

Travel Time Survey

Route 24



Prepared by the

Roanoke Valley Area Metropolitan Planning Organization

June 2003



Background

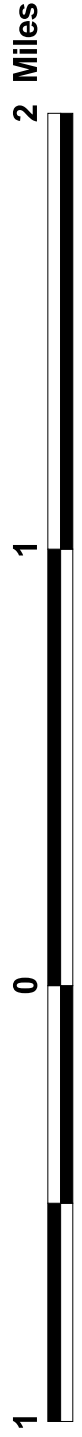
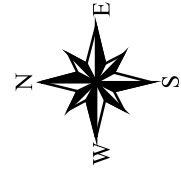
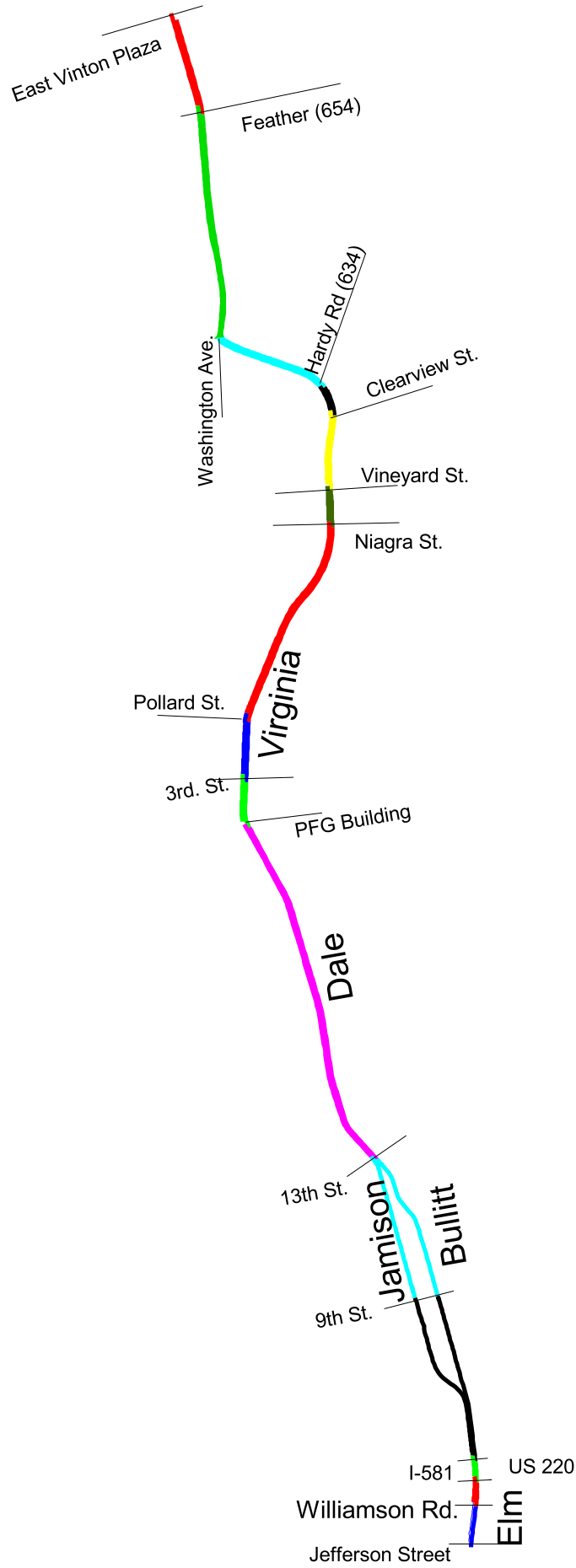
The data included in this report is part of an ongoing project conducted by the Roanoke Valley Area Metropolitan Planning Organization. For a complete overview of the project, including a methodology, please refer to the report *Travel Time Survey Pilot Study-Technical Report-GPS Travel Time Data Collection on the Route 419 Corridor*, which was published in August 2000 (revised December 2000).

No attempt has been made to extensively interpret the data in this report. The report merely attempts to record data to for use and comparison for later studies. The first few pages contain summary tables of selected data. The bulk of the document contains data from each of the travel runs.

