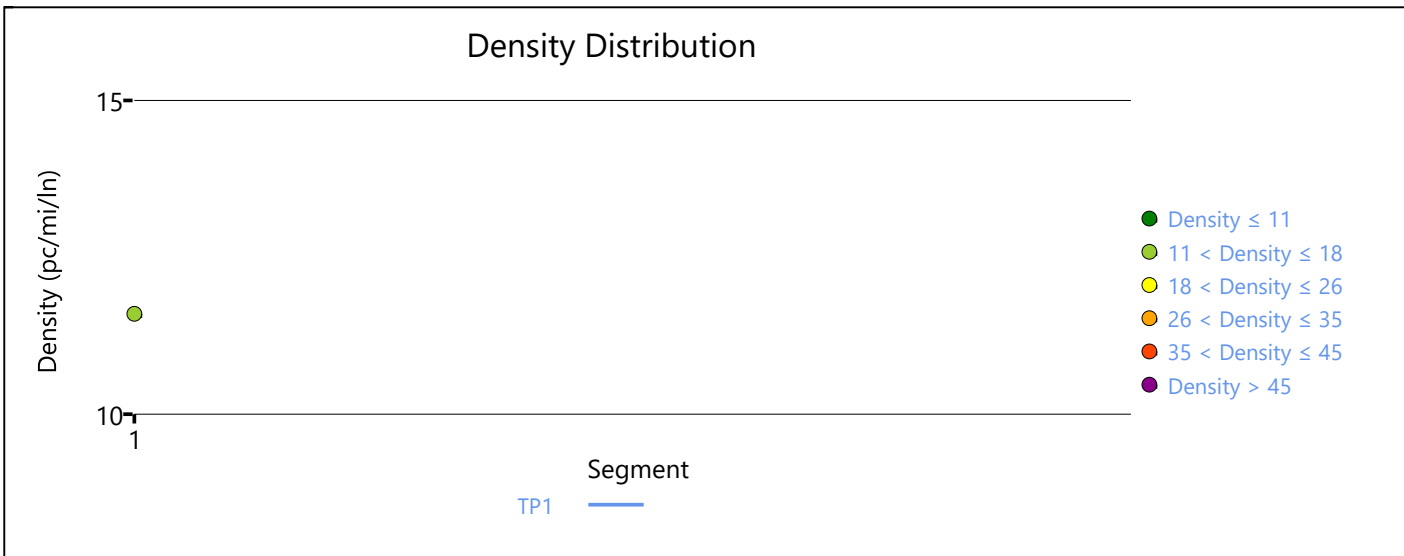
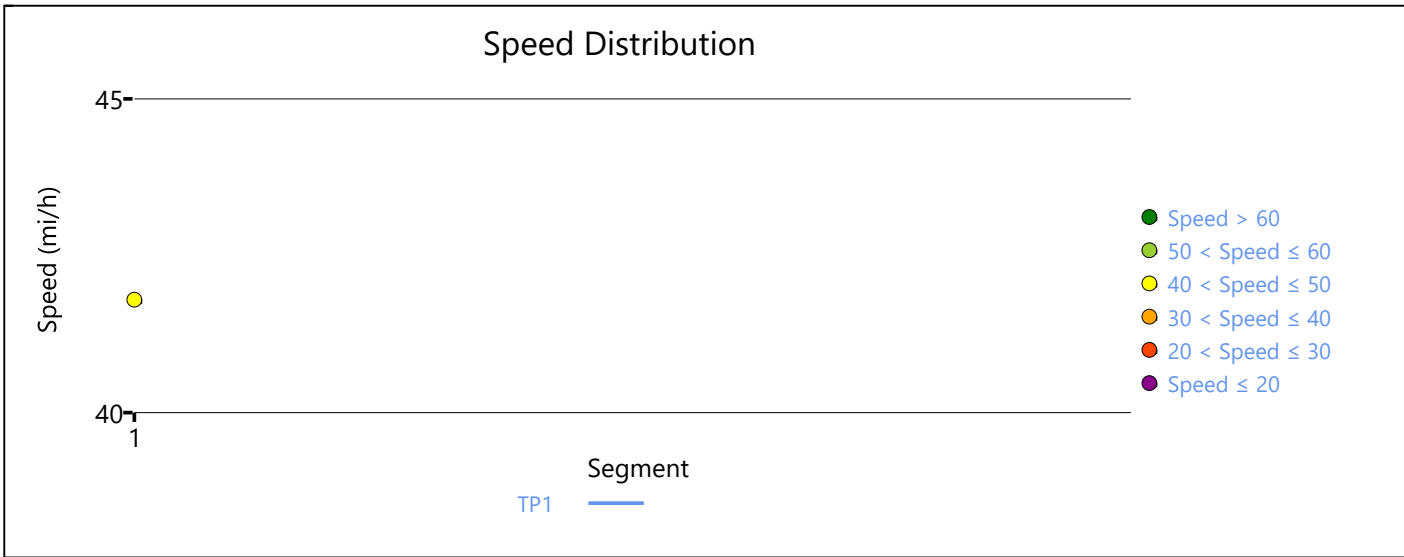
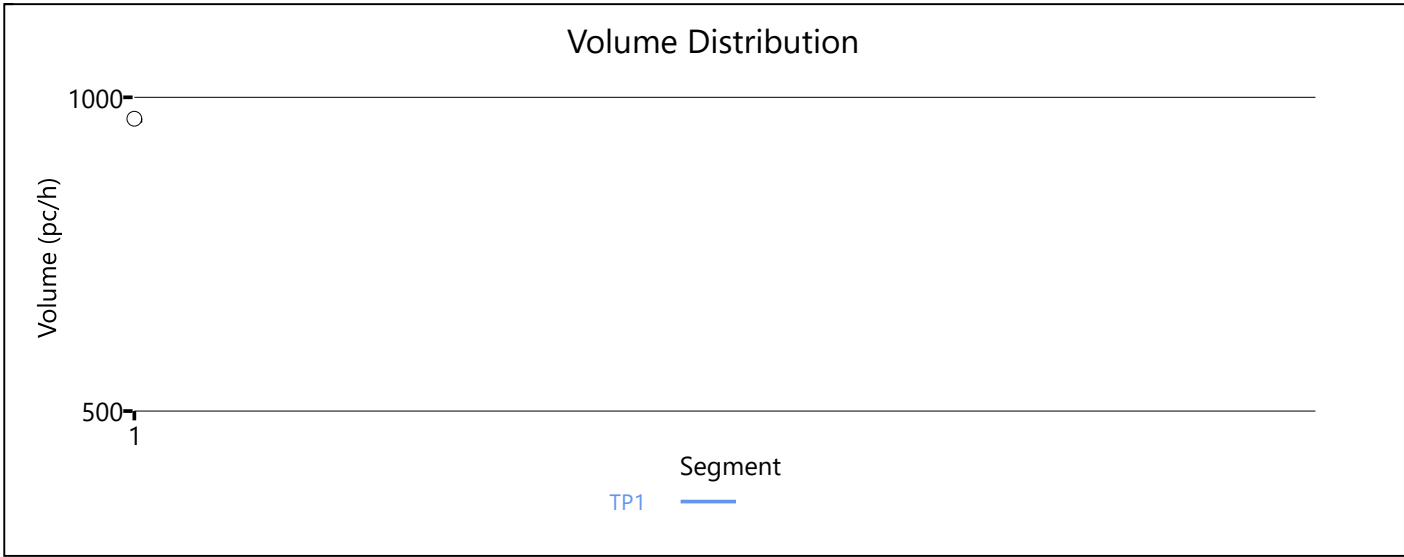
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	11.6	10.4	1.40	B

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	10.4
Average Travel Time, min	1.40	Density, pc/mi/ln	11.6

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.812	271	4400	0.06	41.8	3.3	A

Facility Analysis Results

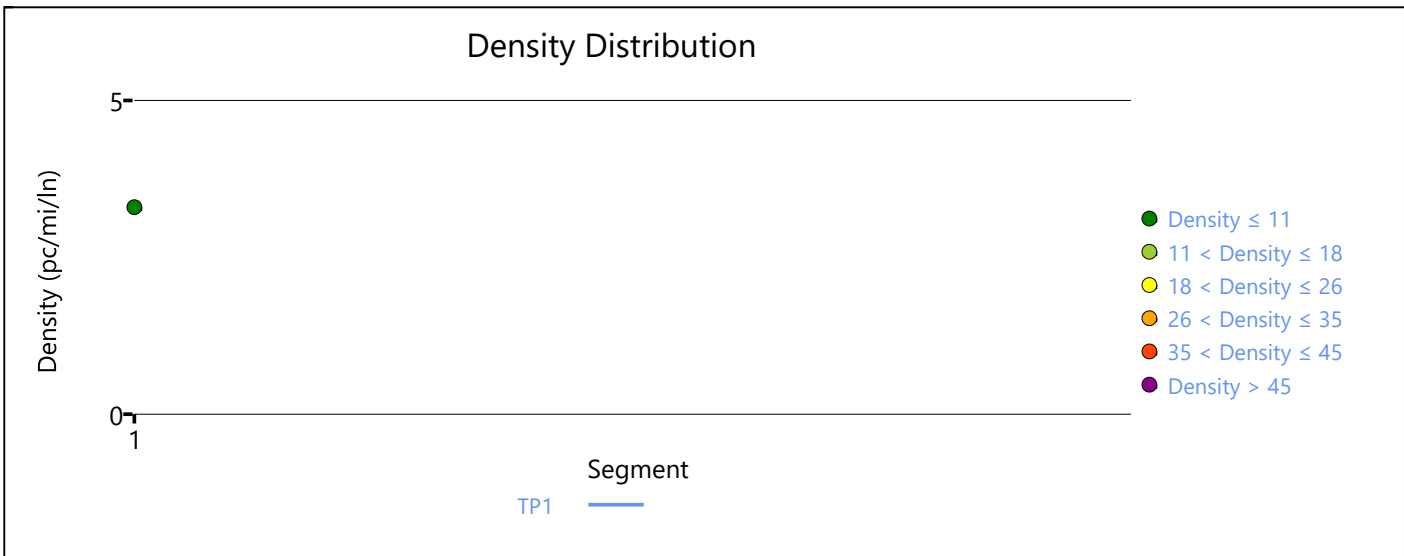
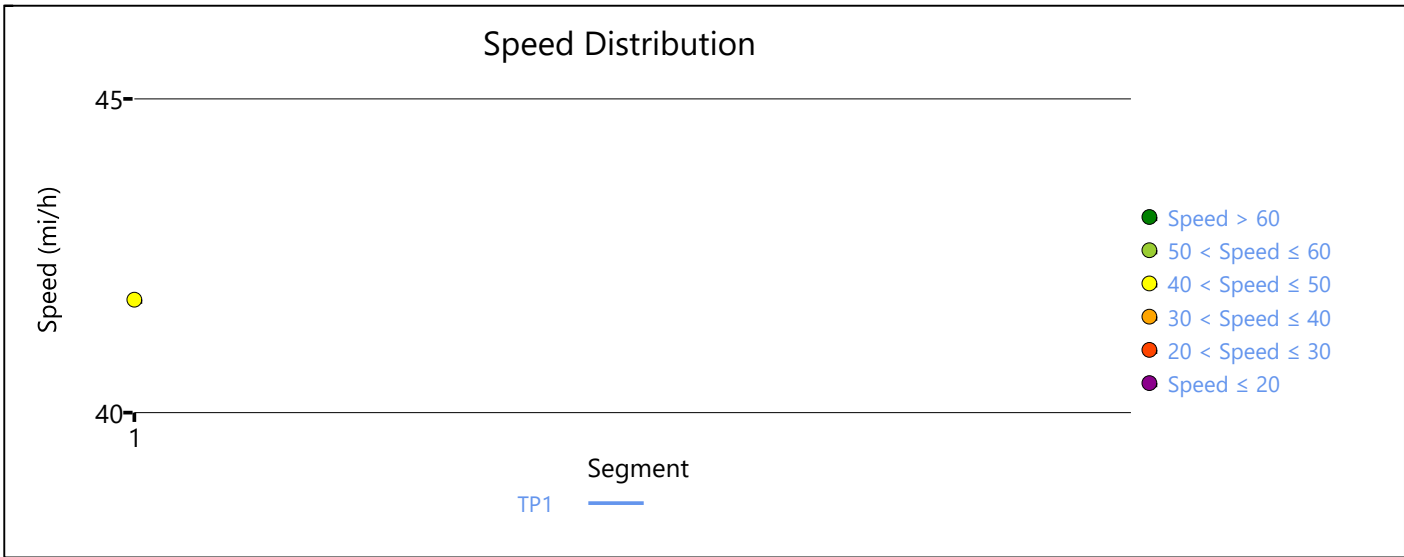
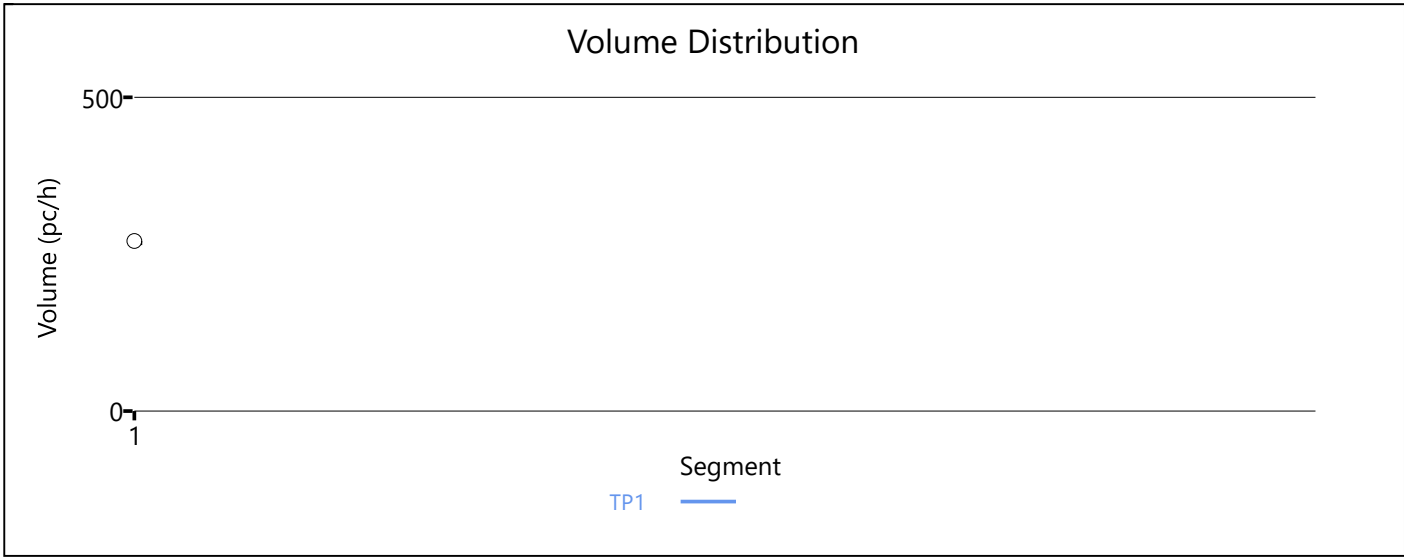
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	3.3	2.7	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	2.7
Average Travel Time, min	1.40	Density, pc/mi/ln	3.3

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.917	5948	8800	0.68	41.8	35.6	E

Facility Analysis Results

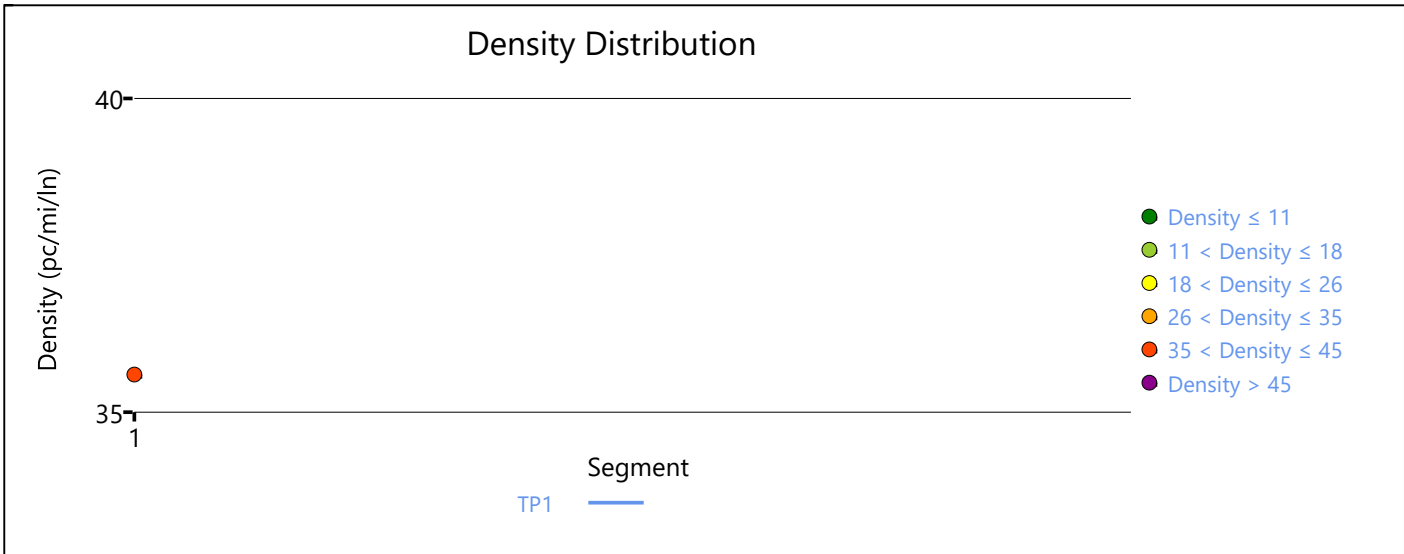
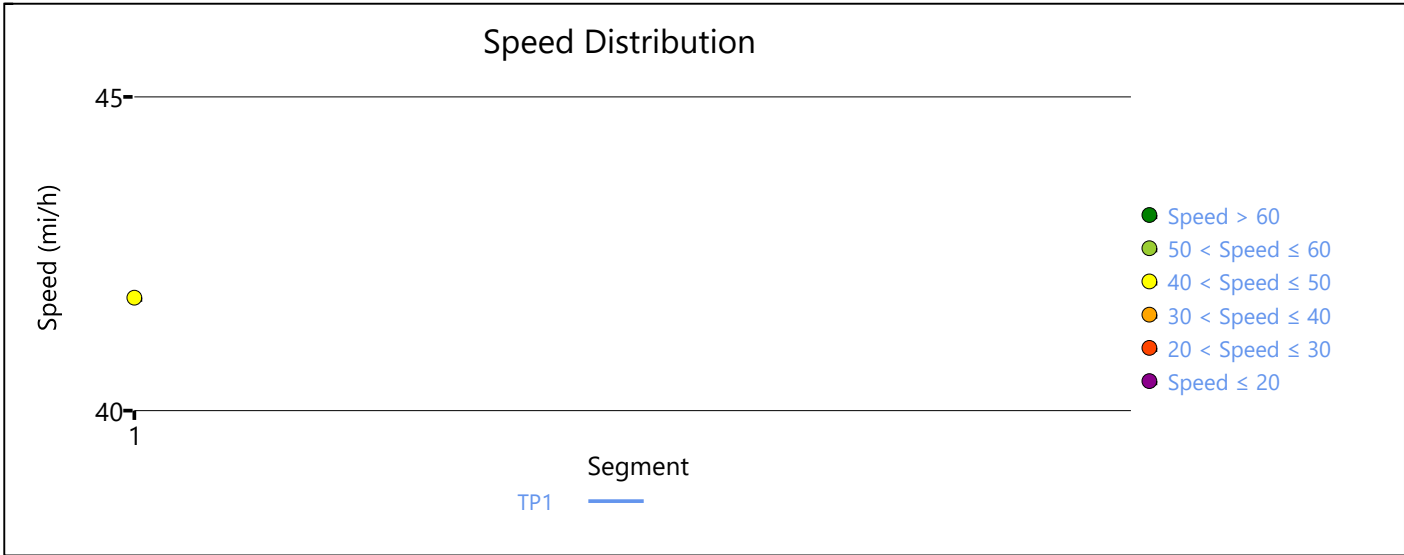
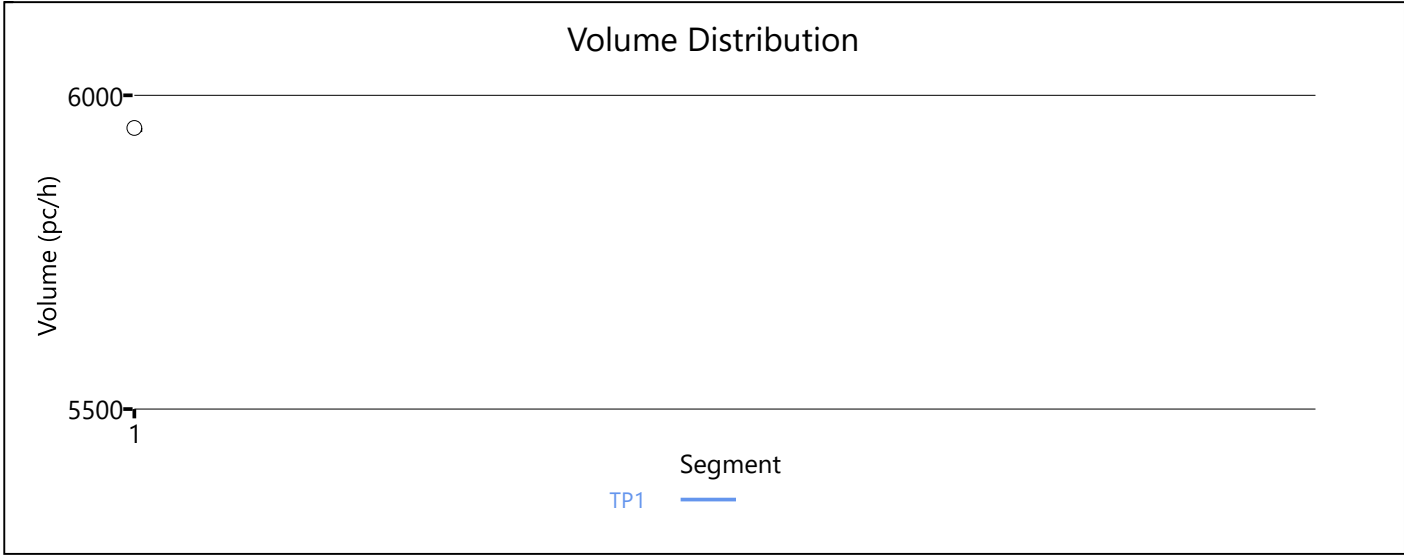
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	35.6	32.6	1.00	E

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	32.6
Average Travel Time, min	1.00	Density, pc/mi/ln	35.6

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.883	4278	8800	0.49	41.8	25.6	C

Facility Analysis Results

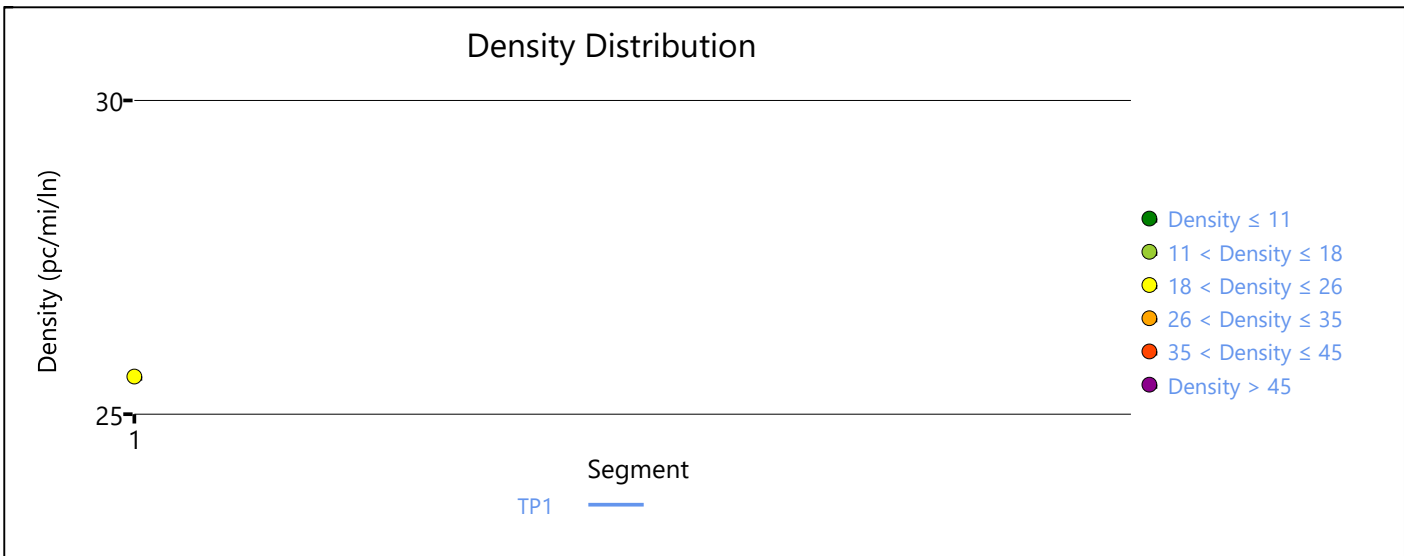
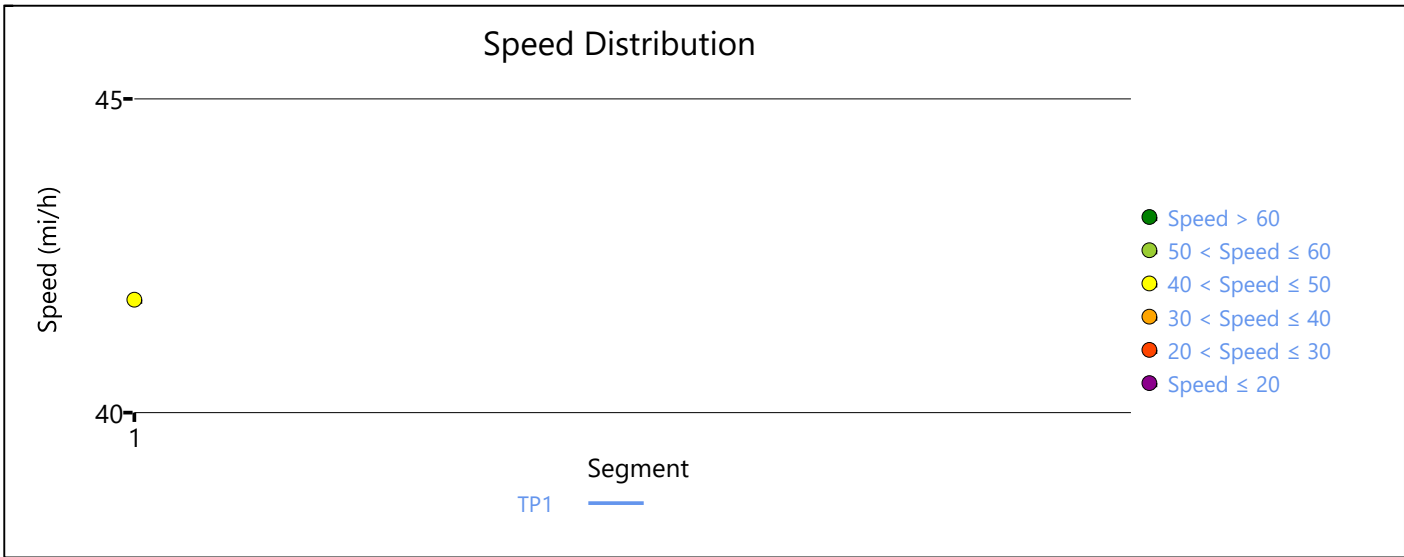
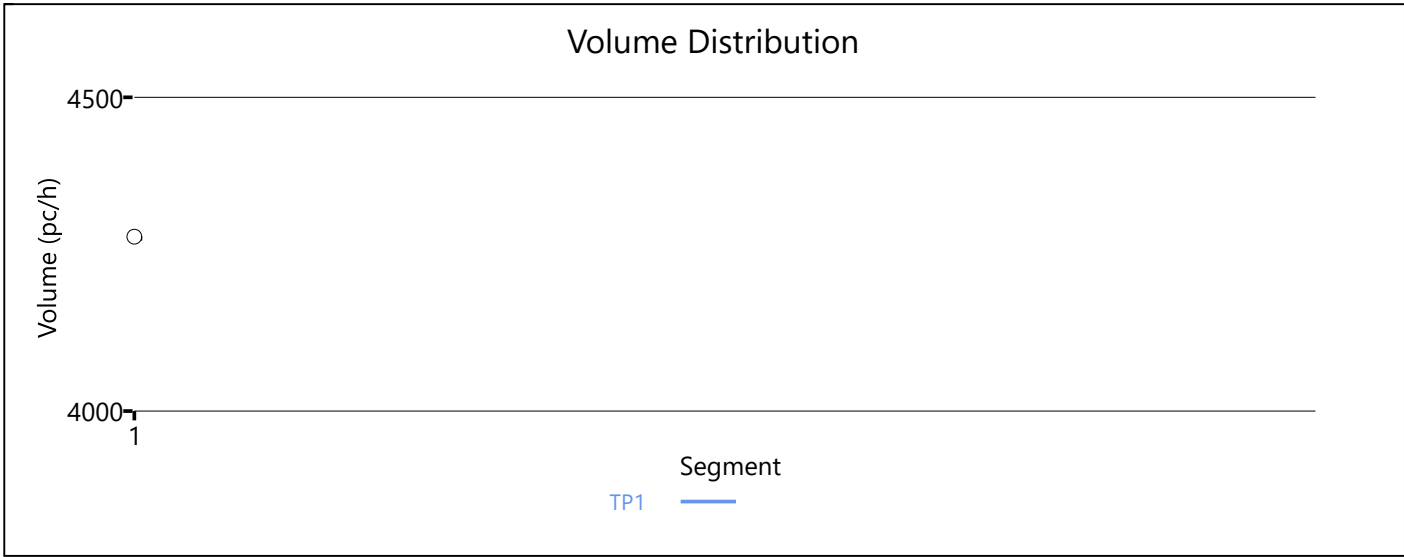
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	25.6	22.6	1.00	C

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	22.6
Average Travel Time, min	1.00	Density, pc/mi/ln	25.6

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.949	4870	8800	0.55	41.8	29.1	D

