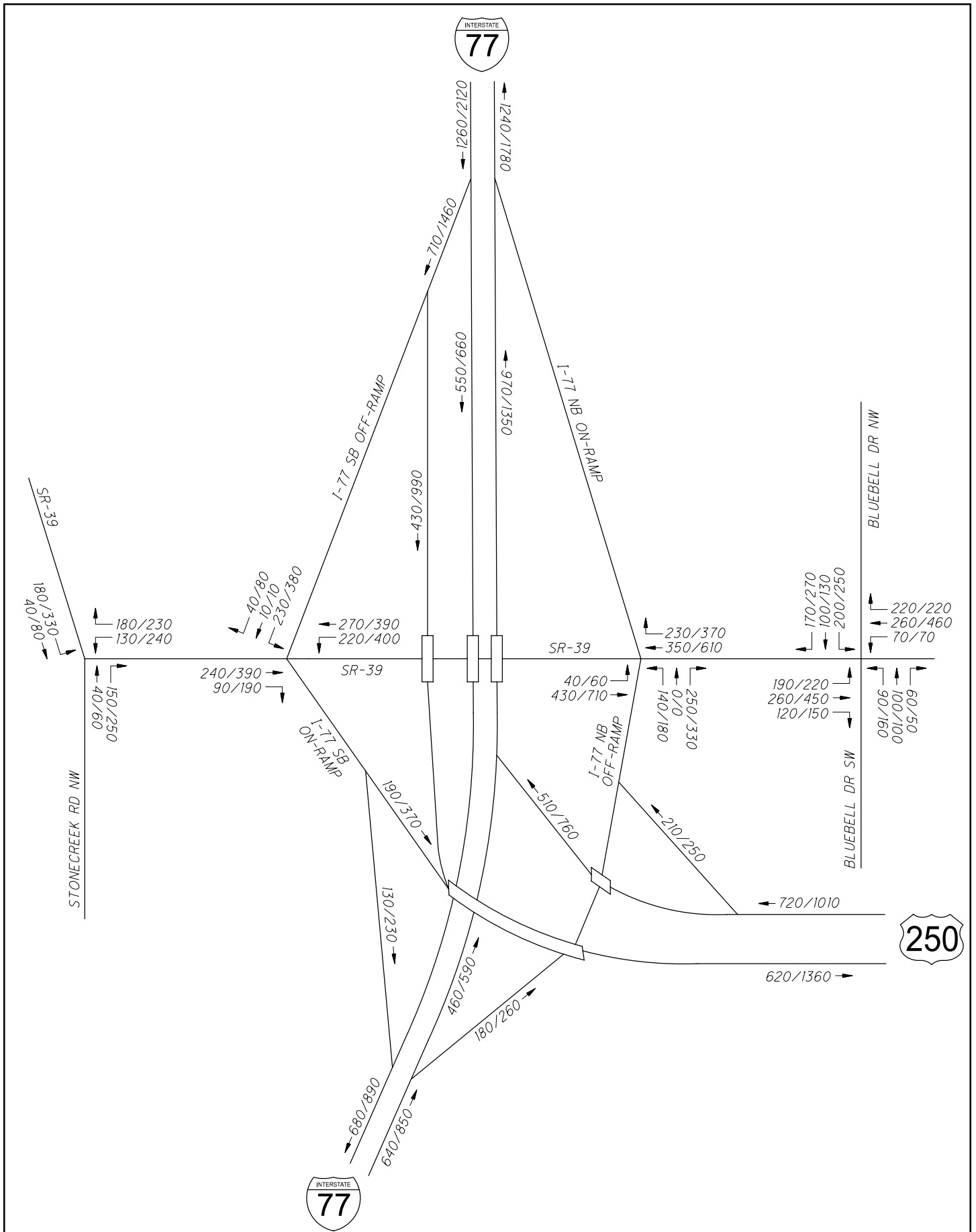


# Tuscarawas I-77 / US 250 / SR 39 Feasibility Study

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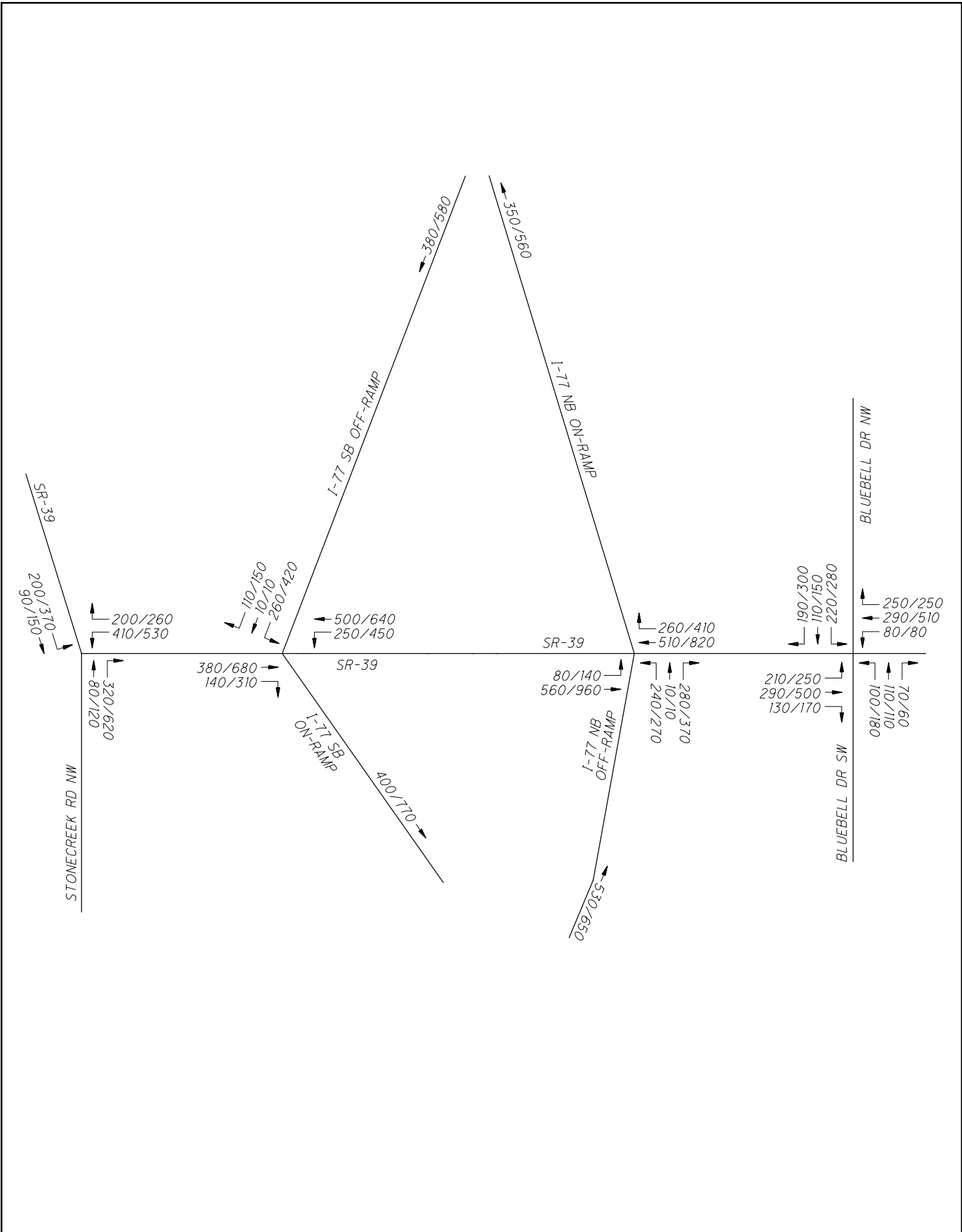
## Appendix E: Traffic Forecasts





**TUS-77/US-250/SR-39 INTERCHANGE FEASIBILITY STUDY  
EXISTING AM/PM PEAK HOUR VOLUMES**

NOT TO SCALE



**TUS-77 / US-250 / SR-39 INTERCHANGE FEASIBILITY STUDY**  
**2050 AM / PM DESIGN HOUR VOLUMES**



# TFMS - Segment Forecast Report

Username	Email	Script Import Date	Script Version	Model Version
