Appendix A
Field Observation Notes

CARPENTER MARTY transportation

Memo

RE: WV-51 Feasibility Study Site Visit Field Notes
To: File
From: Dustin Gohs, PE
Date: February 25, 2021

Attendees: HEPMPO – Matt Mullenax
Charles Town – Daryl Hennessy, Todd Wilt
CM – Ali Sadeghian, Dustin Gohs

The field visit study area consists of the following locations:

- WV-51 from the Norfolk Southern railroad tracks as the west terminus to West Street as the east terminus. For the purpose of these field notes, this section will be broken up into the following sub-sections:
    - Section 1 - From the railroad tracks to the intersection with Summit Point Road/W. Washington Street, WV-51 is known as MLK Jr. Boulevard here
    - Section 2 - From the intersection of Summit Point Road/W. Washington Street to the intersection with West Street, WV-51 is known as W. Washington Street here
    - Section 3 - Summit Point Road/W. Washington Street from the Norfolk Southern railroad tracks as the west terminus to MLK Jr. Boulevard as the east terminus

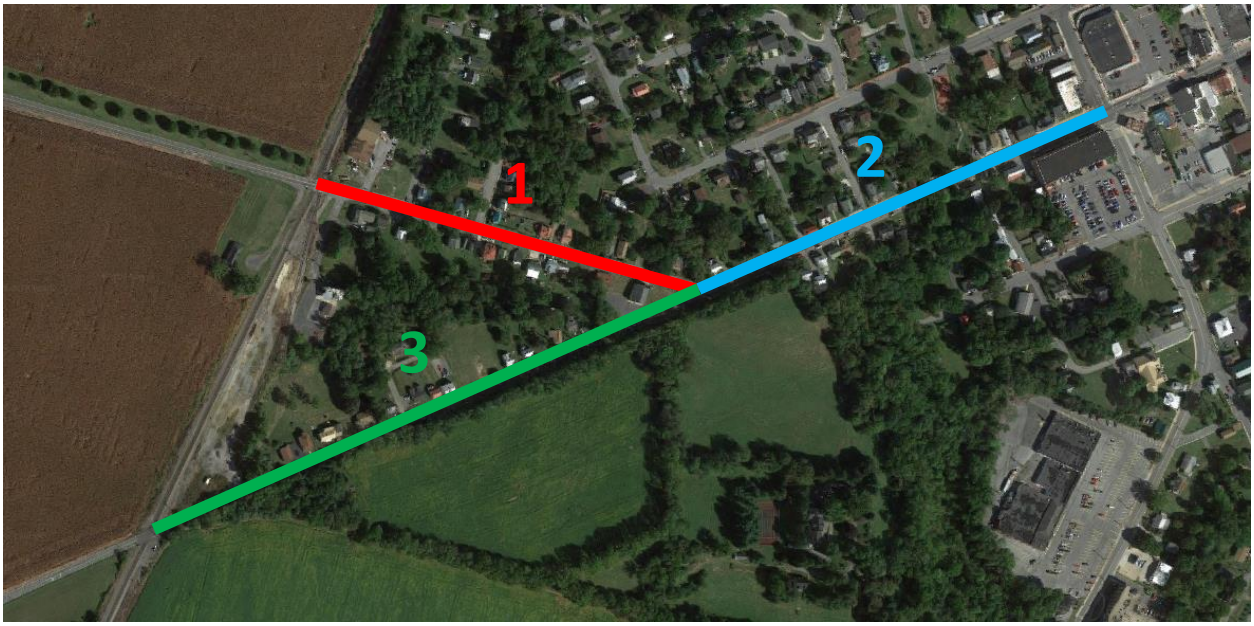

Figure 1 - WV-51 Project Site Overview Map

General Notes

- Daryl Hennessy mentioned it would be nice to have a rough count of trees being removed and trees to be planted
- All railroad crossings in the study area will remain undisturbed and all work will remain outside of the railroad right-of-way (R/W)

Section 1

Existing Conditions

- R/W Width = 40'
- Lane Width = 10'±
- Existing sidewalk on the north side but used for on-street parking, no pedestrian access
    - Significant drainage issues and ponding on the existing sidewalk
- Minimal on-street parking on the south side with dedicated parking areas at a few houses
- Utility poles on both sides of the road within 5' of the edge of pavement
    - Investigate ability/cost of putting utilities underground with project
- Little to no stormwater management
    - One catch basin on either side of the road at the east side of Zion Baptist Church
    - Manholes along the north side of the road
    - One catch basin on the north side with a curb opening and solid metal covering in the sidewalk between Davenport Street and Eagle Avenue
        - Completely filled with mud and debris and as a result did not appear to actually be collecting any stormwater
    - No stormwater management on the south side west of Zion Baptist Church; all water sheet flows off of roadway to the south
- West of Davenport Street
    - Houses are at roughly the same elevation as the road
- East of Davenport Street
    - Houses on the north side of MLK Jr. Boulevard are at an elevation several feet above the road with retaining walls located at the back of the sidewalk (presumably near the existing R/W line). Several stairways for porch access encroach into the sidewalk.
    - Houses on the south side of MLK Jr. Boulevard are a couple feet below the road
- East of Morgan Street
    - Concrete retaining wall on the south side of MLK Jr. Boulevard 4-5' off the edge line
- Historical elementary school and church not to be disturbed
- Right turning movement from MLK Jr. Boulevard to W. Washington Street is not a restricted movement. However, the turning radius is nearly impossible for any vehicle to make without crossing the double yellow centerline of W. Washington Street.
- For anyone not familiar with the intersection, approaching on the MLK Jr. Boulevard leg can be confusing due to the skew of the intersection and the allowable continuous right turning movement for the southbound W. Washington Street traffic.

Section 2

Existing Conditions

- R/W Width = 60’
- Lane Width = 11’±
- Existing sidewalk on the north side varying in width
  - 9’± width east of Water Street from back of curb to building faces
  - 6’± with 3’± west of Water Street
- It was mentioned that a left turning phase would be preferrable from westbound W. Washington Street to southbound S. West Street. Matt Mullenax will send Miovision data for this intersection.
- The gas station located at the southeast corner of the W. Washington Street/West St. intersection currently has an excessive, constant drop curb that extends all the way around the corner of the intersection along both streets. This could potentially be reduced to improve pedestrian and vehicular safety at this corner.
- Existing sidewalk on the south side varying from 6’± to 9’± to Water Street. There are no pedestrian facilities on the south side, west of Water Street.
- Matt Mullenax stated there is a City owned alley that continues on the north side of W. Washington Street across from S. Water Street. This is where he would like a **mid-block crossing** with a **new path** connecting to the existing path within Evitt’s Run Park (See Figure 2).
- The **existing hand pump and stone wall** surrounding it will need to remain in place and should not be disturbed as a result of this project. This feature could potentially be incorporated into a **landscaped area** that ties this feature together with the new mid-block crossing. It was stated that even though this area has room for on-street parking, it is rarely used due to the location of pump and stone wall feature.
- The Evitt’s Run Park area of W. Washington Street is in a vertical curve with very minimal stormwater management features, so ponding is currently an issue on both sides of W. Washington Street.

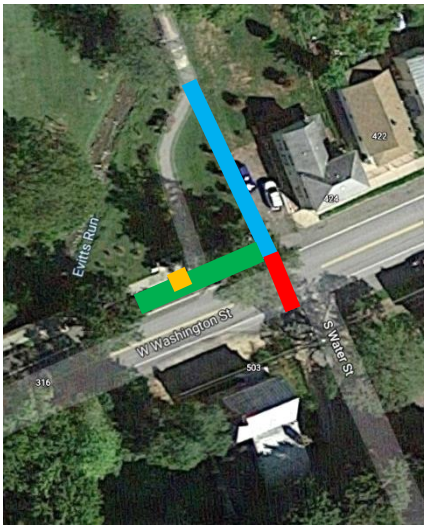

Figure 2 – Mid-Block Crossing

- There is an existing Evitt’s Run culvert running beneath W. Washington Street that appears to be in good condition and there was no evidence or discussion of the culvert needing to be replaced.
- Utility poles and a fire hydrant are located behind the on-street parking on the south side of W. Washington Street.
- On-street parking
  - The north side of W. Washington Street is curbed with areas of on-street parking (some of which has striped parking spaces).
  - The south side of W. Washington Street has shoulders that are used for on-street parking with rough asphalt curbs at the edge on the shoulder.
- Several buildings on the north side have stairs or porches/stoops that appear to encroach into the R/W and reduce sidewalk width for pedestrians.

- Drainage along this entire section is lacking. Only two catch basins were observed along this entire section, one on each side of the road near the sag at Evitt's Run.
- At Johnson Street, an **existing storm pipe** from a closed sewer system to the north outlets at the intersection with W. Washington Street and sends water into W. Washington St. and the adjacent sidewalk to surface flow down to the vertical sag at Evitt's Run (See Figure 3). This pipe would need to be tied into a proposed, underground storm sewer system along W. Washington Street.

Figure 3 – Existing Storm Pipe

- Sight distance may be an issue between Johnson Street and the "Y" intersection.
    - There is a vertical crest curve in this area which may be contributing to crashes at the "Y' intersection.
    - Since continuous right turns are currently allowed at the stop sign, drivers not familiar with the area may be stopping at the stop sign, catching local drivers off guard.
    - The stone wall on the inside of the horizontal curve at the "Y" intersection also impedes sight distance. It was mentioned that there is some pedestrian traffic through this intersection and crossing WV-51 when the church has services on Sunday mornings and Wednesday evenings.
- Except for the hand pump and surrounding stone wall, no other items through this section of the corridor were thought to be "off limits" from a historical standpoint. Further research may be needed to make a final determination.

Section 3

Existing Conditions

- R/W Width = 60'
- Lane Width = 10'±
- No pedestrian facilities
- No closed storm sewer, water sheet flows off the edge of the road
- There is an existing culvert just west of Zion Baptist Church
- There is an existing culvert running parallel to W. Washington Street with associated stone wall features directly across from the parking lot of Zion Baptist Church (See Figure 4). This may come up as a feature of concern during the stakeholder meetings.

Figure 4 – Stone Wall

Appendix B
Count Data,
Growth Rate Communications,
and Traffic Volumes

Appendix B

CARPENTER MARTY transportation

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: MLK & Washington
Site Code:
Start Date: 06/12/2019

Turning Movement Data

Start Time	MLK Southbound				Washington St Westbound				Washington St Eastbound				
	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
12:00 AM	0	6	0	6	11	3	0	14	1	0	0	1	21
12:15 AM	0	5	0	5	12	1	0	13	2	0	0	2	20
12:30 AM	0	2	0	2	9	3	0	12	1	0	0	1	15
12:45 AM	0	5	0	5	11	2	0	13	1	0	0	1	19
Hourly Total	0	18	0	18	43	9	0	52	5	0	0	5	75
1:00 AM	0	6	0	6	6	0	0	6	1	0	0	1	13
1:15 AM	0	3	0	3	8	2	0	10	3	0	0	3	16
1:30 AM	0	5	0	5	6	2	0	8	0	0	0	0	13
1:45 AM	0	5	0	5	6	1	0	7	0	0	0	0	12
Hourly Total	0	19	0	19	26	5	0	31	4	0	0	4	54
2:00 AM	0	0	0	0	3	0	0	3	0	0	0	0	3
2:15 AM	0	7	0	7	2	0	0	2	1	0	0	1	10
2:30 AM	0	9	0	9	4	0	0	4	0	0	0	0	13
2:45 AM	0	6	0	6	3	2	0	5	3	0	0	3	14
Hourly Total	0	22	0	22	12	2	0	14	4	0	0	4	40
3:00 AM	0	12	0	12	2	0	0	2	1	0	0	1	15
3:15 AM	0	13	0	13	2	1	0	3	2	0	0	2	18
3:30 AM	0	19	0	19	1	2	0	3	4	0	0	4	26
3:45 AM	0	24	0	24	5	2	0	7	2	0	0	2	33
Hourly Total	0	68	0	68	10	5	0	15	9	0	0	9	92
4:00 AM	0	29	0	29	2	3	0	5	9	0	0	9	43
4:15 AM	0	40	0	40	7	3	0	10	15	0	0	15	65
4:30 AM	0	51	0	51	5	1	0	6	10	0	0	10	67
4:45 AM	0	60	0	60	7	2	0	9	11	0	0	11	80
Hourly Total	0	180	0	180	21	9	0	30	45	0	0	45	255
5:00 AM	0	54	0	54	4	4	0	8	14	1	0	15	77
5:15 AM	0	66	0	66	14	9	0	23	11	1	0	12	101
5:30 AM	0	72	0	72	9	3	0	12	15	0	0	15	99
5:45 AM	0	75	0	75	10	5	0	15	17	0	0	17	107
Hourly Total	0	267	0	267	37	21	0	58	57	2	0	59	384
6:00 AM	0	67	0	67	24	6	0	30	13	0	0	13	110
6:15 AM	0	71	0	71	22	3	0	25	21	0	0	21	117
6:30 AM	0	90	0	90	17	8	0	25	15	1	0	16	131
6:45 AM	0	101	0	101	29	12	0	41	25	0	0	25	167
Hourly Total	0	329	0	329	92	29	0	121	74	1	0	75	525
7:00 AM	0	84	0	84	23	16	0	39	36	0	0	36	159
7:15 AM	0	100	0	100	25	10	0	35	33	0	0	33	168
7:30 AM	1	118	0	119	57	14	0	71	28	0	0	28	218