Data Summary

Travel time runs varied from 13 minutes to 26 minutes. The three fastest runs occurred during peak times and the four slowest runs occurred during non-peak times (Table 1). The average speed for the 4.5 mile corridor was 21 miles per hour. Some of the longest delays and slowest segments were at the interchange of Elm Avenue and I-581/US 220. In fact, Table 3 illustrates that is often not possible to maintain the 25mph posted speed through this interchange. These segments are also some of the shortest, signalized road segments in the region. The fastest segments occurred during non-peak times and on the outskirts of Vinton in areas that had 35 or 45 mph posted speed limits (Table 5).

Route 24 Corridor



Sample Travel Time Run: Route 24
Eastbound Non-Peak
2/3/2003 8:59am-9:10am

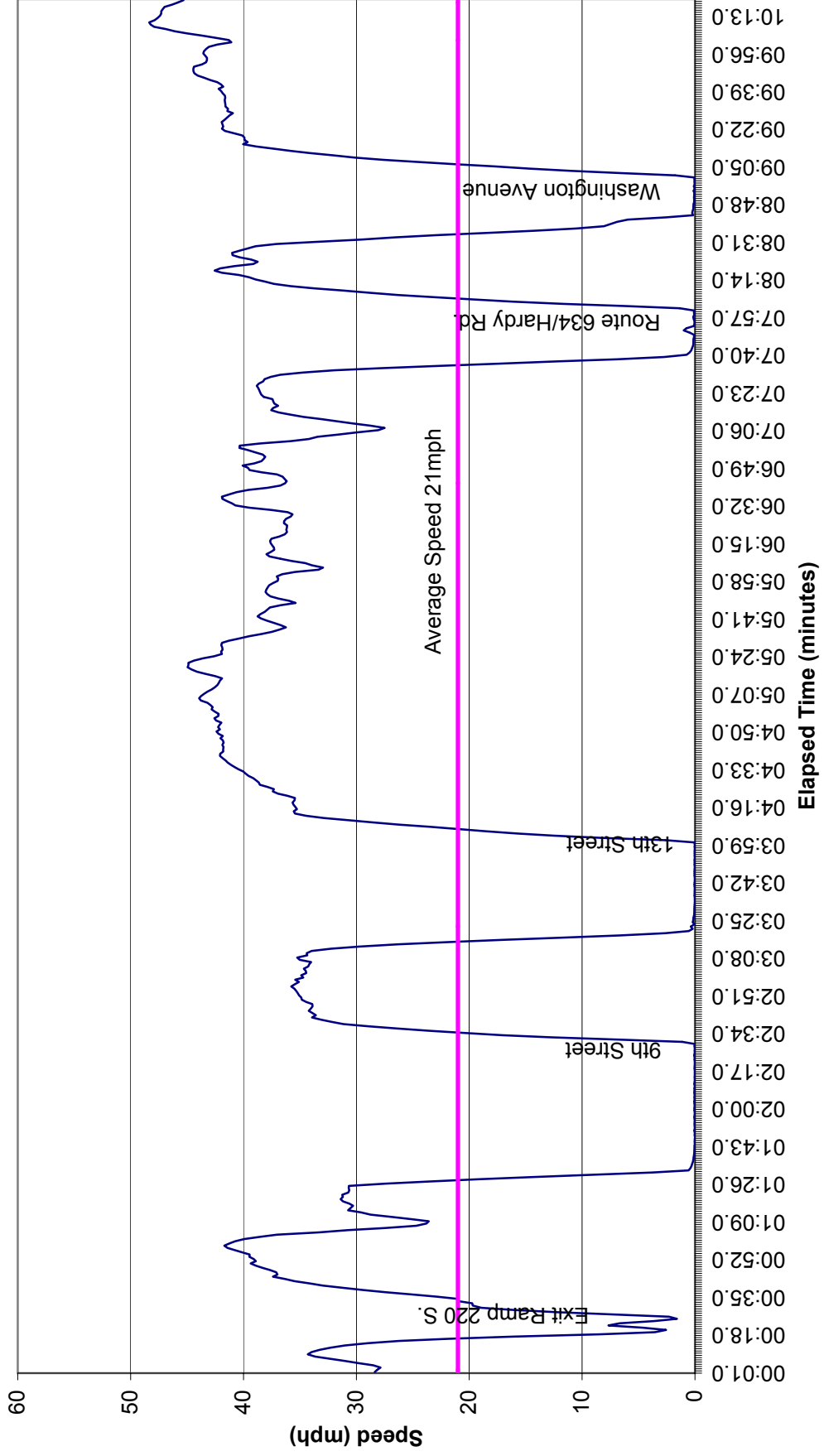


Table 1 - Route 24 Travel Time Runs

Date	Period	Direction	Time (h:m:s)	Speed (mph)
2/3/2003	Peak	East	0:20:48	13.0
6/6/2003	Peak	East	0:15:56	17.0
6/6/2003	Peak	West	0:12:11	22.2
2/14/2003	Non-Peak	West	0:11:32	23.5
2/14/2003	Non-Peak	East	0:11:24	23.7
2/4/2003	Peak	West	0:13:39	19.8
2/4/2003	Peak	East	0:13:12	20.5
2/3/2003	Peak	West	0:18:36	14.6
2/3/2003	Non-Peak	West	0:13:47	19.6
2/3/2003	Non-Peak	East	0:10:20	26.1
1/24/2003	Non-Peak	West	0:10:42	25.3
1/24/2003	Non-Peak	East	0:10:17	26.3
Average			0:13:32	21.0

Table 2 - Longest Delay Times

Travel Run	Intersection	Seconds
2/3/2003-East-Peak	Williamson Road	204
2/3/2003-West-Peak	581 North Ramp	181
2/3/2003-East-Peak	13th Street	166
2/4/2003-West-Peak	Washington Ave.	85
1/24/2003-East-Non Peak	13th Street	71
6/6/2003-East-Peak	220 South Ramp	70
6/6/2003-West-Peak	Washington Ave.	70
2/3/2003-West-Peak	13th Street	67
2/4/2003-West-Peak	581 North Ramp	66

Table 4 - Slowest Running Travel Segments*