kyle.bright	Kyle.Bright@burgessniple.com	4/14/2020 5:30:19 PM	2020.001	2023.1900

## Forecast Summary

Project ID	Project Name	Opening Year	Design Year
		2025	2045

Project Description

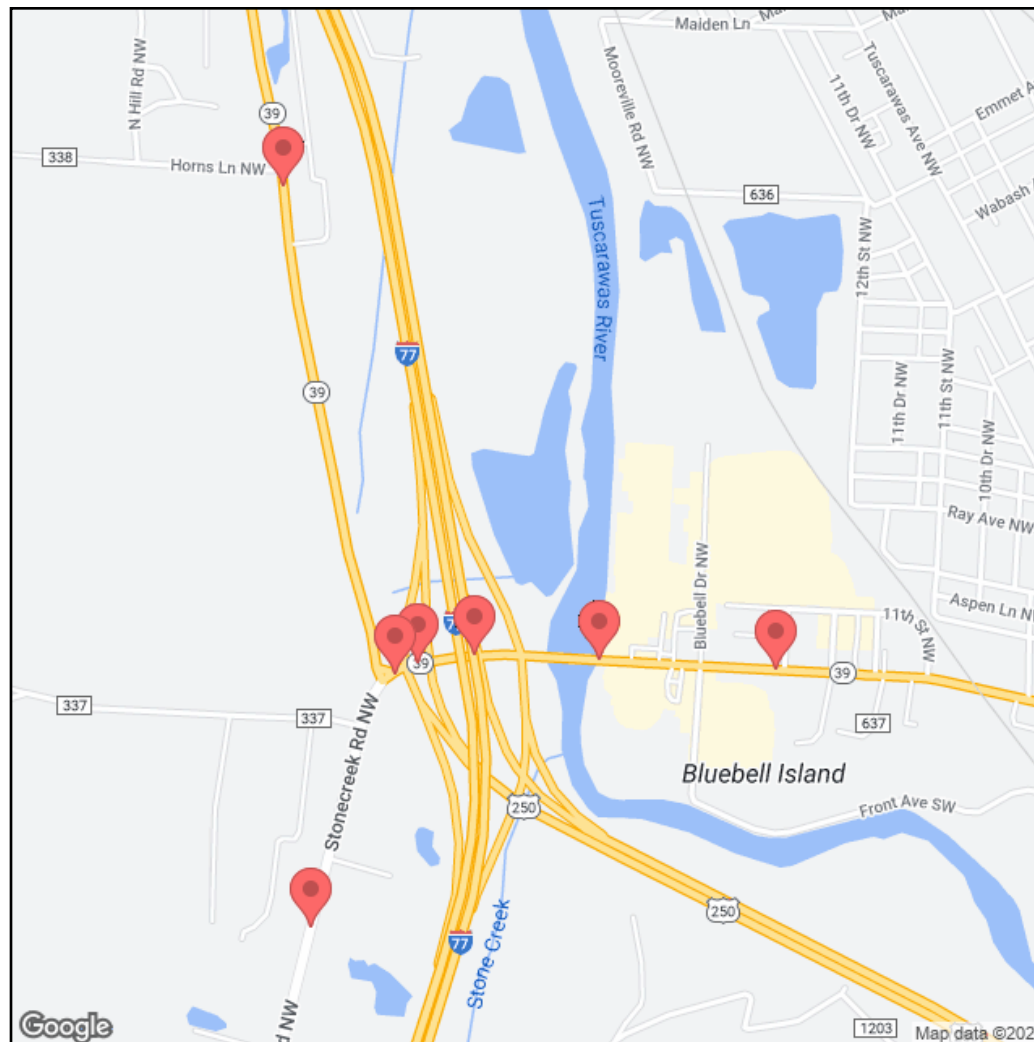
\*Users of this data need to be aware that there are limitations to the forecasts generated by this product that make it suitable only for roadway design projects which are low risk.