7:45 AM	1	120	0	121	40	14	0	54	44	0	0	44	219
Hourly Total	2	422	0	424	145	54	0	199	141	0	0	141	764
8:00 AM	0	96	0	96	33	19	0	52	29	1	0	30	178
8:15 AM	1	92	0	93	38	18	0	56	34	0	0	34	183
8:30 AM	0	96	0	96	41	14	0	55	32	0	0	32	183
8:45 AM	0	85	0	85	43	14	0	57	39	0	0	39	181
Hourly Total	1	369	0	370	155	65	0	220	134	1	0	135	725
9:00 AM	0	85	0	85	43	14	0	57	23	1	0	24	166
9:15 AM	2	70	0	72	36	15	0	51	28	0	0	28	151
9:30 AM	0	49	0	49	45	8	0	53	28	0	0	28	130
9:45 AM	0	63	0	63	46	24	0	70	30	1	0	31	164
Hourly Total	2	267	0	269	170	61	0	231	109	2	0	111	611
10:00 AM	1	55	0	56	45	17	0	62	26	1	0	27	145
10:15 AM	0	56	0	56	46	15	0	61	35	0	0	35	152
10:30 AM	0	77	0	77	56	20	0	76	27	1	0	28	181
10:45 AM	0	70	0	70	53	21	0	74	30	0	0	30	174
Hourly Total	1	258	0	259	200	73	0	273	118	2	0	120	652
11:00 AM	0	57	0	57	60	25	0	85	24	0	0	24	166
11:15 AM	0	72	0	72	54	26	0	80	18	0	0	18	170
11:30 AM	0	61	0	61	60	32	0	92	29	0	0	29	182
11:45 AM	0	71	0	71	67	24	0	91	25	0	0	25	187
Hourly Total	0	261	0	261	241	107	0	348	96	0	0	96	705
12:00 PM	1	74	0	75	57	25	0	82	26	1	0	27	184
12:15 PM	0	71	0	71	75	28	0	103	25	0	0	25	199
12:30 PM	0	74	0	74	62	28	0	90	33	1	0	34	198
12:45 PM	1	90	0	91	56	28	0	84	27	0	0	27	202
Hourly Total	2	309	0	311	250	109	0	359	111	2	0	113	783
1:00 PM	1	52	0	53	63	45	0	108	26	0	0	26	187
1:15 PM	0	50	0	50	77	40	0	117	18	0	0	18	185
1:30 PM	0	76	0	76	68	25	0	93	25	1	0	26	195
1:45 PM	0	64	0	64	66	24	1	91	28	0	0	28	183
Hourly Total	1	242	0	243	274	134	1	409	97	1	0	98	750
2:00 PM	1	59	0	60	77	21	0	98	30	0	0	30	188
2:15 PM	1	56	0	57	76	31	0	107	24	0	0	24	188
2:30 PM	1	49	0	50	88	22	0	110	31	0	0	31	191
2:45 PM	1	53	0	54	71	30	0	101	25	0	0	25	180
Hourly Total	4	217	0	221	312	104	0	416	110	0	0	110	747
3:00 PM	0	55	0	55	96	29	0	125	29	1	0	30	210
3:15 PM	0	66	0	66	93	33	0	126	25	0	0	25	217
3:30 PM	0	58	0	58	102	32	0	134	31	0	0	31	223
3:45 PM	0	65	0	65	78	34	0	112	30	1	0	31	208
Hourly Total	0	244	0	244	369	128	0	497	115	2	0	117	858
4:00 PM	1	59	0	60	131	54	0	185	26	0	0	26	271
4:15 PM	0	85	0	85	113	33	0	146	21	0	0	21	252
4:30 PM	0	67	0	67	137	49	0	186	25	0	0	25	278
4:45 PM	1	65	0	66	139	38	0	177	30	0	0	30	273
Hourly Total	2	276	0	278	520	174	0	694	102	0	0	102	1074
5:00 PM	0	70	0	70	152	37	0	189	38	1	0	39	298
5:15 PM	0	79	0	79	159	39	0	198	36	1	0	37	314
5:30 PM	1	80	0	81	129	44	0	173	34	1	0	35	289
5:45 PM	1	84	0	85	108	47	0	155	24	0	0	24	264
Hourly Total	2	313	0	315	548	167	0	715	132	3	0	135	1165

6:00 PM	2	65	0	67	99	45	0	144	24	0	0	24	235
6:15 PM	1	60	0	61	99	34	0	133	24	1	0	25	219
6:30 PM	0	63	0	63	79	26	0	105	26	0	0	26	194
6:45 PM	1	63	0	64	93	33	0	126	29	1	0	30	220
Hourly Total	4	251	0	255	370	138	0	508	103	2	0	105	868
7:00 PM	0	37	0	37	77	34	0	111	20	0	0	20	168
7:15 PM	1	37	0	38	74	44	0	118	24	1	0	25	181
7:30 PM	0	52	0	52	96	32	0	128	25	2	0	27	207
7:45 PM	0	50	0	50	65	31	0	96	17	1	0	18	164
Hourly Total	1	176	0	177	312	141	0	453	86	4	0	90	720
8:00 PM	0	46	0	46	77	25	0	102	15	0	0	15	163
8:15 PM	0	48	0	48	72	33	0	105	7	0	0	7	160
8:30 PM	0	41	0	41	42	25	0	67	13	1	0	14	122
8:45 PM	0	38	0	38	55	22	0	77	9	0	0	9	124
Hourly Total	0	173	0	173	246	105	0	351	44	1	0	45	569
9:00 PM	0	21	0	21	55	27	0	82	10	0	0	10	113
9:15 PM	0	20	0	20	56	24	0	80	14	1	0	15	115
9:30 PM	0	14	0	14	53	19	0	72	3	0	0	3	89
9:45 PM	0	23	0	23	38	18	0	56	9	0	0	9	88
Hourly Total	0	78	0	78	202	88	0	290	36	1	0	37	405
10:00 PM	0	19	0	19	25	8	0	33	6	0	0	6	58
10:15 PM	0	23	0	23	29	8	0	37	2	0	0	2	62
10:30 PM	0	9	0	9	29	8	0	37	4	0	0	4	50
10:45 PM	0	5	0	5	18	6	0	24	6	0	0	6	35
Hourly Total	0	56	0	56	101	30	0	131	18	0	0	18	205
11:00 PM	0	10	0	10	24	10	0	34	2	0	0	2	46
11:15 PM	0	7	0	7	24	7	0	31	3	0	0	3	41
11:30 PM	0	9	0	9	18	1	0	19	1	0	0	1	29
11:45 PM	0	6	0	6	15	6	0	21	1	0	0	1	28
Hourly Total	0	32	0	32	81	24	0	105	7	0	0	7	144
Grand Total	22	4847	0	4869	4737	1782	1	6520	1757	24	0	1781	13170
Approach %	0.5	99.5	0.0	-	72.7	27.3	0.0	-	98.7	1.3	0.0	-	-
Total %	0.2	36.8	0.0	37.0	36.0	13.5	0.0	49.5	13.3	0.2	0.0	13.5	-
Motorcycles	0	29	0	29	21	10	0	31	7	1	0	8	68
% Motorcycles	0.0	0.6	-	0.6	0.4	0.6	0.0	0.5	0.4	4.2	-	0.4	0.5
Cars & Light Goods	21	4638	0	4659	4548	1742	1	6291	1717	22	0	1739	12689
% Cars & Light Goods	95.5	95.7	-	95.7	96.0	97.8	100.0	96.5	97.7	91.7	-	97.6	96.3
Buses	0	7	0	7	4	0	0	4	0	0	0	0	11
% Buses	0.0	0.1	-	0.1	0.1	0.0	0.0	0.1	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	1	138	0	139	124	25	0	149	24	1	0	25	313
% Single-Unit Trucks	4.5	2.8	-	2.9	2.6	1.4	0.0	2.3	1.4	4.2	-	1.4	2.4
Articulated Trucks	0	35	0	35	40	5	0	45	9	0	0	9	89
% Articulated Trucks	0.0	0.7	-	0.7	0.8	0.3	0.0	0.7	0.5	0.0	-	0.5	0.7

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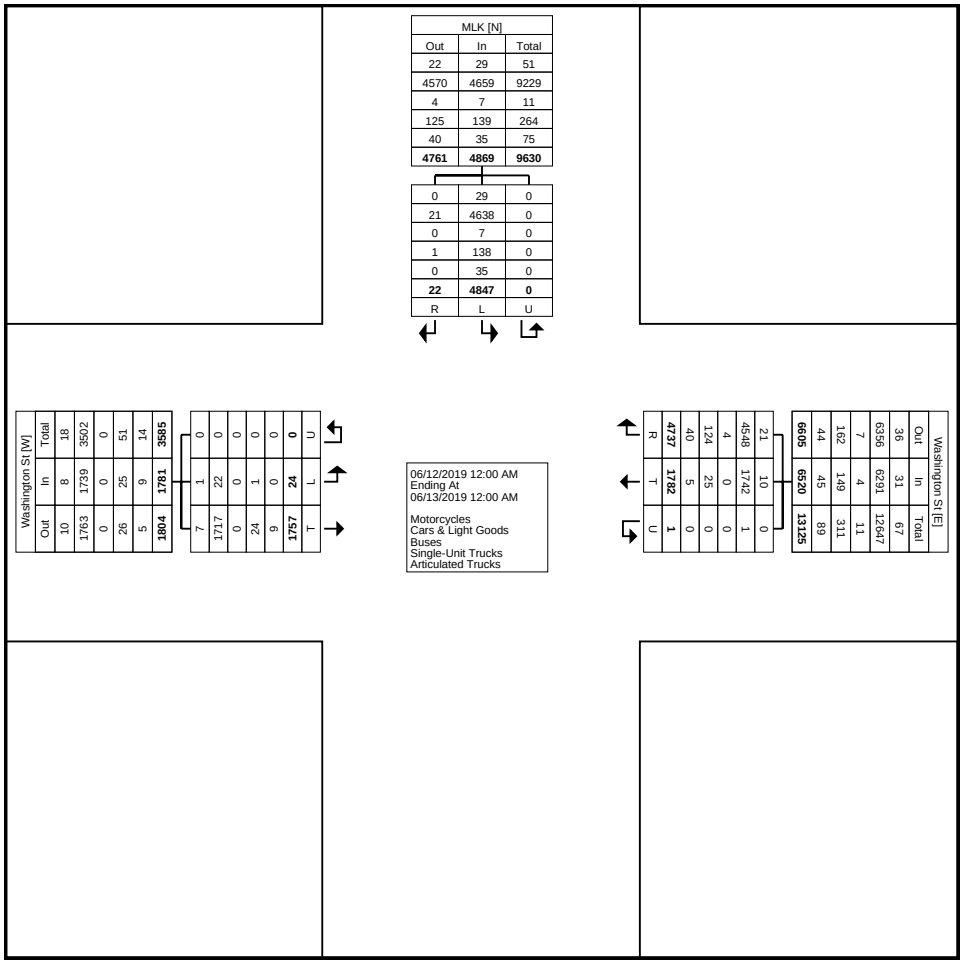
Site Code:
Start Date: 06/12/2019



Turning Movement Data Plot

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: MLK & Washington
Site Code:
Start Date: 06/12/2019