Travel Run	From/To	MPH	Speed Limit
2/3/2003 - West-Non-Peak	US 220 Exit Ramp/Williamson	11.4	25
2/3/03 - East - Peak	Williamson/US 220 Exit Ramp	11.4	25
2/3/03 - East - Peak	Jefferson/Williamson	11.6	25
1/24/03 - West-Non-Peak	I 581 Exit Ramp/ US 220 Exit Ramp	12.0	30/25
2/14/03 - East-Non-Peak	Niagra Street/Vineyard Street	12.0	35
2/4/2003 - East-Peak	Williamson/US 220 Exit Ramp	13.5	25
6/6/03 - East-Peak	Jefferson/Williamson	13.7	25

*includes running time only (does not include stopped delay time)

Table 5 - Fastest Travel and Running Segments*

Travel Run	From/To	MPH	Speed Limit
2/3/03 - East-Non-Peak	Feather/East Vinton Plaza	44.6	45
1/24/03 - East-Non-Peak	Feather/East Vinton Plaza	44.6	45
1/24/03 - East-Non-Peak	Washington Avenue/Feather	40.5	35/45
2/3/03 - East-Non-Peak	13th Street/PFG Building	40.1	30/35
2/14/03 - West-Non-Peak	Clearview/Vineyard	40	35
2/14/03 - West-Non-Peak	13th Street/PFG Building	39	35

*includes running time only (does not include stopped delay time)

Table 7 - Lowest Number of Access Points Per Mile*

Direction	Segment From	Segment To	Access/Per Mile
East	Feather	East Vinton Plaza	3.8
West	Clearview	Vineyard	5
West	Washington Avenue	Route 634	6.7
West	3rd Street	PFG Building	7.7
West	Williamson Road	Jefferson	9.1
West	Niagra Street	Pollard Street	10.2

*The Eastbound intersections at Jefferson Street, Williamson Road, and Interstate on-ramps were excluded from this analysis.

Table 8 VDOT Traffic Estimates

From	To	AADT**
8th Street	US 220	9,900
US 220	SR 24	21,000
6th Street	13th Street	24,000
13th Street	Dale/Jamison	28,000
Dale/Jamison	ECL Roanoke	26,000
WCL Vinton	Pollard Street	26,000
Pollard Street	Clearview Street/Hardy Ave.	20,000
Clearview Street/Hardy Ave.	Washington Ave.	15,000
Washington Ave.	ECL Vinton	24,000

Source: VDOT 2001 Traffic Volume Estimates.