## Segment Information

Segment ID	LRS ID	BMP	EMP	Length	Latitude	Longitude
1808901	CTUSCR00021**C	16.704	17.410	0.706	-81.4829289927252	40.4880991948902
1866577	STUSSR00039**C	11.280	12.692	1.412	-81.4836641983471	40.5030037962432
1866589	STUSSR00039**C	12.692	12.734	0.042	-81.4807117114703	40.4931554330333
1866590	STUSSR00039**C	12.734	12.768	0.034	-81.4801000768084	40.493399839054
1866591	STUSSR00039**C	12.768	12.896	0.128	-81.4785759645174	40.4935630408309
1866593	STUSSR00039**C	12.896	13.116	0.220	-81.4752789322005	40.4934639410387
1866596	STUSSR00039**C	13.116	13.391	0.275	-81.4705981668066	40.4932599152892

# Forecast Information

Segment ID	2025 AADT	2045 AADT	DHV-30	K%	D%	T24%	TD%
1808901	4,900	4,900	600	12.0	52.3	0	0
1866577	5,900	5,900	850	14.2	59.3	3	4
1866589	5,900	6,000	850	14.2	59.3	3	4
1866590	5,900	5,900	850	14.2	59.3	3	4
1866591	12,000	12,500	1,600	12.5	52.0	10	16
1866593	21,000	23,000	2,500	10.9	63.3	9	11
1866596	21,000	22,500	2,500	10.9	63.3	9	12



**Definitions:**

- o AADT – Annual Average Daily Traffic
- o DHV30 – Design Hour Volume for 30th highest hour of the year
- o DHV30 – K \* AADT
- o K % – Design Hour Factor
- o D % – Peak Direction Factor
- o T24 % – Percent Daily Trucks
- o TD % – Percent Design Hour Trucks

Forecast Segment ID	Route	BMP	EMP
1808901	CTUSCR00021**C	16.704	17.410

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	12.0	0	4,900	Average	<span style="color: blue;">●</span> -0.900	0.000
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
4,900	52.3	0	<span style="color: yellow;">!</span> 0	Model	<span style="color: blue;">●</span> -999999.000	0.000

● Warning: The growth rate was negative and was capped.

! Warning: FORECAST TRUCKS ZERO BECAUSE NO TRUCK COUNTS ON SEGMENT

## Regression

Method Number	PA AADT	BC AADT	AADT
2	1,762		1,762

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-1712	8487	0	56	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-2.31	0.00	0	0	1,624		1,729	
2	-2.29	0.00	3	0	1,787		1,762	
3	-2.06	0.00	0	0	2,018		2,082	
4	-2.50	0.00	3	0	1,479		1,479	
5	-0.30	0.00	0	0	4,605		4,497	
6	-999999.00	0.00	0	0				

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-2,072	5,735	-64	56	0.56	0.00
2	RAT	0.70	5,491	0.00		0.42	0.00
3	MRAT	1.12	5,517	1.88	26	0.42	0.00
4	RAF		5,626		41	0.49	0.00

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Model Ratio	0.500	0.000

### Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
5491	5679	0	56	5491	5735