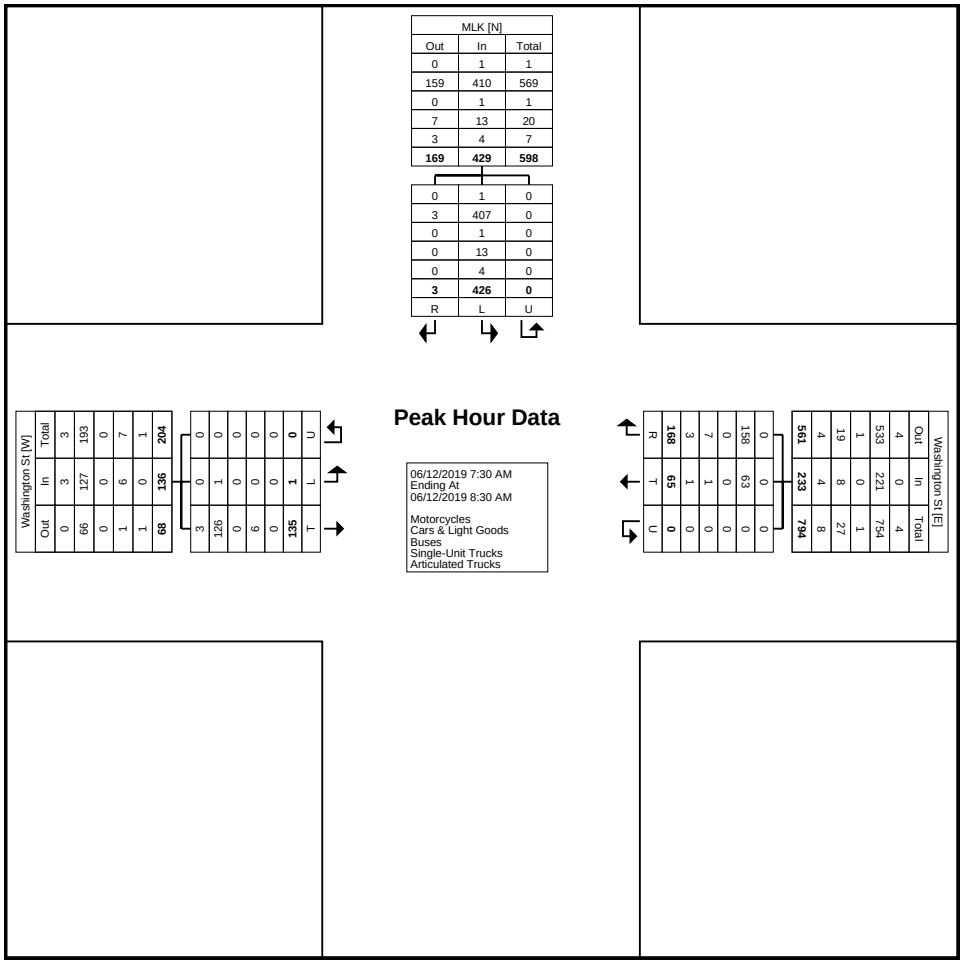
Turning Movement Peak Hour Data (7:30 AM)

Start Time	MLK Southbound				Washington St Westbound				Washington St Eastbound				
	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
7:30 AM	1	118	0	119	57	14	0	71	28	0	0	28	218
7:45 AM	1	120	0	121	40	14	0	54	44	0	0	44	219
8:00 AM	0	96	0	96	33	19	0	52	29	1	0	30	178
8:15 AM	1	92	0	93	38	18	0	56	34	0	0	34	183
Total	3	426	0	429	168	65	0	233	135	1	0	136	798
Approach %	0.7	99.3	0.0	-	72.1	27.9	0.0	-	99.3	0.7	0.0	-	-
Total %	0.4	53.4	0.0	53.8	21.1	8.1	0.0	29.2	16.9	0.1	0.0	17.0	-
PHF	0.750	0.888	0.000	0.886	0.737	0.855	0.000	0.820	0.767	0.250	0.000	0.773	0.911
Motorcycles	0	1	0	1	0	0	0	0	3	0	0	3	4
% Motorcycles	0.0	0.2	-	0.2	0.0	0.0	-	0.0	2.2	0.0	-	2.2	0.5
Cars & Light Goods	3	407	0	410	158	63	0	221	126	1	0	127	758
% Cars & Light Goods	100.0	95.5	-	95.6	94.0	96.9	-	94.8	93.3	100.0	-	93.4	95.0
Buses	0	1	0	1	0	0	0	0	0	0	0	0	1
% Buses	0.0	0.2	-	0.2	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	13	0	13	7	1	0	8	6	0	0	6	27
% Single-Unit Trucks	0.0	3.1	-	3.0	4.2	1.5	-	3.4	4.4	0.0	-	4.4	3.4
Articulated Trucks	0	4	0	4	3	1	0	4	0	0	0	0	8
% Articulated Trucks	0.0	0.9	-	0.9	1.8	1.5	-	1.7	0.0	0.0	-	0.0	1.0

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: MLK & Washington
Site Code:
Start Date: 06/12/2019



Turning Movement Peak Hour Data Plot (7:30 AM)

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: MLK & Washington
Site Code:
Start Date: 06/12/2019

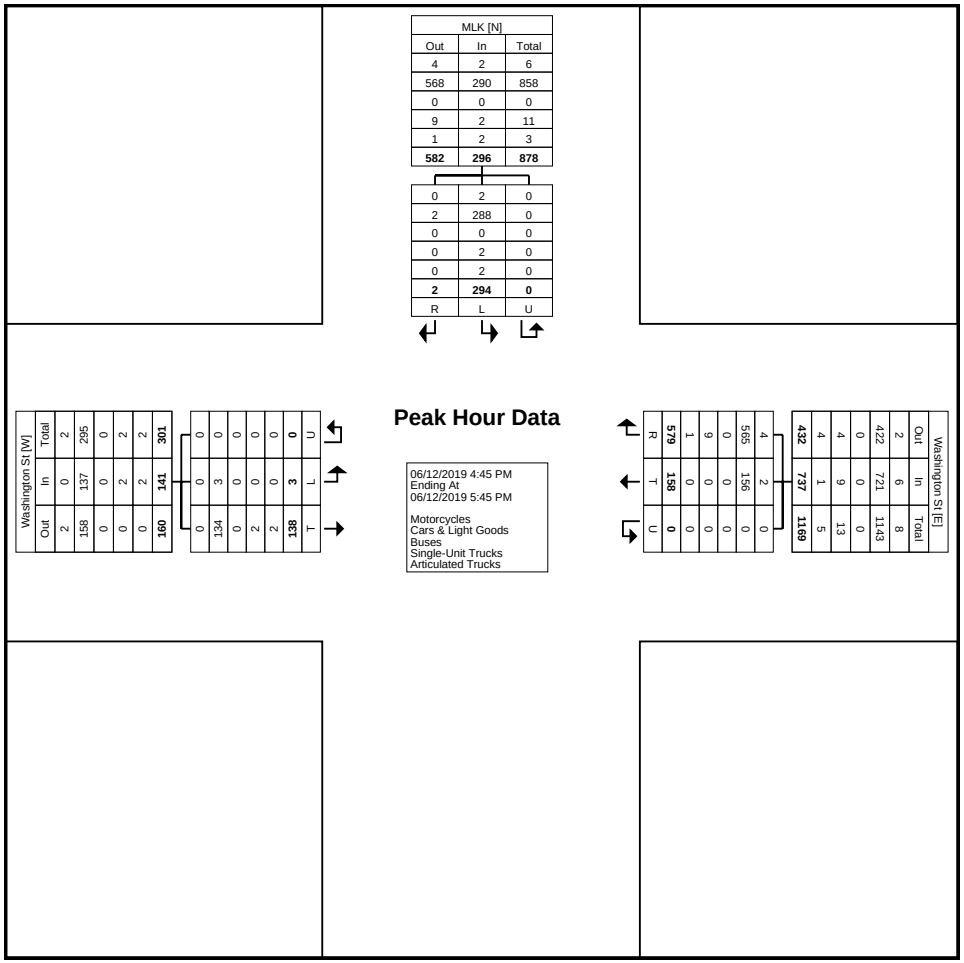
Turning Movement Peak Hour Data (4:45 PM)

Start Time	MLK Southbound				Washington St Westbound				Washington St Eastbound				
	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
4:45 PM	1	65	0	66	139	38	0	177	30	0	0	30	273
5:00 PM	0	70	0	70	152	37	0	189	38	1	0	39	298
5:15 PM	0	79	0	79	159	39	0	198	36	1	0	37	314
5:30 PM	1	80	0	81	129	44	0	173	34	1	0	35	289
Total	2	294	0	296	579	158	0	737	138	3	0	141	1174
Approach %	0.7	99.3	0.0	-	78.6	21.4	0.0	-	97.9	2.1	0.0	-	-
Total %	0.2	25.0	0.0	25.2	49.3	13.5	0.0	62.8	11.8	0.3	0.0	12.0	-
PHF	0.500	0.919	0.000	0.914	0.910	0.898	0.000	0.931	0.908	0.750	0.000	0.904	0.935
Motorcycles	0	2	0	2	4	2	0	6	0	0	0	0	8
% Motorcycles	0.0	0.7	-	0.7	0.7	1.3	-	0.8	0.0	0.0	-	0.0	0.7
Cars & Light Goods	2	288	0	290	565	156	0	721	134	3	0	137	1148
% Cars & Light Goods	100.0	98.0	-	98.0	97.6	98.7	-	97.8	97.1	100.0	-	97.2	97.8
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	2	0	2	9	0	0	9	2	0	0	2	13
% Single-Unit Trucks	0.0	0.7	-	0.7	1.6	0.0	-	1.2	1.4	0.0	-	1.4	1.1
Articulated Trucks	0	2	0	2	1	0	0	1	2	0	0	2	5
% Articulated Trucks	0.0	0.7	-	0.7	0.2	0.0	-	0.1	1.4	0.0	-	1.4	0.4

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: MLK & Washington
Site Code:
Start Date: 06/12/2019
Page No: 8



Turning Movement Peak Hour Data Plot (4:45 PM)

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: Washington & West
Site Code:
Start Date: 06/12/2019

Turning Movement Data

Start Time	West Sr Southbound					Washington St Westbound					West St Northbound					Washington St Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
12:00 AM	0	1	2	0	3	0	8	1	0	9	0	0	5	0	5	2	4	1	0	7	24
12:15 AM	0	1	0	0	1	1	8	1	0	10	2	0	2	0	4	3	4	0	0	7	22
12:30 AM	0	1	1	0	2	0	14	0	0	14	1	0	1	0	2	1	2	0	0	3	21
12:45 AM	0	1	0	0	1	1	8	1	0	10	0	0	2	0	2	2	3	1	0	6	19
Hourly Total	0	4	3	0	7	2	38	3	0	43	3	0	10	0	13	8	13	2	0	23	86
1:00 AM	1	1	0	0	2	1	4	0	0	5	0	0	0	0	0	1	5	1	0	7	14
1:15 AM	0	2	0	0	2	1	9	1	0	11	0	1	1	0	2	1	5	0	0	6	21
1:30 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	4	0	1	0	5	14
1:45 AM	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	1	4	0	0	5	13
Hourly Total	1	3	0	0	4	2	28	2	0	32	1	1	1	0	3	7	14	2	0	23	62
2:00 AM	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	3
2:15 AM	0	1	0	0	1	0	3	1	0	4	1	0	0	0	1	3	5	0	0	8	14
2:30 AM	1	0	0	0	1	0	2	0	0	2	1	1	0	0	2	3	6	0	0	9	14
2:45 AM	0	0	0	0	0	0	4	2	0	6	2	0	1	0	3	3	6	0	0	9	18
Hourly Total	2	1	0	0	3	0	10	3	0	13	4	1	2	0	7	9	17	0	0	26	49
3:00 AM	1	1	0	0	2	0	2	1	0	3	1	1	0	0	2	5	7	1	0	13	20
3:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	7	9	0	0	16	20
3:30 AM	0	0	0	0	0	1	5	2	0	8	2	1	0	0	3	5	17	0	0	22	33
3:45 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	4	23	0	0	27	33
Hourly Total	1	1	0	0	2	1	15	4	0	20	3	2	1	0	6	21	56	1	0	78	106
4:00 AM	0	0	0	0	0	0	3	0	0	3	2	0	1	0	3	11	27	0	0	38	44
4:15 AM	0	0	0	0	0	0	5	2	0	7	0	1	2	0	3	17	38	0	0	55	65
4:30 AM	1	3	2	0	6	0	4	0	0	4	1	0	4	0	5	19	43	0	0	62	77
4:45 AM	1	2	1	0	4	1	6	0	0	7	0	0	0	0	0	23	48	0	0	71	82
Hourly Total	2	5	3	0	10	1	18	2	0	21	3	1	7	0	11	70	156	0	0	226	268
5:00 AM	4	3	2	0	9	1	4	2	0	7	4	0	0	0	4	23	43	1	0	67	87
5:15 AM	2	7	0	0	9	1	21	0	0	22	2	0	3	0	5	19	58	0	0	77	113
5:30 AM	1	8	1	0	10	0	12	2	0	14	4	0	1	0	5	25	54	1	0	80	109
5:45 AM	0	2	0	0	2	0	8	4	0	12	3	1	5	0	9	19	67	1	0	87	110
Hourly Total	7	20	3	0	30	2	45	8	0	55	13	1	9	0	23	86	222	3	0	311	419
6:00 AM	4	8	2	0	14	1	14	3	0	18	5	1	12	0	18	23	59	0	0	82	132
6:15 AM	1	7	2	0	10	2	17	7	0	26	2	3	7	0	12	16	70	4	0	90	138
6:30 AM	5	10	0	0	15	0	14	1	0	15	5	4	4	0	13	23	80	0	0	103	146
6:45 AM	8	4	1	0	13	0	32	5	0	37	8	1	5	0	14	28	92	1	0	121	185
Hourly Total	18	29	5	0	52	3	77	16	0	96	20	9	28	0	57	90	301	5	0	396	601
7:00 AM	7	12	1	0	20	3	20	4	0	27	8	2	9	0	19	21	86	1	0	108	174
7:15 AM	1	6	2	0	9	1	23	3	0	27	1	7	8	0	16	37	87	4	0	128	180
7:30 AM	4	10	3	0	17	2	49	7	0	58	6	16	16	0	38	38	90	3	0	131	244