**Annual Average Daily Traffic

Date: January 24, 2003; Eastbound Route 24; Non Peak (9:34-9:45am)

Intersections	Access Points		Speed Limit	Segment Length(mi)	Elapsed Time	Running Time			Stopped		Overall Mean Speed(mph)
	Number	Per/Mile				Time in Motion(s)	Mean Speed (mph)	Delay Time			
Jefferson Street Segment 1 >	0	0.0	25	0.11	0:00:43	21	18.9	23		9.2	
Williamson Road Segment 2 >	0	0.0	25	0.06	0:00:22	14	15.4	8		9.8	
Exit Ramp (US 220 S) Segment 3 >	0	0.0	25/30	0.06	0:00:13	13	16.6	0		16.6	
Exit Ramp (US 581 N) Segment 4 >	10	21.7	30	0.46	0:00:54	54	30.7	0		30.7	
9th Street Segment 5 >	14	34.1	30	0.41	0:01:59	48	30.8	71		12.4	
13th Street Segment 6 >	13	13.3	30/35	0.98	0:01:40	100	35.3	0		35.3	
PFG Building Intersection Segment 7 >	6	46.2	35	0.13	0:00:31	17	27.5	14		15.1	
3rd Street Segment 8 >	8	53.3	35	0.15	0:00:20	20	27.0	0		27.0	
Pollard Street Segment 9 >	23	39.0	35	0.59	0:00:58	58	36.6	0		36.6	
Niagra Street Segment 10 >	4	44.4	35	0.09	0:00:12	12	27.0	0		27.0	
Vineyard Street Segment 11 >	4	20.0	35	0.20	0:00:21	21	34.3	0		34.3	
Clearview Street Segment 12 >	1	12.5	35	0.08	0:00:09	9	32.0	0		32.0	
Route 634 Segment 13 >	4	13.3	35	0.30	0:00:38	34	31.8	4		28.4	
Washington Avenue Segment 14 >	21	33.3	35/45	0.63	0:00:56	56	40.5	0		40.5	
Feather (Route 654) Segment 15 >	1	3.8	45	0.26	0:00:21	21	44.6	0		44.6	
East Vinton Plaza Totals/Average	109	24.2	-	4.51	0:10:17	498	32.6	120		26.31	

Date: February 3, 2003; Route 24 Eastbound; Non-Peak (8:59-9:10am)

Intersections	Access Points		Speed Limit	Segment Length(mi)	Elapsed Time	Running Time		Stopped Delay Time	Overall Mean Speed(mph)
	Number	Per/Mile				Time in Motion(s)	Mean Speed (mph)		
Jefferson Street Segment 1 >	0	0.0	25	0.11	0:00:13	13	30.5	0	30.5
Williamson Road Segment 2 >	0	0.0	25	0.06	0:00:19	12	18.0	6	11.4
Exit Ramp (US 220 S) Segment 3 >	0	0.0	25/30	0.05	0:00:08	8	22.5	0	22.5
Exit Ramp (US 581 N) Segment 4 >	10	21.7	30	0.46	0:01:53	53	31.2	60	14.7
9th Street Segment 5 >	14	34.1	30	0.41	0:01:33	50	29.5	43	15.9
13th Street Segment 6 >	13	13.3	30/35	0.98	0:01:28	88	40.1	0	40.1
PFG Building Intersection Segment 7 >	6	46.2	35	0.13	0:00:12	12	39.0	0	39.0
3rd Street Segment 8 >	8	53.3	35	0.15	0:00:16	16	33.8	0	33.8
Pollard Street Segment 9 >	23	39.0	35	0.59	0:00:56	56	37.9	0	37.9
Niagra Street Segment 10 >	4	44.4	35	0.09	0:00:11	11	29.5	0	29.5
Vineyard Street Segment 11 >	4	20.0	35	0.20	0:00:20	20	36.0	0	36.0
Clearview Street Segment 12 >	1	12.5	35	0.08	0:00:36	13	22.2	23	8.0
Route 634 Segment 13 >	4	13.3	35	0.30	0:00:56	36	30.0	20	19.3
Washington Avenue Segment 14 >	21	33.3	35/45	0.63	0:00:58	58	39.1	0	39.1
Feather (Route 654) Segment 15 >	1	3.8	45	0.26	0:00:21	21	44.6	0	44.6
East Vinton Plaza Totals/Average	109	24.2	-	4.50	0:10:20	467	34.7	152	26.13

Date: February 3, 2003; Route 24 Eastbound, Peak (5:10-5:35pm)