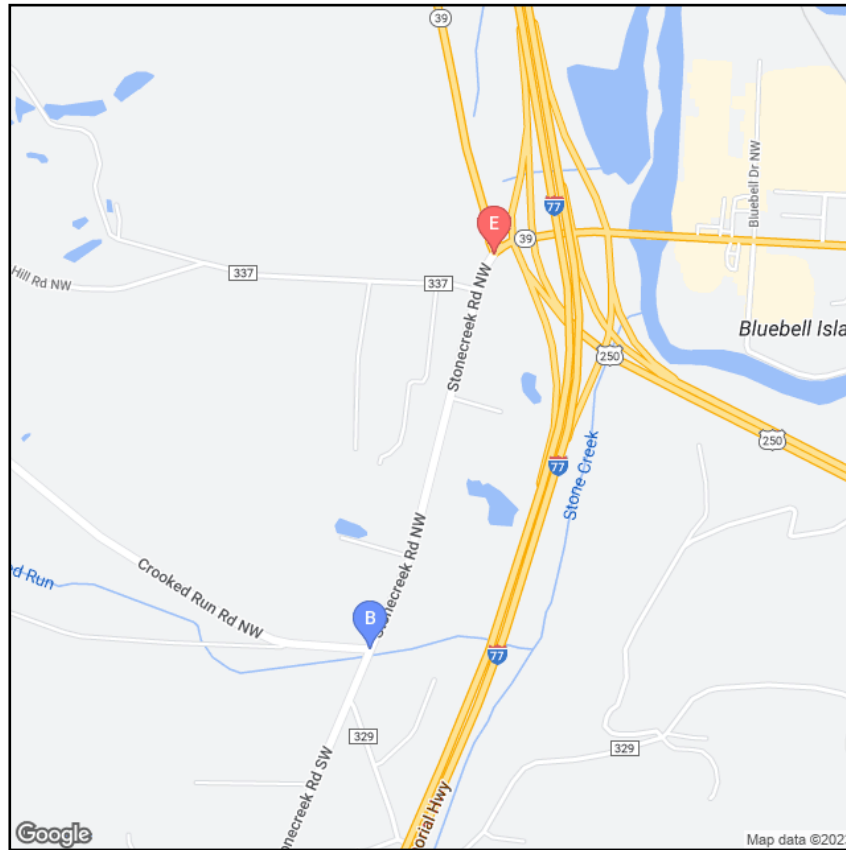
Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2009	6,354	6,354	
2013	6,017	6,017	
2016	5,002	5,002	
2019	5,282	5,282	
* 2022	4,913	4,913	

\* Pivot Point





Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1808901	CTUSCR00021**C	16.704	17.410	0.706	4,900	4,900	600	12.0	52.3	0	0

Forecast Segment ID	Route	BMP	EMP
1866577	STUSSR00039**C	11.280	12.692

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 14.2	3	5,700	Average	● -0.100	0.000
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
5,900	◆ 59.3	4	200	Average	● -13.700	0.000

● Warning: The growth rate was negative and was capped.

◆ K/D factors from TCDS were used.

## Regression

Method Number	PA AADT	BC AADT	AADT
2	5,221	-1,346	3,875

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
2690	9134	-1843	445	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.46	-26.02	0	0	4,774	-1,263	4,939	-1,251
2	-0.29	-27.73	3	2	5,176	-1,347	5,221	-1,346
3	0.24	-19.17	0	0	5,966	-853	6,052	-869
4	-999999.00	-999999.00	0	0				
5	-999999.00	-999999.00	0	0				
6	-999999.00	-999999.00	0	0				

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	5,563	5,978	187	214	0.06	0.27
2	RAT	18.92	7,850	16.49	445	1.09	4.41
3	MRAT	1.34	7,379	2.24	317	0.87	2.12
4	RAF		6,678		266	0.46	1.20

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Difference	Difference	0.100	0.300

### Method 1 - 4 Volume

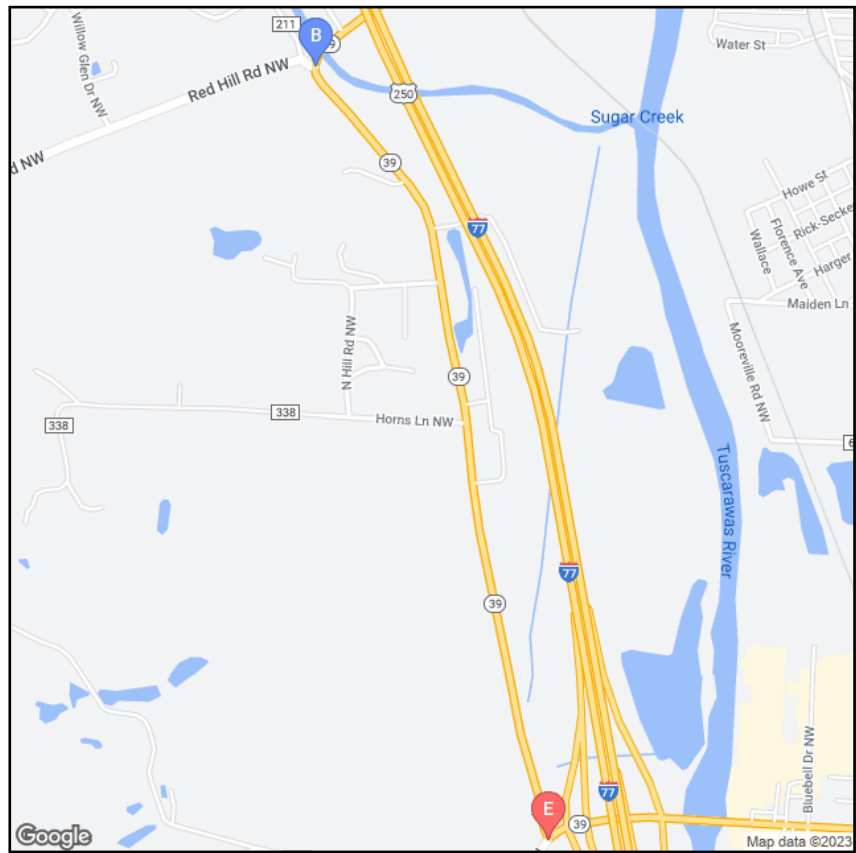
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
5764	7405	214	445	5978	7850