7:45 AM	6	15	2	0	23	1	36	5	0	42	10	13	10	0	33	46	96	5	0	147	245
Hourly Total	18	43	8	0	69	7	128	19	0	154	25	38	43	0	106	142	359	13	0	514	843
8:00 AM	6	7	3	0	16	1	27	16	0	44	11	7	15	0	33	27	84	4	0	115	208
8:15 AM	7	13	5	0	25	1	31	17	0	49	14	18	14	0	46	31	84	3	0	118	238
8:30 AM	4	11	3	0	18	1	33	12	0	46	23	12	16	0	51	29	84	2	0	115	230
8:45 AM	8	16	3	0	27	2	38	10	0	50	18	16	9	0	43	35	63	7	0	105	225
Hourly Total	25	47	14	0	86	5	129	55	0	189	66	53	54	0	173	122	315	16	0	453	901
9:00 AM	8	7	2	0	17	2	39	14	0	55	13	12	9	0	34	22	74	4	0	100	206
9:15 AM	3	13	1	0	17	0	36	13	0	49	15	10	13	0	38	22	63	1	0	86	190
9:30 AM	6	14	1	0	21	2	35	14	0	51	19	10	12	0	41	17	48	2	0	67	180
9:45 AM	9	11	3	0	23	2	50	14	0	66	21	12	9	0	42	23	61	1	0	85	216
Hourly Total	26	45	7	0	78	6	160	55	0	221	68	44	43	0	155	84	246	8	0	338	792
10:00 AM	6	9	1	0	16	1	39	11	0	51	16	7	16	0	39	10	62	1	0	73	179
10:15 AM	9	7	3	0	19	3	41	18	0	62	5	9	11	0	25	24	55	4	0	83	189
10:30 AM	7	11	4	0	22	2	52	9	0	63	16	11	17	0	44	23	71	3	0	97	226
10:45 AM	5	16	2	0	23	2	53	19	0	74	18	14	18	0	50	19	75	2	0	96	243
Hourly Total	27	43	10	0	80	8	185	57	0	250	55	41	62	0	158	76	263	10	0	349	837
11:00 AM	14	11	0	0	25	3	48	19	0	70	25	13	16	0	54	12	62	1	0	75	224
11:15 AM	10	16	4	0	30	4	55	19	0	78	20	14	14	0	48	14	64	4	0	82	238
11:30 AM	11	17	2	0	30	2	59	14	0	75	19	18	18	0	55	14	70	4	0	88	248
11:45 AM	14	16	2	0	32	3	65	27	0	95	21	15	12	0	48	18	74	3	0	95	270
Hourly Total	49	60	8	0	117	12	227	79	0	318	85	60	60	0	205	58	270	12	0	340	980
12:00 PM	8	21	3	0	32	1	53	13	0	67	21	15	23	0	59	12	72	4	0	88	246
12:15 PM	18	20	3	0	41	2	56	27	0	85	29	5	25	0	59	18	71	5	0	94	279
12:30 PM	16	18	2	0	36	4	49	16	0	69	21	14	18	0	53	14	82	2	0	98	256
12:45 PM	7	19	3	0	29	4	61	23	0	88	18	10	21	0	49	23	87	4	0	114	280
Hourly Total	49	78	11	0	138	11	219	79	0	309	89	44	87	0	220	67	312	15	0	394	1061
1:00 PM	13	13	5	0	31	2	66	22	0	90	20	13	26	0	59	18	55	2	0	75	255
1:15 PM	12	9	1	0	22	5	75	25	0	105	17	8	22	0	47	19	46	2	0	67	241
1:30 PM	6	15	0	0	21	1	60	21	0	82	23	13	22	0	58	13	73	4	0	90	251
1:45 PM	13	16	3	0	32	5	65	24	0	94	22	9	17	0	48	21	75	1	0	97	271
Hourly Total	44	53	9	0	106	13	266	92	0	371	82	43	87	0	212	71	249	9	0	329	1018
2:00 PM	15	19	1	0	35	2	53	28	0	83	23	12	20	0	55	15	72	2	0	89	262
2:15 PM	15	13	1	0	29	5	74	15	0	94	18	9	17	0	44	20	51	3	0	74	241
2:30 PM	10	24	1	0	35	5	66	22	0	93	18	10	22	0	50	11	60	2	0	73	251
2:45 PM	13	21	3	0	37	1	72	20	0	93	23	16	26	0	65	10	65	1	0	76	271
Hourly Total	53	77	6	0	136	13	265	85	0	363	82	47	85	0	214	56	248	8	0	312	1025
3:00 PM	14	11	2	0	27	4	72	15	0	91	27	13	25	0	65	15	67	1	0	83	266
3:15 PM	19	17	2	0	38	4	84	18	0	106	23	15	26	0	64	16	68	0	0	84	292
3:30 PM	10	24	1	0	35	2	91	16	0	109	17	18	26	0	61	19	52	3	0	74	279
3:45 PM	8	19	2	0	29	3	81	15	0	99	20	13	27	0	60	22	75	2	0	99	287
Hourly Total	51	71	7	0	129	13	328	64	0	405	87	59	104	0	250	72	262	6	0	340	1124
4:00 PM	19	18	4	0	41	2	120	15	0	137	21	8	34	0	63	14	65	3	0	82	323
4:15 PM	11	17	6	0	34	7	95	20	0	122	22	18	33	0	73	24	76	2	0	102	331
4:30 PM	26	23	2	0	51	2	110	18	0	130	27	6	42	0	75	21	55	1	0	77	333
4:45 PM	15	18	2	0	35	4	129	11	0	144	26	22	33	0	81	11	83	1	0	95	355
Hourly Total	71	76	14	0	161	15	454	64	0	533	96	54	142	0	292	70	279	7	0	356	1342
5:00 PM	30	26	1	0	57	3	112	20	0	135	17	15	36	0	68	19	80	4	0	103	363
5:15 PM	17	28	2	0	47	4	128	15	0	147	16	12	42	0	70	24	82	3	0	109	373
5:30 PM	15	36	3	0	54	4	116	26	0	146	17	14	45	0	76	21	84	4	0	109	385
5:45 PM	11	10	1	0	22	2	113	29	0	144	26	15	29	0	70	20	77	1	0	98	334
Hourly Total	73	100	7	0	180	13	469	90	0	572	76	56	152	0	284	84	323	12	0	419	1455

6:00 PM	17	12	5	0	34	2	84	16	0	102	23	9	37	0	69	10	69	4	0	83	288
6:15 PM	16	19	1	0	36	3	82	21	0	106	22	13	23	0	58	11	71	0	0	82	282
6:30 PM	9	8	1	0	18	3	66	12	0	81	12	11	24	0	47	12	70	4	0	86	232
6:45 PM	13	16	3	0	32	3	82	14	0	99	15	8	24	0	47	14	65	6	0	85	263
Hourly Total	55	55	10	0	120	11	314	63	0	388	72	41	108	0	221	47	275	14	0	336	1065
7:00 PM	11	18	2	0	31	1	73	9	0	83	17	13	24	0	54	15	40	1	0	56	224
7:15 PM	20	8	2	0	30	0	78	21	0	99	14	15	19	0	48	15	48	3	0	66	243
7:30 PM	15	10	1	0	26	1	79	19	0	99	9	8	29	0	46	12	56	5	0	73	244
7:45 PM	4	8	4	0	16	3	66	18	0	87	11	10	19	0	40	12	50	0	0	62	205
Hourly Total	50	44	9	0	103	5	296	67	0	368	51	46	91	0	188	54	194	9	0	257	916
8:00 PM	13	11	1	0	25	1	73	14	0	88	10	8	16	0	34	7	47	1	0	55	202
8:15 PM	4	9	1	0	14	3	68	12	0	83	9	4	20	0	33	13	39	3	0	55	185
8:30 PM	1	19	1	0	21	1	50	14	0	65	9	6	12	0	27	16	36	1	0	53	166
8:45 PM	6	18	2	0	26	6	54	9	0	69	9	9	15	0	33	10	33	2	0	45	173
Hourly Total	24	57	5	0	86	11	245	49	0	305	37	27	63	0	127	46	155	7	0	208	726
9:00 PM	10	8	3	0	21	2	58	8	0	68	4	9	13	0	26	8	22	1	0	31	146
9:15 PM	6	3	1	0	10	1	55	9	0	65	6	4	17	0	27	4	29	0	0	33	135
9:30 PM	5	4	1	0	10	3	46	5	0	54	5	2	14	0	21	3	13	0	0	16	101
9:45 PM	5	4	1	0	10	3	33	5	0	41	7	5	17	0	29	9	18	2	0	29	109
Hourly Total	26	19	6	0	51	9	192	27	0	228	22	20	61	0	103	24	82	3	0	109	491
10:00 PM	4	2	0	0	6	2	29	9	0	40	4	3	3	0	10	2	20	0	0	22	78
10:15 PM	1	1	2	0	4	2	25	5	0	32	2	2	7	0	11	8	16	1	0	25	72
10:30 PM	0	2	1	0	3	3	35	5	0	43	4	3	2	0	9	2	12	0	0	14	69
10:45 PM	0	3	0	0	3	2	17	3	0	22	2	5	5	0	12	1	6	2	0	9	46
Hourly Total	5	8	3	0	16	9	106	22	0	137	12	13	17	0	42	13	54	3	0	70	265
11:00 PM	2	0	0	0	2	1	20	2	0	23	1	0	11	0	12	0	12	0	0	12	49
11:15 PM	3	1	1	0	5	1	23	4	0	28	4	1	3	0	8	0	9	0	0	9	50
11:30 PM	1	0	0	0	1	0	15	3	0	18	1	1	5	0	7	2	7	1	0	10	36
11:45 PM	0	1	0	0	1	1	18	1	0	20	3	1	2	0	6	3	4	0	0	7	34
Hourly Total	6	2	1	0	9	3	76	10	0	89	9	3	21	0	33	5	32	1	0	38	169
Grand Total	683	941	149	0	1773	175	4290	1015	0	5480	1061	704	1338	0	3103	1382	4697	166	0	6245	16601
Approach %	38.5	53.1	8.4	0.0	-	3.2	78.3	18.5	0.0	-	34.2	22.7	43.1	0.0	-	22.1	75.2	2.7	0.0	-	-
Total %	4.1	5.7	0.9	0.0	10.7	1.1	25.8	6.1	0.0	33.0	6.4	4.2	8.1	0.0	18.7	8.3	28.3	1.0	0.0	37.6	-
Motorcycles	2	0	0	0	2	0	24	3	0	27	2	3	3	0	8	5	32	0	0	37	74
% Motorcycles	0.3	0.0	0.0	-	0.1	0.0	0.6	0.3	-	0.5	0.2	0.4	0.2	-	0.3	0.4	0.7	0.0	-	0.6	0.4
Cars & Light Goods	669	928	145	0	1742	172	4113	972	0	5257	1029	691	1305	0	3025	1331	4514	164	0	6009	16033
% Cars & Light Goods	98.0	98.6	97.3	-	98.3	98.3	95.9	95.8	-	95.9	97.0	98.2	97.5	-	97.5	96.3	96.1	98.8	-	96.2	96.6
Buses	1	1	0	0	2	0	3	13	0	16	18	1	0	0	19	0	5	1	0	6	43
% Buses	0.1	0.1	0.0	-	0.1	0.0	0.1	1.3	-	0.3	1.7	0.1	0.0	-	0.6	0.0	0.1	0.6	-	0.1	0.3
Single-Unit Trucks	10	11	3	0	24	3	117	20	0	140	10	9	23	0	42	37	117	1	0	155	361
% Single-Unit Trucks	1.5	1.2	2.0	-	1.4	1.7	2.7	2.0	-	2.6	0.9	1.3	1.7	-	1.4	2.7	2.5	0.6	-	2.5	2.2
Articulated Trucks	1	1	1	0	3	0	33	7	0	40	2	0	7	0	9	9	29	0	0	38	90
% Articulated Trucks	0.1	0.1	0.7	-	0.2	0.0	0.8	0.7	-	0.7	0.2	0.0	0.5	-	0.3	0.7	0.6	0.0	-	0.6	0.5

