

Route 221 Corridor Study



Study Area and Purpose

Three Study Areas Sections

- Perrowville Road to Thomas Jefferson Road
- Ambassador Drive to Cloverhill Boulevard
- Enterprise Drive to Graves Mill Road

Purpose

Identify improvements to address congestion, safety, access management, and multimodal mobility.



Improvement Alternatives

Initial Improvement Concept Screening

Detailed Improvement Analysis

- Perrowville Road – Corporate Park Drive
- Burnbridge Road and Thomas Jefferson Road
- Ambassador Drive – Cloverhill Boulevard
- Enterprise Drive
- Gristmill Drive and Graves Mill Road

Intersection	Overall LOS	
	AM	PM
1. Perrowville Road/Ashwood Park Road	D	E
2. Venture Drive	F*	F*
3. Corporate Park Drive/Elkton Farm Road	C	F
4. Burnbridge Road	F*	F*
5. Thomas Jefferson Road	D	E
6. Ambassador Drive/Regis Lane	F*	F*
7. Newcomb Boulevard	F*	F*
8. Cloverhill Boulevard	E	F
9. Vista Centre Drive/Enterprise Drive	F	F
10. Gristmill Drive	E	F
11. Graves Mill Road	C	E

*Unsignalized movement



Example of Intersection/Segment Analysis Underway

Perrowville Road – Corporate Park Drive

Raised Median

Perrowville Road

Dual WB right turn lanes

Thru-cut (single WB right turn lane)

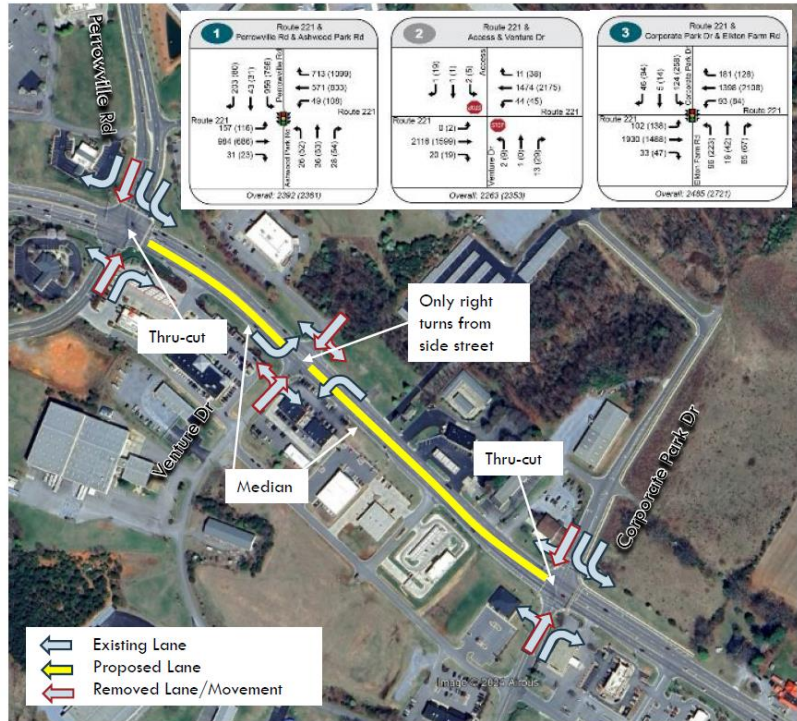
Venture Drive

Only right turns from side street

Corporate Park Drive

Thru-cut

Dismissed: thru-cut performs better with no ROW cost



Perrowville Road – Corporate Park Drive

Issues Addressed

Safety

- Angle collisions
- PSI
 - Perrowville Road Intersection
 - Venture Drive to Corporate Park Drive Segment

Traffic Operations

- LOS/Delay – significantly reduced, overall all LOS D or better
- Queues – significantly reduced