Intersections	Access Points		Speed Limit	Segment Length(mi)	Elapsed Time	Running Time		Stopped Delay Time	Overall Mean Speed(mph)
	Number	Per/Mile				Time in Motion(s)	Mean Speed (mph)		
Jefferson Street Segment 1 >	0	0.0	25	0.11	0:03:57	34	11.6	204	1.7
Williamson Road Segment 2 >	0	0.0	25	0.06	0:01:08	19	11.4	49	3.2
Exit Ramp (US 220 S) Segment 3 >	0	0.0	25/30	0.05	0:01:02	10	18.0	52	2.9
Exit Ramp (US 581 N) Segment 4 >	10	21.7	30	0.46	0:01:34	53	31.2	41	17.6
9th Street Segment 5 >	14	34.1	30	0.41	0:03:56	70	21.1	166	6.3
13th Street Segment 6 >	13	13.3	30/35	0.98	0:01:38	98	36.0	0	36.0
PFG Building Intersection Segment 7 >	6	46.2	35	0.13	0:00:14	14	33.4	0	33.4
3rd Street Segment 8 >	8	53.3	35	0.15	0:00:24	24	22.5	0	22.5
Pollard Street Segment 9 >	23	39.0	35	0.59	0:01:41	73	29.1	29	21.0
Niagra Street Segment 10 >	4	44.4	35	0.09	0:00:18	18	18.0	0	18.0
Vineyard Street Segment 11 >	4	20.0	35	0.20	0:00:23	23	31.3	0	31.3
Clearview Street Segment 12 >	1	12.5	35	0.08	0:00:09	9	32.0	0	32.0
Route 634 Segment 13 >	4	13.3	35	0.30	0:01:23	46	23.5	37	13.0
Washington Avenue Segment 14 >	21	33.3	35/45	0.63	0:02:33	93	24.4	60	14.8
Feather (Route 654) Segment 15 >	1	3.8	45	0.26	0:00:28	28	33.4	0	33.4
East Vinton Plaza Totals/Average	109	24.2	-	4.50	0:20:48	612	26.5	638	12.98

Date: February 4, 2003; Route 24 Eastbound; Peak (5:15-5:30pm)

Intersections	Access Points		Speed Limit	Segment Length(mi)	Elapsed Time	Running Time			Stopped		Overall Mean Speed(mph)
	Number	Per/Mile				Time in Motion(s)	Mean Speed (mph)	Delay Time			
Jefferson Street Segment 1 >	0	0.0	25	0.11	0:00:18	19	20.8	0	0	22.0	
Williamson Road Segment 2 >	0	0.0	25	0.06	0:00:47	16	13.5	31	31	4.6	
Exit Ramp (US 220 S) Segment 3 >	0	0.0	25/30	0.05	0:00:08	8	22.5	0	0	22.5	
Exit Ramp (US 581 N) Segment 4 >	10	21.7	30	0.46	0:01:37	64	25.9	33	33	17.1	
9th Street Segment 5 >	14	34.1	30	0.41	0:01:01	60	24.6	0	0	24.2	
13th Street Segment 6 >	13	13.3	30/35	0.98	0:01:36	96	36.8	0	0	36.8	
PFG Building Intersection Segment 7 >	6	46.2	35	0.13	0:00:43	23	20.3	20	20	10.9	
3rd Street Segment 8 >	8	53.3	35	0.15	0:00:20	20	27.0	0	0	27.0	
Pollard Street Segment 9 >	23	39.0	35	0.59	0:01:03	63	33.7	0	0	33.7	
Niagra Street Segment 10 >	4	44.4	35	0.09	0:00:58	17	19.1	41	41	5.6	
Vineyard Street Segment 11 >	4	20.0	35	0.20	0:01:00	33	21.8	27	27	12.0	
Clearview Street Segment 12 >	1	12.5	35	0.08	0:00:47	15	19.2	32	32	6.1	
Route 634 Segment 13 >	4	13.3	35	0.30	0:00:38	38	28.4	0	0	28.4	
Washington Avenue Segment 14 >	21	33.3	35/45	0.63	0:01:08	68	33.4	0	0	33.4	
Feather (Route 654) Segment 15 >	1	3.8	45	0.26	0:01:08	41	22.8	27	27	13.8	
East Vinton Plaza Totals/Average	109	24.2	-	4.50	0:13:12	581	27.9	211	211	20.45	