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2013	6,560	5,864	695
2016	6,022	5,593	428
2019	5,737	5,376	361
* 2022	5,873	5,674	199

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1866577	STUSSR00039**C	11.280	12.692	1.412	5,900	5,900	850	14.2	59.3	3	4

Forecast Segment ID	Route	BMP	EMP
1866589	STUSSR00039**C	12.692	12.734

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 14.2	3	5,800	Average	0.100	0.100
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
6,000	◆ 59.3	4	200	Average	● -13.300	0.000

● Warning: The growth rate was negative and was capped.

◆ K/D factors from TCDS were used.

## Regression

Method Number	PA AADT	BC AADT	AADT
2	5,221	-1,346	3,875

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
2690	9134	-1843	378	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.46	-26.02	0	0	4,774	-1,263	4,939	-1,251
2	-0.29	-27.73	3	2	5,176	-1,347	5,221	-1,346
3	0.24	-19.17	0	0	5,966	-853	6,052	-869
4	-999999.00	-999999.00	0	0				
5	-999999.00	-999999.00	0	0				
6	-999999.00	-999999.00	0	0				

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-1,100	6,706	127	263	0.48	1.15
2	RAT	0.84	6,575	2.78	378	0.33	3.21
3	MRAT	1.12	6,589	1.90	324	0.37	2.24
4	RAF		6,648		294	0.43	1.70

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Difference	0.500	1.200

### Method 1 - 4 Volume

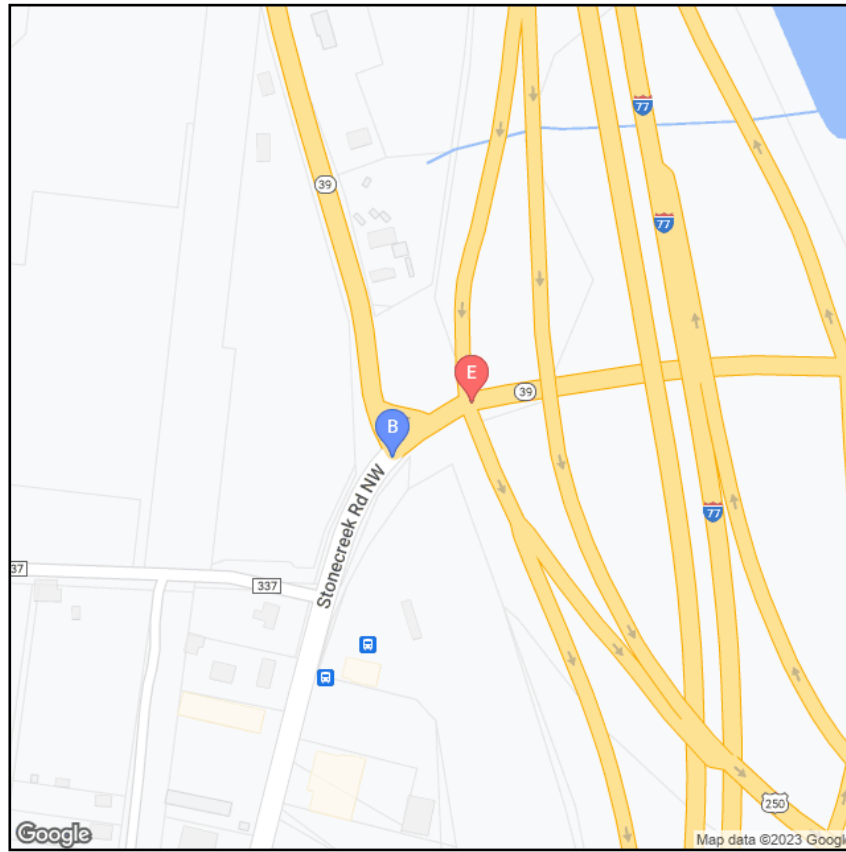
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
6197	6443	263	378	6460	6821

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2013	6,560	5,864	695
2016	6,022	5,593	428
2019	5,737	5,376	361
* 2022	5,873	5,674	199

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1866589	STUSSR00039**C	12.692	12.734	0.042	5,900	6,000	850	14.2	59.3	3	4

Forecast Segment ID	Route	BMP	EMP
1866590	STUSSR00039**C	12.734	12.768

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 14.2	3	5,700	Average	● -0.100	0.000
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
5,900	◆ 59.3	4	200	Average	● -12.500	0.000

● Warning: The growth rate was negative and was capped.

◆ K/D factors from TCDS were used.