Facility Analysis Results

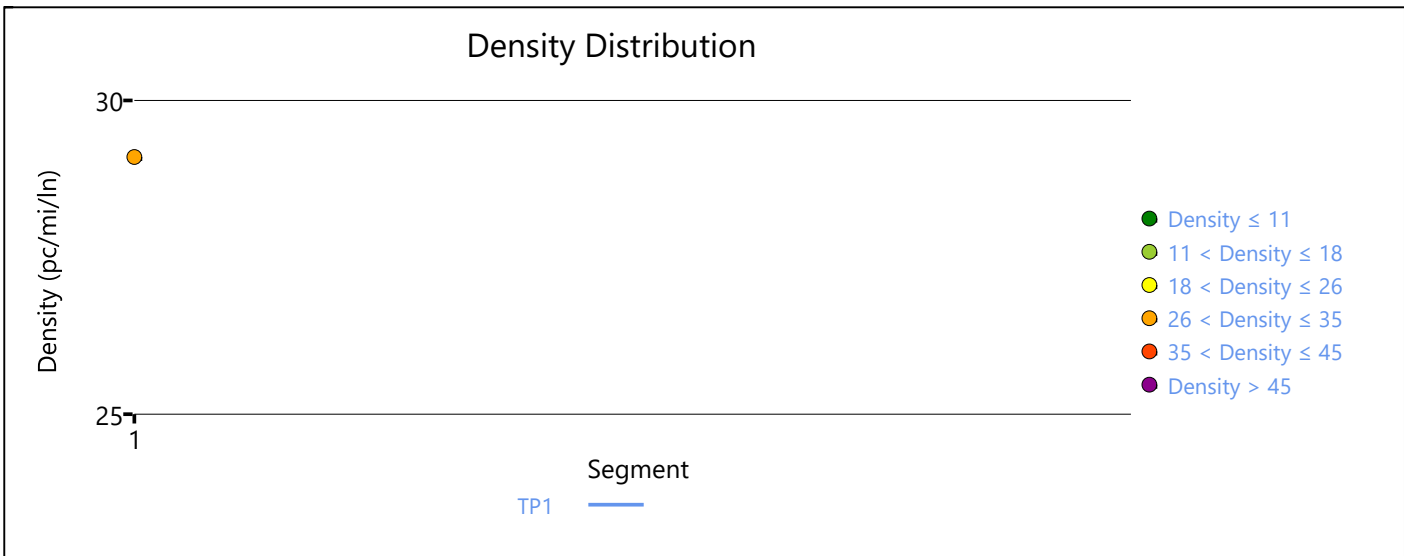
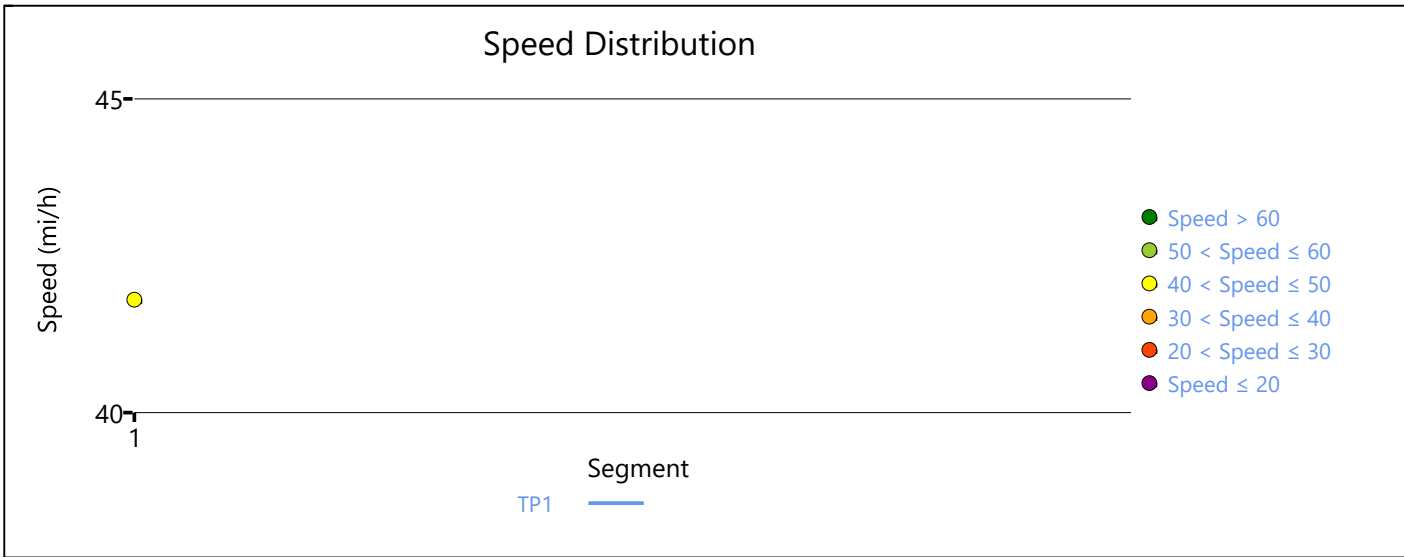
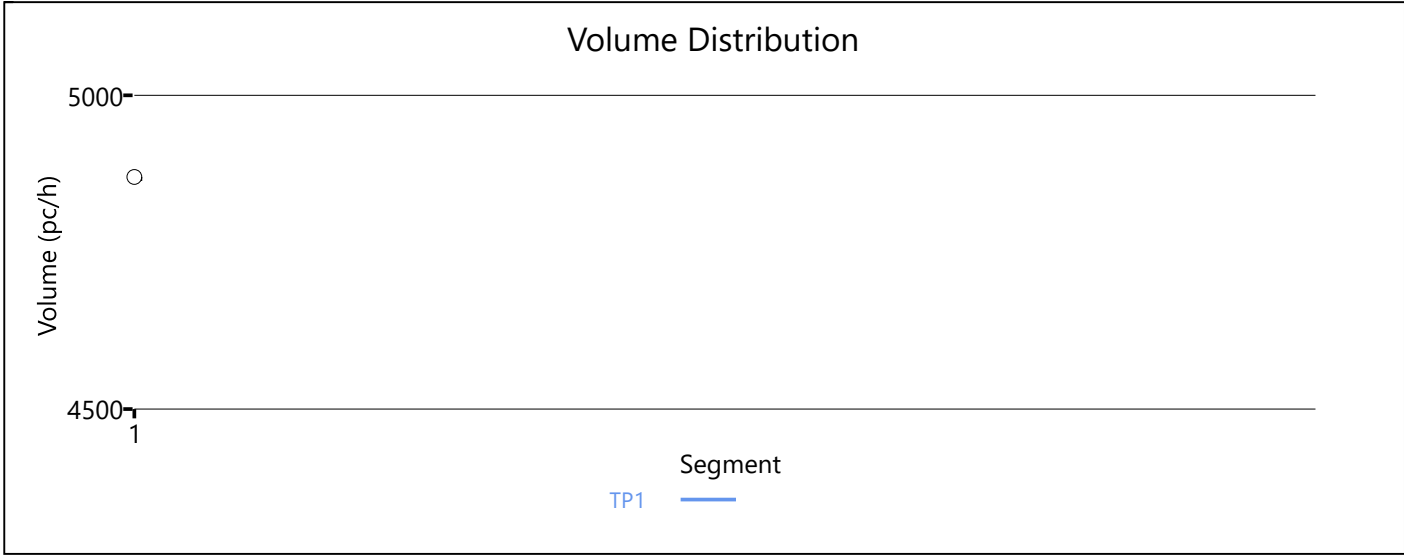
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	29.1	27.6	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	27.6
Average Travel Time, min	1.00	Density, pc/mi/ln	29.1

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.896	1028	8800	0.12	41.8	6.1	A

Facility Analysis Results

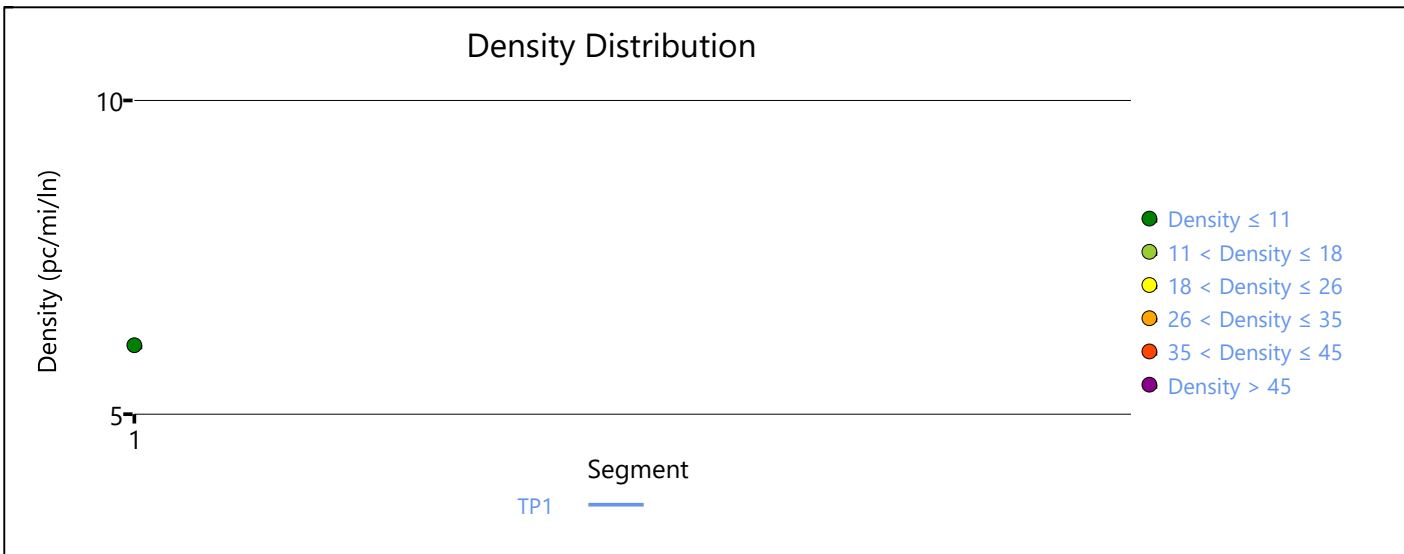
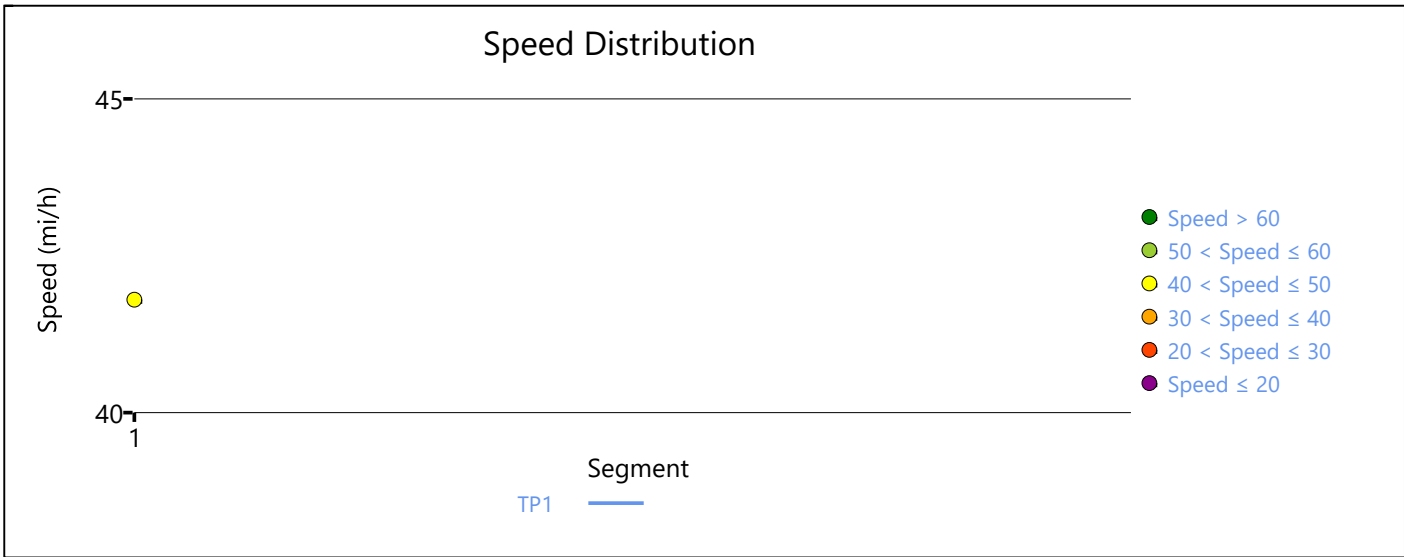
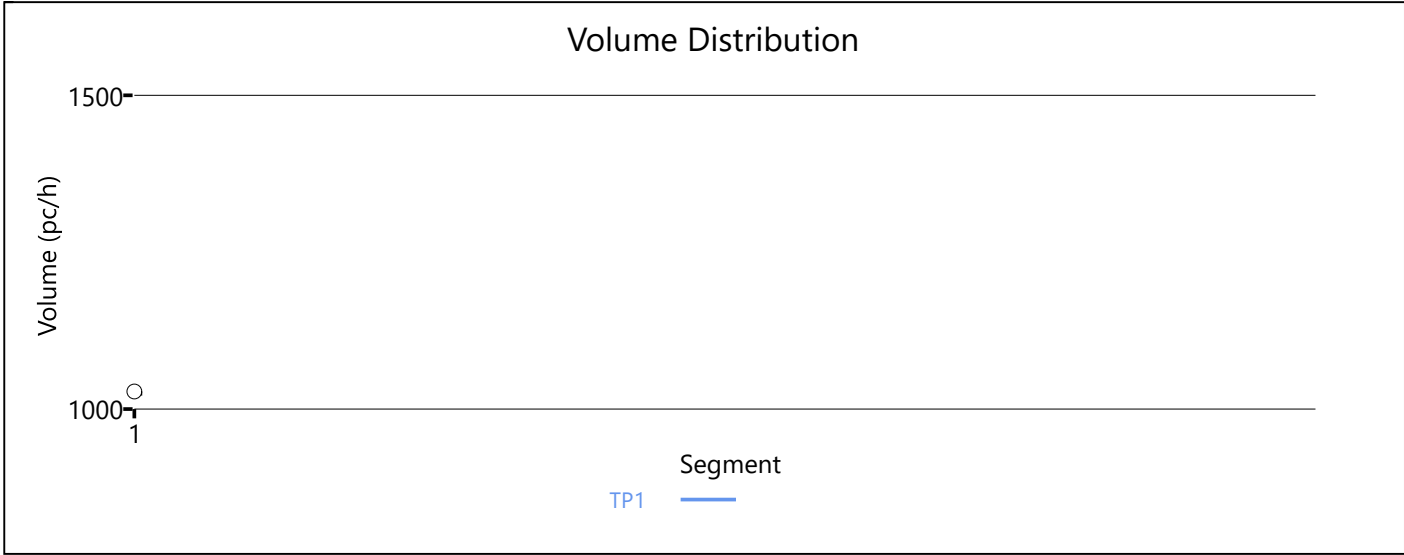
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	6.1	5.5	1.00	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	5.5
Average Travel Time, min	1.00	Density, pc/mi/ln	6.1

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NoBuild
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.846	1440	6654	0.22	51.8	9.3	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.846	0.829	1440	805	6750	4200	0.21	0.19	54.9	55.0	8.7	8.7	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.873	631	6654	0.09	51.8	4.1	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.8	7.2	6.2	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	52.8	Density, veh/mi/ln	6.2
Average Travel Time, min	1.50	Density, pc/mi/ln	7.2

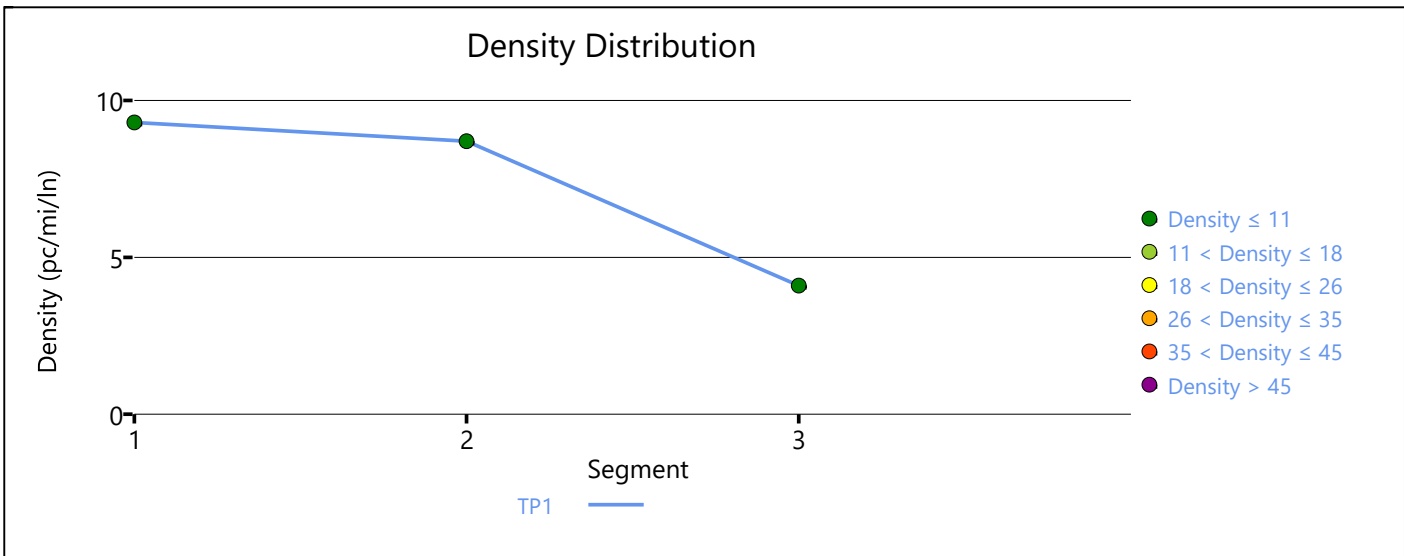
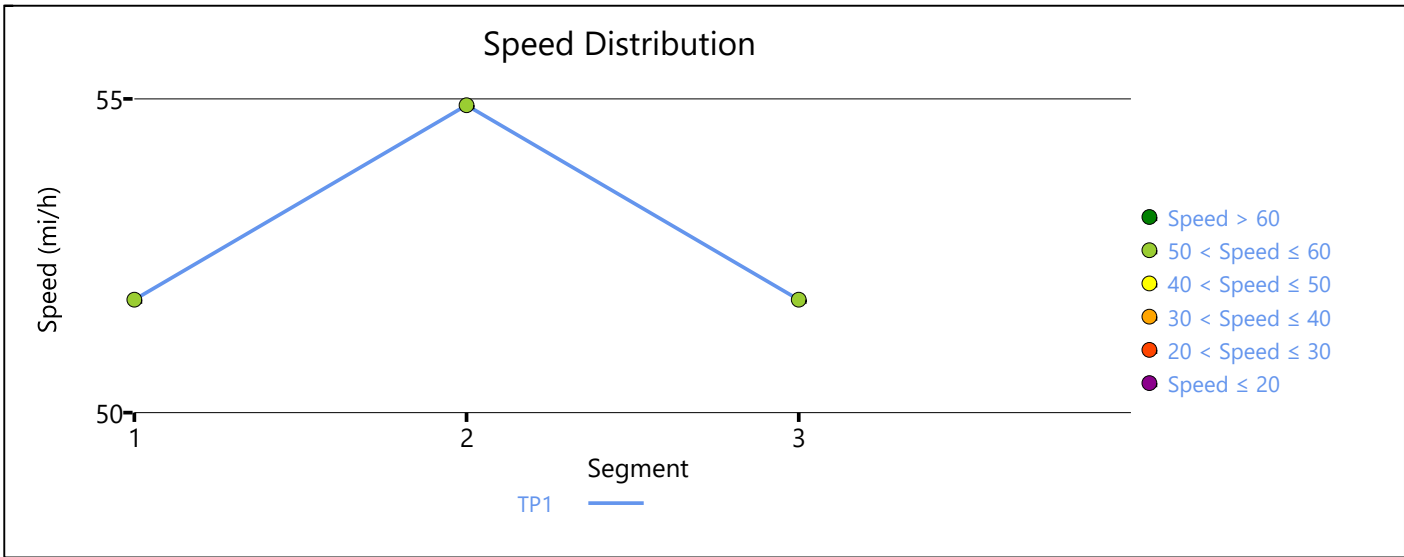
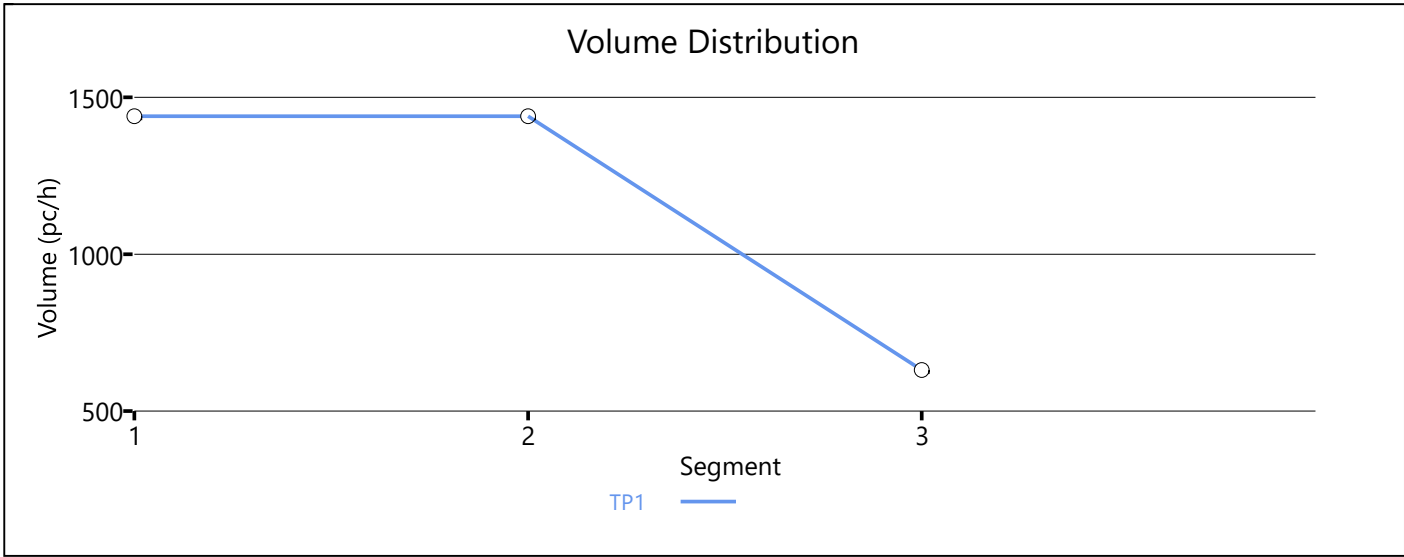
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	No Build
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.810	826	6654	0.12	51.8	5.3	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.810	0.817	826	763	6750	4200	0.12	0.18	54.9	55.0	5.0	5.0	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.715	64	6654	0.01	51.8	0.4	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	3.4	2.8	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	2.8
Average Travel Time, min	1.50	Density, pc/mi/ln	3.4

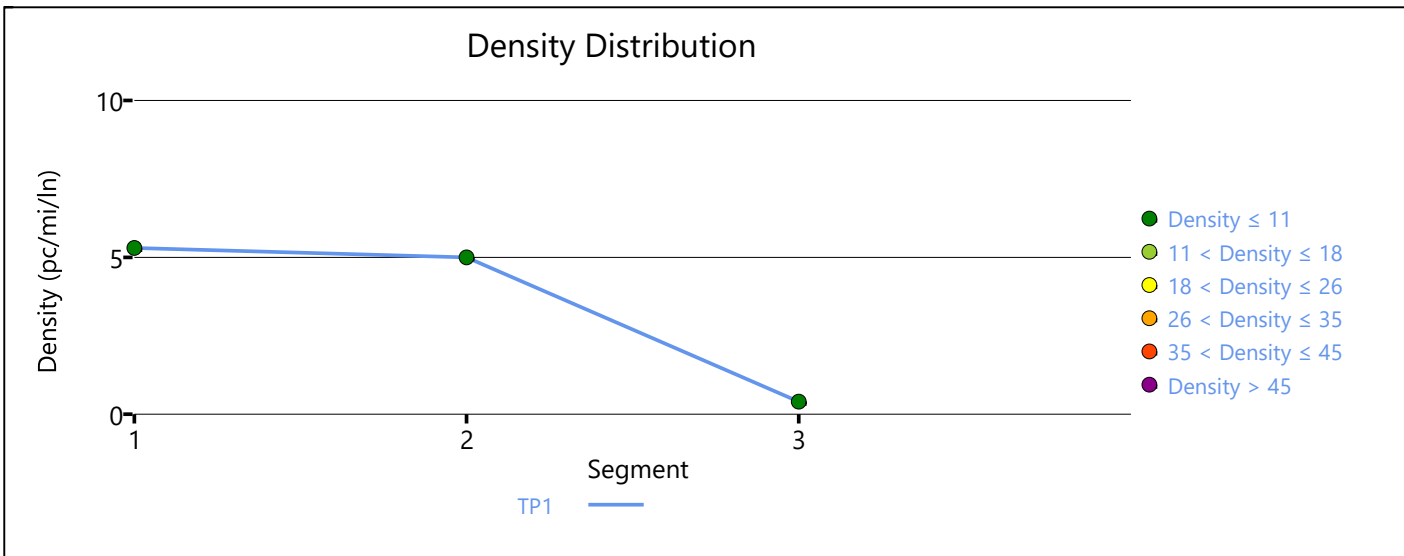
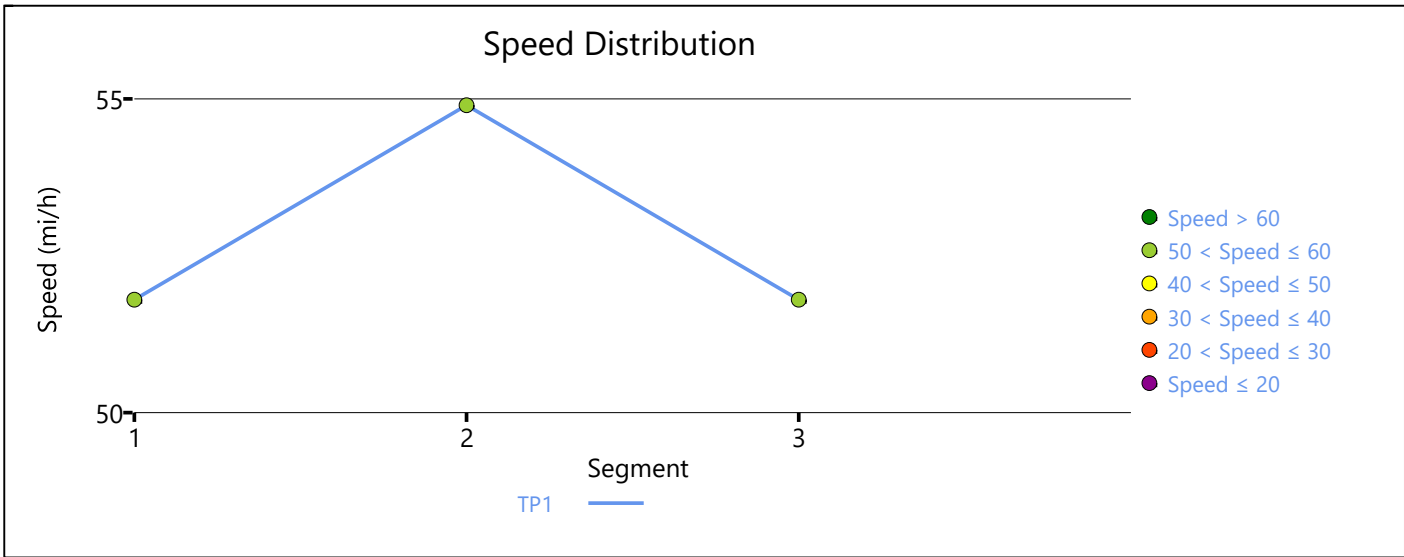
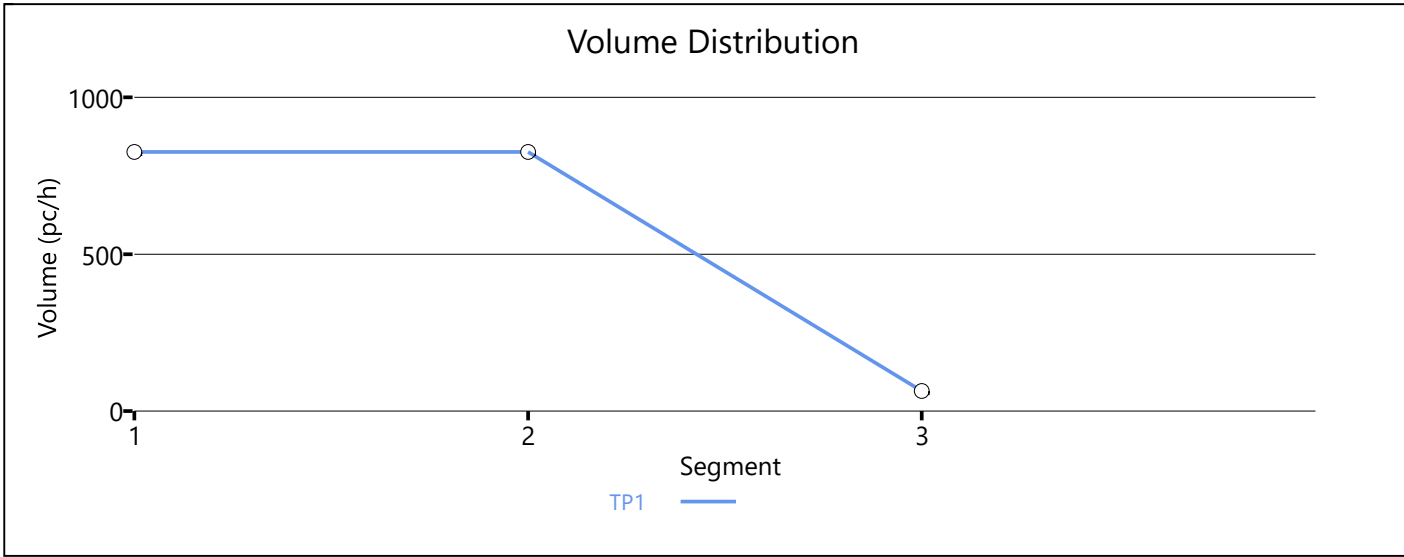
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	No Build
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.921	915	6654	0.14	51.8	5.9	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.921	0.926	915	867	6750	4200	0.14	0.21	54.9	55.0	5.5	5.5	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.822	48	6654	0.01	51.8	0.3	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	3.7	3.4	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	3.4
Average Travel Time, min	1.50	Density, pc/mi/ln	3.7