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: Washington & West
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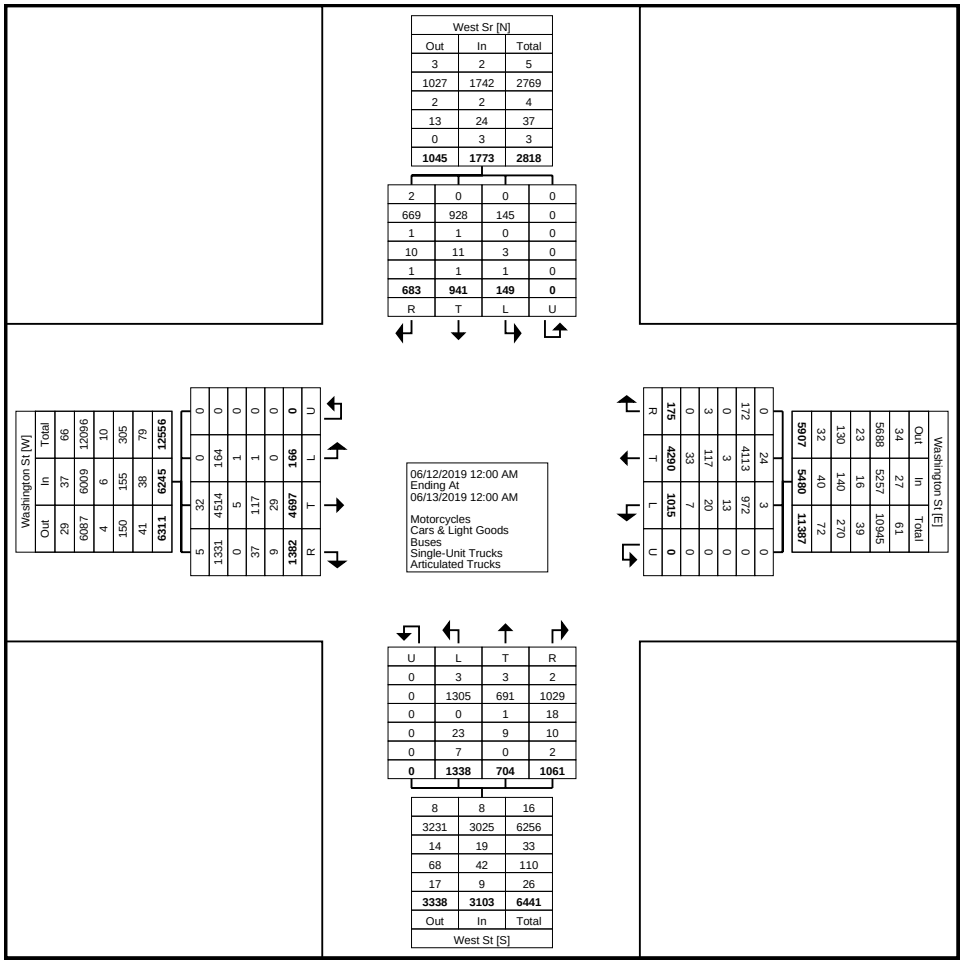
Page No: 4



Turning Movement Data Plot

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: Washington & West
Site Code:
Start Date: 06/12/2019

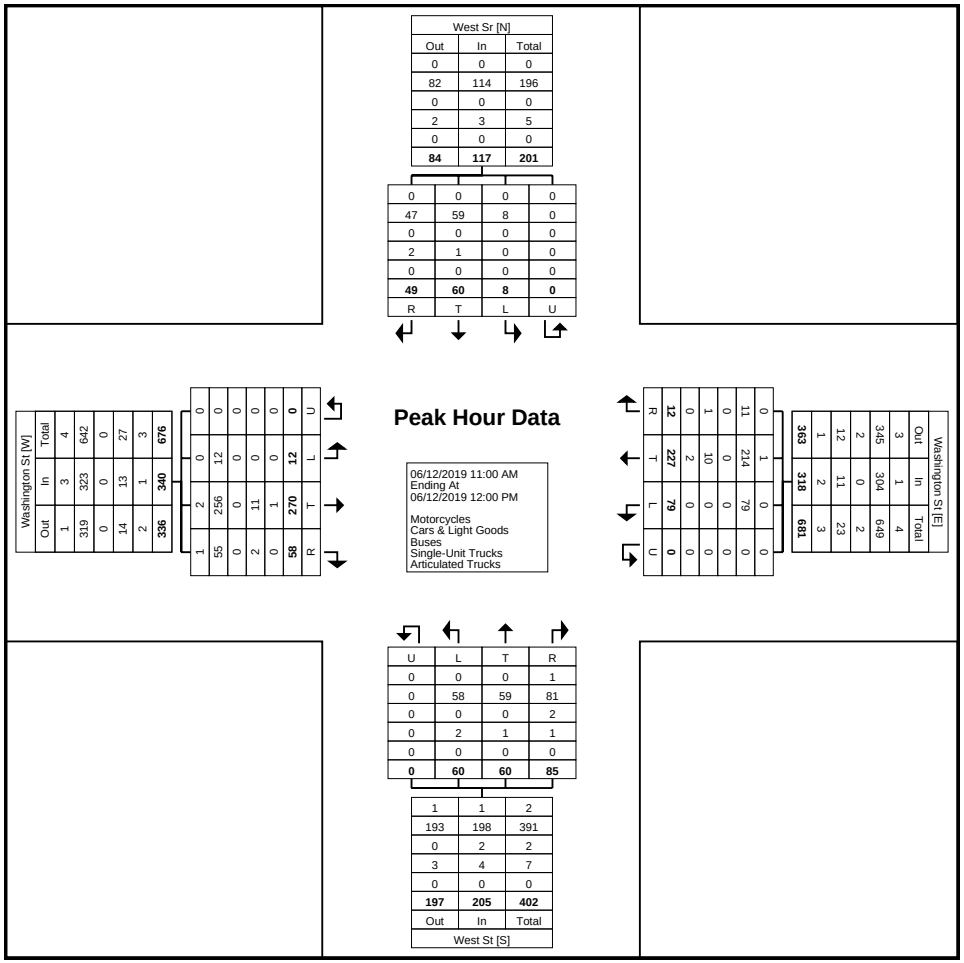
Turning Movement Peak Hour Data (11:00 AM)

Start Time	West Sr Southbound					Washington St Westbound					West St Northbound					Washington St Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
11:00 AM	14	11	0	0	25	3	48	19	0	70	25	13	16	0	54	12	62	1	0	75	224
11:15 AM	10	16	4	0	30	4	55	19	0	78	20	14	14	0	48	14	64	4	0	82	238
11:30 AM	11	17	2	0	30	2	59	14	0	75	19	18	18	0	55	14	70	4	0	88	248
11:45 AM	14	16	2	0	32	3	65	27	0	95	21	15	12	0	48	18	74	3	0	95	270
Total	49	60	8	0	117	12	227	79	0	318	85	60	60	0	205	58	270	12	0	340	980
Approach %	41.9	51.3	6.8	0.0	-	3.8	71.4	24.8	0.0	-	41.5	29.3	29.3	0.0	-	17.1	79.4	3.5	0.0	-	-
Total %	5.0	6.1	0.8	0.0	11.9	1.2	23.2	8.1	0.0	32.4	8.7	6.1	6.1	0.0	20.9	5.9	27.6	1.2	0.0	34.7	-
PHF	0.875	0.882	0.500	0.000	0.914	0.750	0.873	0.731	0.000	0.837	0.850	0.833	0.833	0.000	0.932	0.806	0.912	0.750	0.000	0.895	0.907
Motorcycles	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1	2	0	0	3	5
% Motorcycles	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.3	1.2	0.0	0.0	-	0.5	1.7	0.7	0.0	-	0.9	0.5
Cars & Light Goods	47	59	8	0	114	11	214	79	0	304	81	59	58	0	198	55	256	12	0	323	939
% Cars & Light Goods	95.9	98.3	100.0	-	97.4	91.7	94.3	100.0	-	95.6	95.3	98.3	96.7	-	96.6	94.8	94.8	100.0	-	95.0	95.8
Buses	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
% Buses	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	2.4	0.0	0.0	-	1.0	0.0	0.0	0.0	-	0.0	0.2
Single-Unit Trucks	2	1	0	0	3	1	10	0	0	11	1	1	2	0	4	2	11	0	0	13	31
% Single-Unit Trucks	4.1	1.7	0.0	-	2.6	8.3	4.4	0.0	-	3.5	1.2	1.7	3.3	-	2.0	3.4	4.1	0.0	-	3.8	3.2
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.9	0.0	-	0.6	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.3	0.3

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: Washington & West
Site Code:
Start Date: 06/12/2019



Turning Movement Peak Hour Data Plot (11:00 AM)

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: Washington & West
Site Code:
Start Date: 06/12/2019

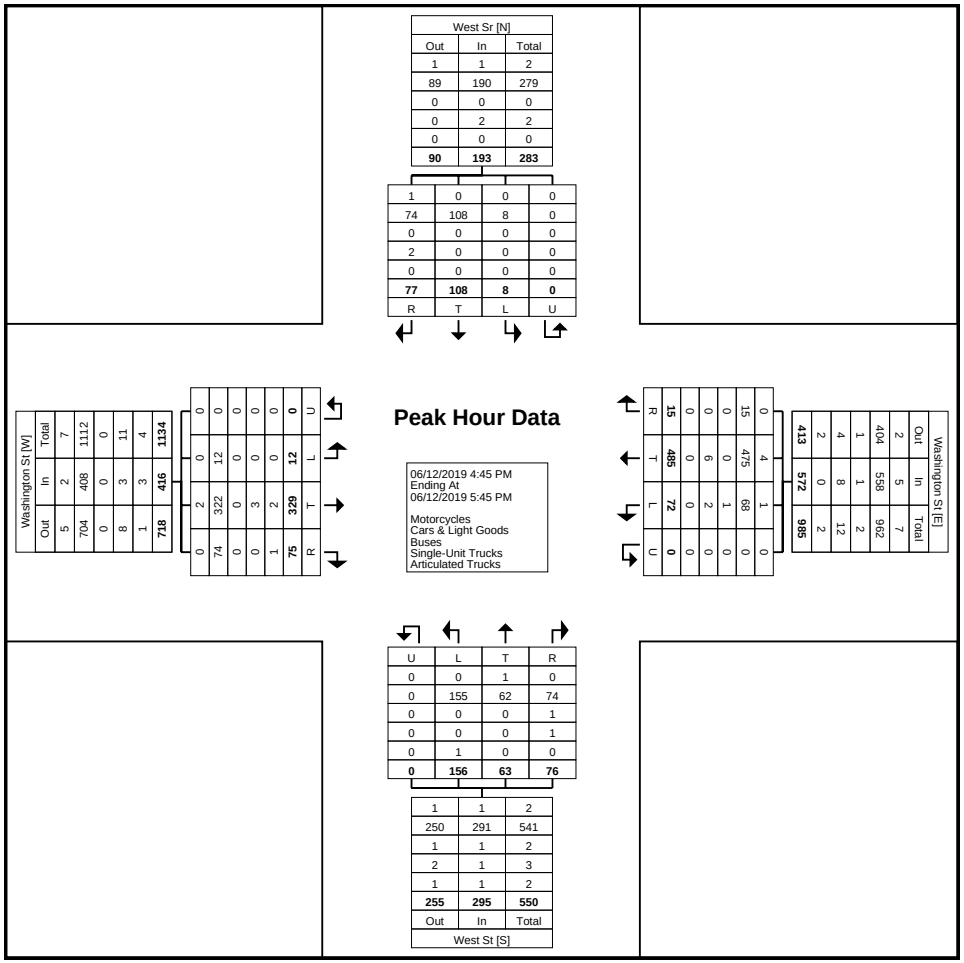
Turning Movement Peak Hour Data (4:45 PM)

Start Time	West Sr Southbound					Washington St Westbound					West St Northbound					Washington St Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
4:45 PM	15	18	2	0	35	4	129	11	0	144	26	22	33	0	81	11	83	1	0	95	355
5:00 PM	30	26	1	0	57	3	112	20	0	135	17	15	36	0	68	19	80	4	0	103	363
5:15 PM	17	28	2	0	47	4	128	15	0	147	16	12	42	0	70	24	82	3	0	109	373
5:30 PM	15	36	3	0	54	4	116	26	0	146	17	14	45	0	76	21	84	4	0	109	385
Total	77	108	8	0	193	15	485	72	0	572	76	63	156	0	295	75	329	12	0	416	1476
Approach %	39.9	56.0	4.1	0.0	-	2.6	84.8	12.6	0.0	-	25.8	21.4	52.9	0.0	-	18.0	79.1	2.9	0.0	-	-
Total %	5.2	7.3	0.5	0.0	13.1	1.0	32.9	4.9	0.0	38.8	5.1	4.3	10.6	0.0	20.0	5.1	22.3	0.8	0.0	28.2	-
PHF	0.642	0.750	0.667	0.000	0.846	0.938	0.940	0.692	0.000	0.973	0.731	0.716	0.867	0.000	0.910	0.781	0.979	0.750	0.000	0.954	0.958
Motorcycles	1	0	0	0	1	0	4	1	0	5	0	1	0	0	1	0	2	0	0	2	9
% Motorcycles	1.3	0.0	0.0	-	0.5	0.0	0.8	1.4	-	0.9	0.0	1.6	0.0	-	0.3	0.0	0.6	0.0	-	0.5	0.6
Cars & Light Goods	74	108	8	0	190	15	475	68	0	558	74	62	155	0	291	74	322	12	0	408	1447
% Cars & Light Goods	96.1	100.0	100.0	-	98.4	100.0	97.9	94.4	-	97.6	97.4	98.4	99.4	-	98.6	98.7	97.9	100.0	-	98.1	98.0
Buses	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	2
% Buses	0.0	0.0	0.0	-	0.0	0.0	0.0	1.4	-	0.2	1.3	0.0	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	2	0	0	0	2	0	6	2	0	8	1	0	0	0	1	0	3	0	0	3	14
% Single-Unit Trucks	2.6	0.0	0.0	-	1.0	0.0	1.2	2.8	-	1.4	1.3	0.0	0.0	-	0.3	0.0	0.9	0.0	-	0.7	0.9
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	3	4
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	-	0.3	1.3	0.6	0.0	-	0.7	0.3