Date: February 14, 2003; Route 24 Eastbound; Nonpeak (11:35-11:50am)

Intersections	Access Points		Speed Limit	Segment Length(mi)	Elapsed Time	Running Time		Stopped Delay Time	Overall Mean Speed(mph)
	Number	Per/Mile				Time in Motion(s)	Mean Speed (mph)		
Jefferson Street Segment 1>	0	0.0	25	0.11	0:00:53	22	18.0	32	7.5
Williamson Road Segment 2>	0	0.0	25	0.06	0:00:17	14	15.4	3	12.7
Exit Ramp (US 220 S) Segment 3>	0	0.0	25/30	0.05	0:00:10	10	18.0	0	18.0
Exit Ramp (US 581 N) Segment 4>	10	21.7	30	0.46	0:00:51	51	32.5	0	32.5
9th Street Segment 5>	14	34.1	30	0.41	0:01:28	60	24.6	28	16.8
13th Street Segment 6>	13	13.3	30/35	0.98	0:01:31	91	38.8	0	38.8
PFG Building Intersection Segment 7>	6	46.2	35	0.13	0:00:12	12	39.0	0	39.0
3rd Street Segment 8>	8	53.3	35	0.15	0:00:22	22	24.5	0	24.5
Pollard Street Segment 9>	23	39.0	35	0.59	0:01:39	89	23.9	10	21.5
Niagra Street Segment 10>	4	44.4	35	0.09	0:00:27	26	12.5	1	12.0
Vineyard Street Segment 11>	4	20.0	35	0.20	0:00:43	36	20.0	7	16.7
Clearview Street Segment 12>	1	12.5	35	0.08	0:00:09	9	32.0	0	32.0
Route 634 Segment 13>	4	13.3	35	0.30	0:00:33	33	32.7	0	32.7
Washington Avenue Segment 14>	21	33.3	35/45	0.63	0:01:13	65	34.9	8	31.1
Feather (Route 654) Segment 15>	1	3.8	45	0.26	0:00:56	33	28.4	23	16.7
East Vinton Plaza Totals/Average	109	24.2	-	4.50	0:11:24	573	28.3	112	23.68

Date: 6/6/2003 Westbound Route 24 Peak (5:29-5:41pm)

Intersections	Access Points		Speed Limit	Segment Length(mi)	Elapsed Time	Running Time			Stopped		Overall Mean Speed(mph)
	Number	Per/Mile				Time in Motion(s)	Mean Speed (mph)	Delay Time			
East Vinton Plaza	6	23.1	45	0.26	0:00:31	31	30.2	0	30.2		
Segment 1>											
Feather (Route 654)	33	52.4	45/35	0.63	0:02:09	59	38.4	70	17.6		
Segment 2>											
Washington Avenue	2	6.7	35	0.30	0:00:35	35	30.9	0	30.9		
Segment 3>											
Route 634	2	25.0	35	0.08	0:00:12	12	24.0	0	24.0		
Segment 4>											
Clearview Street	1	5.0	35	0.20	0:00:27	27	26.7	0	26.7		
Segment 5>											
Vineyard Street	3	33.3	35	0.09	0:00:26	18	18.0	8	12.5		
Segment 6>											
Niagra Street	6	10.2	35	0.59	0:01:03	63	33.7	0	33.7		
Segment 7>											
Pollard Street	37	246.7	35	0.15	0:00:17	17	31.8	0	31.8		
Segment 8>											
3rd Street	1	7.7	35	0.13	0:00:29	19	24.6	10	16.1		
Segment 9>											
PFG Building Intersection	34	34.7	35/30	0.98	0:02:20	103	34.3	37	25.2		
Segment 10>											
13th Street	10	24.4	30	0.41	0:00:52	52	28.4	0	28.4		
Segment 11>											
9th Street	10	21.7	30	0.46	0:01:04	56	29.6	8	25.9		
Segment 12>											
Exit Ramp (US 581 N)	0	0.0	30/25	0.06	0:00:57	14	15.4	43	3.8		
Segment 13>											
Exit Ramp (US 220 S)	0	0.0	25	0.06	0:00:09	9	24.0	0	24.0		
Segment 14>											
Williamson Road	1	9.1	25	0.11	0:00:40	26	15.2	14	9.9		
Segment 15>											
Jefferson Street											
Totals/Average	146	32.4	-	4.51	0:12:11	541	30.0	190	22.21		