## Regression

Method Number	PA AADT	BC AADT	AADT
2	5,221	-1,346	3,875

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
2690	9134	-1843	373	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.46	-26.02	0	0	4,774	-1,263	4,939	-1,251
2	-0.29	-27.73	3	2	5,176	-1,347	5,221	-1,346
3	0.24	-19.17	0	0	5,966	-853	6,052	-869
4	-999999.00	-999999.00	0	0				
5	-999999.00	-999999.00	0	0				
6	-999999.00	-999999.00	0	0				



## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-6,997	6,452	-162	373	0.25	3.12
2	RAT	0.46	6,137	0.55	295	0.11	1.72
3	MRAT	1.04	6,151	1.48	320	0.10	2.17
4	RAF		6,301		346	0.18	2.64

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Model Ratio	Average	0.100	2.600

### Method 1 - 4 Volume

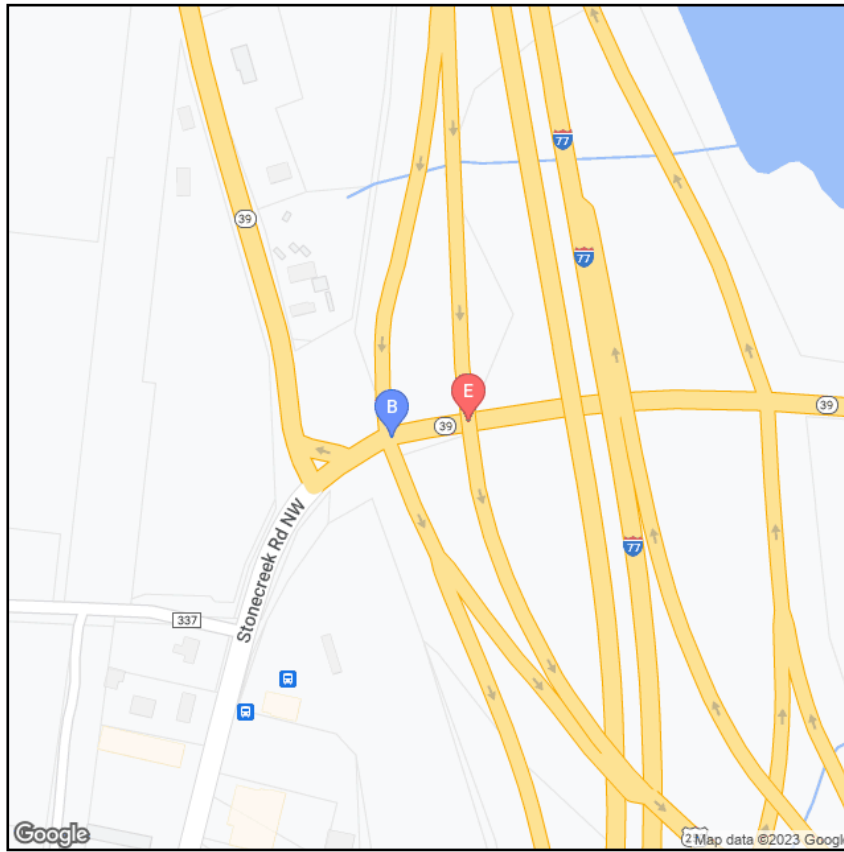
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
5805	6079	295	373	6100	6452

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2013	6,560	5,864	695
2016	6,022	5,593	428
2019	5,737	5,376	361
* 2022	5,873	5,674	199

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1866590	STUSSR00039**C	12.734	12.768	0.034	5,900	5,900	850	14.2	59.3	3	4

Forecast Segment ID	Route	BMP	EMP
1866591	STUSSR00039**C	12.768	12.896

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 12.5	9	11,000	Model	0.100	0.100
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
12,300	◆ 52.0	14	1,300	Model	0.600	0.600

◆ K/D factors from TCDS were used.

## Regression

Method Number	PA AADT	BC AADT	AADT
1	7,924	2,037	9,961

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-16785	35816	-191	6718	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.98	2.86	0	0	9,006	1,957	7,924	2,037
2	-1.27	6.51	4	1	7,301	3,279	7,023	3,194
3	-1.02	6.51	0	0	8,866	3,279	7,801	3,194
4	-1.02	5.18	4	5	8,176	2,678	7,801	2,773
5	-0.65	8.80	0	0	10,108	4,086	8,923	3,922
6	0.61	7.48	4	5	13,535	3,485	12,761	3,502

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-833	12,616	771	1,306	0.13	0.55
2	RAT	0.94	12,578	3.13	1,676	0.00	1.72
3	MRAT	1.04	12,580	1.48	1,556	0.04	1.34
4	RAF		12,598		1,431	0.09	0.94