Burgess & Niple
5085 Reed Rd

Columbus, Ohio, United States 43220
614-459-2050 x 356 charles.popovich@burgessniple.com

Count Name: Washington & West
Site Code:
Start Date: 06/12/2019



Turning Movement Peak Hour Data Plot (4:45 PM)

MLK & Washington Bike/Ped - TMC

Wed Jun 12, 2019

Full Length (12 AM-1 AM, 1 AM-2 AM, 2 AM-3 AM, 3 AM-4 AM, 4 AM-5 AM, 5 AM-6 AM, 6 AM-7 AM, 7 AM-8 AM, 8 AM-9 AM, 9 AM-10 AM, 10 AM-11 AM, 11 AM-12 PM, 12 PM-1 PM, 1 PM-2 PM, 2 PM-3 PM, 3 PM-4 PM, 4 PM-5 PM, 5 PM-6 PM, 6 PM-7 PM, 7 PM-8 PM, 8 PM-9 PM, 9 PM-10 PM, 10 PM-11 PM, 11 PM-12 AM (+1))

All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 787751, Location: 39.286453, -77.867659

Provided by: Burgess & Niple
5085 Reed Rd,
Columbus, OH, 43220, US

Leg	MLK Jr Blvd		Washington St			Washington St		
Direction	Southbound		Westbound			Eastbound		
Time	**App**	Ped*	U	**App**	Ped*	**App**	Ped*	**Int**
2019-06-12 12:00AM	**0**	0	0	**0**	0	**0**	0	**0**
12:15AM	**0**	0	0	**0**	0	**0**	0	**0**
12:30AM	**0**	0	0	**0**	0	**0**	0	**0**
12:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
1:00AM	**0**	0	0	**0**	0	**0**	0	**0**
1:15AM	**0**	0	0	**0**	0	**0**	0	**0**
1:30AM	**0**	0	0	**0**	0	**0**	0	**0**
1:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
2:00AM	**0**	0	0	**0**	0	**0**	0	**0**
2:15AM	**0**	0	0	**0**	0	**0**	0	**0**
2:30AM	**0**	0	0	**0**	0	**0**	0	**0**
2:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
3:00AM	**0**	0	0	**0**	0	**0**	0	**0**
3:15AM	**0**	0	0	**0**	0	**0**	0	**0**
3:30AM	**0**	0	0	**0**	0	**0**	0	**0**
3:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
4:00AM	**0**	0	0	**0**	0	**0**	0	**0**
4:15AM	**0**	0	0	**0**	0	**0**	0	**0**
4:30AM	**0**	0	0	**0**	0	**0**	0	**0**
4:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
5:00AM	**0**	0	0	**0**	0	**0**	0	**0**
5:15AM	**0**	0	0	**0**	0	**0**	0	**0**
5:30AM	**0**	0	0	**0**	0	**0**	0	**0**
5:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
6:00AM	**0**	0	0	**0**	0	**0**	0	**0**
6:15AM	**0**	0	0	**0**	0	**0**	0	**0**
6:30AM	**0**	0	0	**0**	0	**0**	0	**0**
6:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
7:00AM	**0**	0	0	**0**	0	**0**	0	**0**
7:15AM	**0**	0	0	**0**	0	**0**	0	**0**
7:30AM	**0**	0	0	**0**	0	**0**	0	**0**
7:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
8:00AM	**0**	0	0	**0**	0	**0**	0	**0**
8:15AM	**0**	0	0	**0**	0	**0**	0	**0**
8:30AM	**0**	0	0	**0**	0	**0**	0	**0**
8:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
9:00AM	**0**	0	0	**0**	0	**0**	0	**0**
9:15AM	**0**	0	0	**0**	0	**0**	0	**0**
9:30AM	**0**	0	0	**0**	0	**0**	0	**0**
9:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
10:00AM	**0**	0	0	**0**	0	**0**	0	**0**

Leg Direction	MLK Jr Blvd Southbound		Washington St Westbound			Washington St Eastbound		
Time	**App**	Ped*	U	**App**	Ped*	**App**	Ped*	**Int**
10:15AM	**0**	0	0	**0**	0	**0**	0	**0**
10:30AM	**0**	0	0	**0**	0	**0**	0	**0**
10:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
11:00AM	**0**	0	0	**0**	0	**0**	0	**0**
11:15AM	**0**	0	0	**0**	0	**0**	0	**0**
11:30AM	**0**	5	0	**0**	0	**0**	0	**0**
11:45AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	5	0	**0**	0	**0**	0	**0**
12:00PM	**0**	5	0	**0**	0	**0**	0	**0**
12:15PM	**0**	0	0	**0**	0	**0**	0	**0**
12:30PM	**0**	0	0	**0**	0	**0**	0	**0**
12:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	5	0	**0**	0	**0**	0	**0**
1:00PM	**0**	0	0	**0**	0	**0**	0	**0**
1:15PM	**0**	0	0	**0**	0	**0**	0	**0**
1:30PM	**0**	0	0	**0**	0	**0**	0	**0**
1:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
2:00PM	**0**	0	0	**0**	0	**0**	0	**0**
2:15PM	**0**	0	0	**0**	0	**0**	0	**0**
2:30PM	**0**	0	0	**0**	0	**0**	0	**0**
2:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
3:00PM	**0**	0	0	**0**	0	**0**	0	**0**
3:15PM	**0**	0	0	**0**	0	**0**	0	**0**
3:30PM	**0**	0	0	**0**	0	**0**	0	**0**
3:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
4:00PM	**0**	0	0	**0**	0	**0**	0	**0**
4:15PM	**0**	0	0	**0**	0	**0**	0	**0**
4:30PM	**0**	0	0	**0**	0	**0**	0	**0**
4:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
5:00PM	**0**	0	0	**0**	0	**0**	0	**0**
5:15PM	**0**	0	0	**0**	0	**0**	0	**0**
5:30PM	**0**	0	0	**0**	0	**0**	0	**0**
5:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
6:00PM	**0**	0	0	**0**	0	**0**	0	**0**
6:15PM	**0**	0	0	**0**	0	**0**	0	**0**
6:30PM	**0**	0	0	**0**	0	**0**	0	**0**
6:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
7:00PM	**0**	0	0	**0**	0	**0**	0	**0**
7:15PM	**0**	0	0	**0**	0	**0**	0	**0**
7:30PM	**0**	0	0	**0**	0	**0**	0	**0**
7:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
8:00PM	**0**	0	0	**0**	0	**0**	0	**0**
8:15PM	**0**	0	0	**0**	0	**0**	0	**0**
8:30PM	**0**	0	0	**0**	0	**0**	0	**0**
8:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
9:00PM	**0**	0	0	**0**	0	**0**	0	**0**
9:15PM	**0**	0	0	**0**	0	**0**	0	**0**
9:30PM	**0**	0	0	**0**	0	**0**	0	**0**
9:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
10:00PM	**0**	0	0	**0**	0	**0**	0	**0**

Leg Direction	MLK Jr Blvd Southbound		Washington St Westbound			Washington St Eastbound		
Time	**App**	Ped*	U	**App**	Ped*	**App**	Ped*	**Int**
10:15PM	**0**	0	0	**0**	0	**0**	0	**0**
10:30PM	**0**	0	0	**0**	0	**0**	0	**0**
10:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
11:00PM	**0**	0	0	**0**	0	**0**	0	**0**
11:15PM	**0**	0	0	**0**	0	**0**	0	**0**
11:30PM	**0**	0	0	**0**	0	**0**	0	**0**
11:45PM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
2019-06-13 12:00AM	**0**	0	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**
Total	**0**	10	0	**0**	0	**0**	0	**0**
% Approach	**-**	-	0%	**-**	-	**-**	-	**-**
% Total	**-**	-	-	**-**	-	**-**	-	**-**
Vehicles	**0**	-	0	**0**	-	**0**	-	0
% Vehicles	**-**	-	0%	**-**	-	**-**	-	**-**
Pedestrians	-	10	-	-	0	-	0	
% Pedestrians	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	0	-	-	0	-	0	
% Bicycles on Crosswalk	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. U: U-Turn

MLK & Washington Bike/Ped - TMC
Wed Jun 12, 2019
Full Length (12 AM-1 AM, 1 AM-2 AM, 2 AM-3 AM, 3 AM-4 AM, 4 AM-5 AM, 5 AM-6 AM, 6 AM-7 AM, 7 AM-8 AM, 8 AM-9 AM, 9 AM-10 AM, 10 AM-11 AM, 11 AM-12 PM, 12 PM-1 PM, 1 PM-2 PM, 2 PM-3 PM, 3 PM-4 PM, 4 PM-5 PM, 5 PM-6 PM, 6 PM-7 PM, 7 PM-8 PM, 8 PM-9 PM, 9 PM-10 PM, 10 PM-11 PM, 11 PM-12 AM (+1))
All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 787751, Location: 39.286453, -77.867659

Provided by: Burgess & Niple
5085 Reed Rd,
Columbus, OH, 43220, US

[N] MLK Jr Blvd

West & Washington - Bike/Ped - TMC

Wed Jun 12, 2019

Full Length (12 AM-1 AM, 1 AM-2 AM, 2 AM-3 AM, 3 AM-4 AM, 4 AM-5 AM, 5 AM-6 AM, 6 AM-7 AM, 7 AM-8 AM, 8 AM-9 AM, 9 AM-10 AM, 10 AM-11 AM, 11 AM-12 PM, 12 PM-1 PM, 1 PM-2 PM, 2 PM-3 PM, 3 PM-4 PM, 4 PM-5 PM, 5 PM-6 PM, 6 PM-7 PM, 7 PM-8 PM, 8 PM-9 PM, 9 PM-10 PM, 10 PM-11 PM, 11 PM-12 AM (+1))

All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 787750, Location: 39.287801, -77.863643

Provided by: Burgess & Niple
5085 Reed Rd,
Columbus, OH, 43220, US

Leg	West St		Washington St			West St		Washington St		
Direction	Southbound		Westbound			Northbound		Eastbound		
Time	**App**	Ped*	U	**App**	Ped*	**App**	Ped*	**App**	Ped*	**Int**
2019-06-12 12:00AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
12:15AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
12:30AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
12:45AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
1:00AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
1:15AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
1:30AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
1:45AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
2:00AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
2:15AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
2:30AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
2:45AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
3:00AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
3:15AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
3:30AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
3:45AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
4:00AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
4:15AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
4:30AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
4:45AM	**0**	0	0	**0**	1	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	1	**0**	0	**0**	0	**0**
5:00AM	**0**	0	0	**0**	0	**0**	1	**0**	0	**0**
5:15AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
5:30AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
5:45AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	1	**0**	0	**0**
6:00AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
6:15AM	**0**	1	0	**0**	3	**0**	0	**0**	0	**0**
6:30AM	**0**	6	0	**0**	2	**0**	0	**0**	0	**0**
6:45AM	**0**	2	0	**0**	1	**0**	0	**0**	0	**0**
Hourly Total	**0**	9	0	**0**	6	**0**	0	**0**	0	**0**
7:00AM	**0**	0	0	**0**	2	**0**	0	**0**	0	**0**
7:15AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
7:30AM	**0**	0	0	**0**	4	**0**	0	**0**	0	**0**
7:45AM	**0**	0	0	**0**	6	**0**	0	**0**	3	**0**
Hourly Total	**0**	0	0	**0**	12	**0**	0	**0**	3	**0**
8:00AM	**0**	0	0	**0**	0	**0**	0	**0**	1	**0**
8:15AM	**0**	3	0	**0**	0	**0**	0	**0**	0	**0**
8:30AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
8:45AM	**0**	1	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	4	0	**0**	0	**0**	0	**0**	1	**0**
9:00AM	**0**	2	0	**0**	0	**0**	0	**0**	0	**0**
9:15AM	**0**	1	0	**0**	0	**0**	0	**0**	0	**0**
9:30AM	**0**	4	0	**0**	0	**0**	0	**0**	0	**0**
9:45AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	7	0	**0**	0	**0**	0	**0**	0	**0**
10:00AM	**0**	0	0	**0**	3	**0**	0	**0**	0	**0**