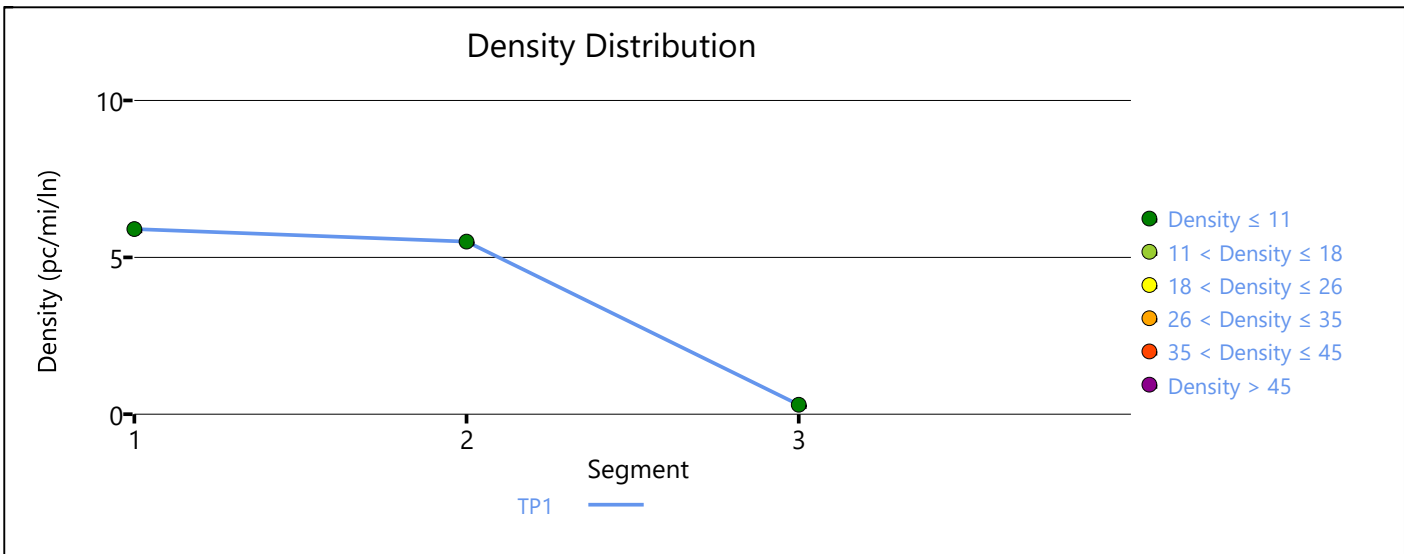
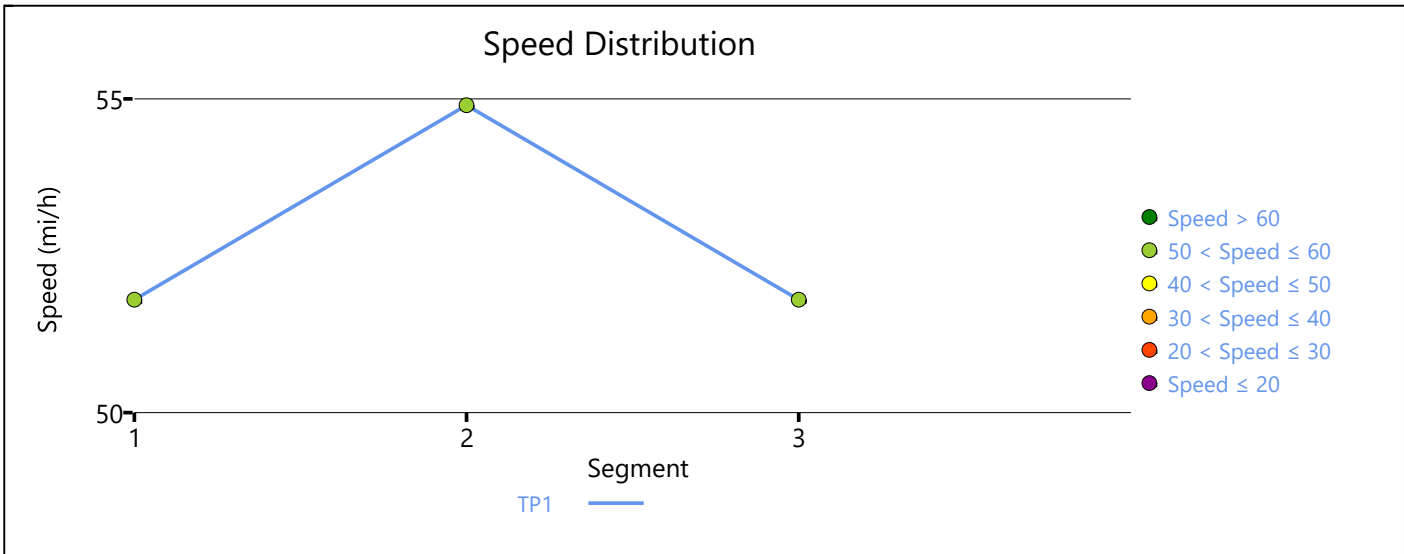
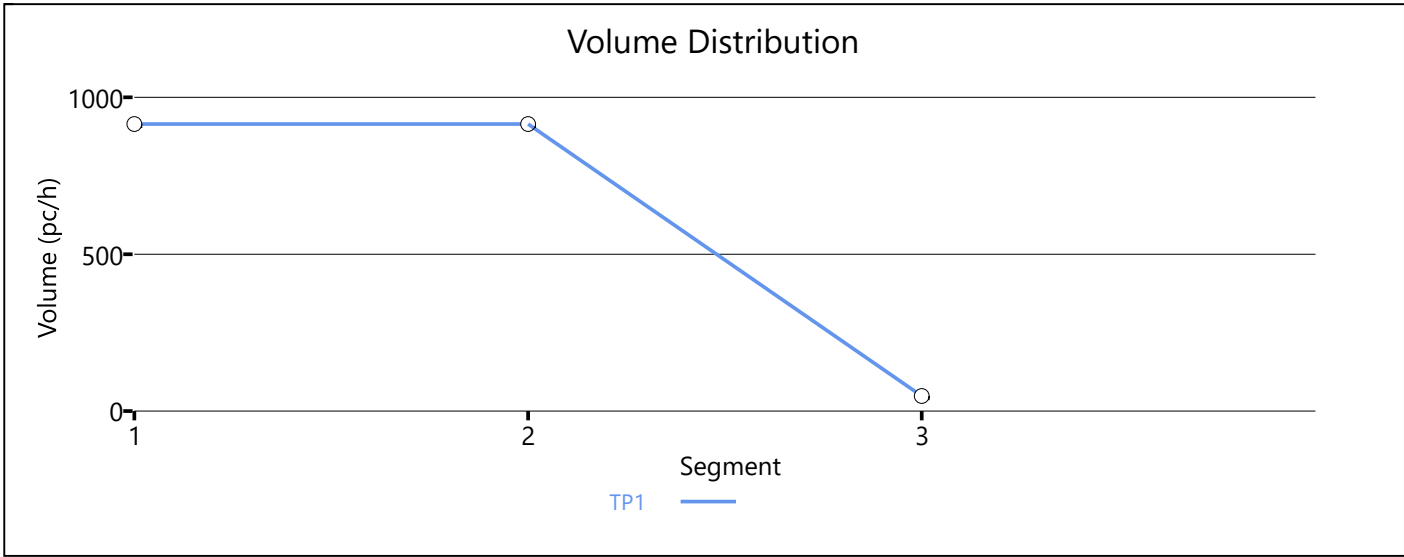
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	No Build
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.891	423	6654	0.06	51.8	2.7	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.891	0.899	423	402	6750	4200	0.06	0.10	54.9	55.0	2.6	2.6	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.734	20	6654	0.00	51.8	0.1	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	1.7	1.5	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	1.5
Average Travel Time, min	1.50	Density, pc/mi/ln	1.7

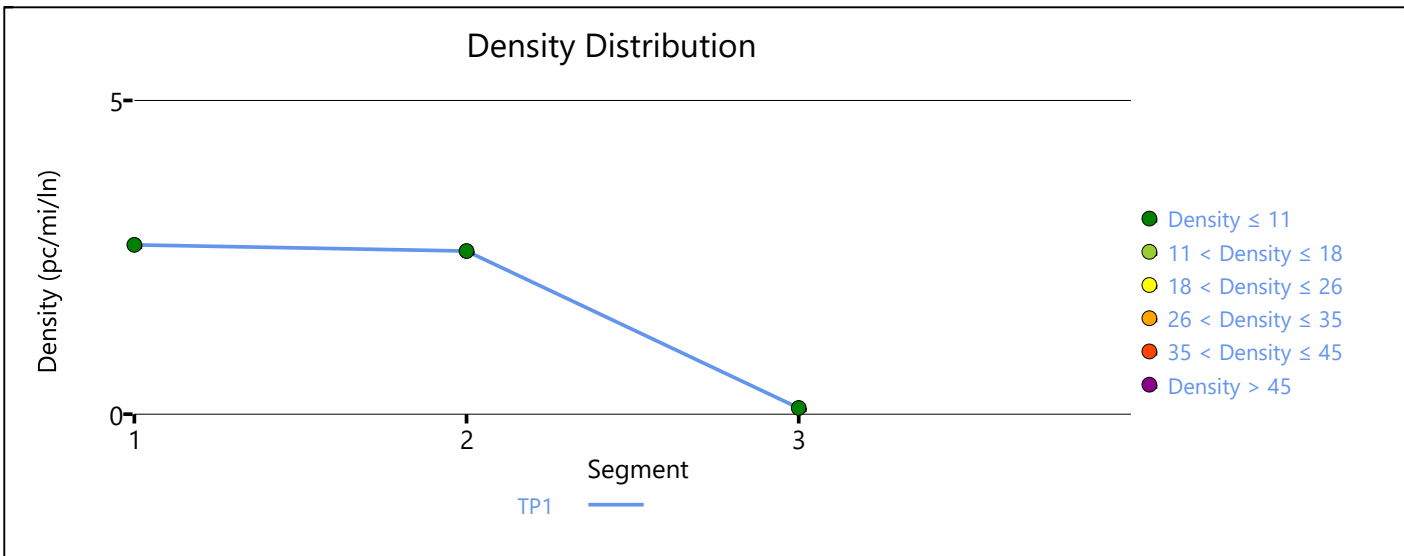
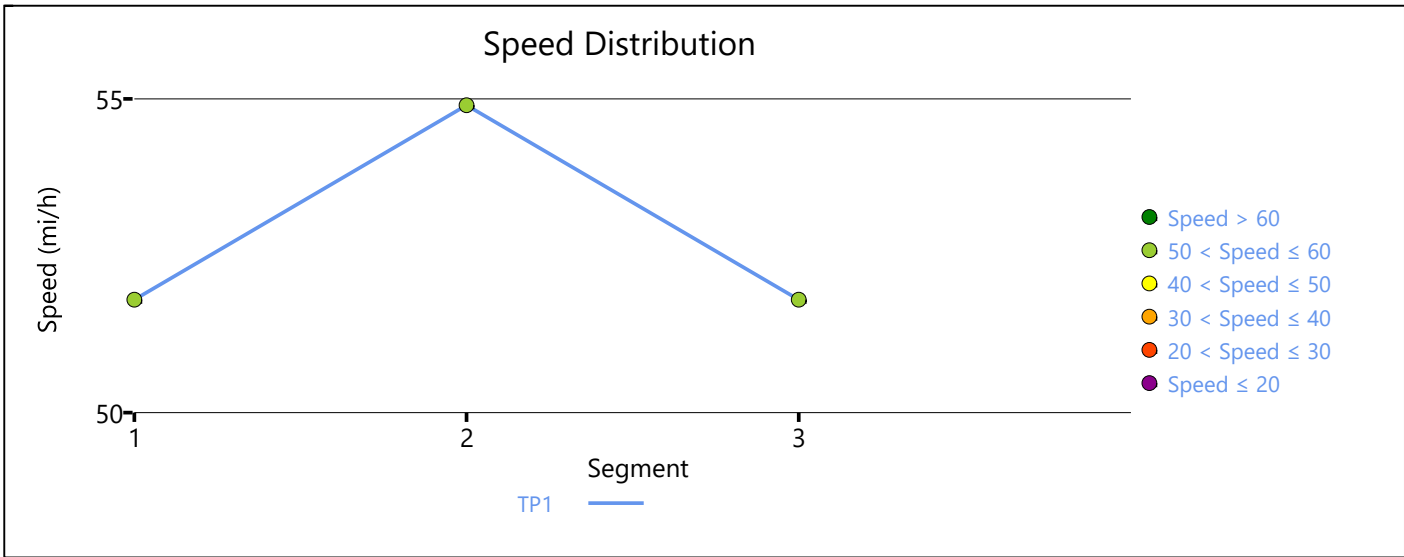
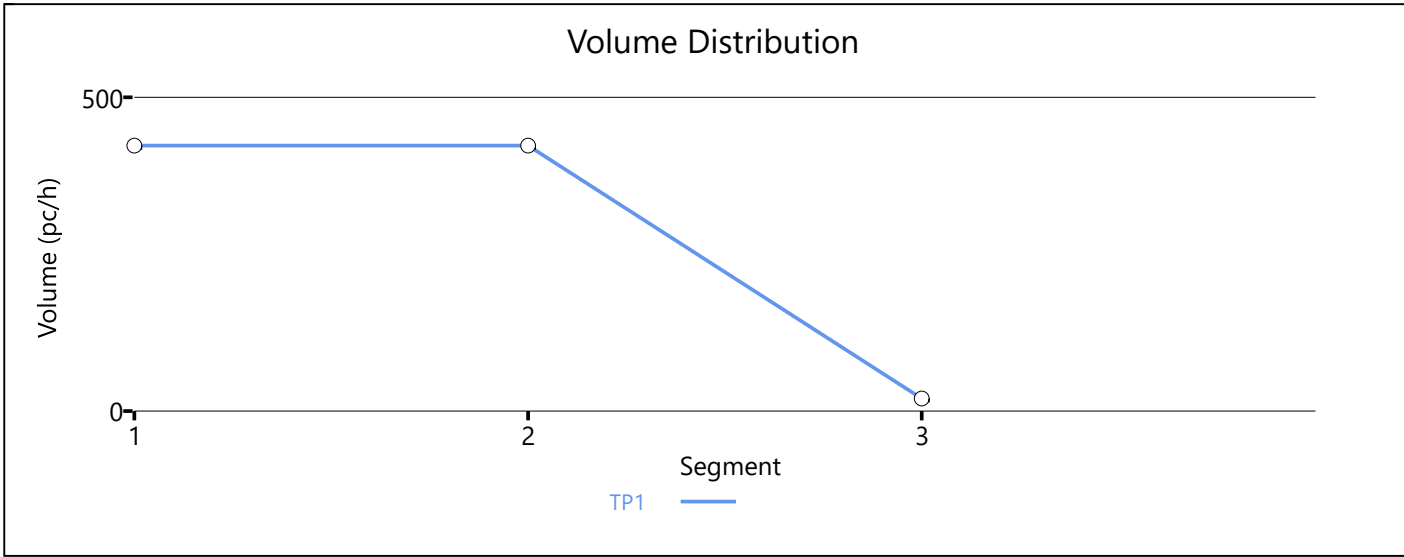
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.909	1717	4400	0.39	41.8	20.5	C

Facility Analysis Results

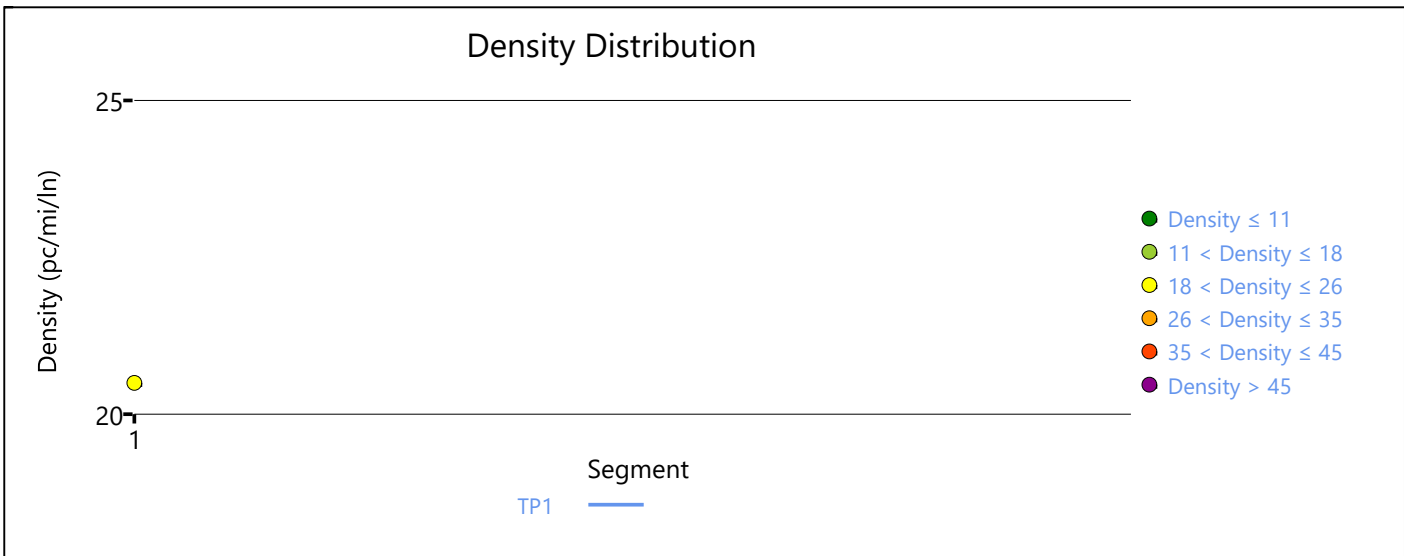
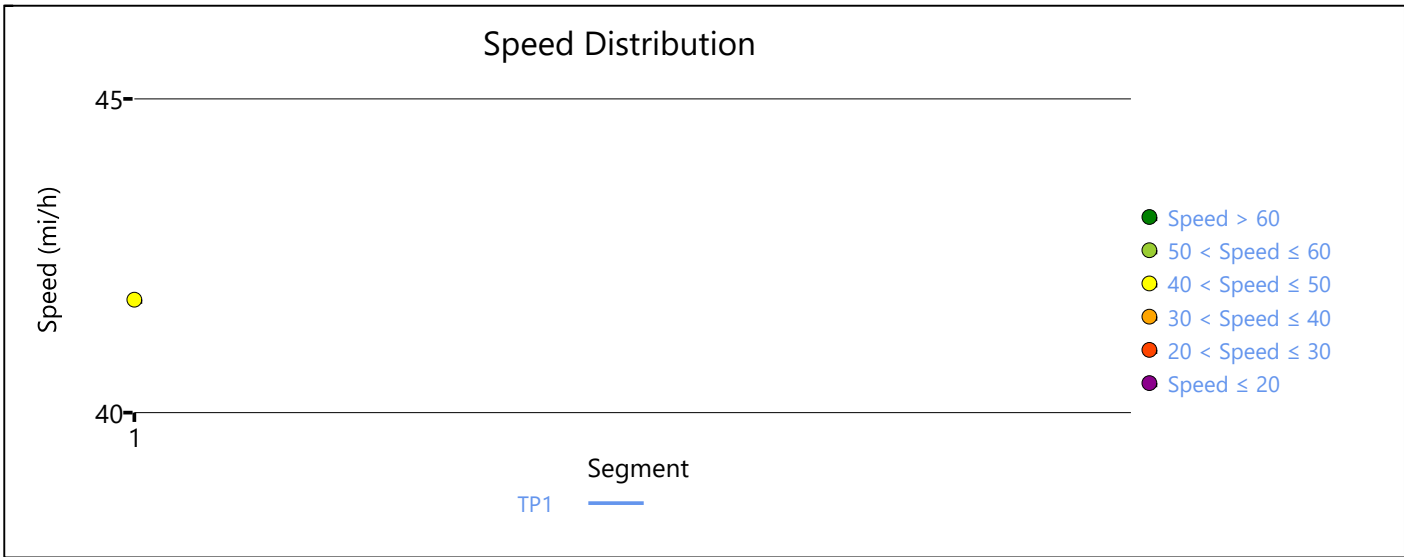
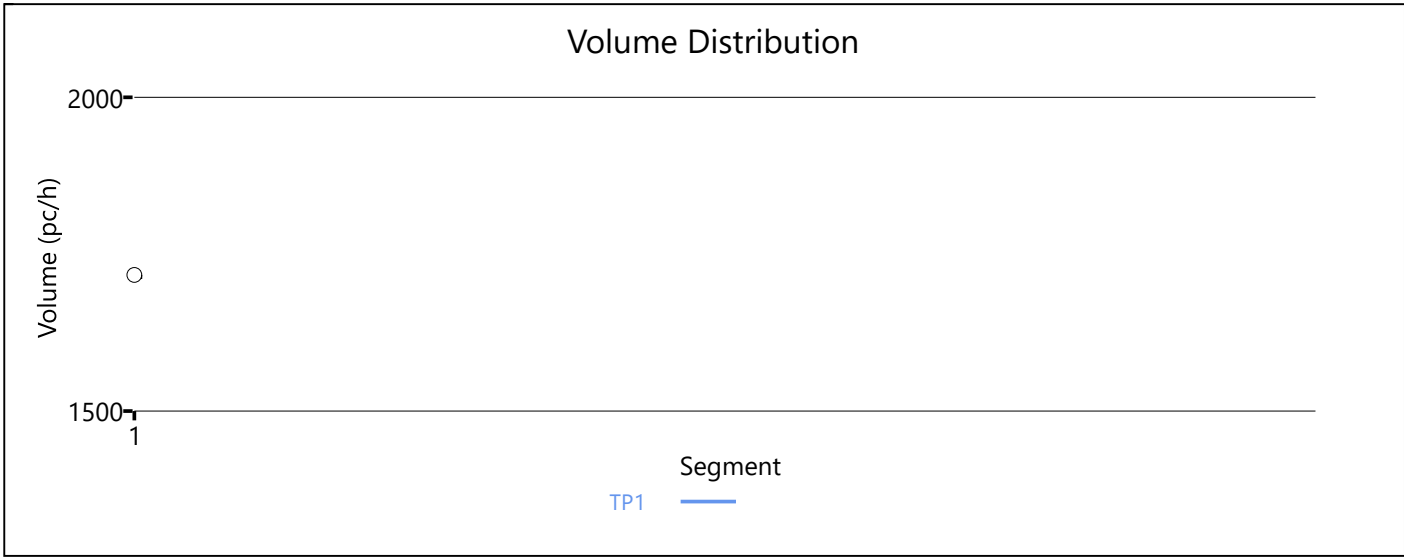
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	20.5	18.6	1.40	C

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	18.6
Average Travel Time, min	1.40	Density, pc/mi/ln	20.5

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.846	944	4400	0.21	41.8	11.3	B

Facility Analysis Results

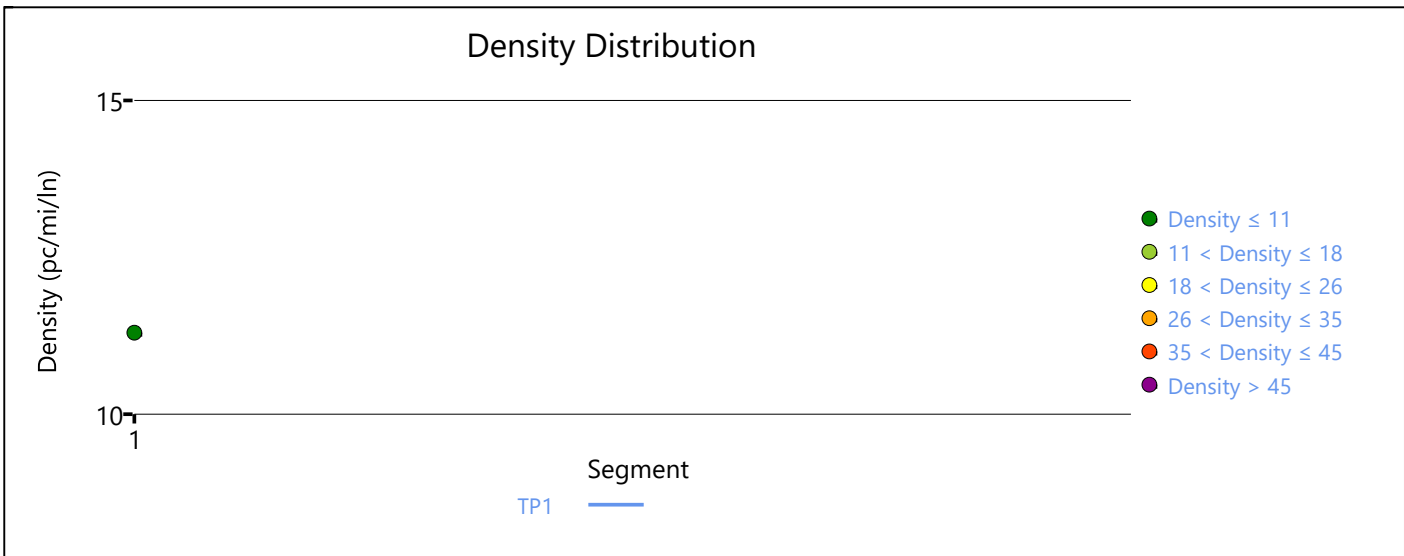
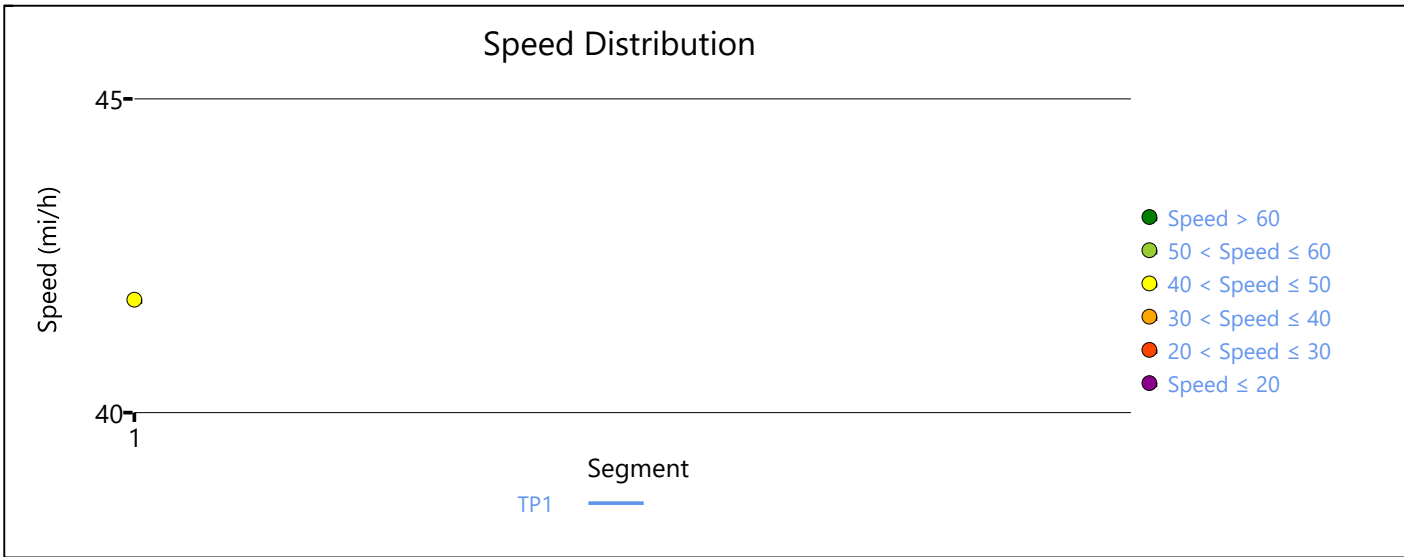
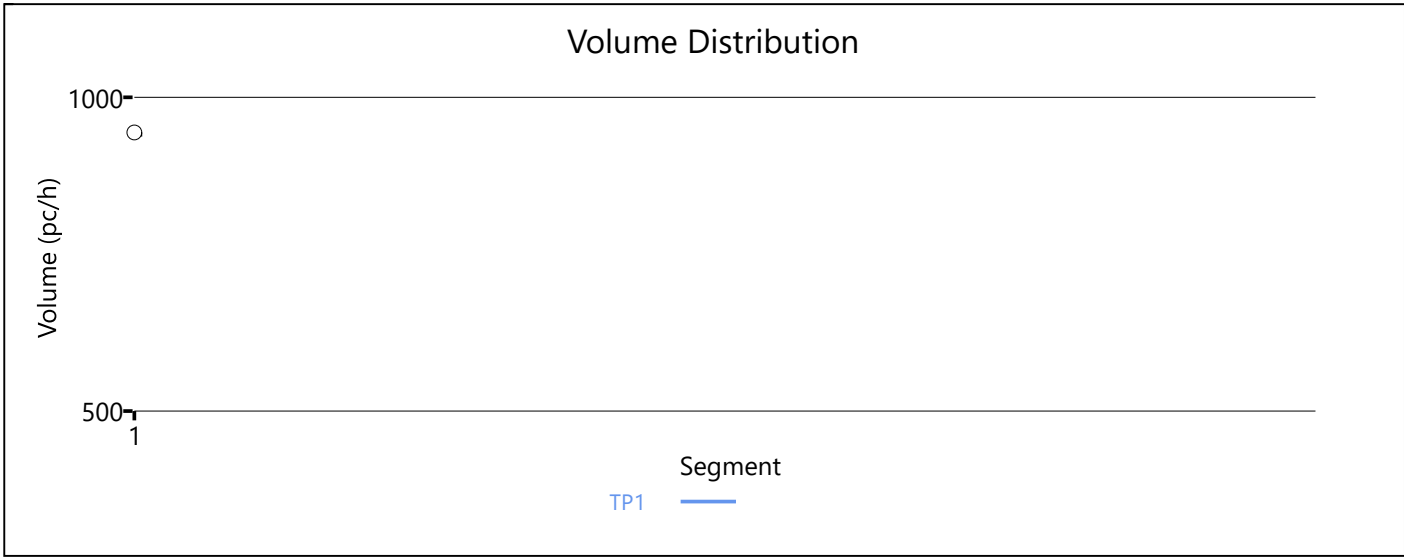
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	11.3	9.6	1.40	B

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	9.6
Average Travel Time, min	1.40	Density, pc/mi/ln	11.3

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.933	893	4400	0.20	41.8	10.7	A