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Difference	0.100	0.600

### Method 1 - 4 Volume

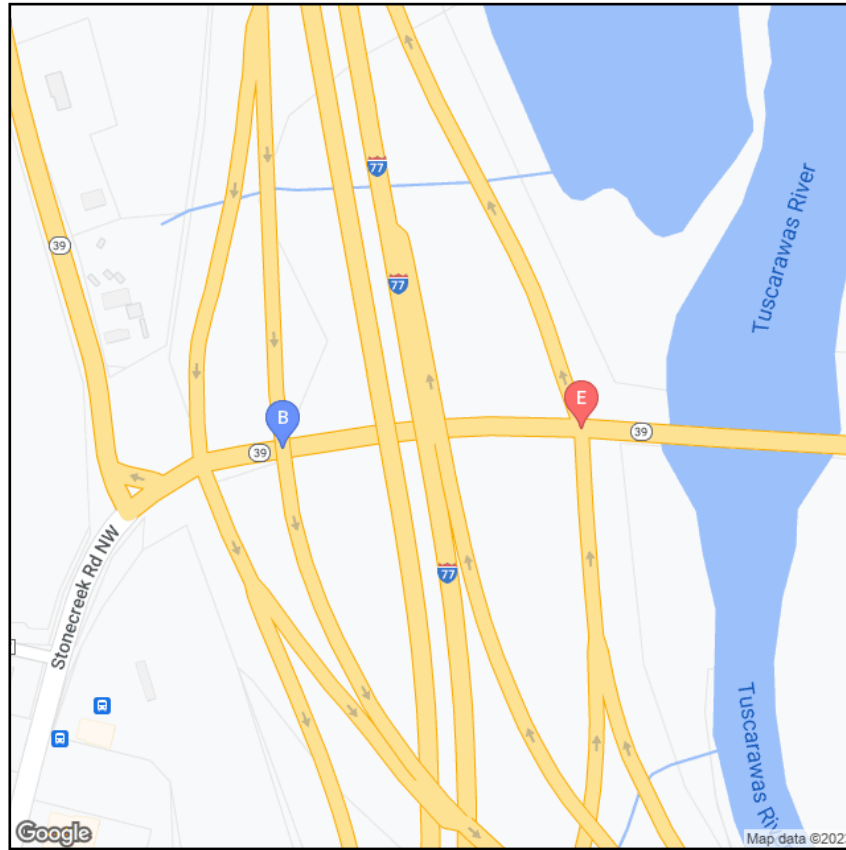
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
10902	11310	1306	1676	12208	12986

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2007	14,520	13,540	980
2010	14,030	13,540	490
2013	11,082	10,695	387
2016	15,950	15,393	557
2019	13,952	12,640	1,312
* 2022	12,037	10,905	1,132

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1866591	STUSSR00039**C	12.768	12.896	0.128	12,000	12,500	1600	12.5	52.0	10	16

Forecast Segment ID	Route	BMP	EMP
1866593	STUSSR00039**C	12.896	13.116

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 10.9	9	21,000	Average	0.500	0.500
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
23,100	◆ 63.3	12	2,100	Model	0.400	0.400

◆ K/D factors from TCDS were used.

## Regression

Method Number	PA AADT	BC AADT	AADT
2	22,697	4,501	27,198

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
9794	46658	-31716	28429	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	0.60	7.35	0	0	20,848	7,384	21,918	5,937
2	0.75	4.71	4	4	22,322	4,667	22,697	4,501
3	1.32	4.67	0	0	25,209	5,723	25,734	4,483
4	1.32	4.67	4	4	25,739	4,646	25,735	4,483
5	2.90	-7.10	0	0	34,384	-1,367	34,021	-1,920
6	2.59	1.77	4	4	32,920	2,940	32,382	2,904

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	5,343	21,709	1,439	2,134	0.15	0.35
2	RAT	1.35	22,054	3.86	2,685	0.11	1.37
3	MRAT	1.06	22,034	1.38	2,532	0.14	1.09
4	RAF		21,871		2,333	0.15	0.72

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Difference	0.200	0.400

### Method 1 - 4 Volume

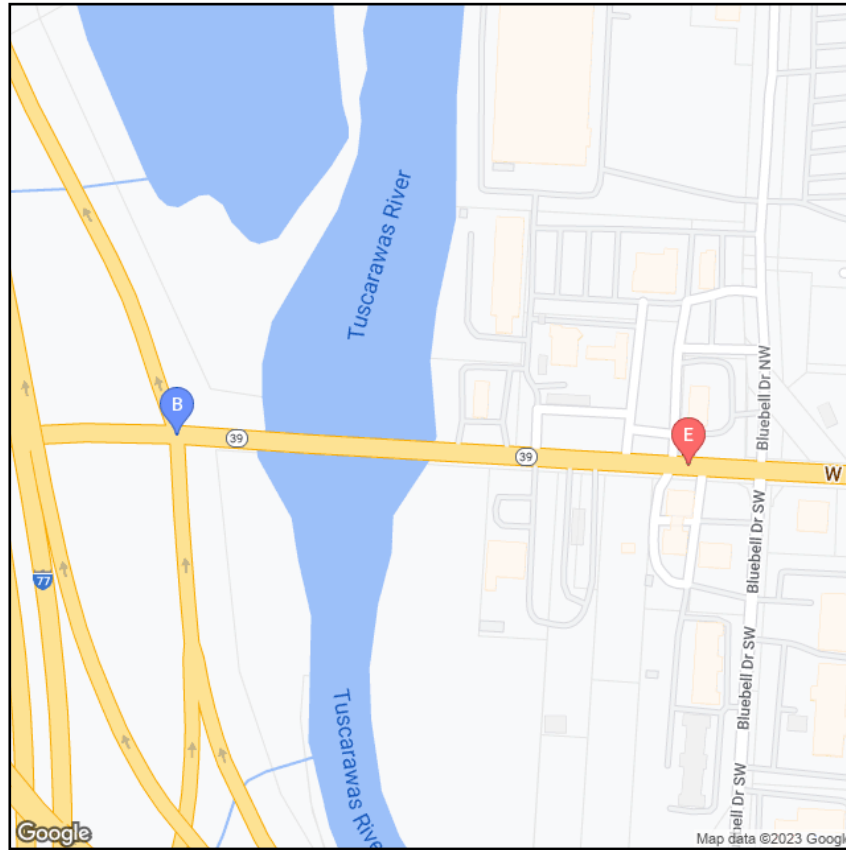
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
19369	19737	2134	2685	21503	22422