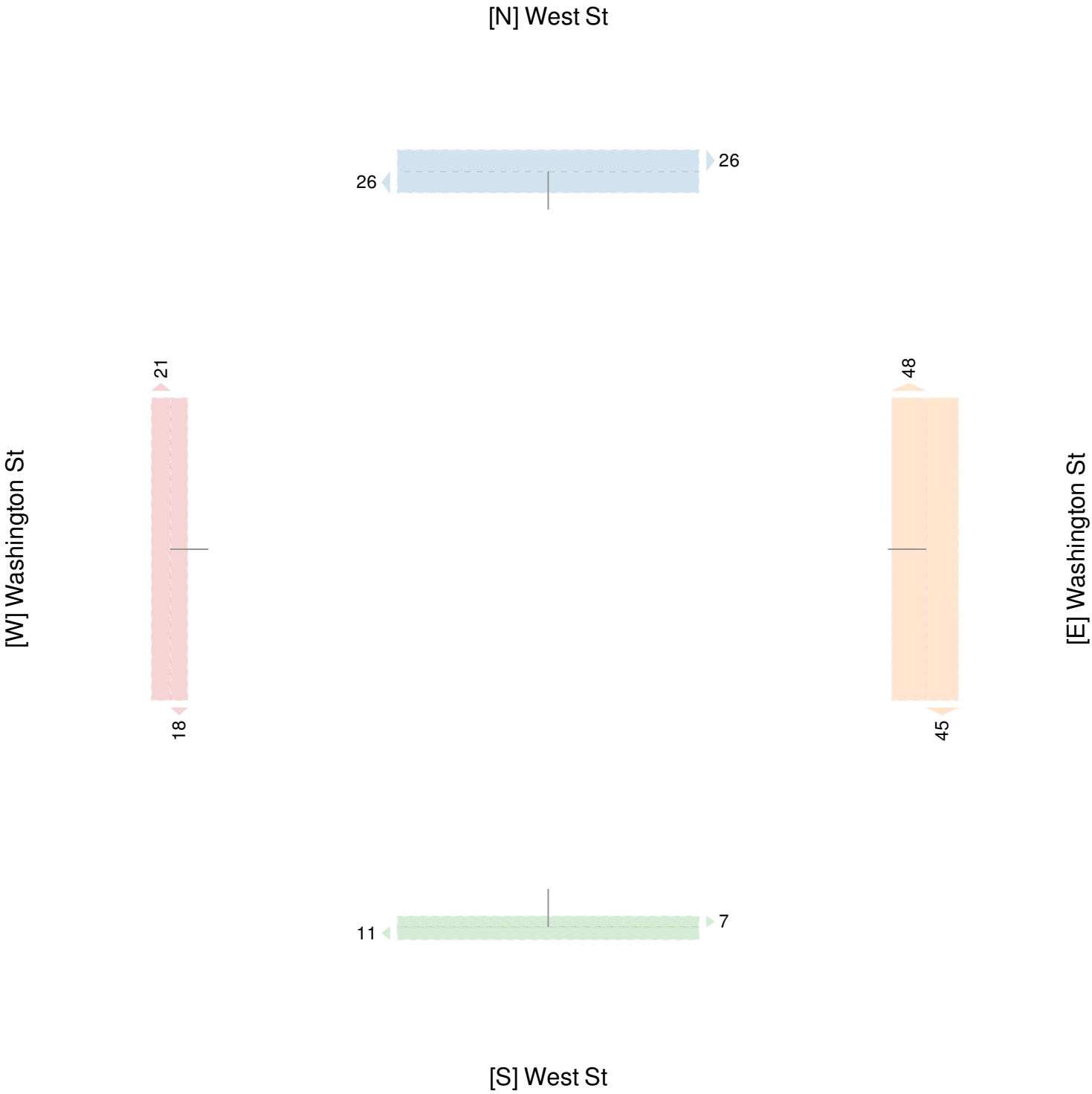
Leg Direction	West St Southbound		Washington St Westbound			West St Northbound		Washington St Eastbound		
Time	**App**	Ped*	U	**App**	Ped*	**App**	Ped*	**App**	Ped*	**Int**
10:15AM	**0**	0	0	**0**	2	**0**	0	**0**	0	**0**
10:30AM	**0**	1	0	**0**	5	**0**	0	**0**	0	**0**
10:45AM	**0**	0	0	**0**	3	**0**	0	**0**	0	**0**
Hourly Total	**0**	1	0	**0**	13	**0**	0	**0**	0	**0**
11:00AM	**0**	0	0	**0**	0	**0**	2	**0**	2	**0**
11:15AM	**0**	2	0	**0**	3	**0**	0	**0**	2	**0**
11:30AM	**0**	2	0	**0**	3	**0**	2	**0**	1	**0**
11:45AM	**0**	2	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	6	0	**0**	6	**0**	4	**0**	5	**0**
12:00PM	**0**	2	0	**0**	0	**0**	0	**0**	0	**0**
12:15PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
12:30PM	**0**	1	0	**0**	2	**0**	1	**0**	2	**0**
12:45PM	**0**	1	0	**0**	1	**0**	0	**0**	0	**0**
Hourly Total	**0**	4	0	**0**	3	**0**	1	**0**	2	**0**
1:00PM	**0**	0	0	**0**	1	**0**	1	**0**	0	**0**
1:15PM	**0**	1	0	**0**	5	**0**	0	**0**	0	**0**
1:30PM	**0**	2	0	**0**	2	**0**	0	**0**	0	**0**
1:45PM	**0**	0	0	**0**	0	**0**	2	**0**	2	**0**
Hourly Total	**0**	3	0	**0**	8	**0**	3	**0**	2	**0**
2:00PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
2:15PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
2:30PM	**0**	0	0	**0**	2	**0**	0	**0**	0	**0**
2:45PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	2	**0**	0	**0**	0	**0**
3:00PM	**0**	0	0	**0**	0	**0**	0	**0**	2	**0**
3:15PM	**0**	0	0	**0**	0	**0**	0	**0**	1	**0**
3:30PM	**0**	1	0	**0**	3	**0**	0	**0**	3	**0**
3:45PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	1	0	**0**	3	**0**	0	**0**	6	**0**
4:00PM	**0**	0	0	**0**	4	**0**	0	**0**	0	**0**
4:15PM	**0**	1	0	**0**	2	**0**	0	**0**	0	**0**
4:30PM	**0**	0	0	**0**	2	**0**	0	**0**	0	**0**
4:45PM	**0**	1	0	**0**	1	**0**	0	**0**	2	**0**
Hourly Total	**0**	2	0	**0**	9	**0**	0	**0**	2	**0**
5:00PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
5:15PM	**0**	0	0	**0**	0	**0**	0	**0**	2	**0**
5:30PM	**0**	0	0	**0**	4	**0**	1	**0**	2	**0**
5:45PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	4	**0**	1	**0**	4	**0**
6:00PM	**0**	0	0	**0**	0	**0**	0	**0**	1	**0**
6:15PM	**0**	0	0	**0**	0	**0**	0	**0**	2	**0**
6:30PM	**0**	0	0	**0**	1	**0**	0	**0**	0	**0**
6:45PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	1	**0**	0	**0**	3	**0**
7:00PM	**0**	0	0	**0**	3	**0**	0	**0**	0	**0**
7:15PM	**0**	0	0	**0**	0	**0**	0	**0**	2	**0**
7:30PM	**0**	0	0	**0**	1	**0**	3	**0**	0	**0**
7:45PM	**0**	1	0	**0**	2	**0**	0	**0**	0	**0**
Hourly Total	**0**	1	0	**0**	6	**0**	3	**0**	2	**0**
8:00PM	**0**	0	0	**0**	0	**0**	2	**0**	2	**0**
8:15PM	**0**	0	0	**0**	1	**0**	0	**0**	1	**0**
8:30PM	**0**	0	0	**0**	8	**0**	0	**0**	0	**0**
8:45PM	**0**	2	0	**0**	2	**0**	1	**0**	2	**0**
Hourly Total	**0**	2	0	**0**	11	**0**	3	**0**	5	**0**
9:00PM	**0**	1	0	**0**	5	**0**	0	**0**	0	**0**
9:15PM	**0**	1	0	**0**	0	**0**	1	**0**	0	**0**
9:30PM	**0**	0	0	**0**	0	**0**	0	**0**	1	**0**
9:45PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	2	0	**0**	5	**0**	1	**0**	1	**0**
10:00PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**

Leg Direction	West St Southbound		Washington St Westbound			West St Northbound		Washington St Eastbound		
Time	**App**	Ped*	U	**App**	Ped*	**App**	Ped*	**App**	Ped*	**Int**
10:15PM	**0**	2	0	**0**	2	**0**	0	**0**	0	**0**
10:30PM	**0**	4	0	**0**	0	**0**	1	**0**	0	**0**
10:45PM	**0**	0	0	**0**	1	**0**	0	**0**	3	**0**
Hourly Total	**0**	6	0	**0**	3	**0**	1	**0**	3	**0**
11:00PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
11:15PM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
11:30PM	**0**	2	0	**0**	0	**0**	0	**0**	0	**0**
11:45PM	**0**	2	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	4	0	**0**	0	**0**	0	**0**	0	**0**
2019-06-13 12:00AM	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Hourly Total	**0**	0	0	**0**	0	**0**	0	**0**	0	**0**
Total	**0**	52	0	**0**	93	**0**	18	**0**	39	**0**
% Approach	**-**	-	0%	**-**	-	**-**	-	**-**	-	**-**
% Total	**-**	-	**-**	**-**	-	**-**	-	**-**	-	**-**
Vehicles	**0**	-	0	**0**	-	**0**	-	**0**	-	0
% Vehicles	**-**	-	0%	**-**	-	**-**	-	**-**	-	**-**
Pedestrians	-	51	-	-	85	-	17	-	36	
% Pedestrians	-	98.1%	-	-	91.4%	-	94.4%	-	92.3%	-
Bicycles on Crosswalk	-	1	-	-	8	-	1	-	3	
% Bicycles on Crosswalk	-	1.9%	-	-	8.6%	-	5.6%	-	7.7%	-

*Pedestrians and Bicycles on Crosswalk. U: U-Turn

West & Washington - Bike/Ped - TMC
Wed Jun 12, 2019
Full Length (12 AM-1 AM, 1 AM-2 AM, 2 AM-3 AM, 3 AM-4 AM, 4 AM-5 AM, 5 AM-6 AM, 6 AM-7 AM, 7 AM-8 AM, 8 AM-9 AM, 9 AM-10 AM, 10 AM-11 AM, 11 AM-12 PM, 12 PM-1 PM, 1 PM-2 PM, 2 PM-3 PM, 3 PM-4 PM, 4 PM-5 PM, 5 PM-6 PM, 6 PM-7 PM, 7 PM-8 PM, 8 PM-9 PM, 9 PM-10 PM, 10 PM-11 PM, 11 PM-12 AM (+1))
All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 787750, Location: 39.287801, -77.863643

Provided by: Burgess & Niple
5085 Reed Rd,
Columbus, OH, 43220, US



Chelsea Cousins

From: Gina Balsamo
Sent: Wednesday, March 3, 2021 11:24 AM
To: Skeen, Jeremy P; mmullenax@washco-md.net
Cc: Johnson, Leland W; Chelsea Cousins
Subject: RE: [External] RE: Huntfield and Village at Foxfield - CR13 entrances?

Jeremy,

Thank you for the quick information!

We will use a linear annual growth rate of 1.5238% for WV-51 and 1.3632% for CR-13. I assume these are linear annual growth rates?

We will assume the growth rates cover planned growth in the area, and specific trip generation from the residential development is not needed in addition to this. Let me know if you think otherwise.

Thanks,

Gina Balsamo, PE
Carpenter Marty Transportation
614.656.2429

From: Skeen, Jeremy P <Jeremy.P.Skeen@wv.gov>
Sent: Wednesday, March 3, 2021 11:04 AM
To: mmullenax@washco-md.net; Gina Balsamo <gbalsamo@cmtran.com>
Cc: Johnson, Leland W <Leland.W.Johnson@wv.gov>
Subject: RE: [External] RE: Huntfield and Village at Foxfield - CR13 entrances?

Hello,

The growth rate I have calculated for WV51 Middleway Pike: 1.5238%
This growth rate was calculated using MPO data on the segment of the road closest to Charles Town.

The growth rate I have calculated for CR13 Summit Point Road: 1.3632%
This was calculated using station 193064 on CR13.

If you have anymore questions, feel free to ask.

Thanks,
Jeremy

From: Johnson, Leland W <Leland.W.Johnson@wv.gov>
Sent: Wednesday, March 3, 2021 10:31 AM
To: Skeen, Jeremy P <Jeremy.P.Skeen@wv.gov>
Subject: FW: [External] RE: Huntfield and Village at Foxfield - CR13 entrances?

Jeremy,

Please handle this request. If the growth rate is showing negative values or growth below 0.5%, instead of the typical minimum growth rate of 0.25%, you can go ahead and confirm the 0.5% growth rate to be reasonable.