Facility Analysis Results

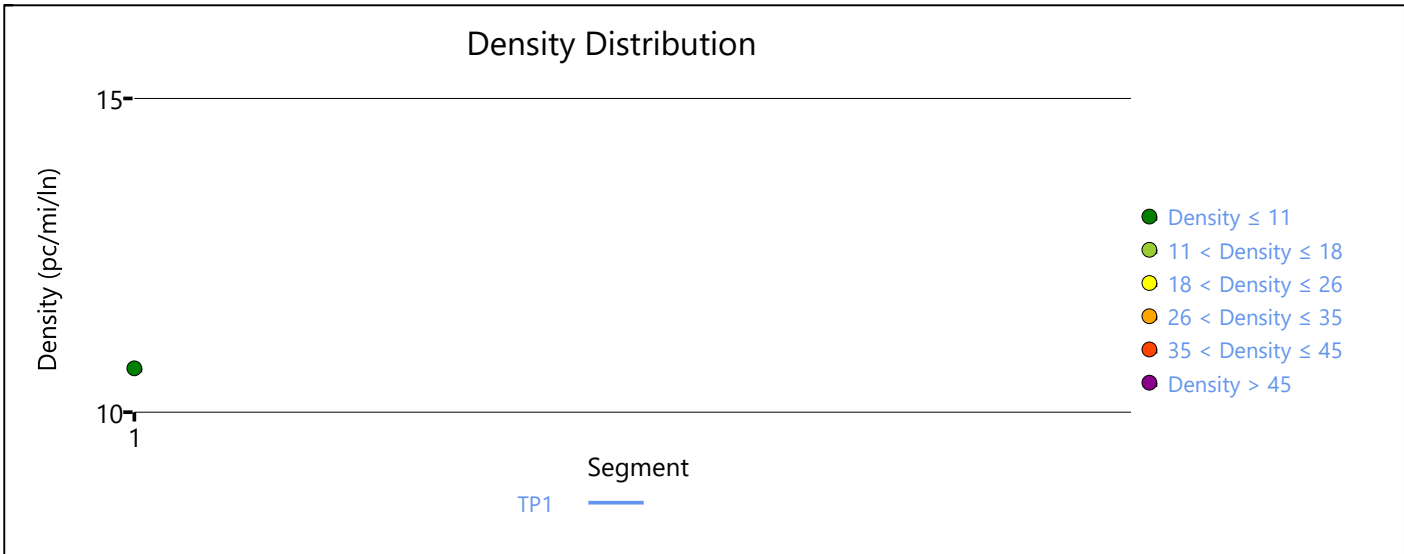
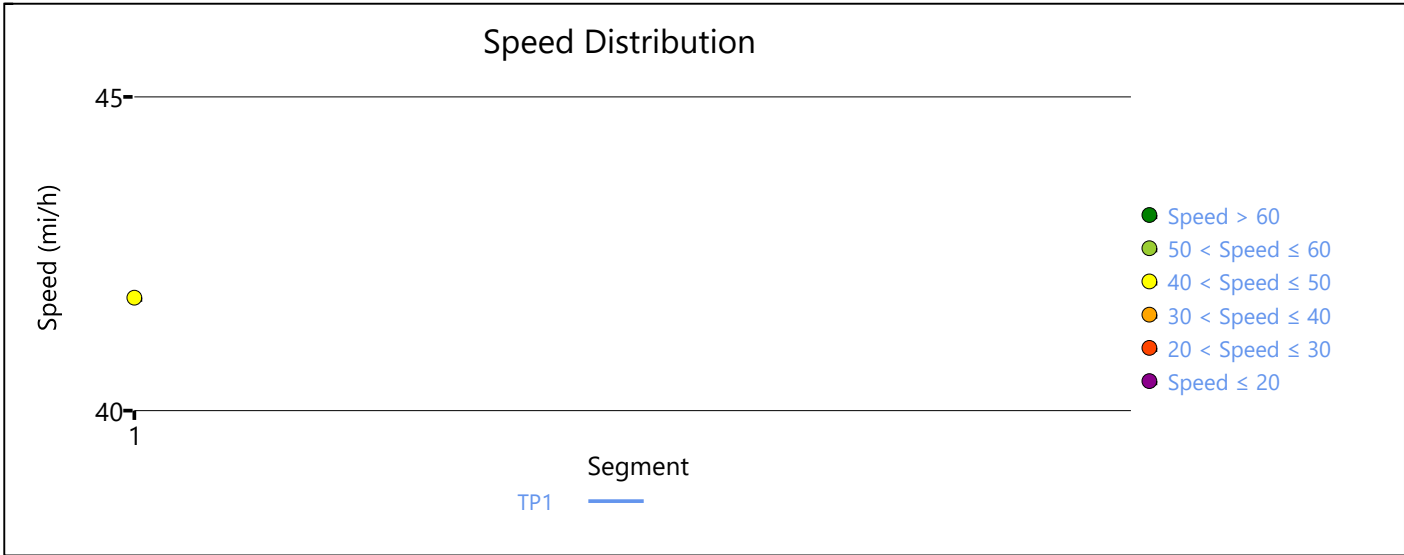
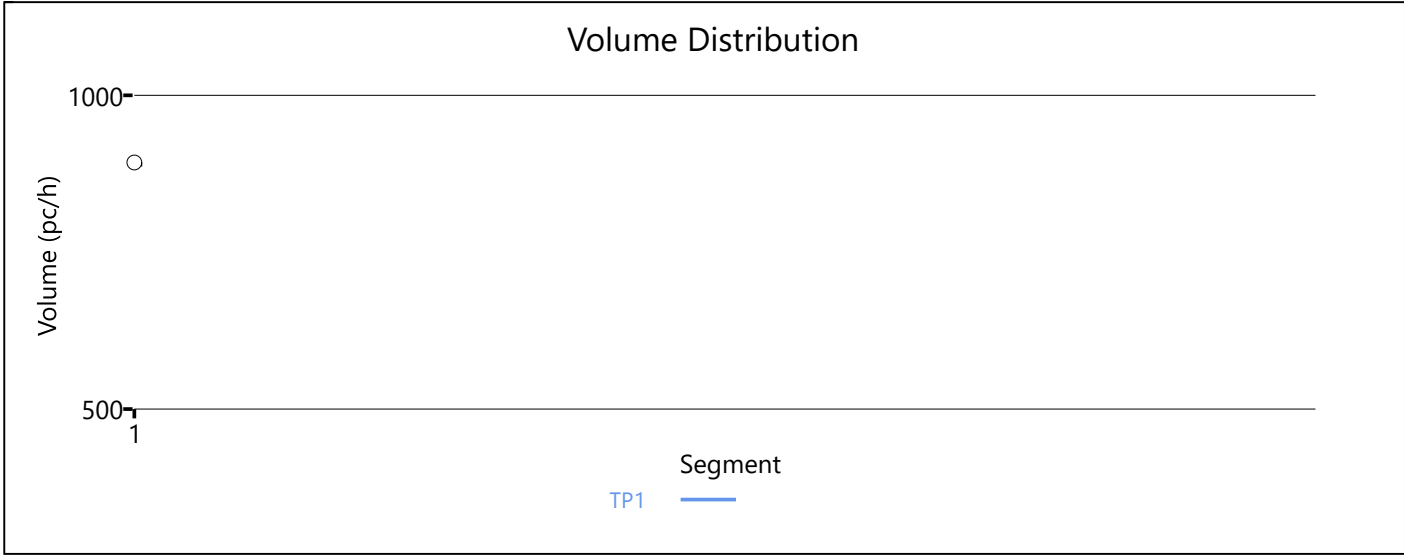
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	10.7	10.0	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	10.0
Average Travel Time, min	1.40	Density, pc/mi/ln	10.7

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.865	280	4400	0.06	41.8	3.3	A

Facility Analysis Results

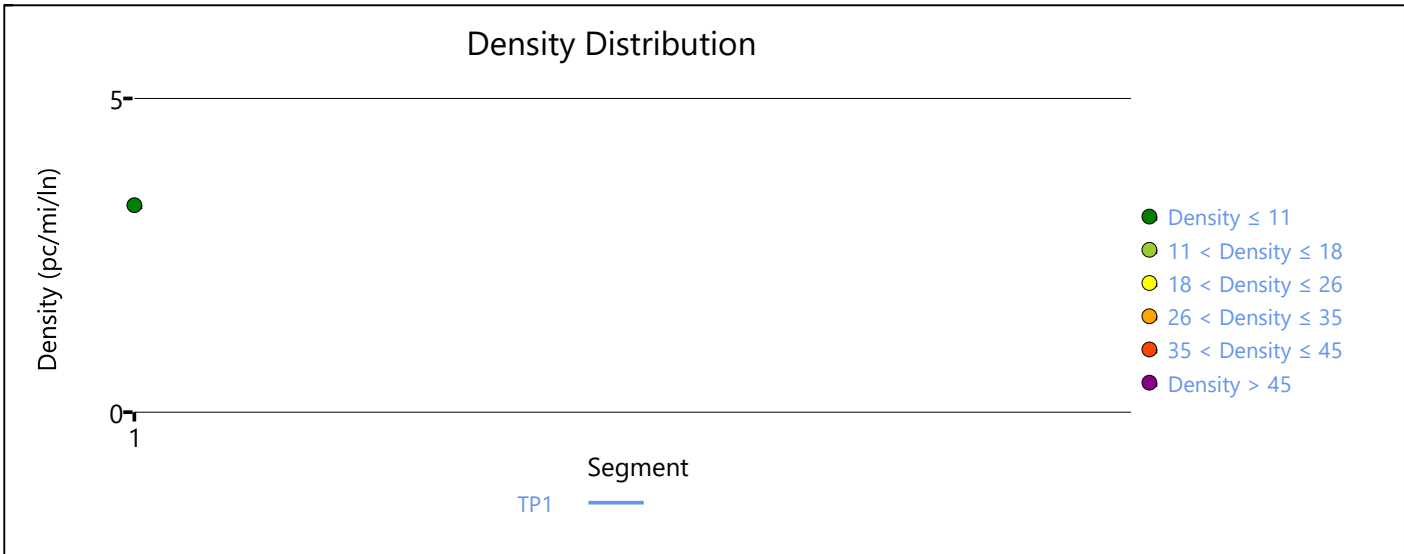
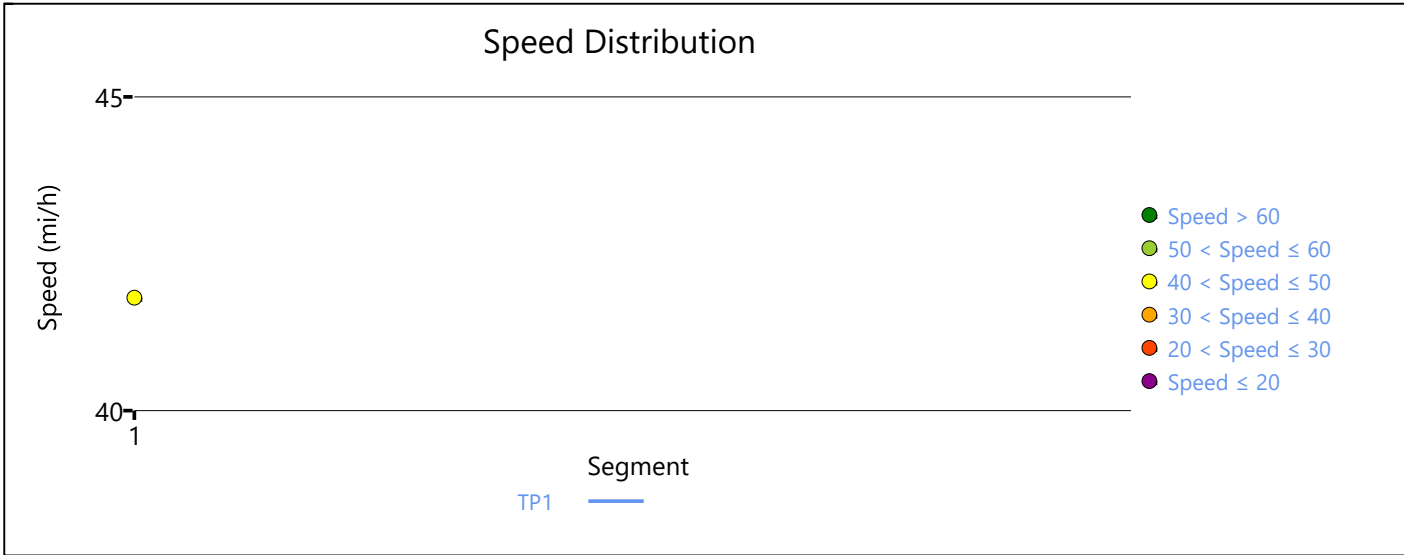
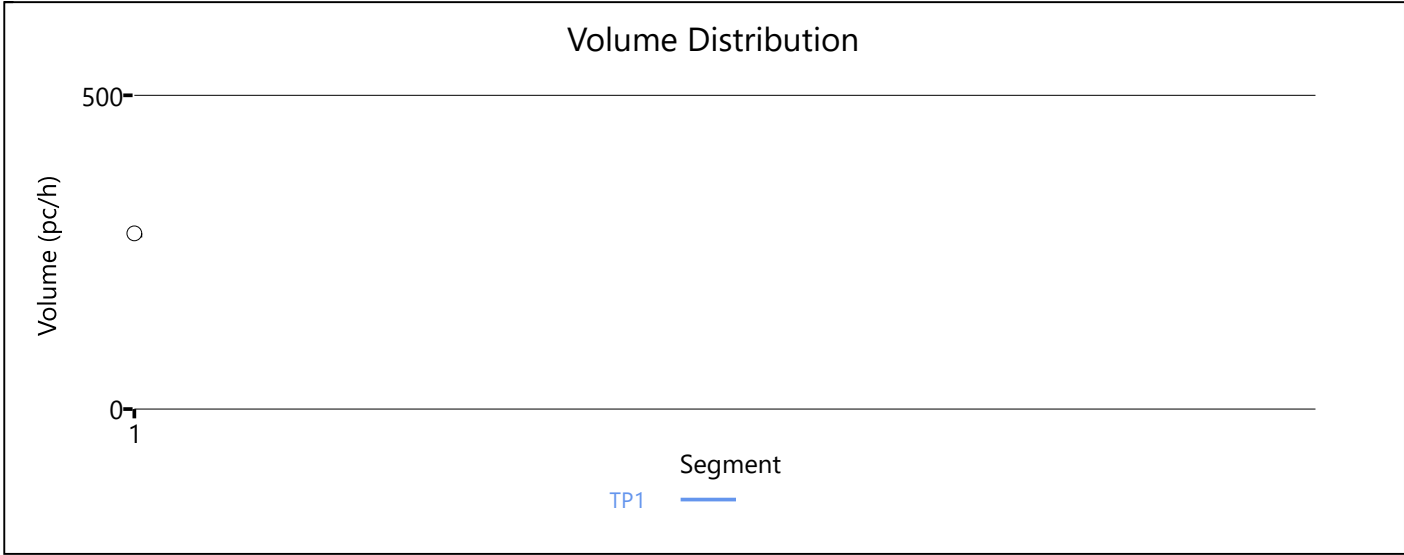
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	3.3	2.9	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	2.9
Average Travel Time, min	1.40	Density, pc/mi/ln	3.3

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.909	5949	8800	0.68	41.8	35.6	E

Facility Analysis Results

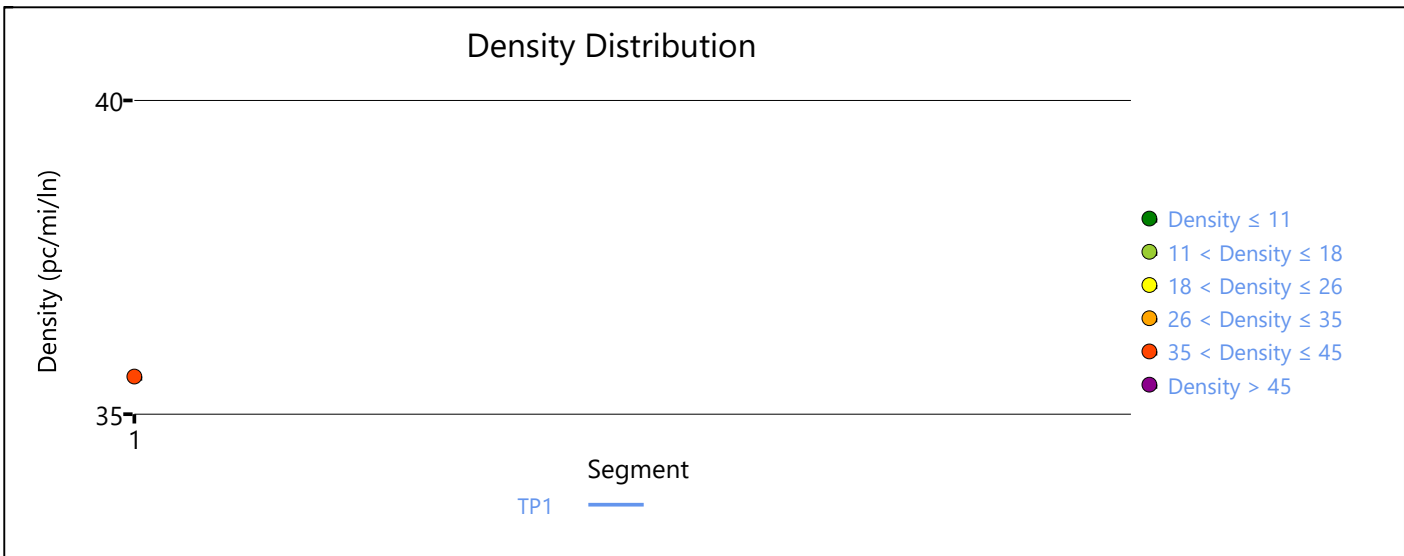
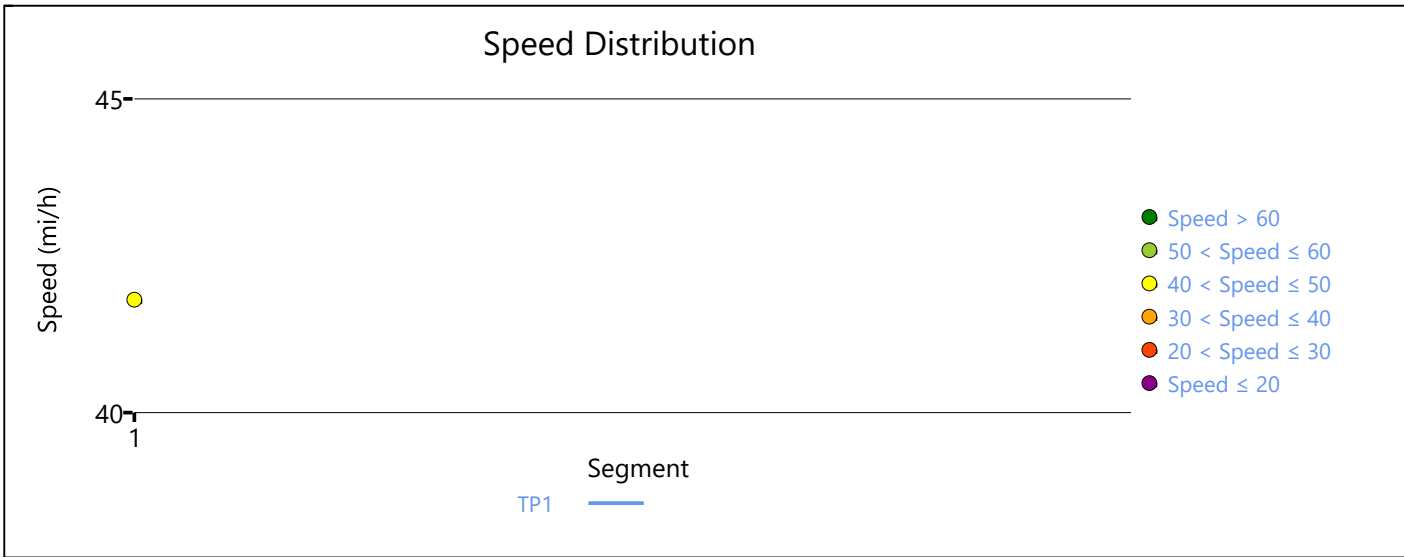
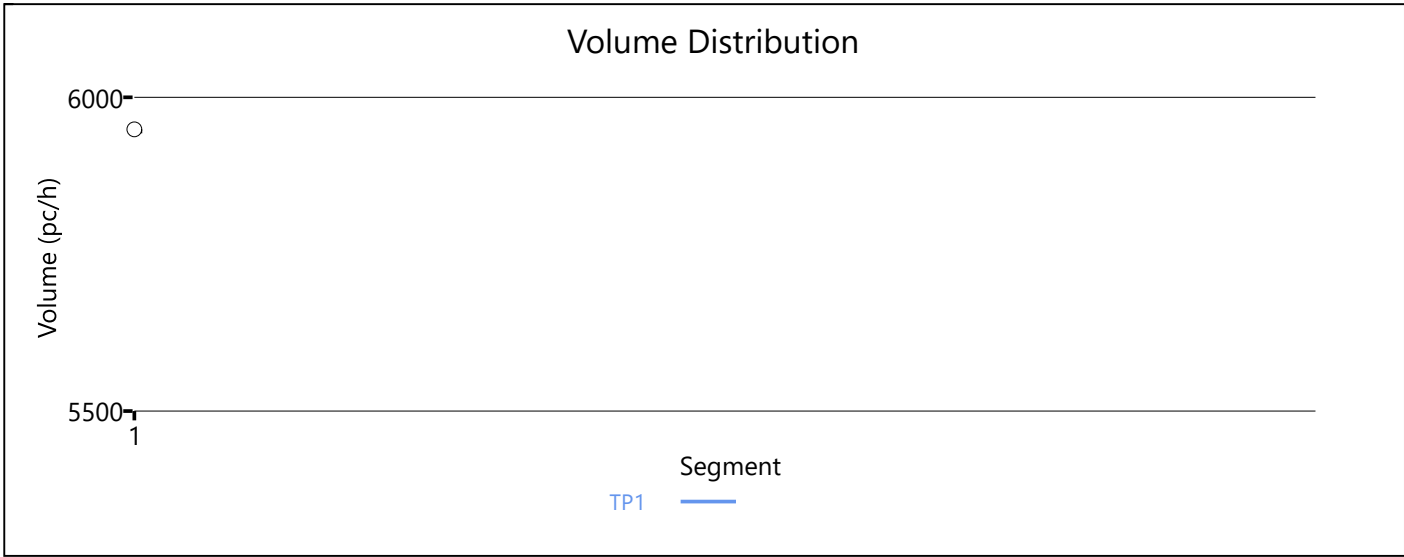
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	35.6	32.4	1.00	E

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	32.4
Average Travel Time, min	1.00	Density, pc/mi/ln	35.6

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.891	5542	8800	0.63	41.8	33.2	D

Facility Analysis Results

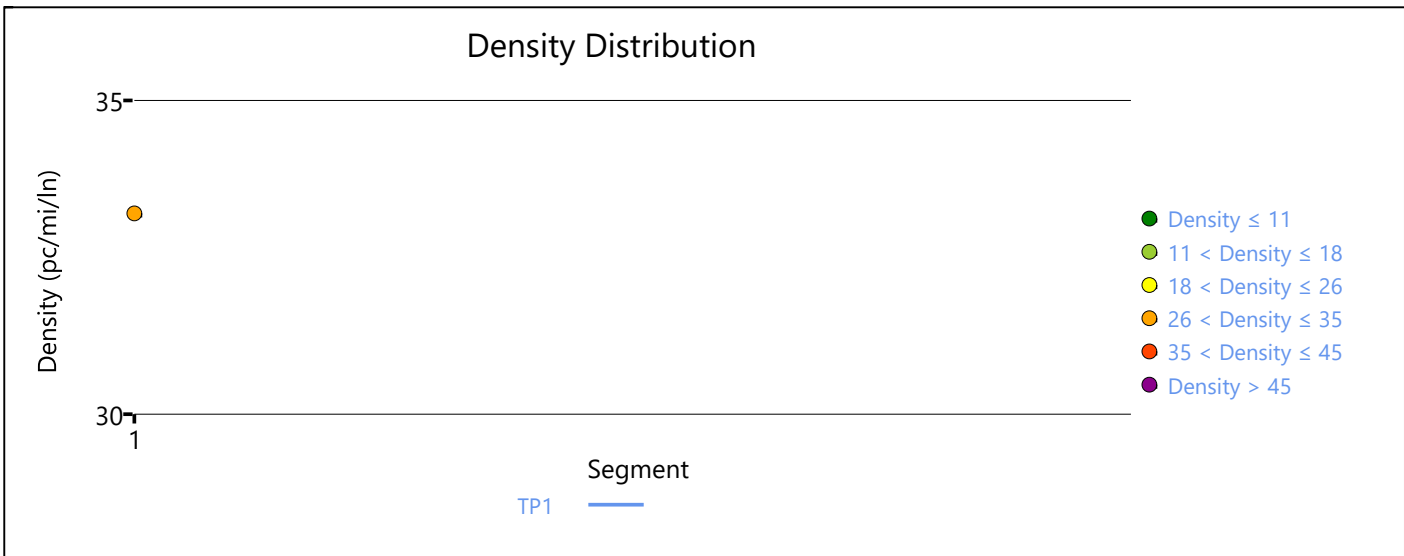
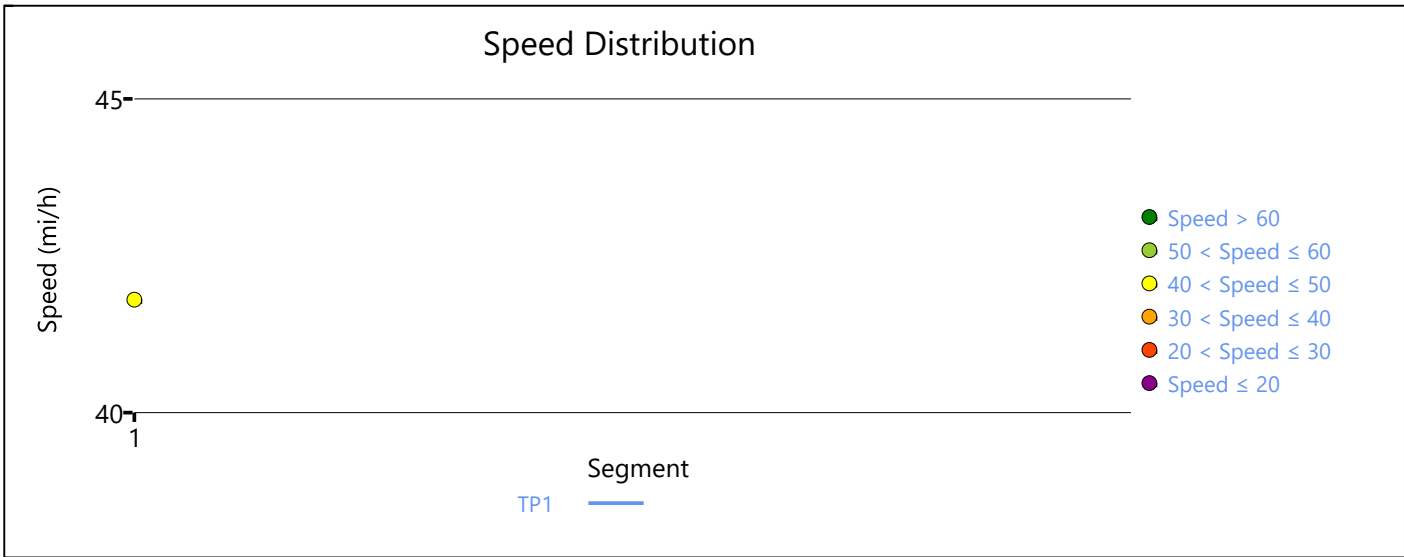
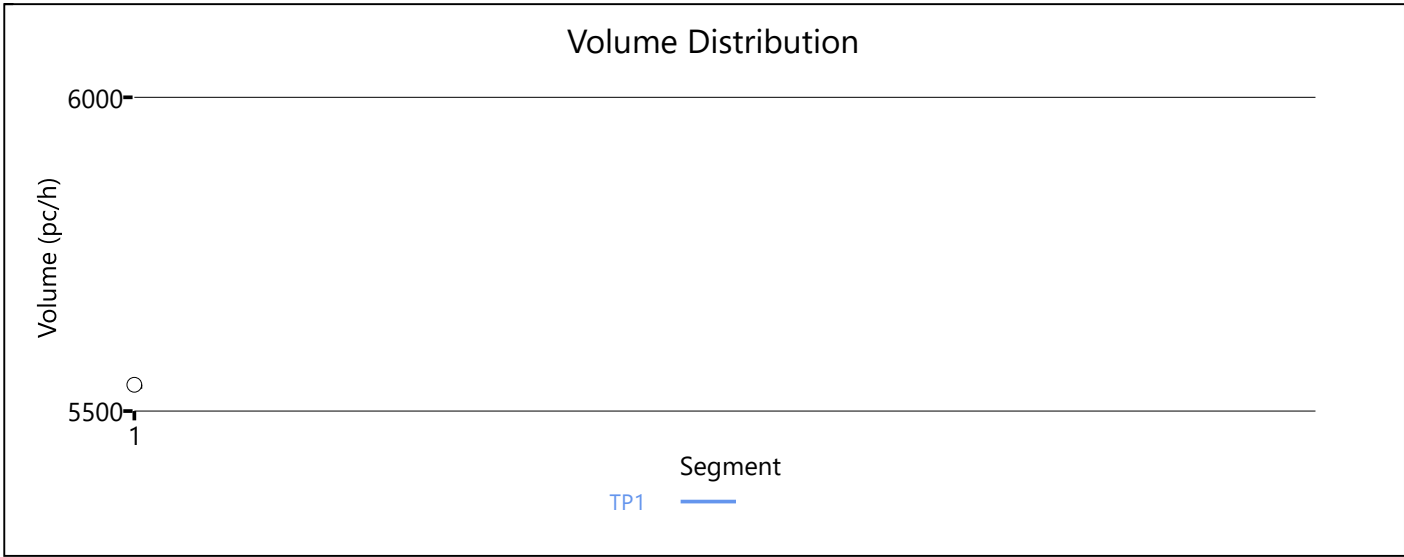
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	33.2	29.6	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	29.6
Average Travel Time, min	1.00	Density, pc/mi/ln	33.2

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.952	5964	8800	0.68	41.8	35.7	E

Facility Analysis Results

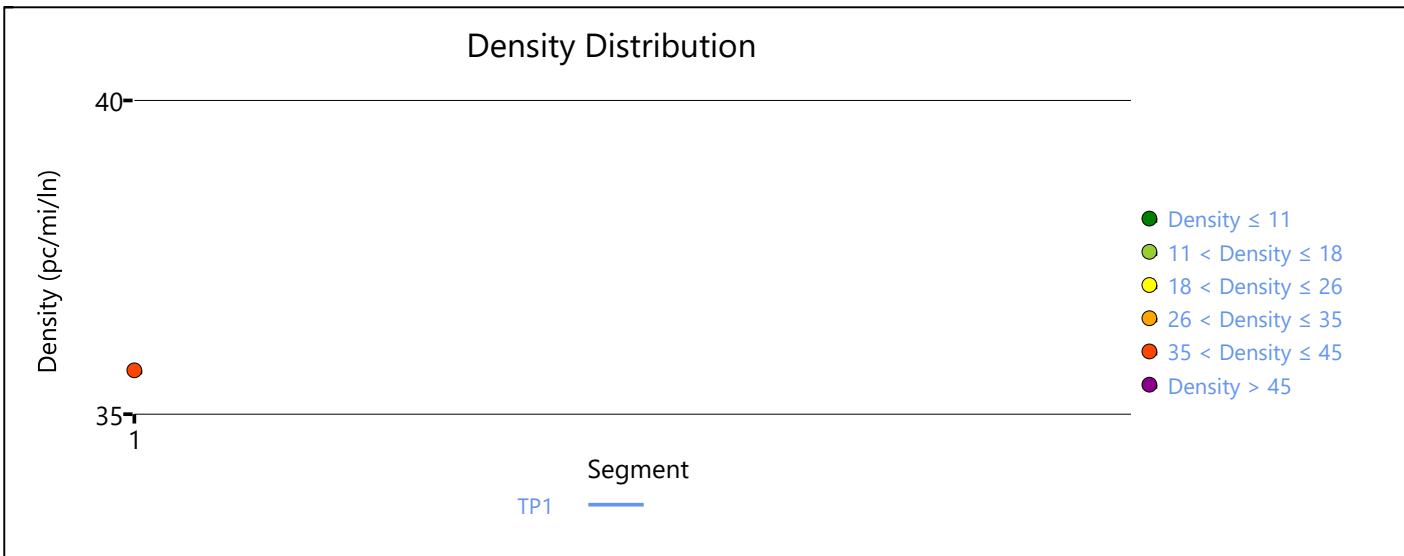
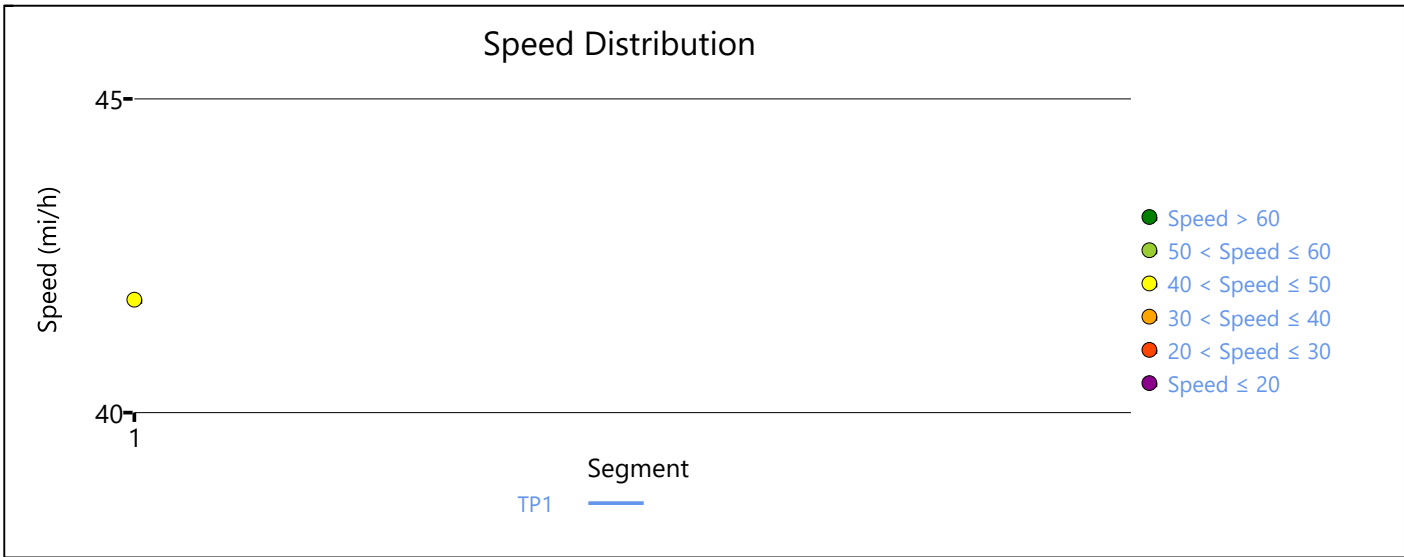
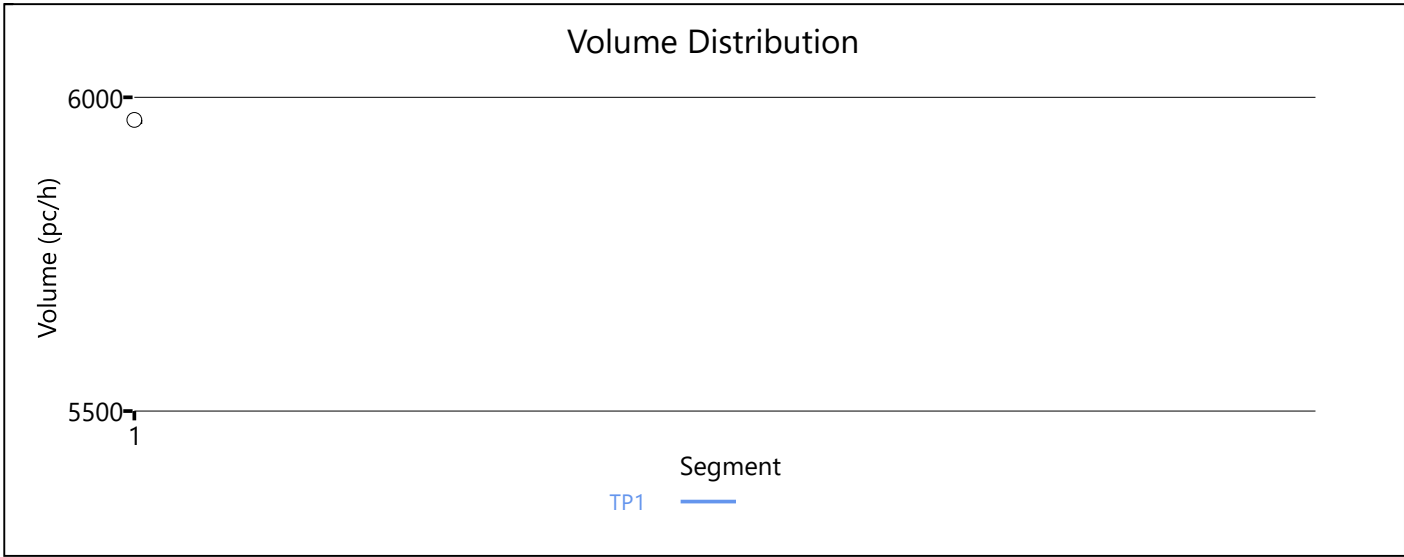
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	35.7	34.0	1.00	E