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2007	18,110	17,380	730
2010	17,760	17,040	720
2013	16,320	14,668	1,651
2016	21,581	14,638	6,942
2019	20,591	18,661	1,930
* 2022	20,715	18,773	1,942

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1866593	STUSSR00039**C	12.896	13.116	0.220	21,000	23,000	2500	10.9	63.3	9	11



Forecast Segment ID	Route	BMP	EMP
1866596	STUSSR00039**C	13.116	13.391

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 10.9	9	21,000	Model	0.400	0.400
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
23,100	◆ 63.3	12	2,100	Model	0.300	0.300

◆ K/D factors from TCDS were used.

## Regression

Method Number	PA AADT	BC AADT	AADT
2	22,697	4,501	27,198

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
9794	46658	-31716	28429	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	0.60	7.35	0	0	20,848	7,384	21,918	5,937
2	0.75	4.71	4	4	22,322	4,667	22,697	4,501
3	1.32	4.67	0	0	25,209	5,723	25,734	4,483
4	1.32	4.67	4	4	25,739	4,646	25,735	4,483
5	2.90	-7.10	0	0	34,384	-1,367	34,021	-1,920
6	2.59	1.77	4	4	32,920	2,940	32,382	2,904

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	7,674	22,364	1,506	2,107	0.28	0.30
2	RAT	1.59	23,335	4.46	2,678	0.36	1.35
3	MRAT	1.13	23,226	1.38	2,521	0.37	1.06
4	RAF		22,795		2,314	0.32	0.68

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Difference	0.400	0.300

### Method 1 - 4 Volume

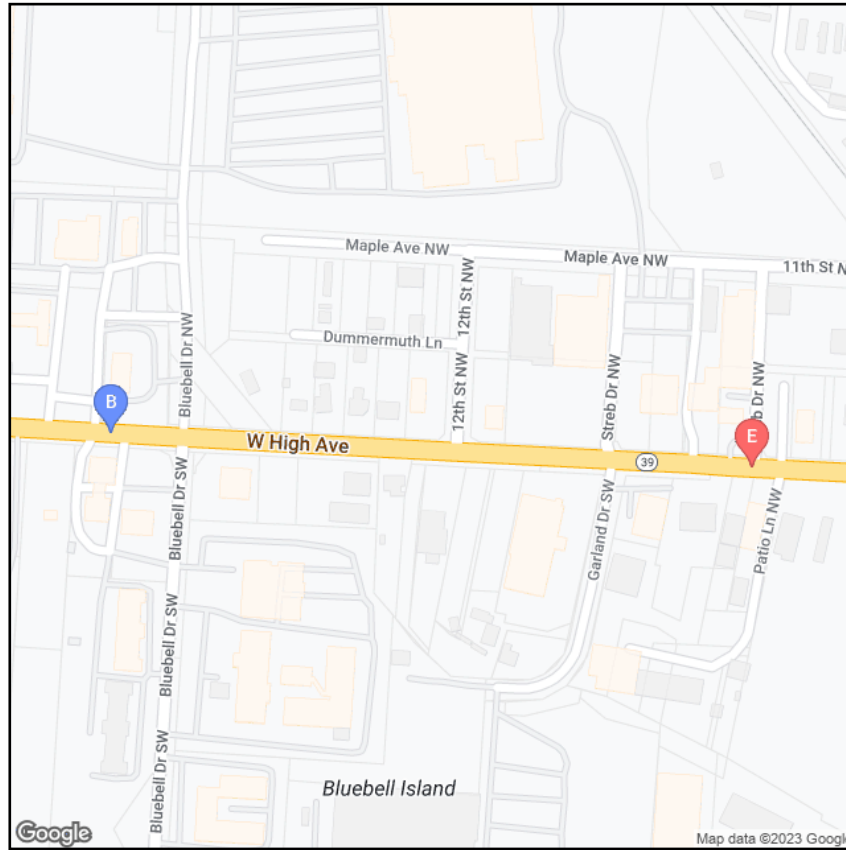
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
20257	20705	2107	2678	22364	23383

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2007	18,110	17,380	730
2010	17,760	17,040	720
2013	16,320	14,668	1,651
2016	21,581	14,638	6,942
2019	20,591	18,661	1,930
* 2022	20,715	18,773	1,942

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1866596	STUSSR00039**C	13.116	13.391	0.275	21,000	22,500	2500	10.9	63.3	9	12