Approach	Movement	Effective Storage	2045 No Build AM			2045 No Build PM			Movement	Effective Storage	2045 Build AM			2045 Build PM		
			LOS	Delay (sec)	Max Queue (ft)	LOS	Delay (sec)	Max Queue (ft)			LOS	Delay (sec)	Max Queue (ft)	LOS	Delay (sec)	Max Queue (ft)
1. Route 221/Perrowville Road/Ashwood Park Road																
Signalized																
Route 221	EBL	480	E	69.8	318	E	57.9	101	EBL	480	D	53.4	224	E	59.7	154
	EBT	1700	D	46.6	489	C	29.3	239	EBT	1700	D	35.8	400	D	36.7	280
	EBR	225	C	26.2	206	C	22.1	60	EBR	225	C	22.0	225	C	26.6	93
Route 221	WBL	250	C	34.8	201	A	7.5	151	WBL	250	B	17.1	130	C	20.8	249
	WBT	610	C	26.1	597	B	13.7	564	WBT	610	C	24.9	278	C	23.6	406
	WBR	350	E	68.2	350	F	110.0	356	WBR	350	A	5.4	259	B	12.0	347
Ashwood Park Road	NBL/T	720	F	107.1	146	F	116.7	207	NBL	720	C	27.0	76	B	18.9	96
	NBR	520	E	59.5	52	D	48.3	61	NBR	520	C	26.7	41	B	18.5	81
	SBL	185	E	61.3	185	F	93.4	185	SBL	750	D	45.7	560	C	24.9	344
Perrowville Road	SBL	750	E	61.3	809	F	93.4	812	SBL	750	D	45.7	558	C	24.9	323
	SBT	750	C	31.6	822	C	34.1	810	SBT	NA	NA	NA	NA	NA	NA	
	SBR	290	C	26.9	290	C	29.2	290	SBR	290	B	19.1	290	B	14.2	116
Intersection			D	51.8		E	64.1		C			30.6		C	24.0	
2. Route 221/Venture Drive																
Unsignalized																
Route 221	EBL	300	A	0.0	0	C	20.7	23	EBL	300	B	13.7	10	C	20.7	26
	EBT	610	A	0.0	18	A	0.0	0	EBT	610	A	0.0	70	A	0.0	66
	EBR	120	A	0.0	9	A	0.0	6	EBR	120	A	0.0	16	A	0.0	20
Route 221	WBL	300	D	27.5	105	C	15.6	64	WBL	300	D	27.6	103	C	15.6	70
	WBT	1030	A	0.0	78	A	0.0	36	WBT	1030	A	0.0	0	A	0.0	9
	WBR	310	A	0.0	0	A	0.0	0	WBR	310	A	0.0	2	A	0.0	0
Venture Drive Access	NBL/T/R	225	F	364.5	78	F	516.2	175	NBR	225	D	26.2	74	C	17.4	84
	SBL/T/R	-	F	819.5	55	F	859.3	109	SBR	-	C	15.7	18	C	24.2	41
3. Route 221/Corporate Park Drive/Elton Farm Road																
Signalized																
Route 221	EBL	245	C	27.3	233	E	55.8	244	EBL	245	A	7.6	244	F	101.9	245
	EBT	1030	B	18.4	781	B	14.0	550	EBT	1030	B	11.9	546	B	10.9	661
	EBR	310	B	10.5	165	B	12.9	257	EBR	310	A	6.4	310	A	8.0	225
Route 221	WBL	350	E	69.9	280	D	40.2	350	WBL	350	D	37.4	163	A	8.2	172
	WBT	2340	C	23.8	589	F	139.2	2245	WBT	2340	A	6.7	263	D	44.7	541
	WBR	335	C	31.6	335	B	18.8	335	WBR	335	A	0.2	71	A	6.2	335
Elton Farm Road	NBL	200	E	65.4	181	F	164.4	200	NBL	200	E	66.8	179	F	98.8	200
	NBT/R	250	E	58.7	227	D	51.4	443	NBR	250	D	54.1	141	D	41.5	484
Corporate Park Drive	SBL	235	E	59.7	184	E	55.1	226	SBL	235	E	57.0	173	D	46.5	224
	SBL	-	E	59.7	213	E	55.1	292	SBL	-	E	57.0	203	D	46.5	290
	SBT/R	-	E	59.5	118	D	48.9	197	SBR	-	D	54.0	75	D	41.7	154
Intersection			C	25.9		F	83.2		B			13.9		D	36.6	

Queues at or beyond effective storage Queues > 500 feet within storage Queues > 1000 feet
Delays > 2 minutes