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	34.0
Average Travel Time, min	1.00	Density, pc/mi/ln	35.7

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.870	1173	8800	0.13	41.8	7.0	A

Facility Analysis Results

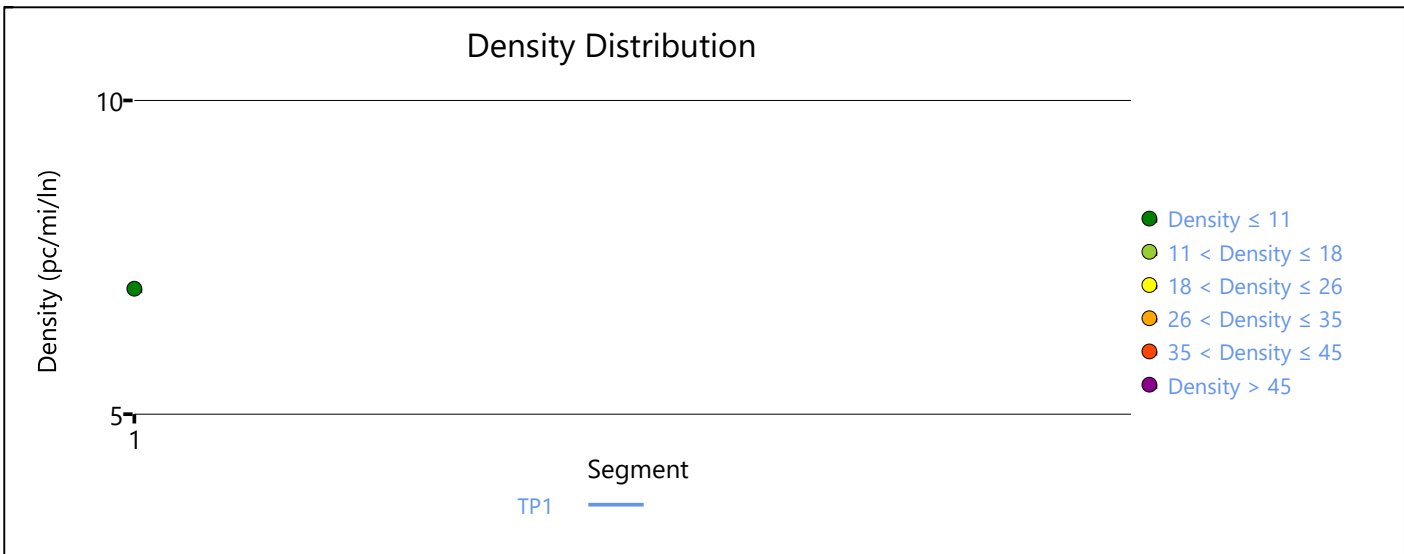
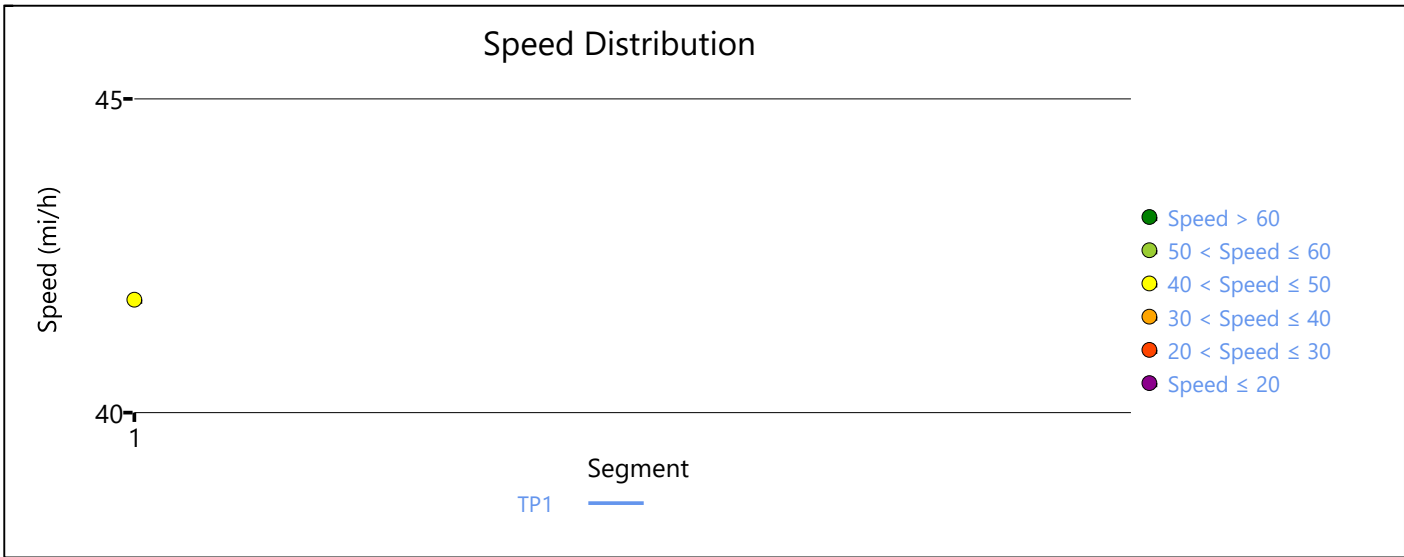
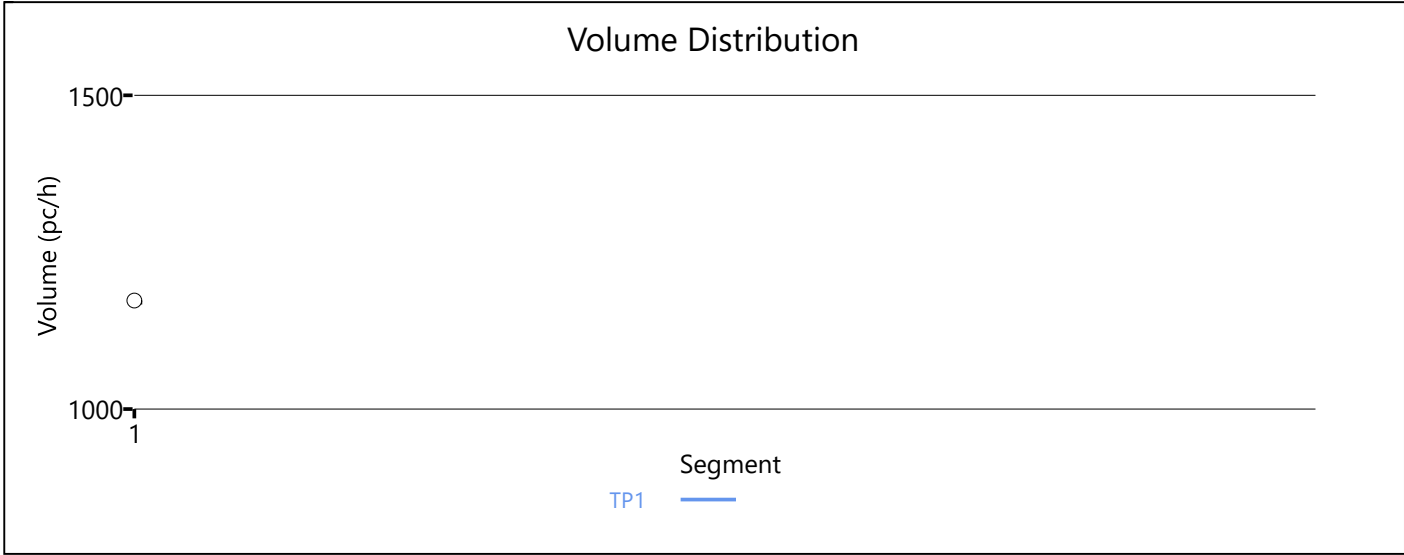
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	7.0	6.1	1.00	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	6.1
Average Travel Time, min	1.00	Density, pc/mi/ln	7.0

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Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.789	280	6654	0.04	51.8	1.8	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.789	0.855	1097	817	6750	4000	0.16	0.20	51.7	51.3	7.1	8.6	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.838	1098	6654	0.17	51.8	7.1	A

Facility Analysis Results

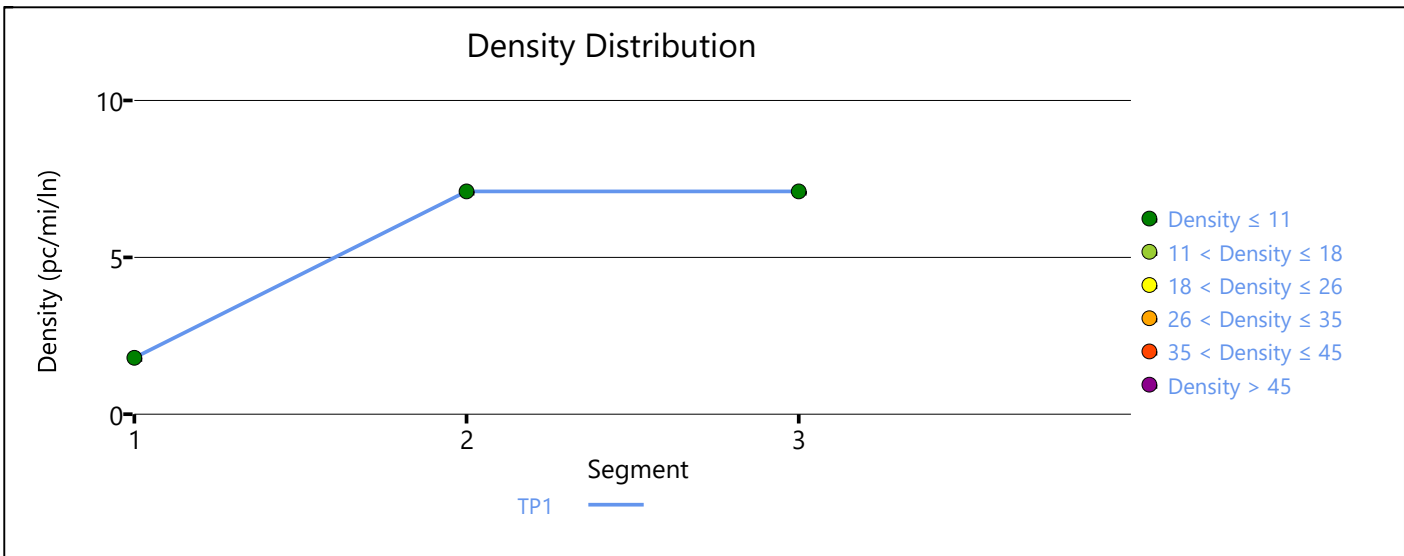
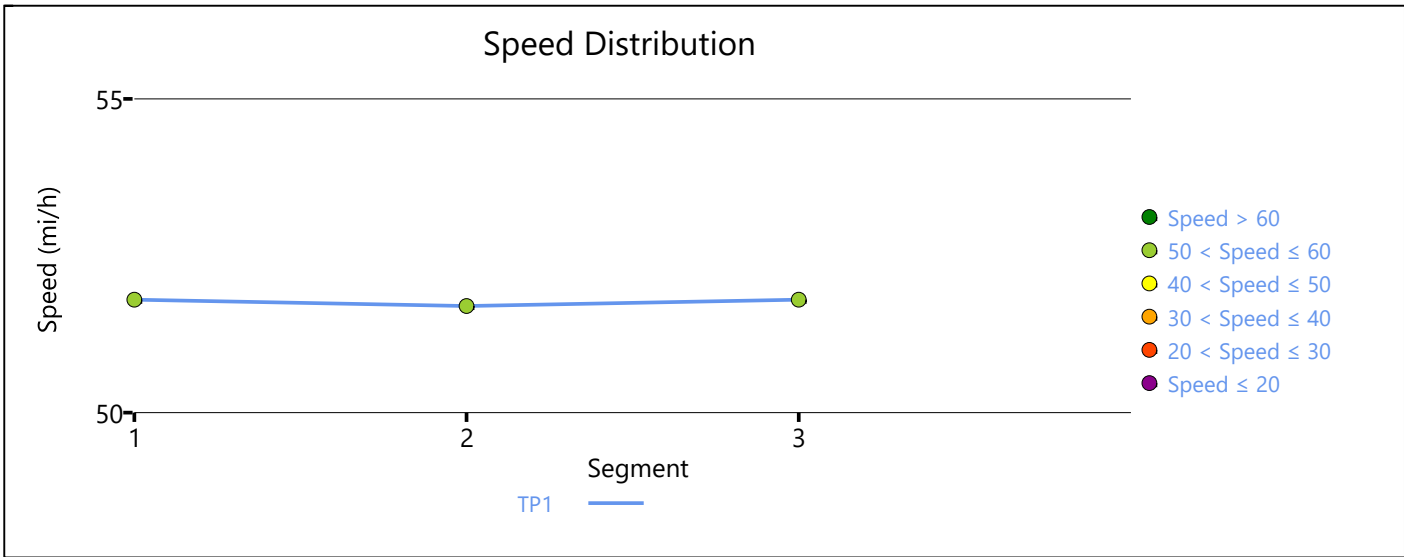
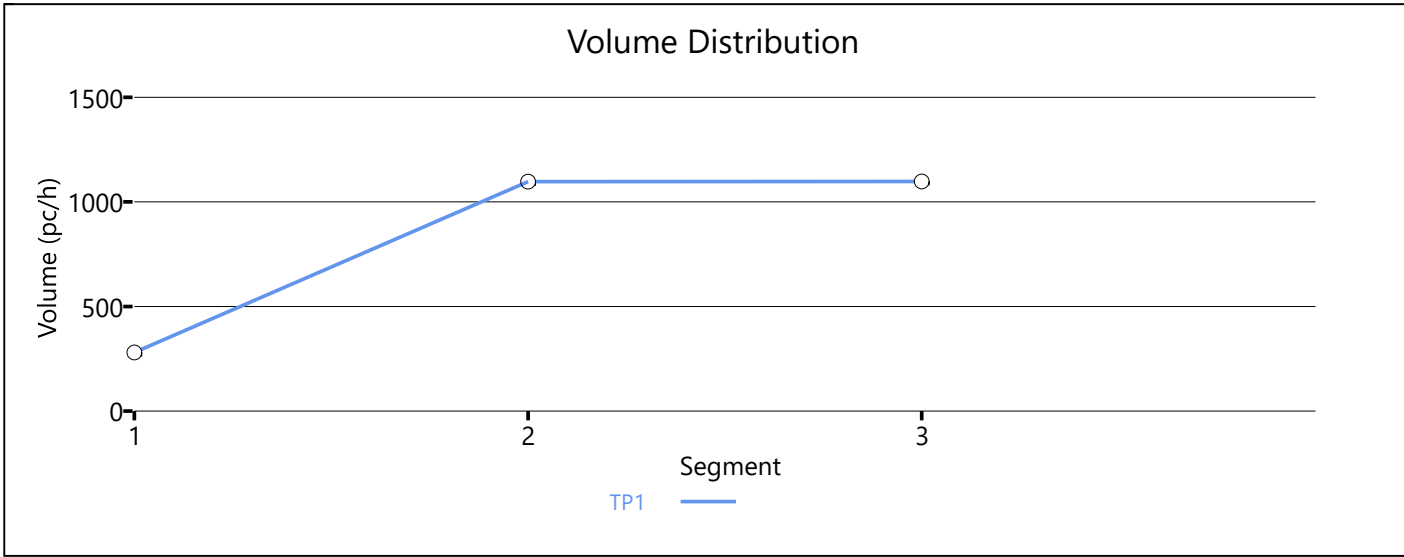
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	4.8	3.9	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	3.9
Average Travel Time, min	1.20	Density, pc/mi/ln	4.8

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.795	317	6654	0.05	51.8	2.0	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.795	0.832	1071	754	6750	4000	0.16	0.19	51.7	51.3	6.9	8.3	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.821	1072	6654	0.16	51.8	6.9	A

Facility Analysis Results

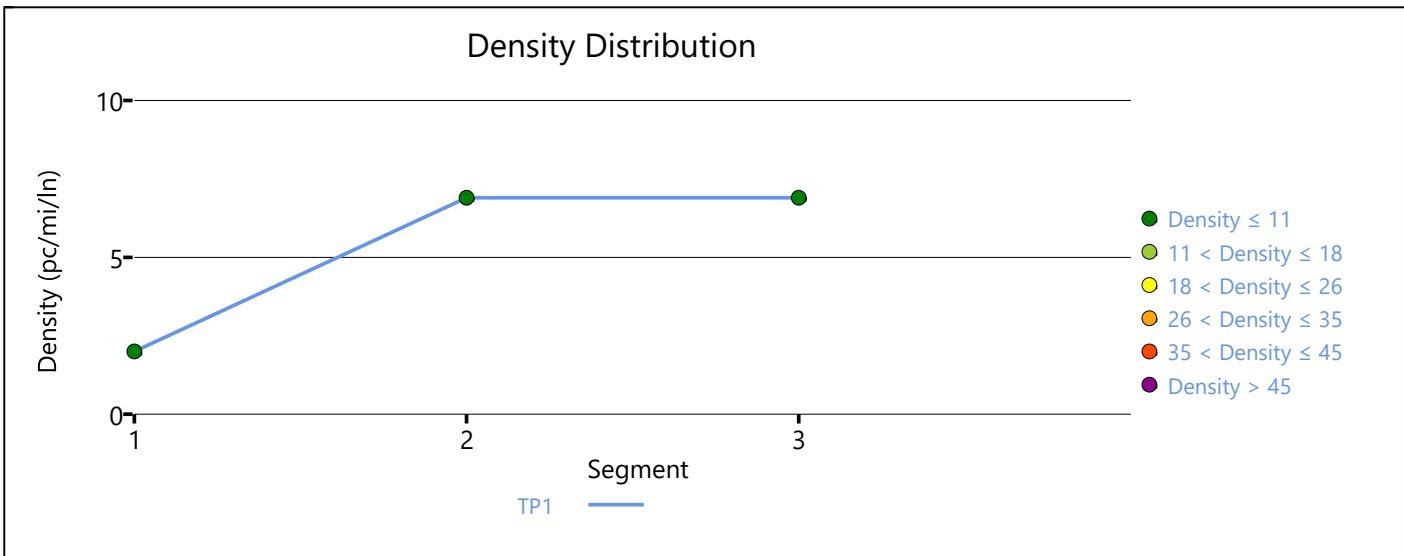
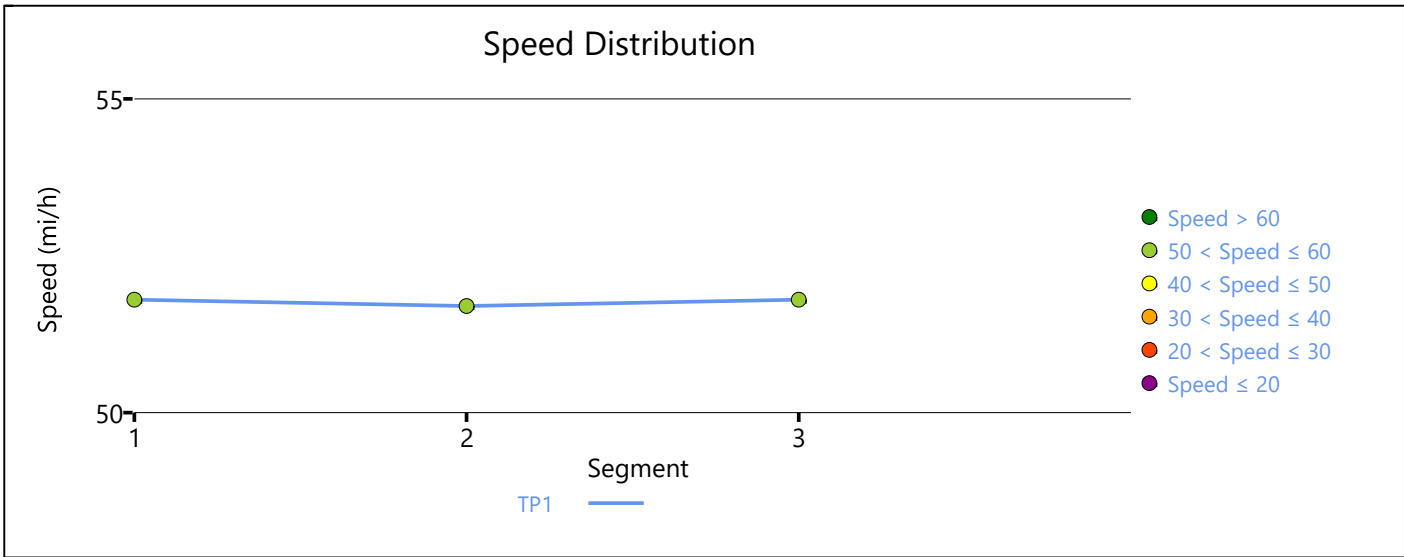
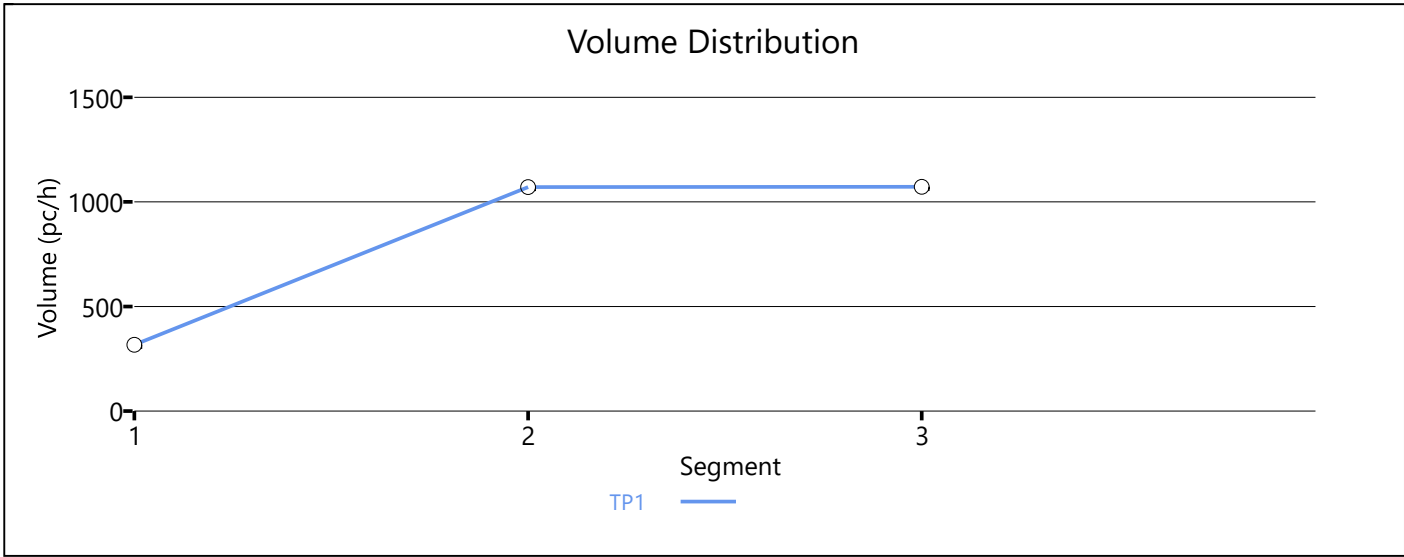
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	4.7	3.9	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	3.9
Average Travel Time, min	1.20	Density, pc/mi/ln	4.7

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.917	545	6654	0.08	51.8	3.5	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.917	0.933	1515	970	6750	4000	0.22	0.24	51.8	51.2	9.7	10.9	B

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.928	1514	6654	0.23	51.8	9.7	A

Facility Analysis Results

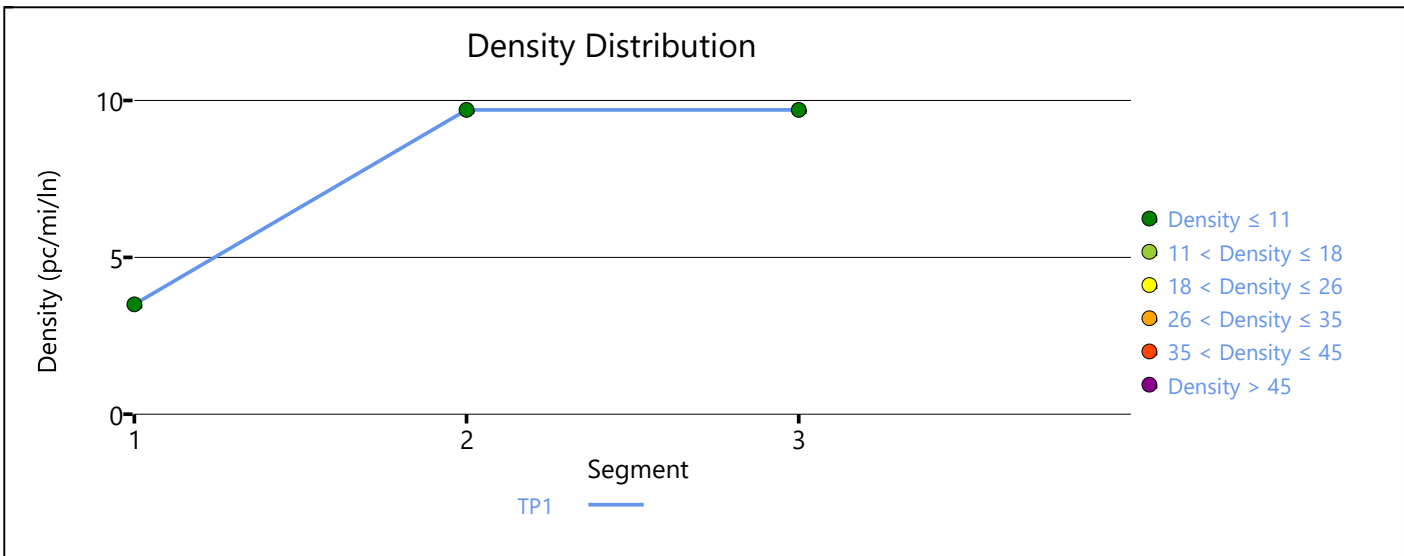
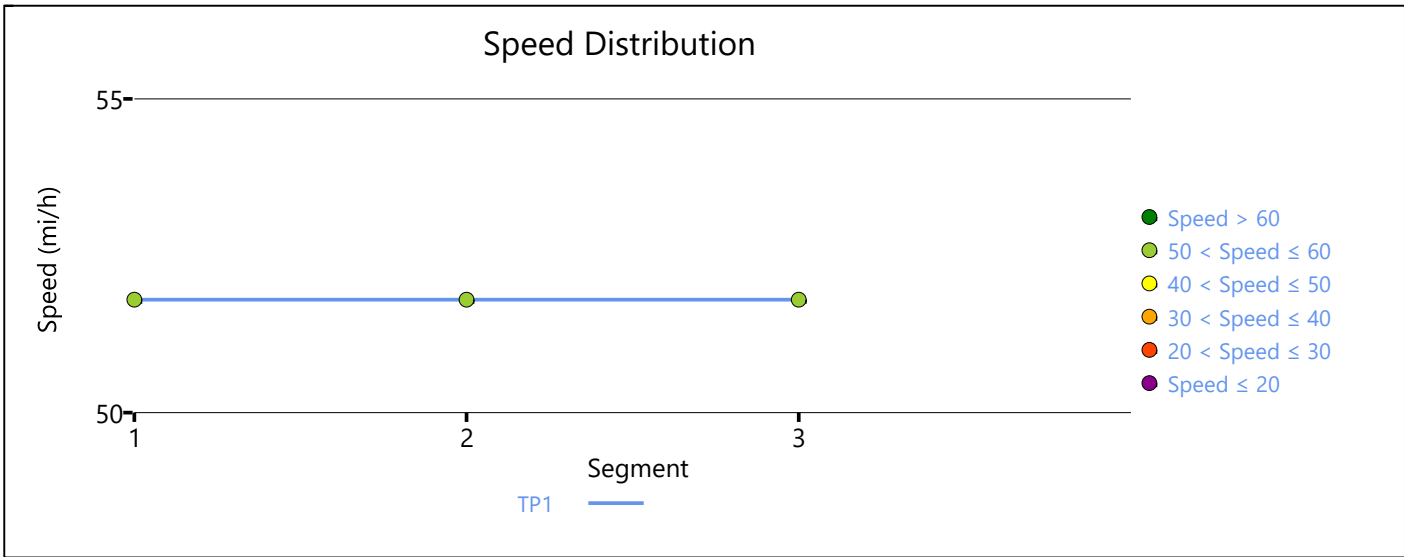
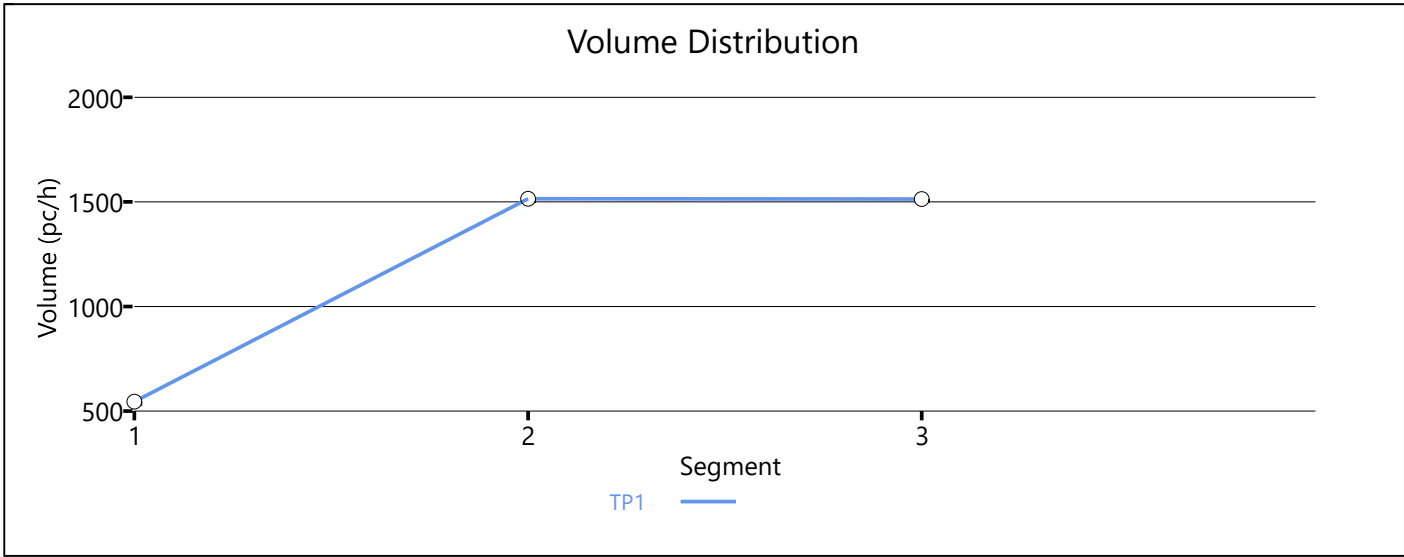
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.8	7.0	6.4	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.8	Density, veh/mi/ln	6.4
Average Travel Time, min	1.20	Density, pc/mi/ln	7.0

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.07		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Merge	Merge	-	663	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.733	22	6654	0.00	51.8	0.1	A

Segment 2: Merge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.733	0.904	409	387	6750	4000	0.06	0.10	51.5	51.4	2.6	4.3	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.896	408	6654	0.06	51.8	2.6	A

Facility Analysis Results

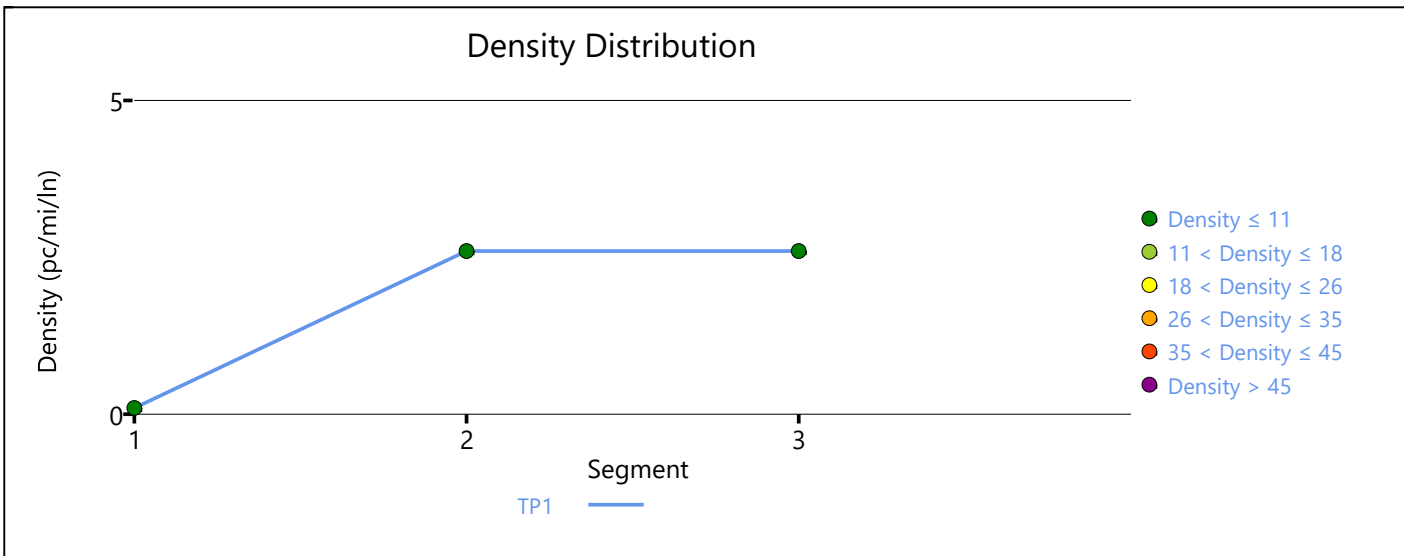
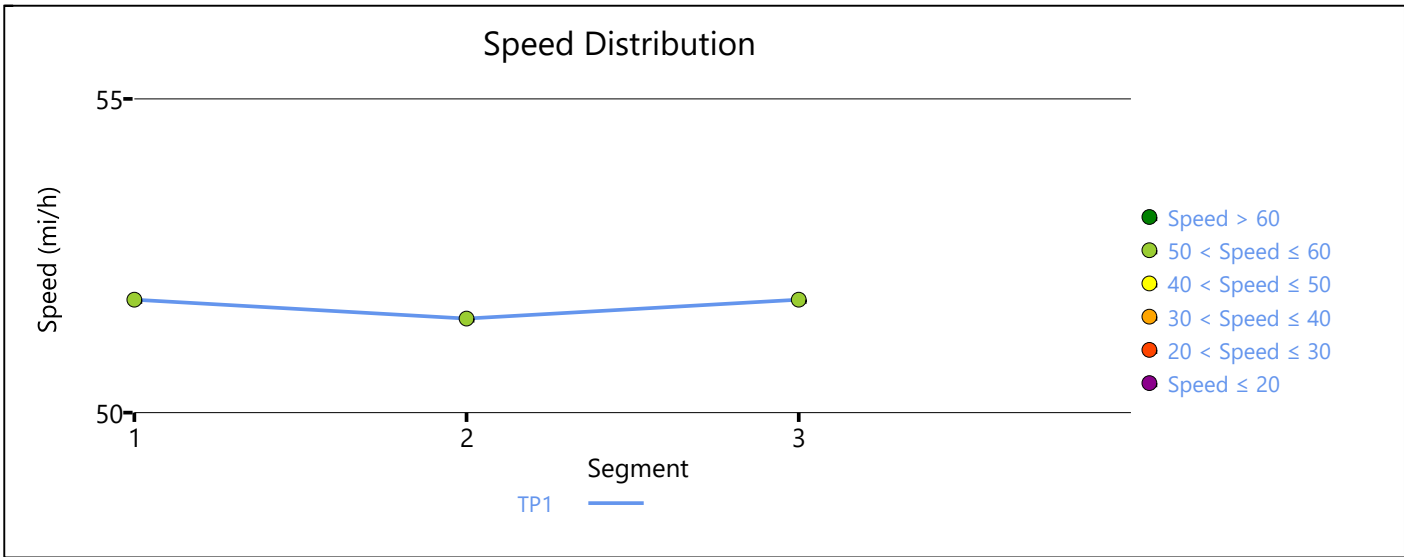
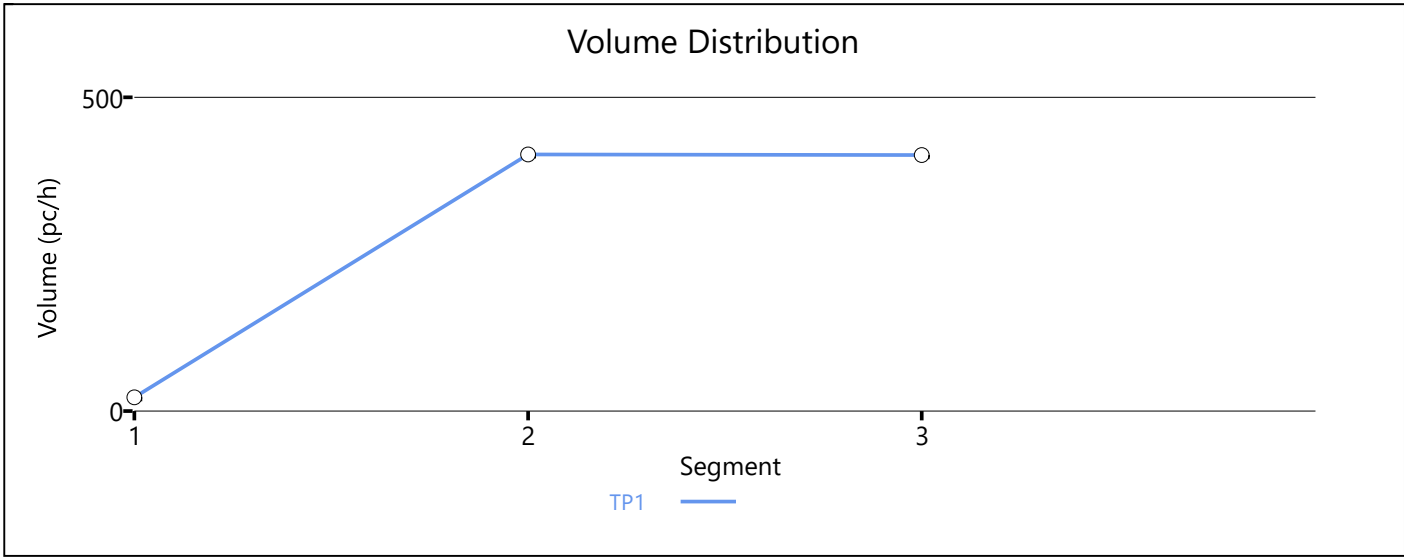
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	51.7	1.5	1.3	1.20	A

Facility Overall Results

Space Mean Speed, mi/h	51.7	Density, veh/mi/ln	1.3
Average Travel Time, min	1.20	Density, pc/mi/ln	1.5

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Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.817	988	4400	0.22	41.8	11.8	B

Facility Analysis Results

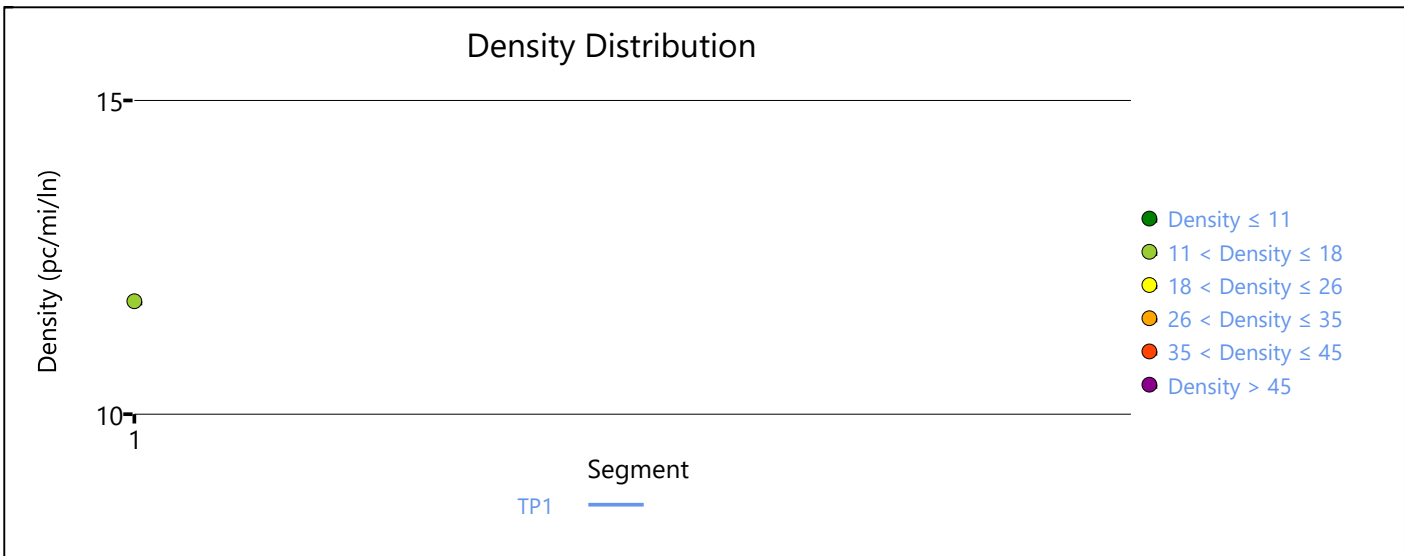
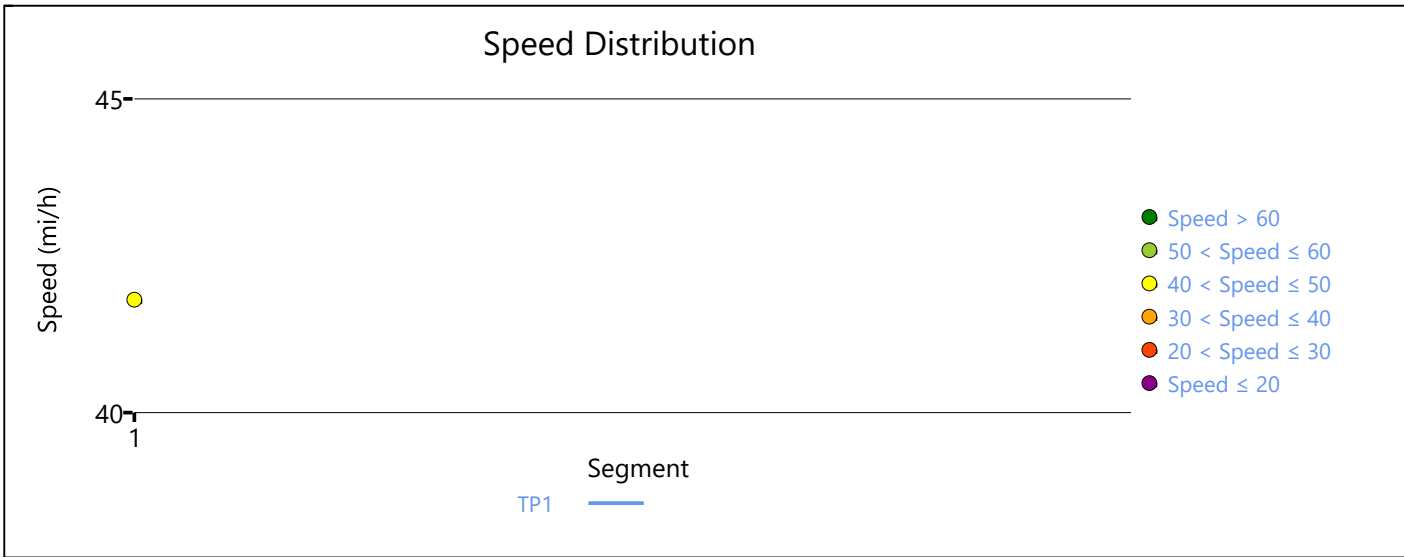
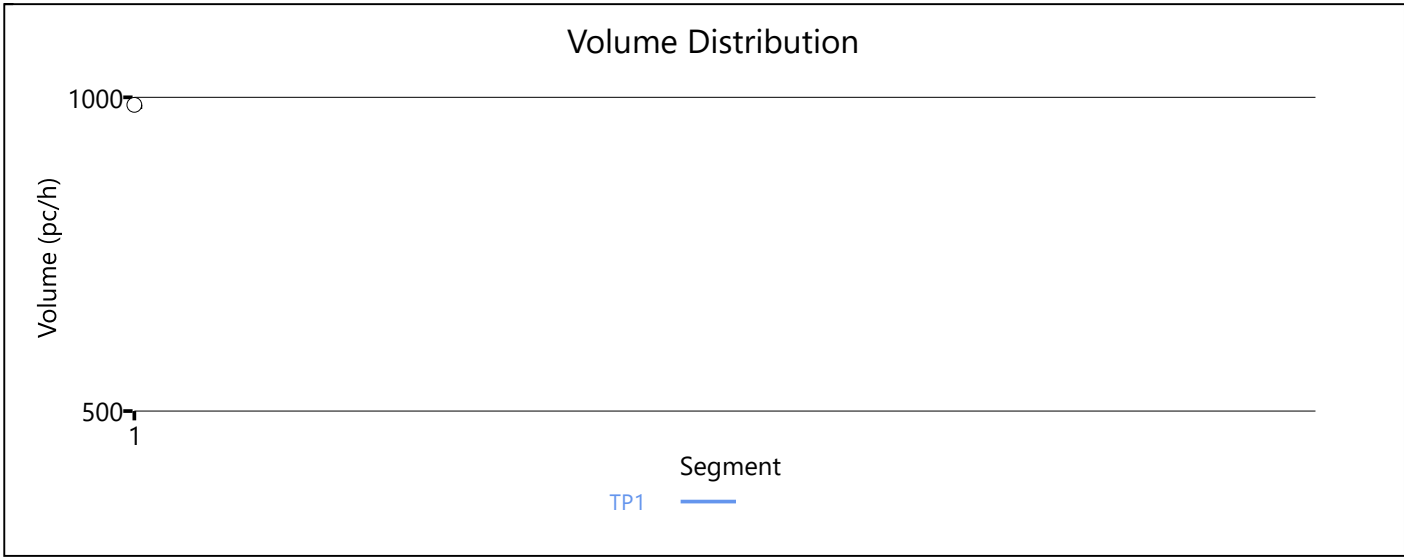
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	11.8	9.6	1.40	B

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	9.6
Average Travel Time, min	1.40	Density, pc/mi/ln	11.8

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Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.797	912	4400	0.21	41.8	10.9	A

Facility Analysis Results

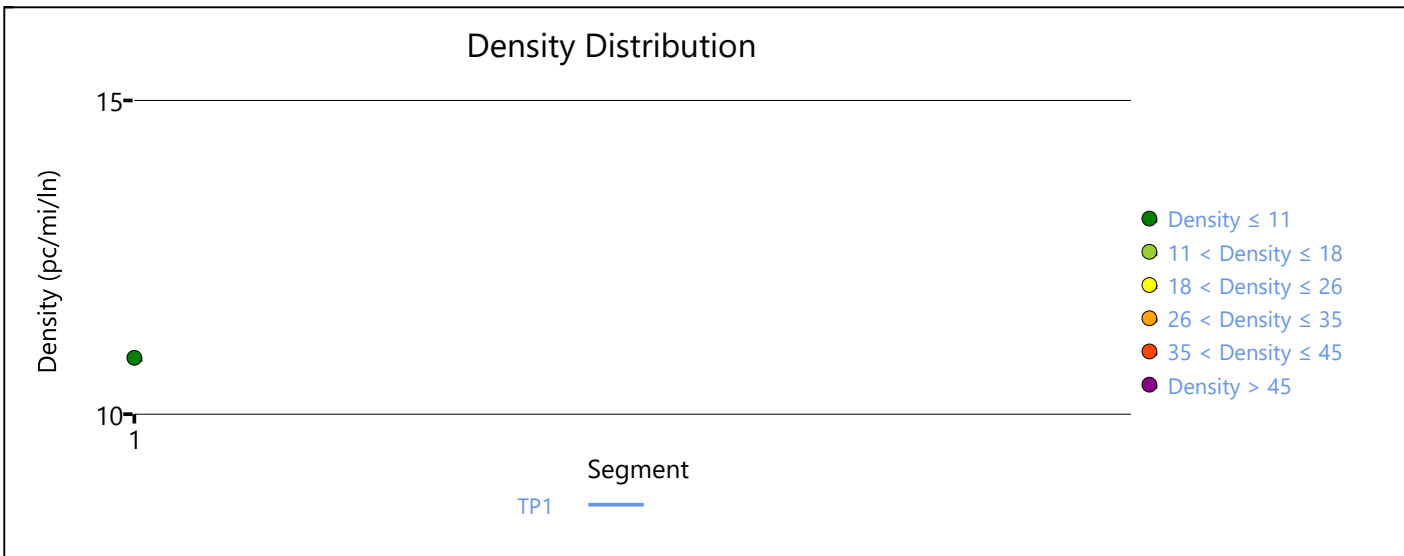
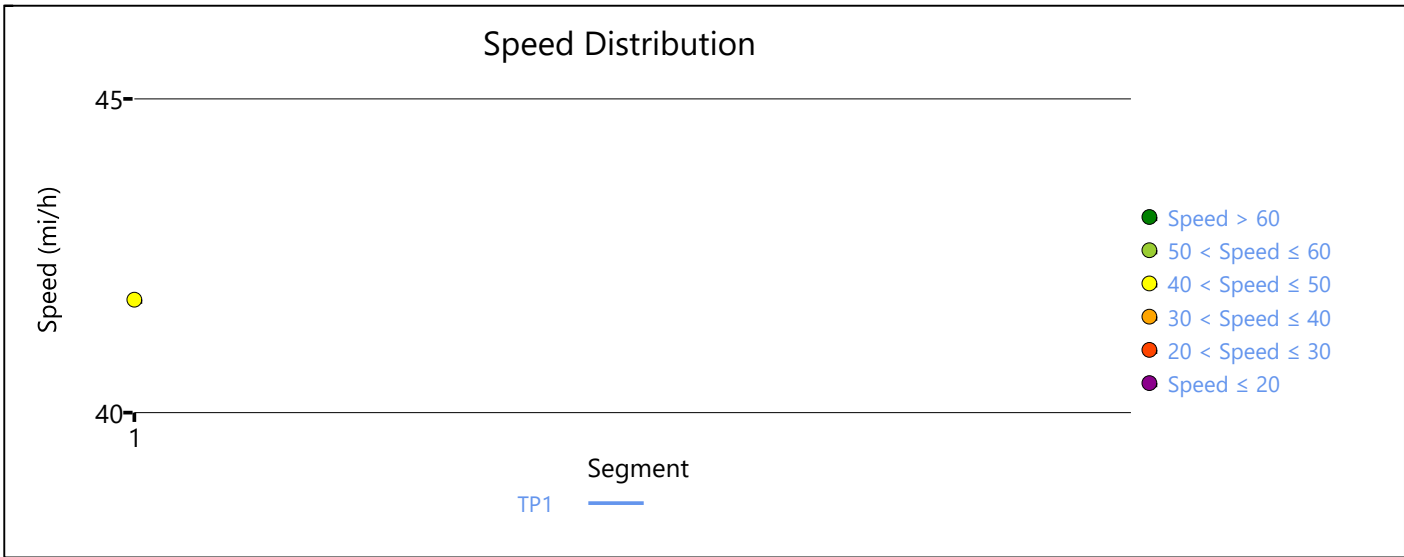
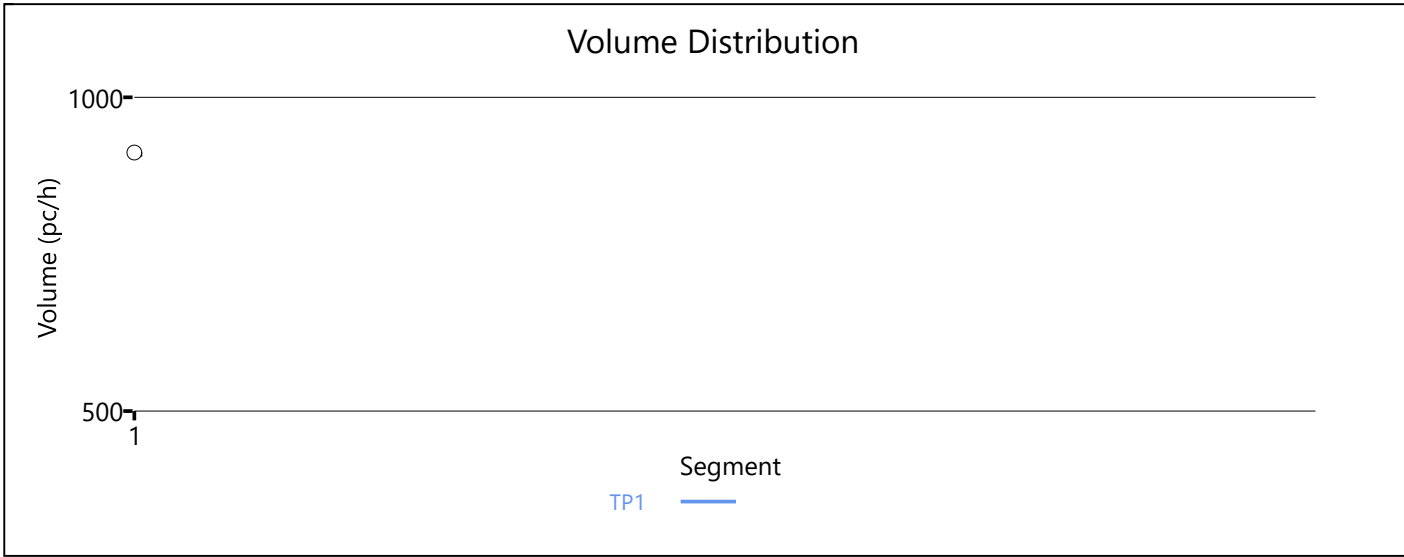
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	10.9	8.7	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	8.7
Average Travel Time, min	1.40	Density, pc/mi/ln	10.9

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Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.912	1122	4400	0.26	41.8	13.4	B

Facility Analysis Results

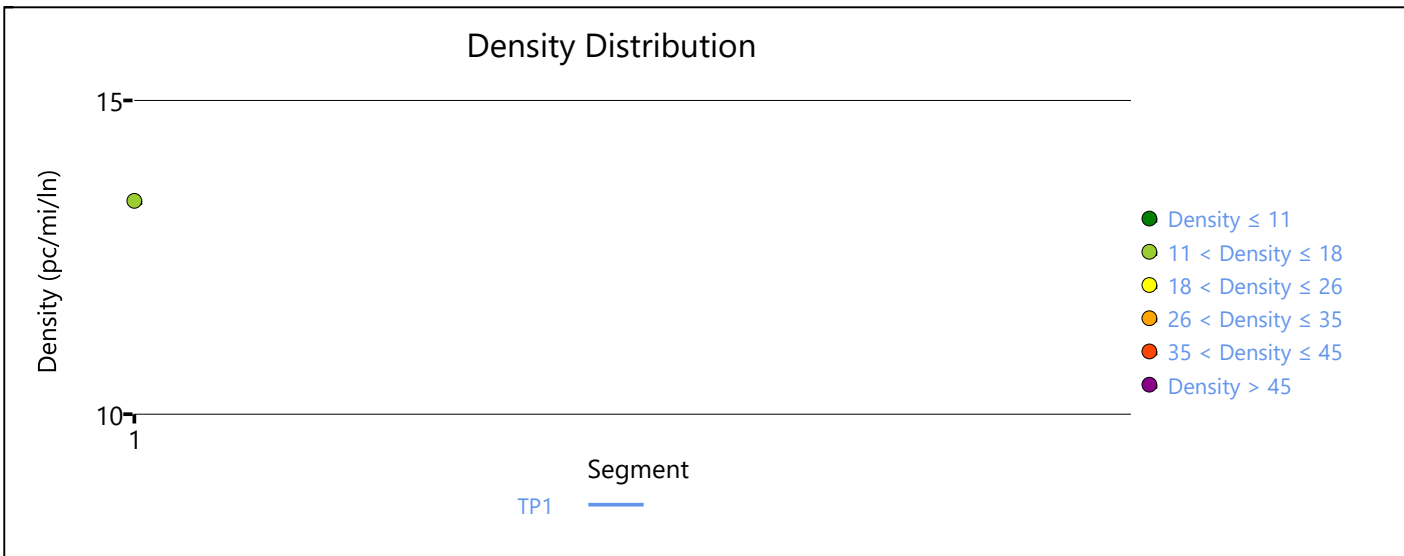
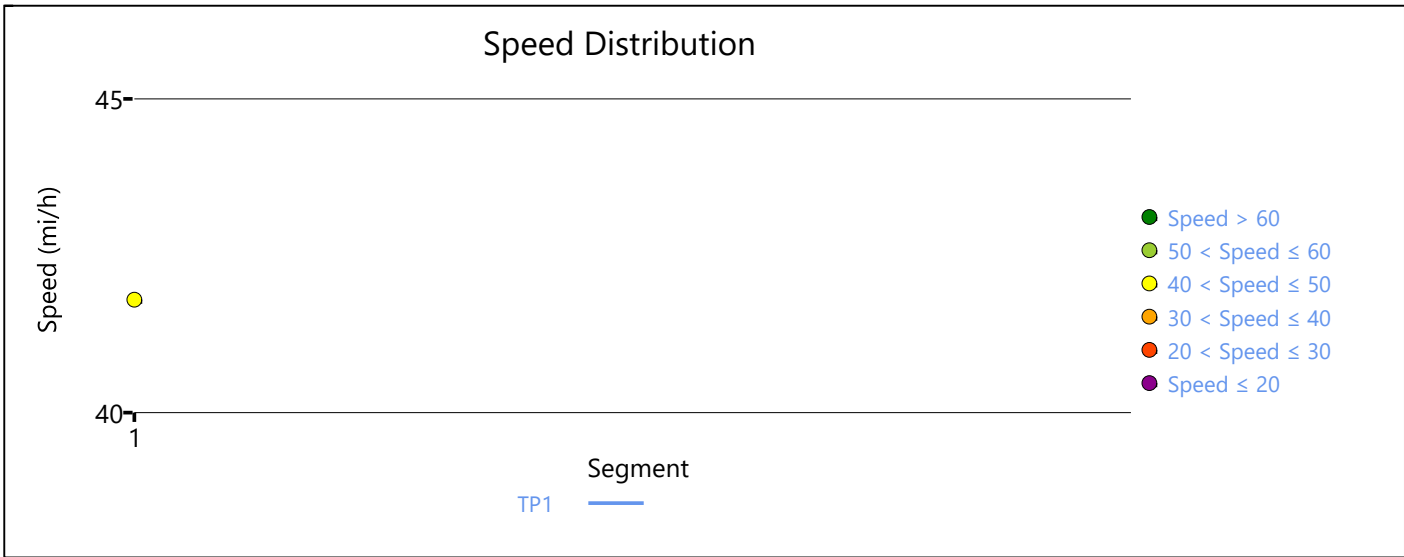
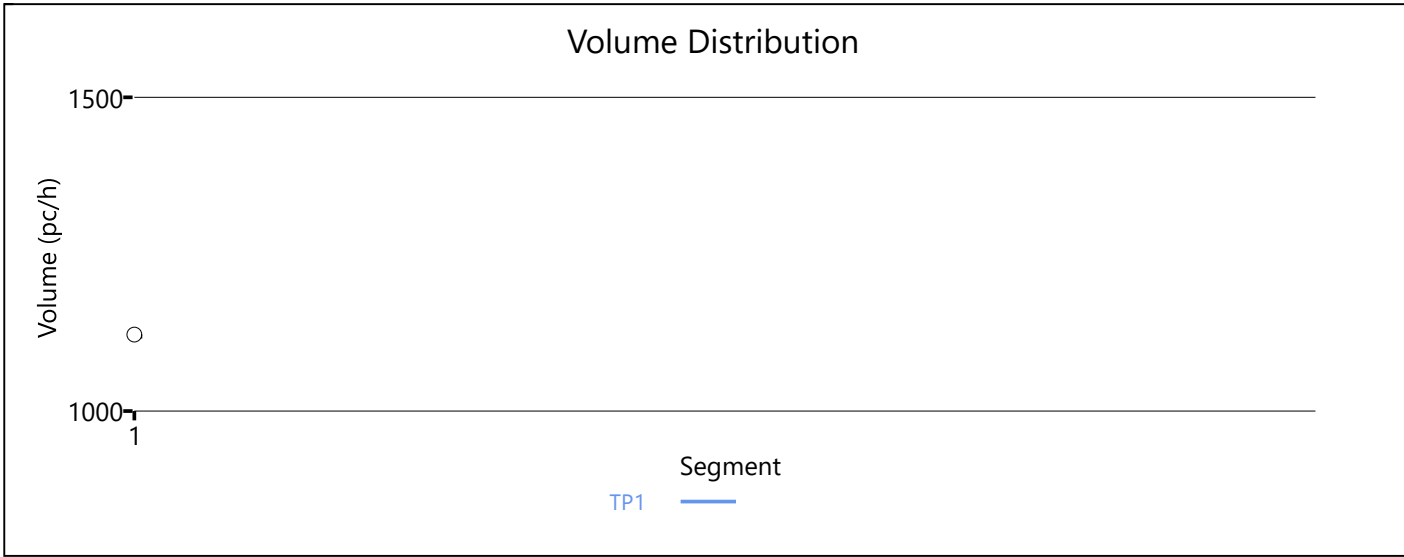
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	13.4	12.2	1.40	B

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	12.2
Average Travel Time, min	1.40	Density, pc/mi/ln	13.4

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HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.00		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.809	274	4400	0.06	41.8	3.3	A

Facility Analysis Results

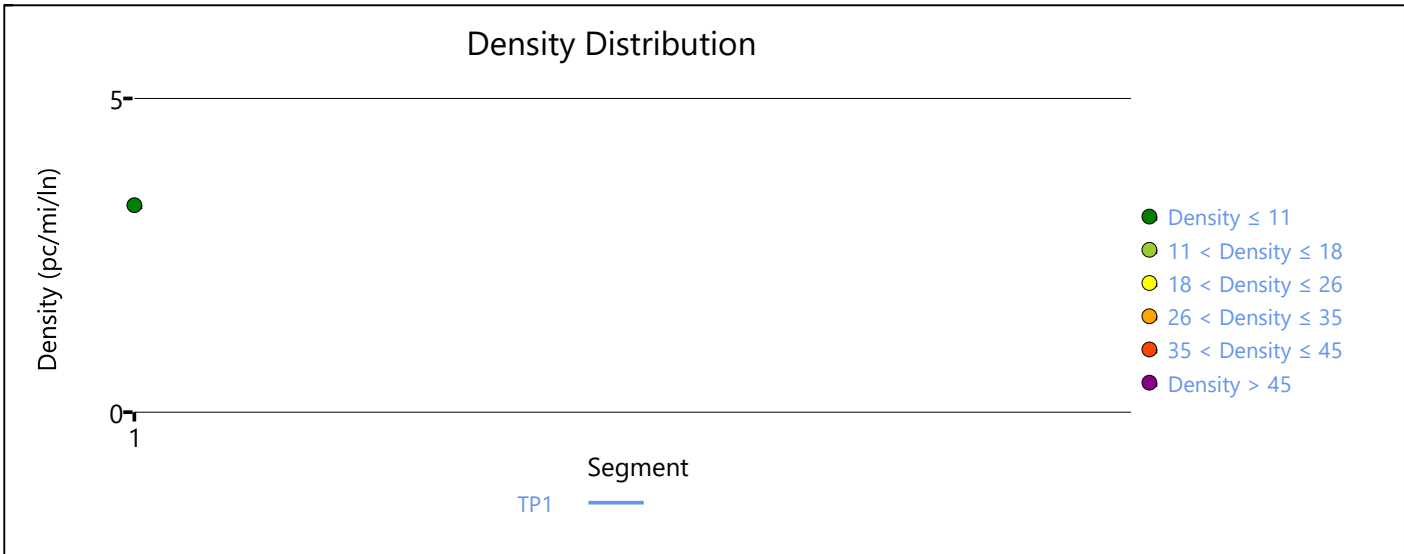
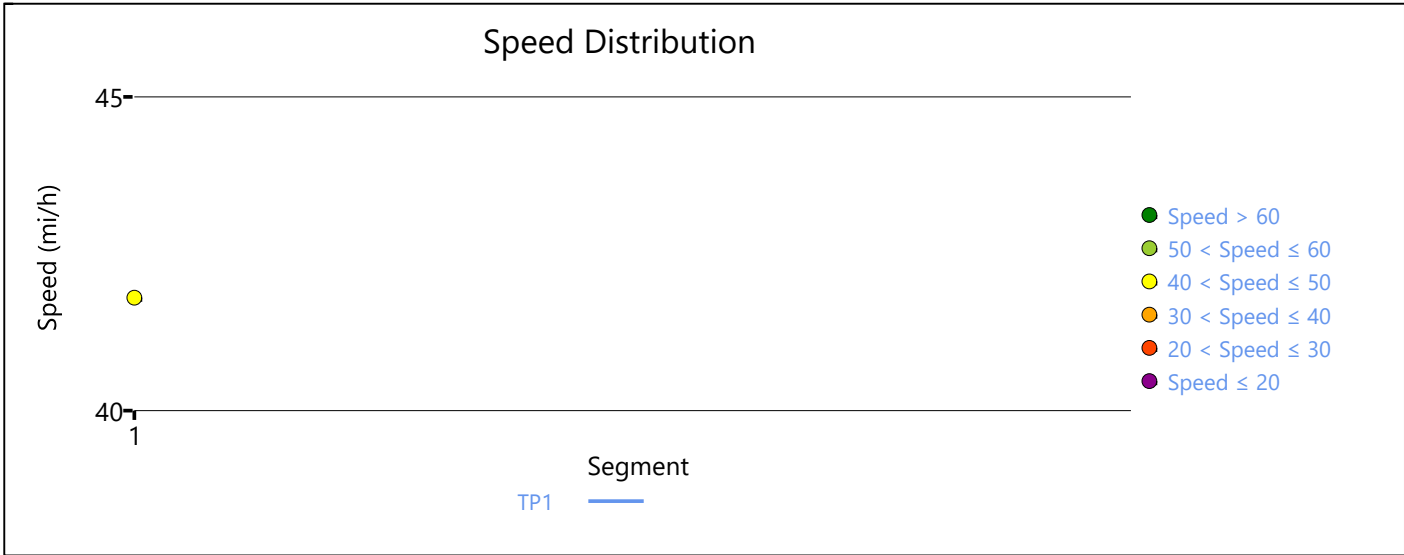
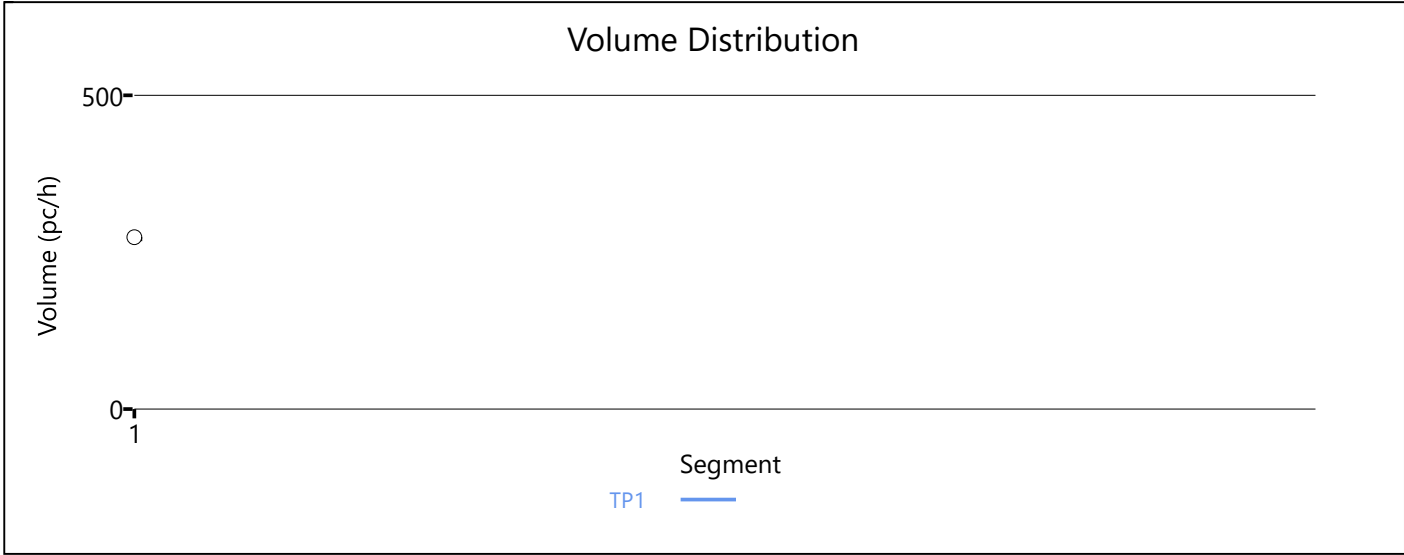
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	3.3	2.7	1.40	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	2.7
Average Travel Time, min	1.40	Density, pc/mi/ln	3.3

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.917	6409	8800	0.73	41.8	38.3	E

Facility Analysis Results

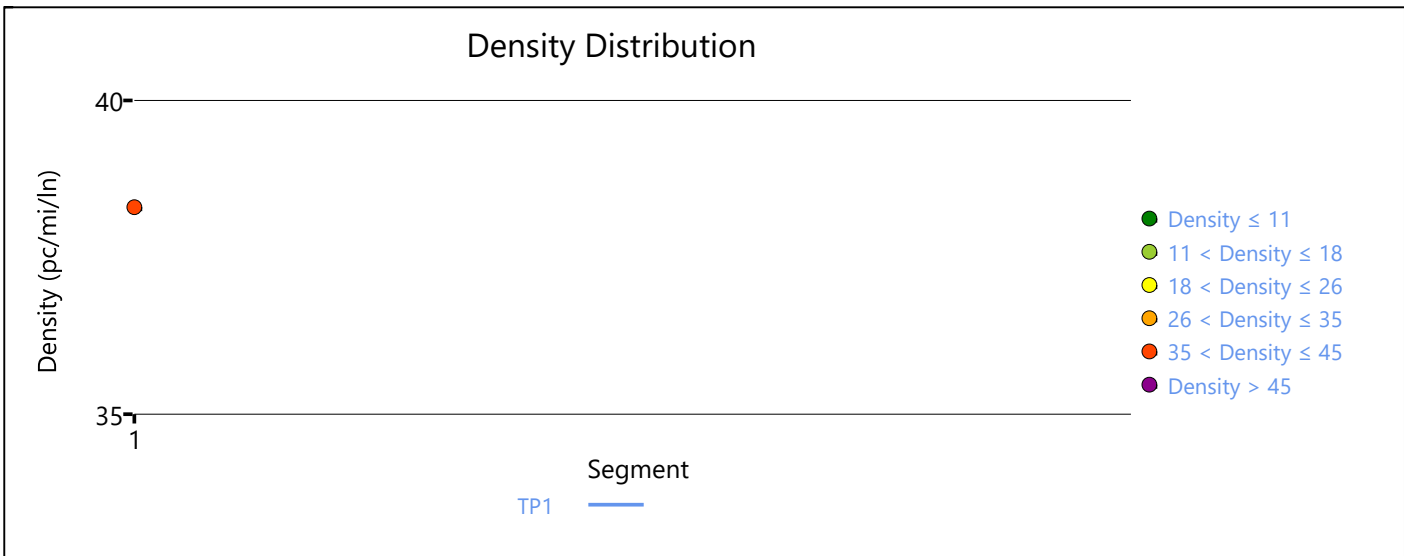
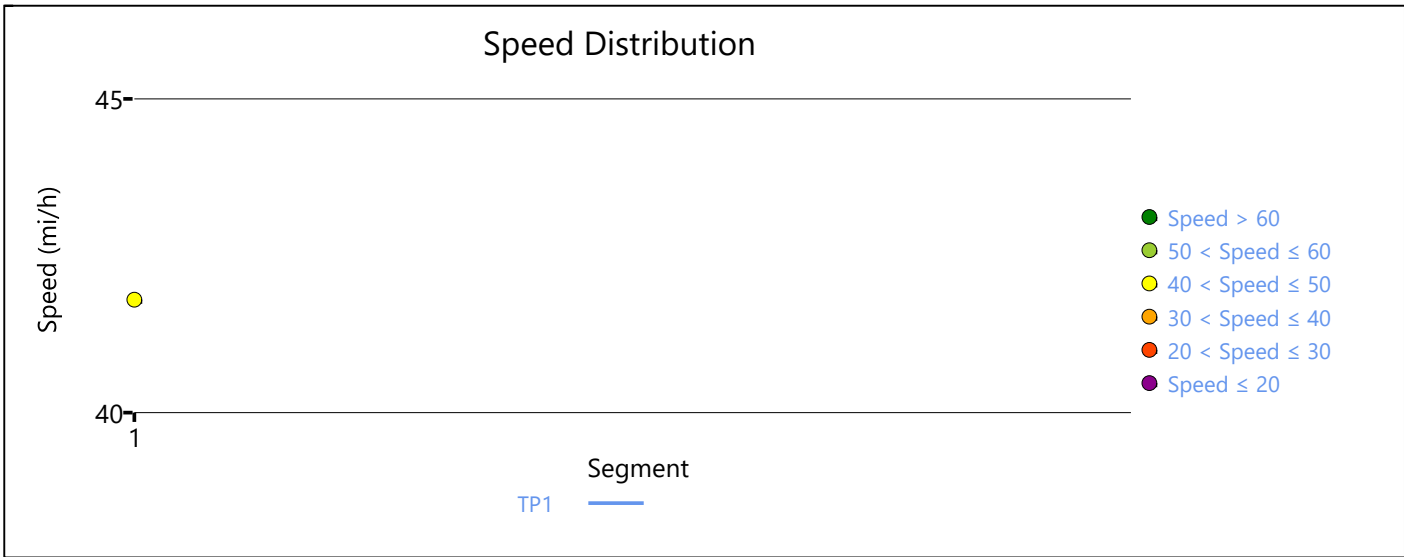
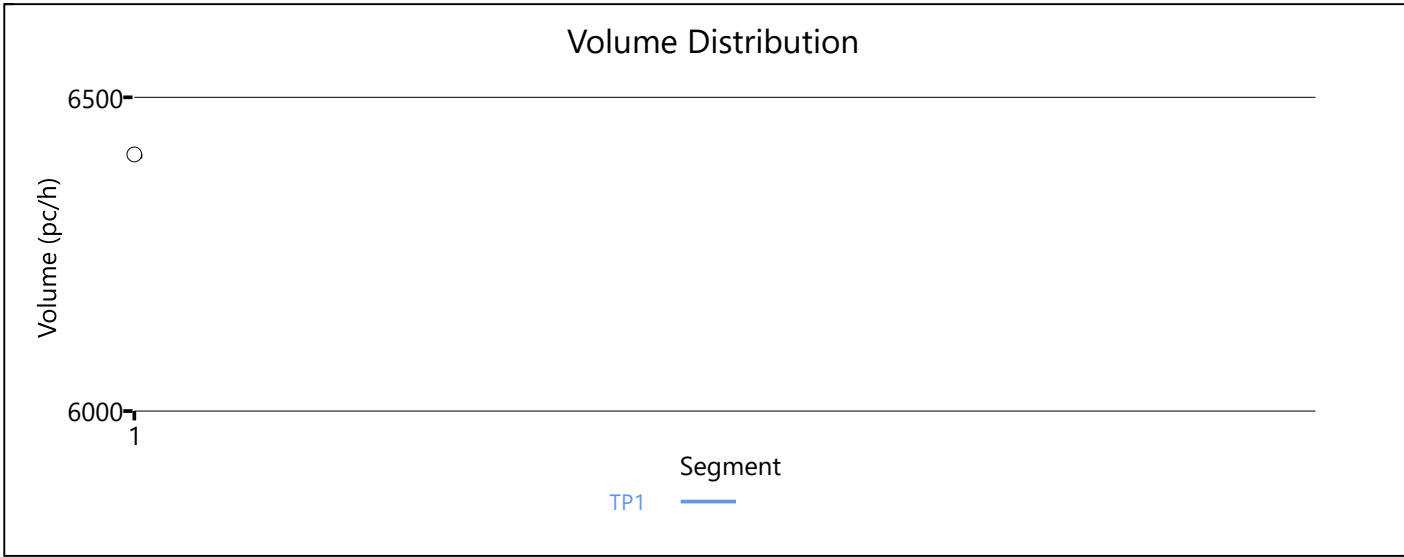
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	38.3	35.1	1.00	E

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	35.1
Average Travel Time, min	1.00	Density, pc/mi/ln	38.3

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.888	4822	8800	0.55	41.8	28.9	D

Facility Analysis Results

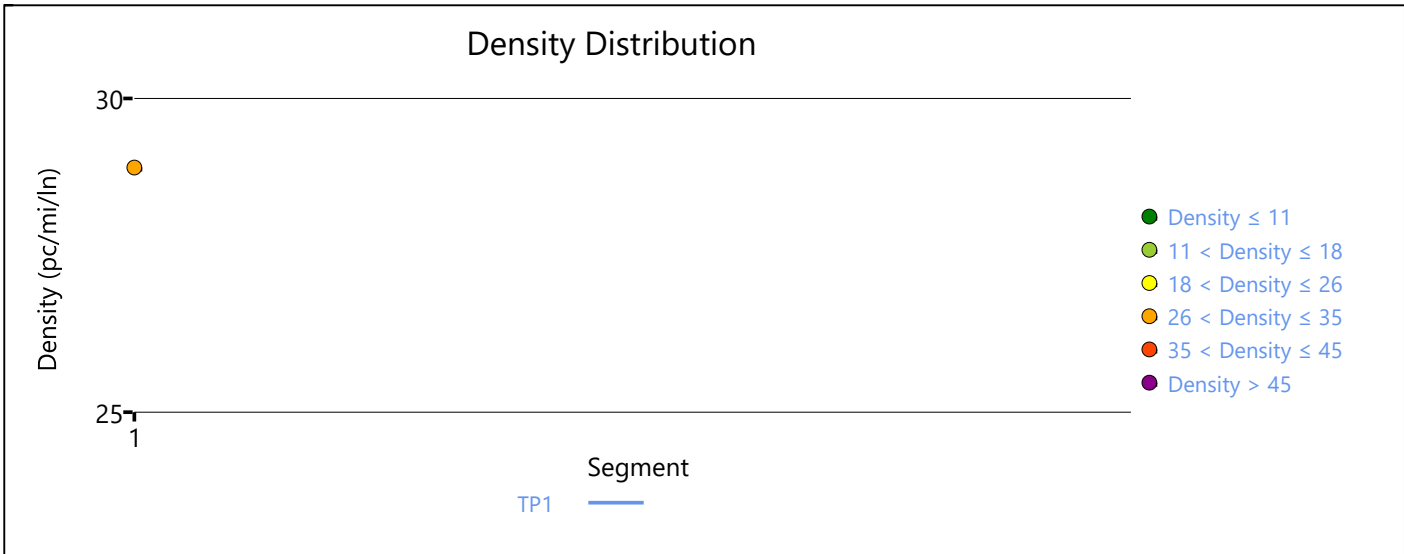
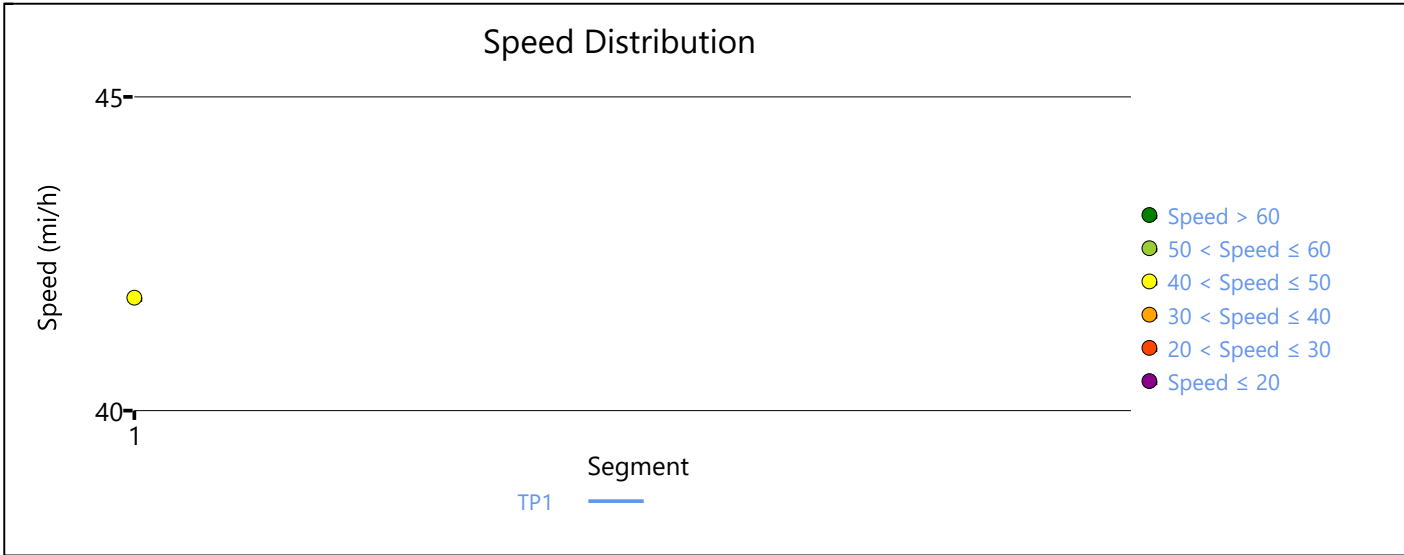
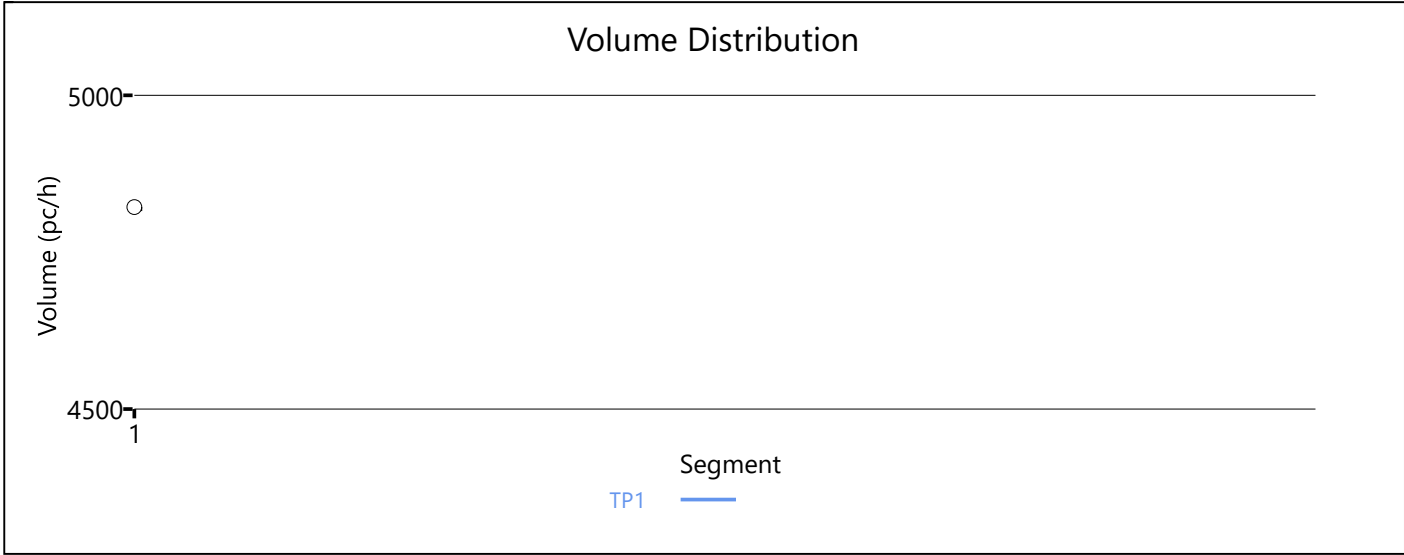
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	28.9	25.7	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	25.7
Average Travel Time, min	1.00	Density, pc/mi/ln	28.9

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.951	5545	8800	0.63	41.8	33.2	D

Facility Analysis Results

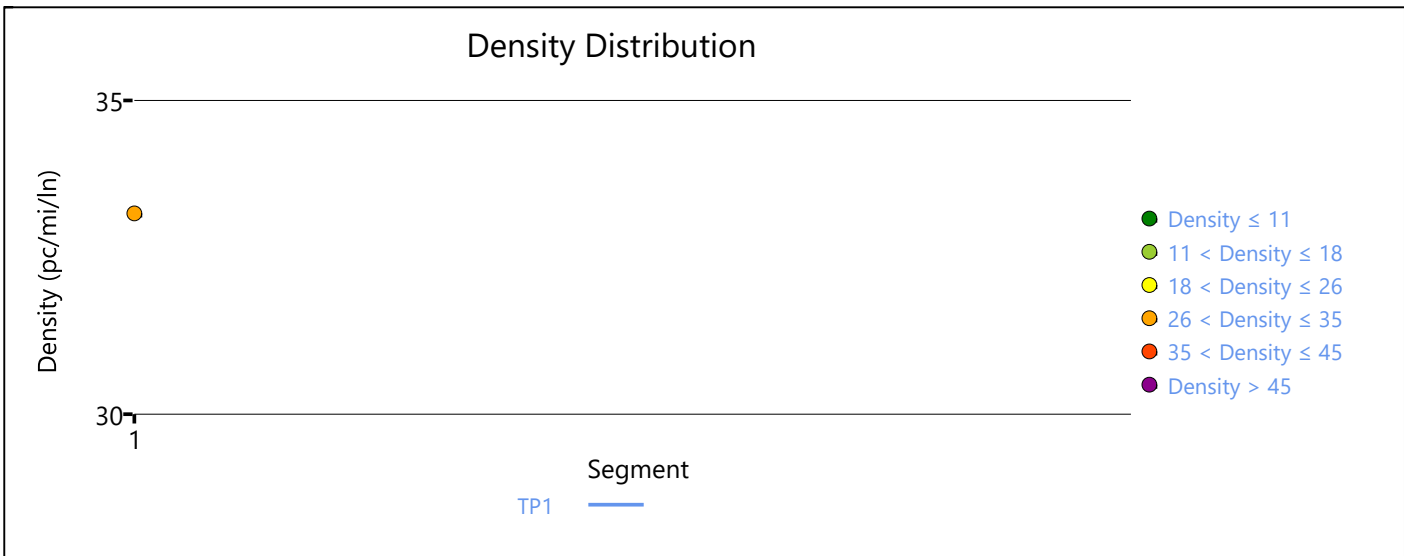
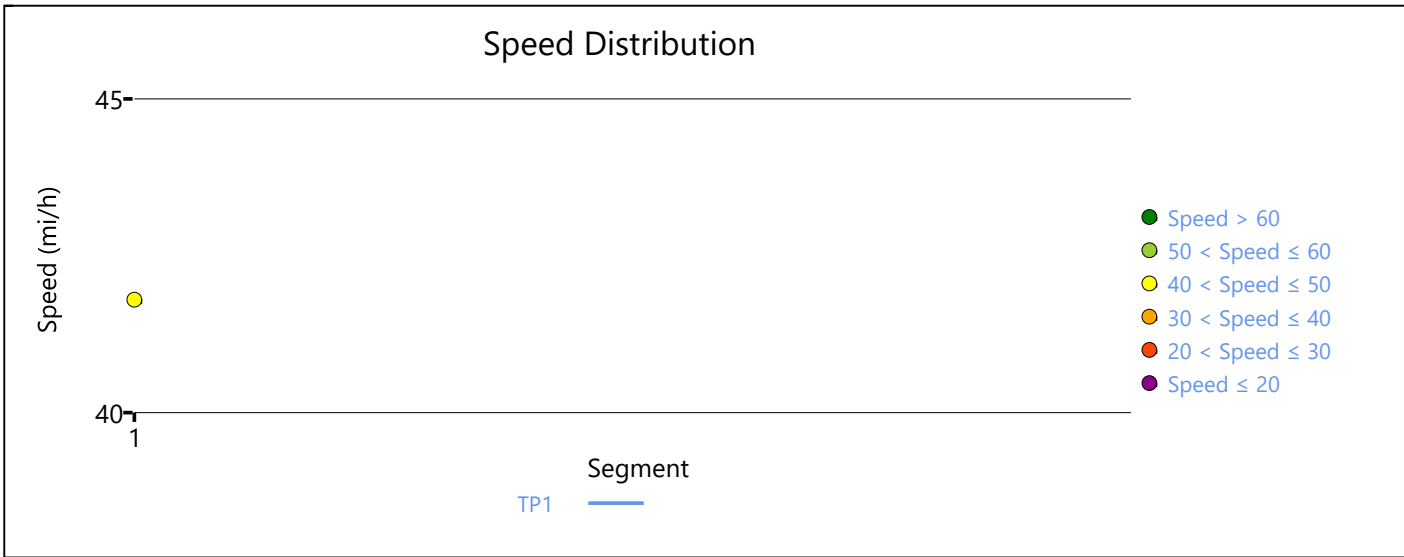
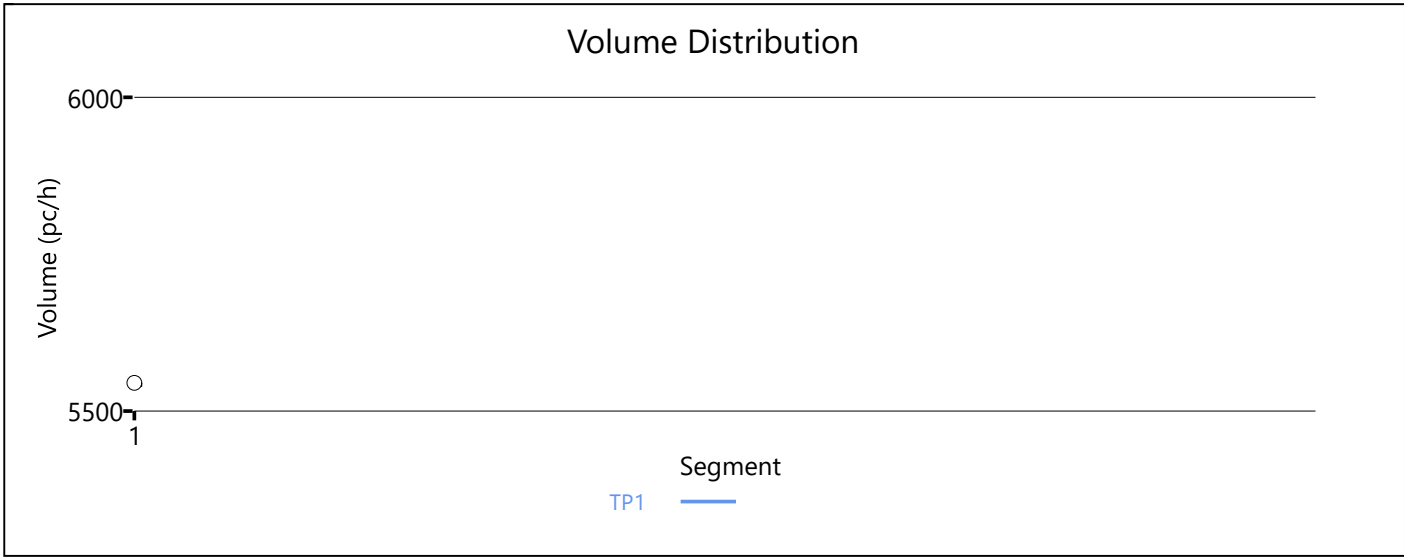
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	33.2	31.6	1.00	D

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	31.6
Average Travel Time, min	1.00	Density, pc/mi/ln	33.2

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	1
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	0.69		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3634	4

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.924	1665	8800	0.19	41.8	10.0	A

Facility Analysis Results

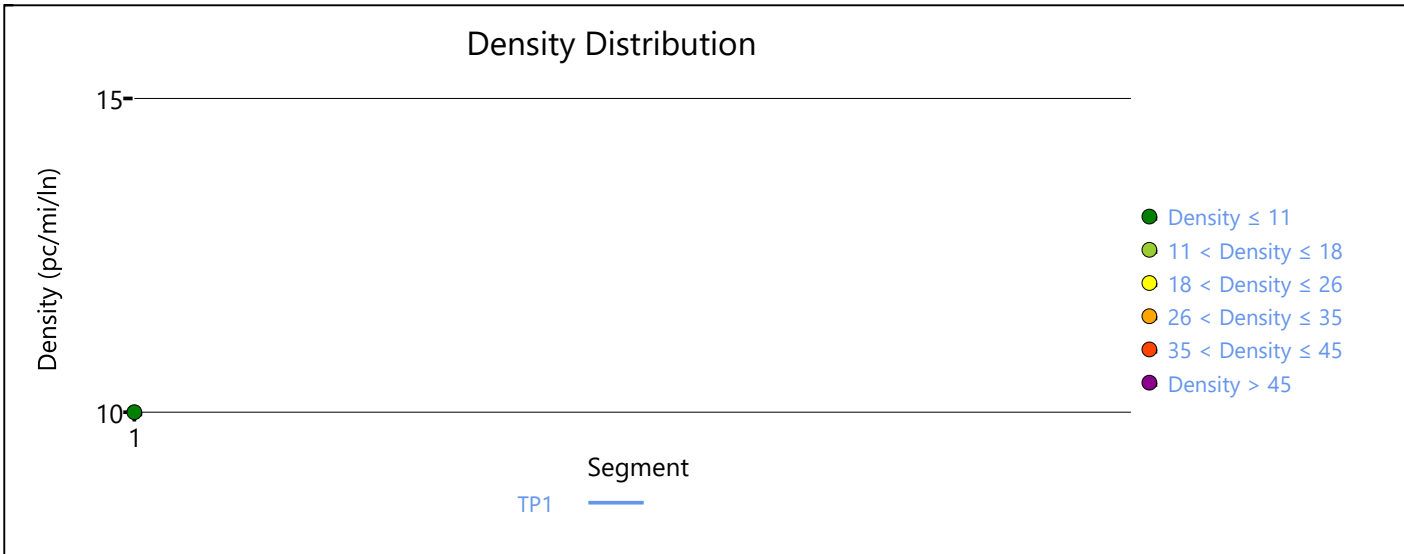
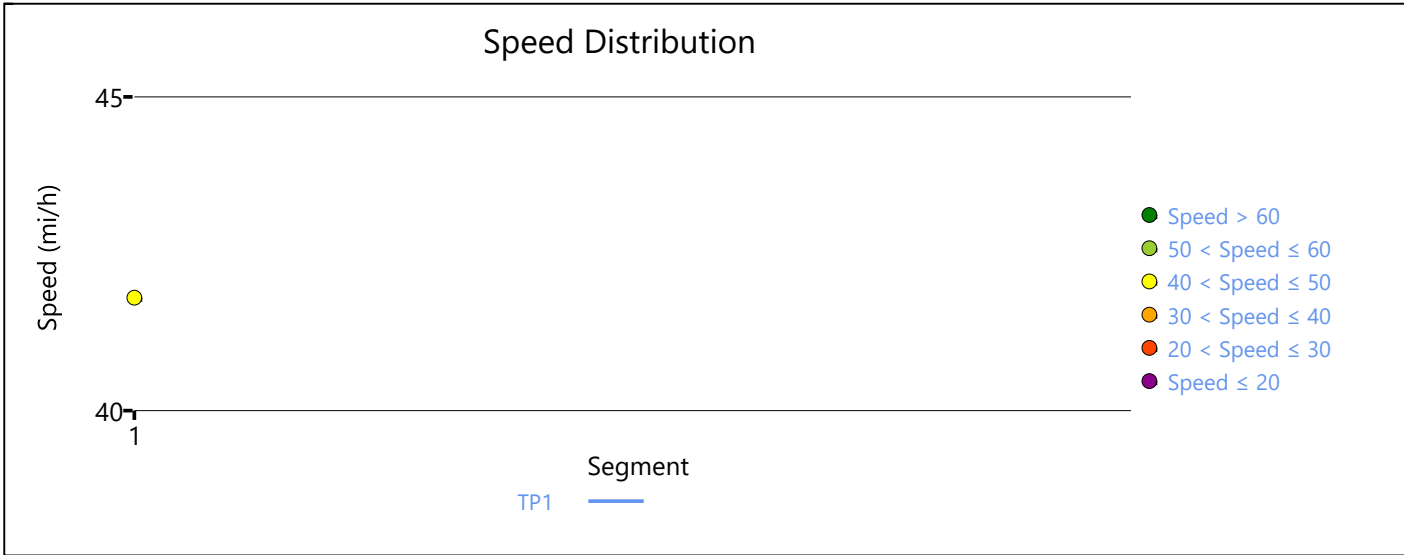
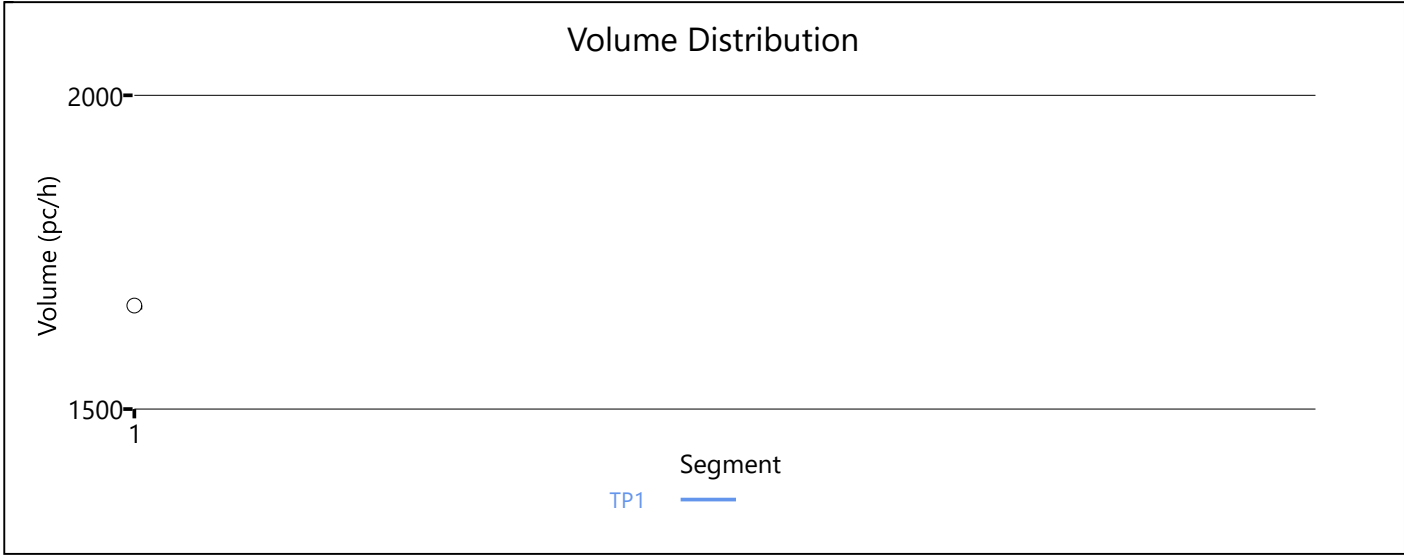
AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	41.8	10.0	9.2	1.00	A

Facility Overall Results

Space Mean Speed, mi/h	41.8	Density, veh/mi/ln	9.2
Average Travel Time, min	1.00	Density, pc/mi/ln	10.0

Messages

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	AM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.856	1546	6654	0.23	51.8	9.9	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.856	0.836	1546	873	6750	4200	0.23	0.21	54.9	55.0	9.4	9.4	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.880	675	6654	0.10	51.8	4.3	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.8	7.7	6.6	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	52.8	Density, veh/mi/ln	6.6
Average Travel Time, min	1.50	Density, pc/mi/ln	7.7

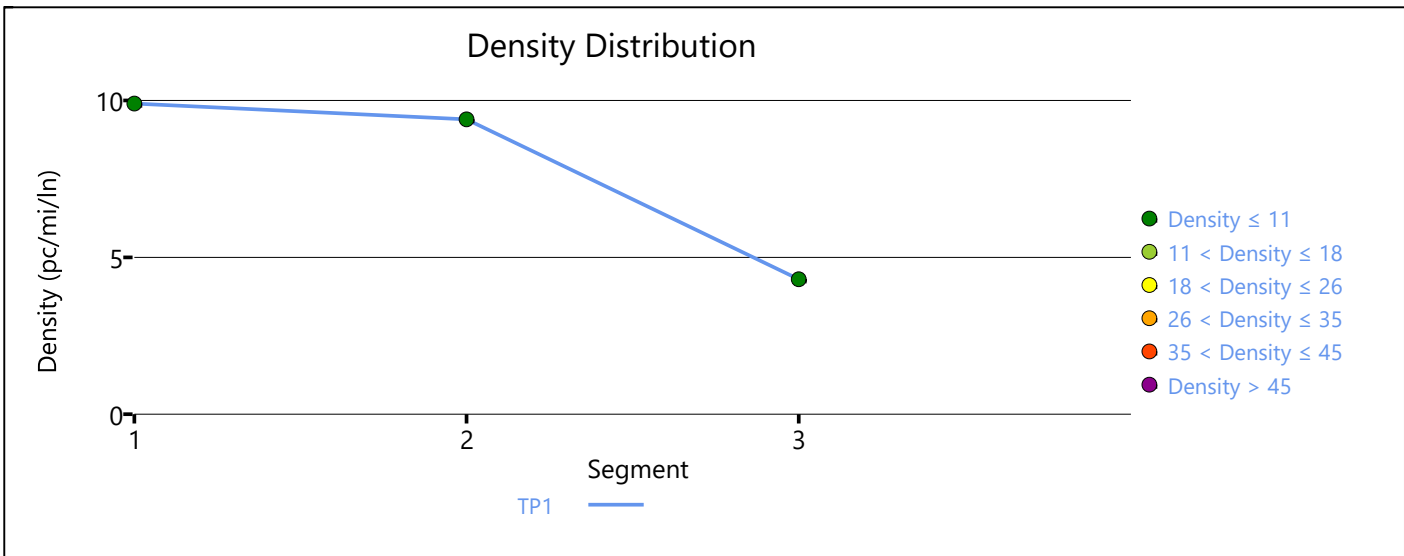
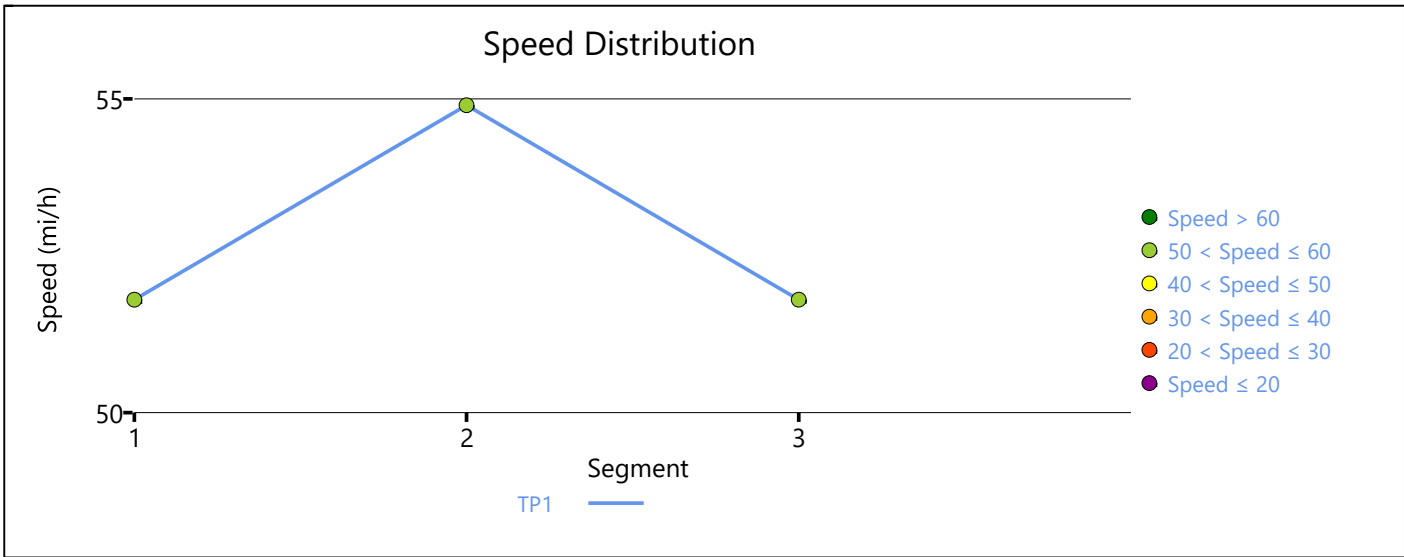
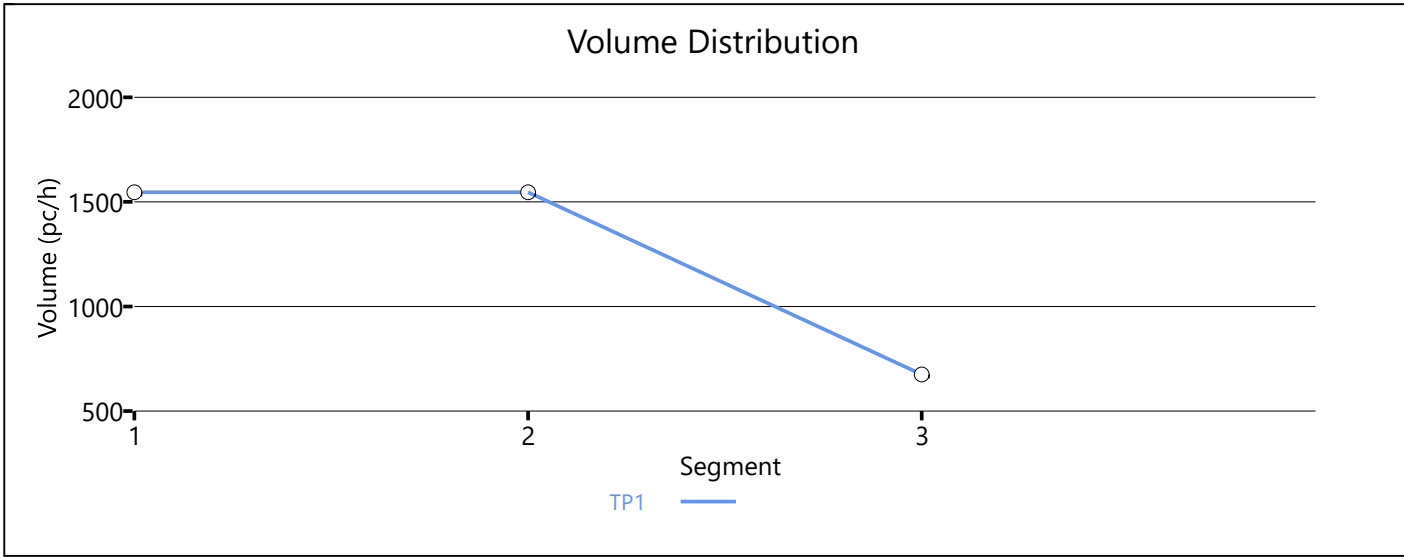
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	MD
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.831	1084	6654	0.16	51.8	7.0	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.831	0.806	1084	853	6750	4200	0.16	0.20	54.9	55.0	6.6	6.6	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.921	232	6654	0.03	51.8	1.5	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.9	4.9	4.1	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	52.9	Density, veh/mi/ln	4.1
Average Travel Time, min	1.50	Density, pc/mi/ln	4.9

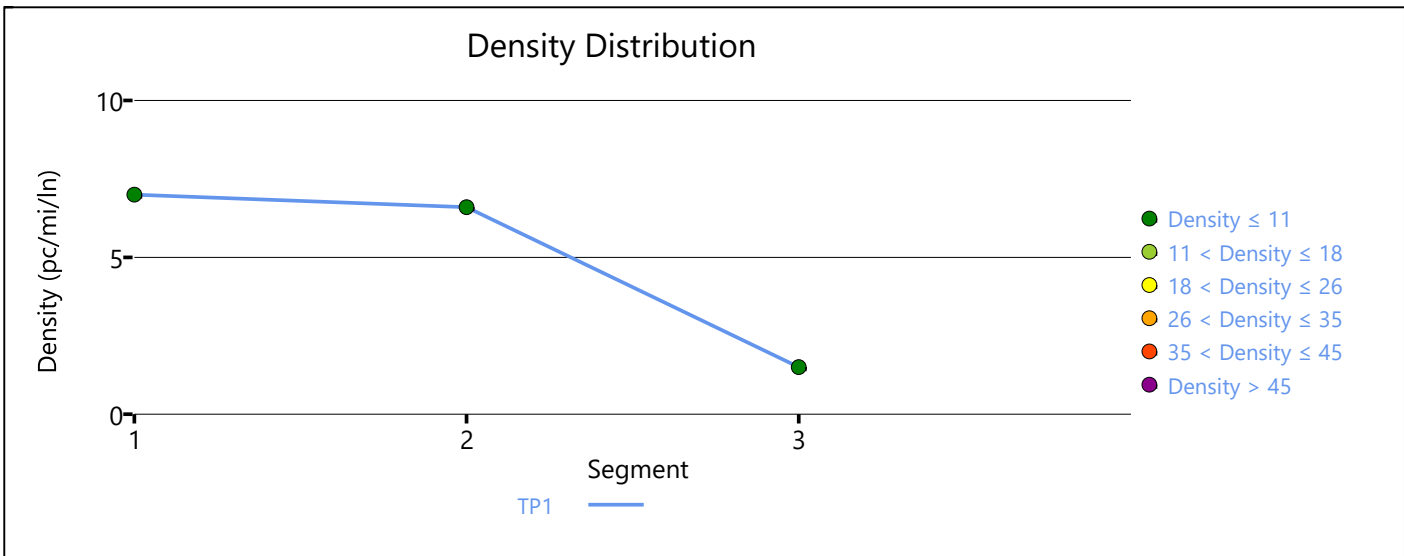
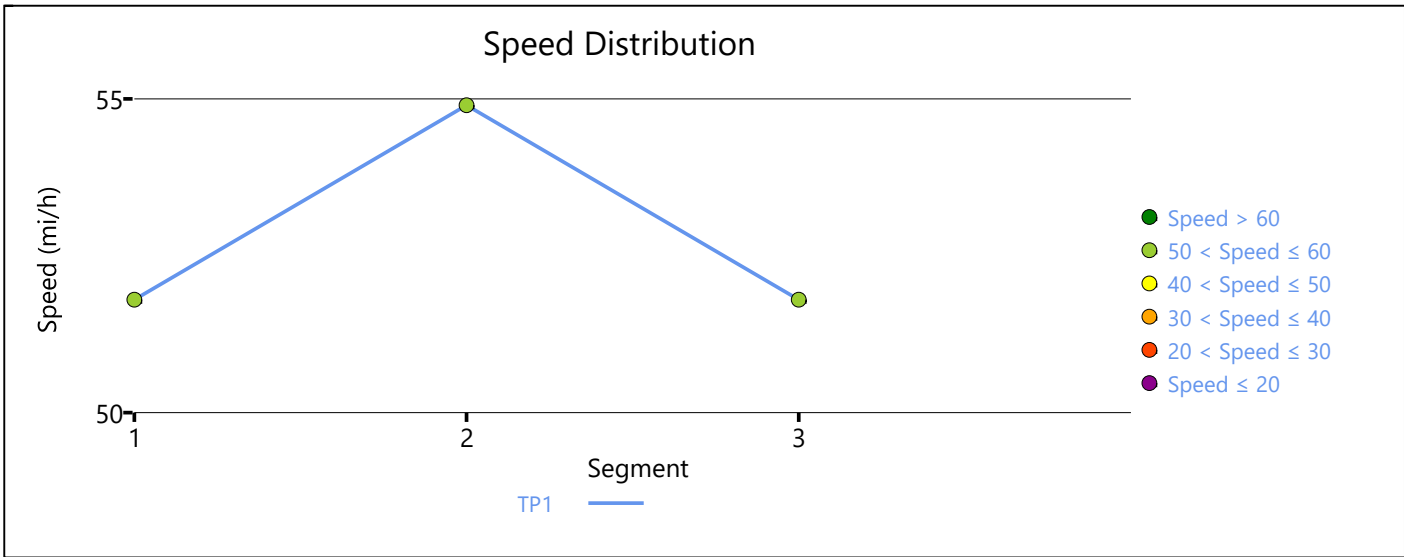
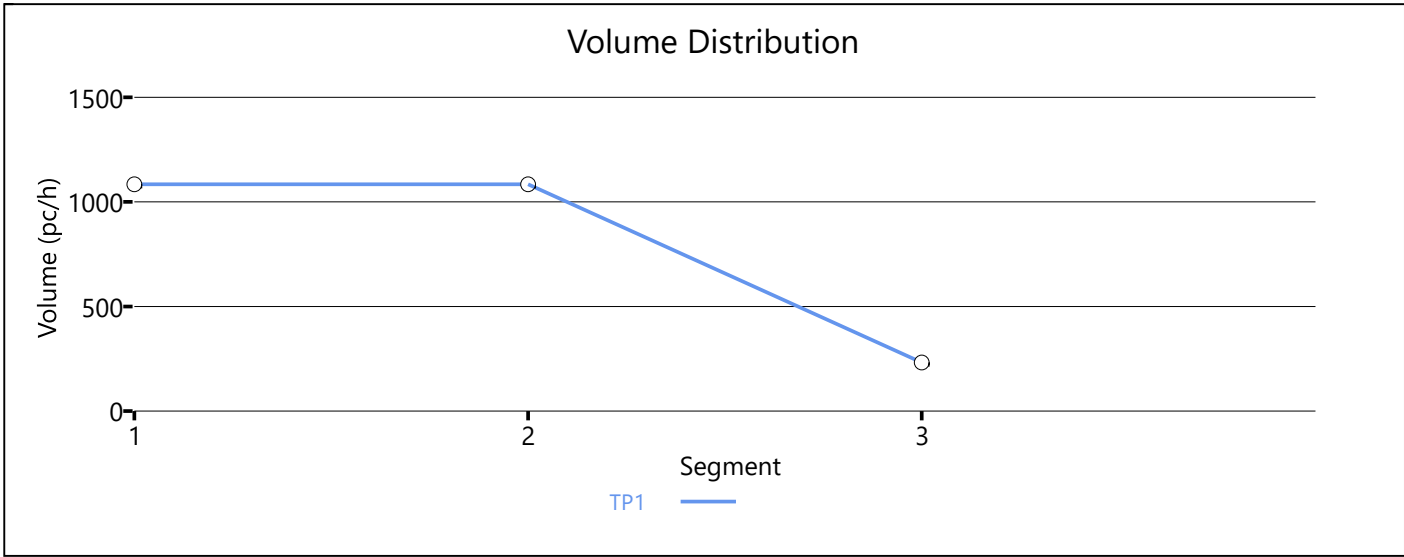
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	PM
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.919	980	6654	0.15	51.8	6.3	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.919	0.926	980	928	6750	4200	0.15	0.22	54.9	55.0	5.9	5.9	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.808	51	6654	0.01	51.8	0.3	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	4.0	3.6	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	3.6
Average Travel Time, min	1.50	Density, pc/mi/ln	4.0

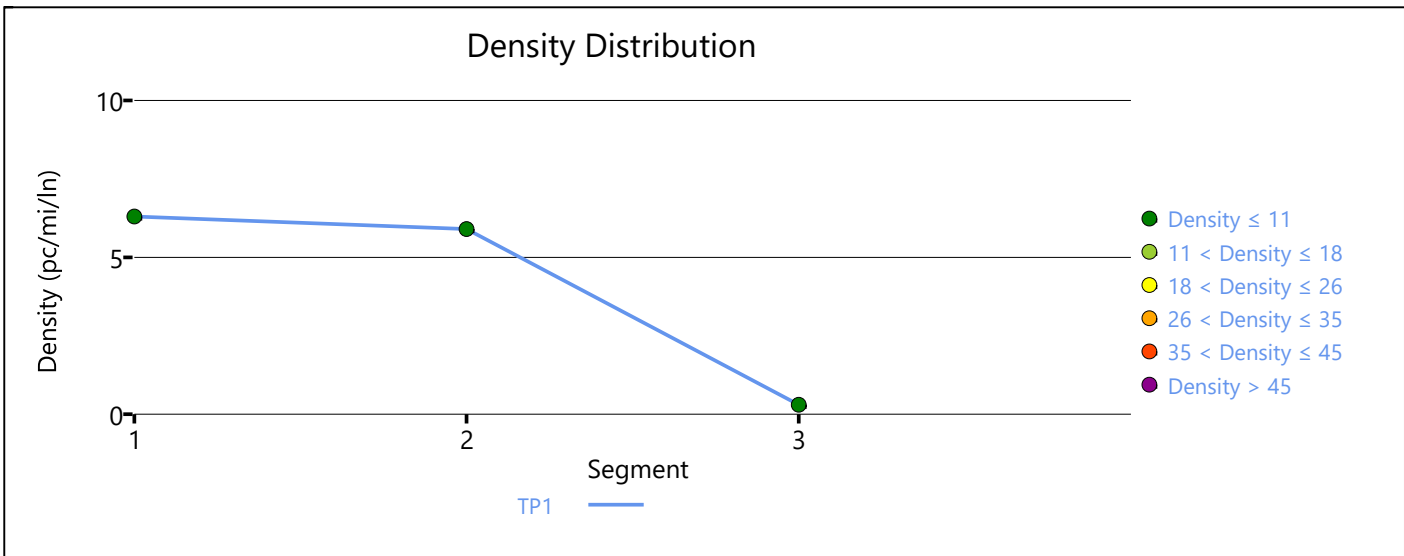
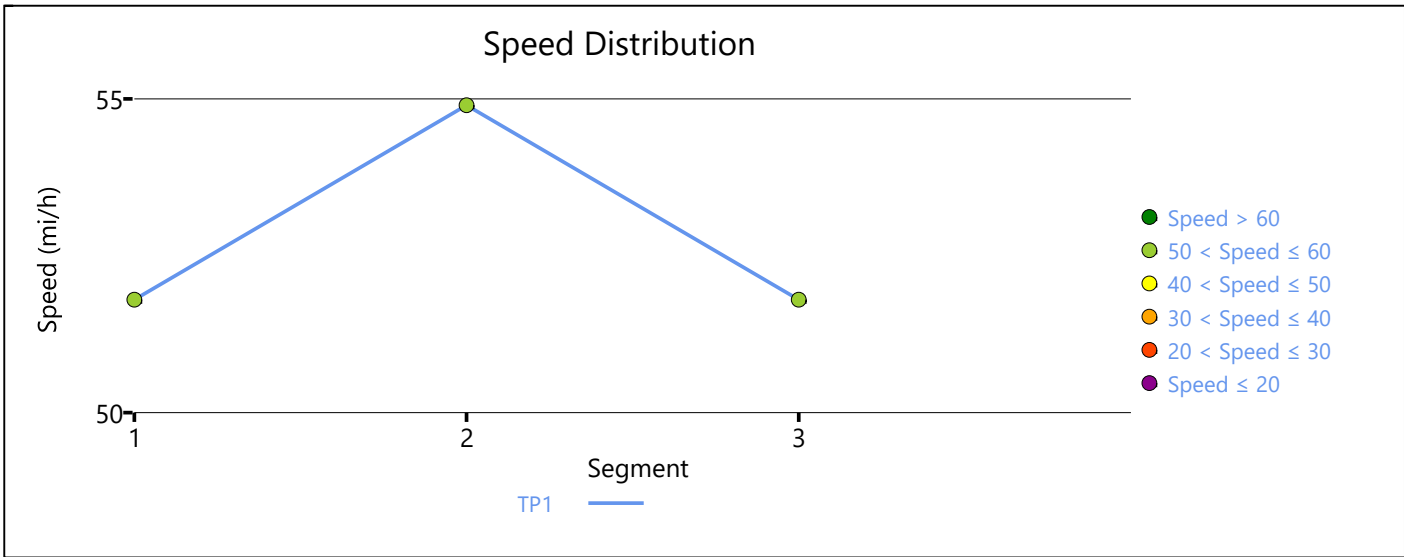
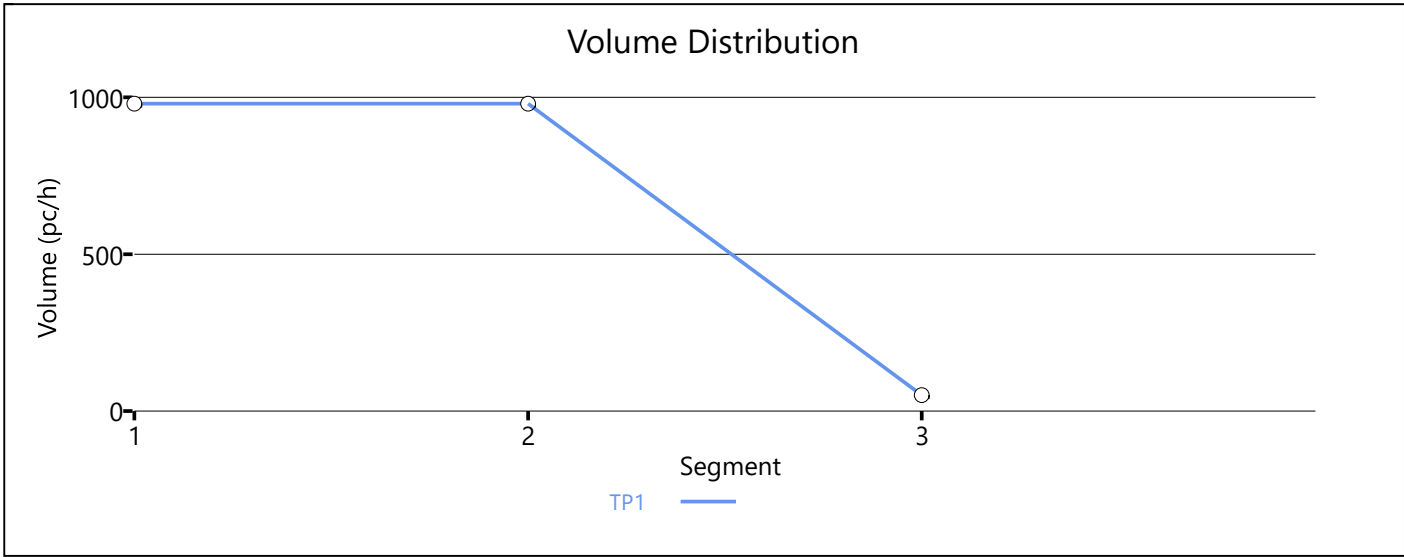
Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments



HCS7 Freeway Facilities Report

Project Information

Analyst	CJ	Date	4/21/2022
Agency	WSP	Analysis Year	NEPA 5
Jurisdiction		Time Analyzed	LN
Project Description	CBD	Units	U.S. Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.29		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		2500	3
2	Diverge	Basic	-	1800	3
3	Basic	Basic		2500	3

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.899	542	6654	0.08	51.8	3.5	A

Segment 2: Diverge

AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.899	0.906	542	523	6750	4200	0.08	0.12	54.9	55.0	3.3	3.3	A

Segment 3: Basic

AP	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.706	20	6654	0.00	51.8	0.1	A

Facility Analysis Results

AP	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	53.0	2.2	2.0	1.50	A

Facility Overall Results

Space Mean Speed, mi/h	53.0	Density, veh/mi/ln	2.0
Average Travel Time, min	1.50	Density, pc/mi/ln	2.2

Messages

WARNING 1	Ramp segment length is longer than 1500 feet for segment 2.
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WARNING 2

Length of accel/decel lane is longer than 1500 feet for segment 2.

Comments