Leland

From: Mullenax, Matt <mmullenax@washco-md.net>
Sent: Wednesday, March 3, 2021 10:26 AM
To: Gina Balsamo <gbalsamo@cmtran.com>; Patrick Park <ppark@cmtran.com>; Ali Sadeghian <asadeghian@cmtran.com>; Dustin Gohs <dgohs@cmtran.com>
Cc: Carr, Brian E <Brian.E.Carr@wv.gov>; Donohue, Kevin <kdonohue@washco-md.net>; Meadows, Donald R <Donald.R.Meadows@wv.gov>; Johnson, Leland W <Leland.W.Johnson@wv.gov>
Subject: [External] RE: Huntfield and Village at Foxfield - CR13 entrances?

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Hi Gina,

I am cc'ing Don Meadows and Leland Johnson regarding the residential development and growth rates in Charles Town, Jefferson County.

Don/Leland – DOH-Planning and HEPMPO are working on a corridor study along WV51 on the west end of Charles Town.

There are two subdivisions along CR13/Summit Point Road that tie in (Huntfield and Village at Foxfield). Don, I'm guessing Huntfield submitted a TIS years ago for the section along Augustine…do you happen to have a digital copy? Or any insights if the TIS covered the whole development and would need to be redone for future sections?

Leland – Gina w/ Carpenter Marty lists a 0.5% growth rate based on historic traffic counts…is that a fairly reasonable estimate or would you recommend a change?

Thank you for any assistance/insights you can provide.

- Matt

From: Gina Balsamo <gbalsamo@cmtran.com>
Sent: Wednesday, March 3, 2021 9:58 AM
To: Mullenax, Matt <mmullenax@washco-md.net>; Patrick Park <ppark@cmtran.com>; Ali Sadeghian <asadeghian@cmtran.com>; Dustin Gohs <dgohs@cmtran.com>
Cc: Carr, Brian E <Brian.E.Carr@wv.gov>; Donohue, Kevin <kdonohue@washco-md.net>
Subject: RE: Huntfield and Village at Foxfield - CR13 entrances?

WARNING!! This message originated from an **External Source**. Please use proper judgment and caution when opening attachments, clicking links, or responding to this email.
Any claims of being a County official or employee should be disregarded.

Thank you for sharing this. Do you know if there was a traffic impact study completed for this development? If so, can you please send along?

We had previously looked into growth rates to use for our Design Year traffic analysis. Historic traffic counts show negative growth in the area. So we assumed a 0.5% linear annual growth rate to be conservative.

Now that I see this development site plan, I am wondering if our assumptions are still appropriate. We could do trip generation for the development site and add the trips to the network if you think that is most appropriate. If you want to go that route, additional details on the site development may be helpful.

Let me know what you think. Feel free to give me a call to discuss, if needed.

Thanks,

Gina Balsamo, PE
Carpenter Marty Transportation
614.656.2429

From: Mullenax, Matt <mmullenax@washco-md.net>
Sent: Wednesday, March 3, 2021 8:24 AM
To: Patrick Park <ppark@cmtran.com>; Gina Balsamo <gbalsamo@cmtran.com>; Ali Sadeghian <asadeghian@cmtran.com>; Dustin Gohs <dgohs@cmtran.com>
Cc: Carr, Brian E <Brian.E.Carr@wv.gov>; Donohue, Kevin <kdonohue@washco-md.net>
Subject: FW: Huntfield and Village at Foxfield - CR13 entrances?

Good morning CM team,

Attached in the upper left-hand corner is an overall layout of the proposed Huntfield development plan, including access points to Summit Point.

This is a large development that may not be fully built out for another 10 years but was referenced during our field review.

Thanks, Matt

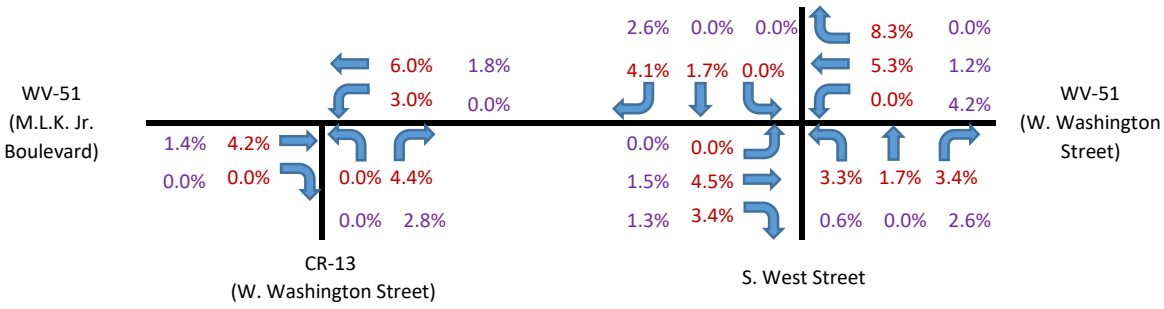
	Year	Period	Scenario	Plate
CARPENTER MARTY transportation	2019		Truck Percentage	

N

AM

PM

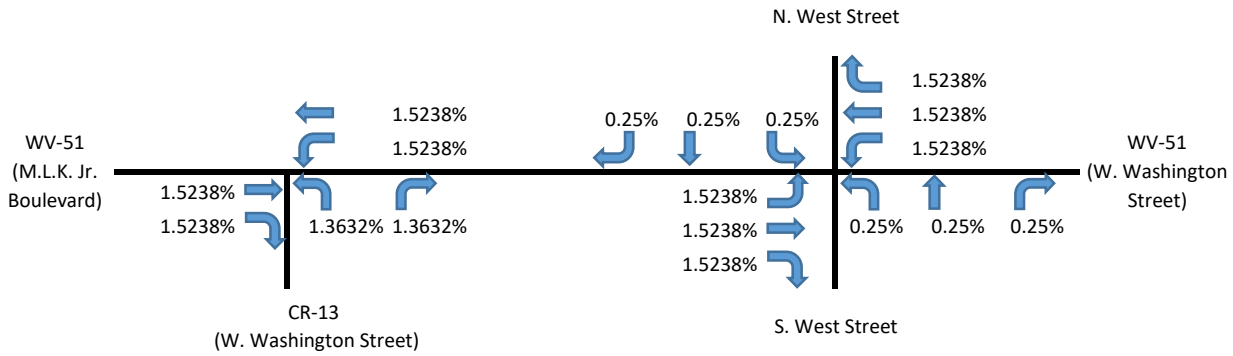
*AM truck percentage was taken from the calculated AM Peak of 11:00-12:00 as classification data for the peak hour of 7:30-8:30 was not available.



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
			Growth Rates	

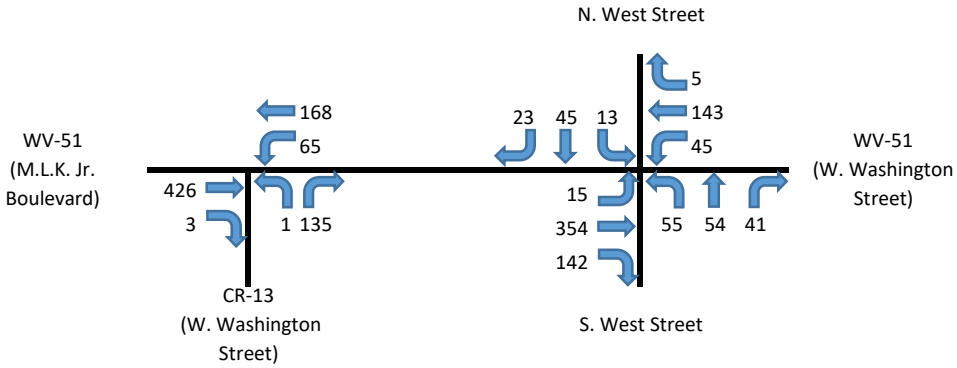
N

*Growth rates for WV-51 (W. Washington Street north of M.L.K. Jr Boulevard & M.L.K. Jr Boulevard) and CR-13 (W. Washington Street south of M.L.K. Jr Boulevard) were provided by WVDOT. Per discussions with WVDOT, a minimum growth rate os 0.25% is common and was thus used for the West Street approaches, were cound data was not available to



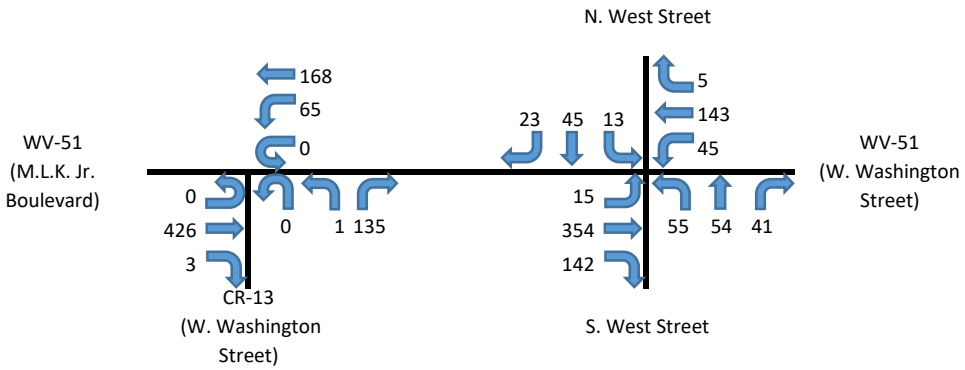
CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	AM	Peak Hour Count Data (7:30-8:30)	

N

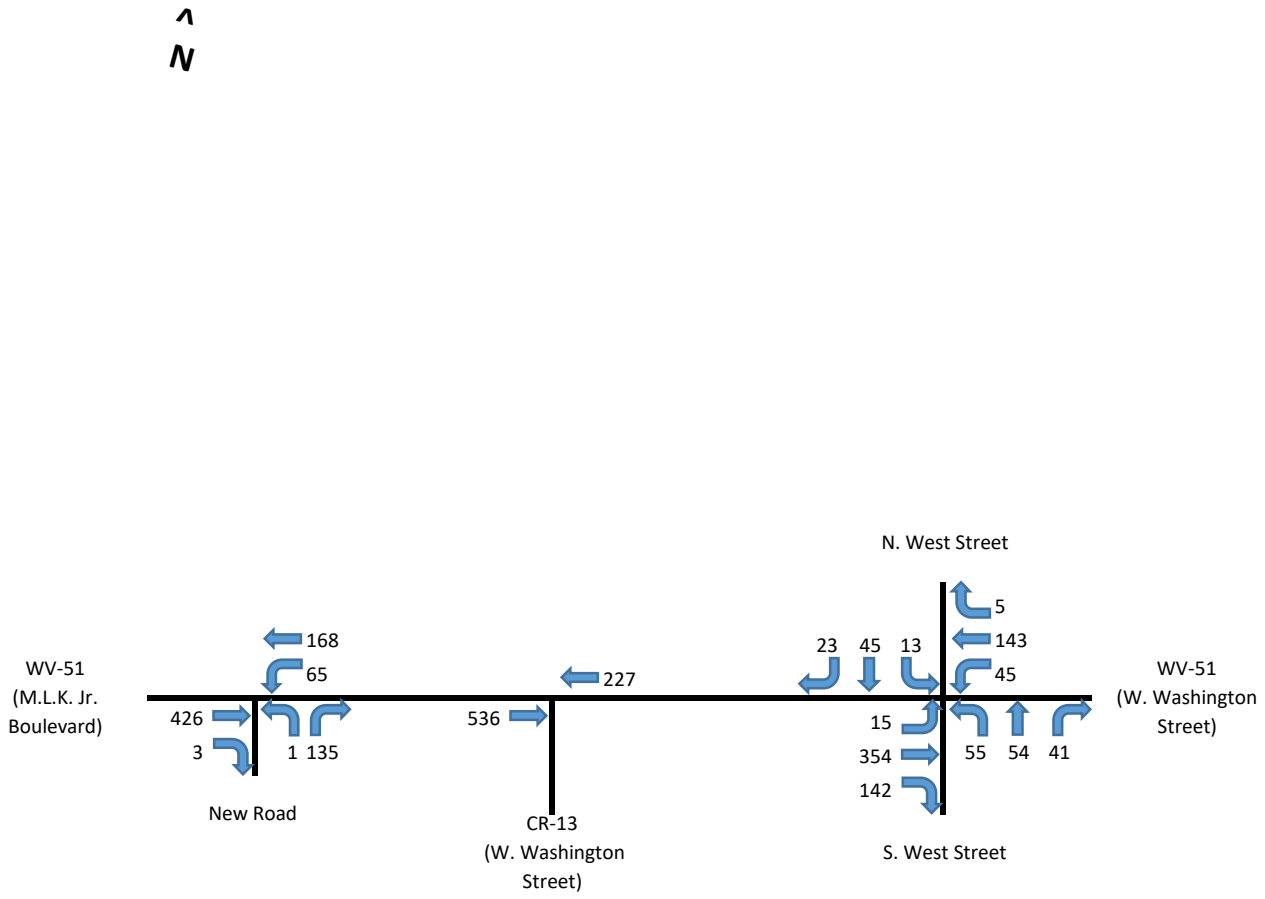


CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	AM	Alternative 1	A1

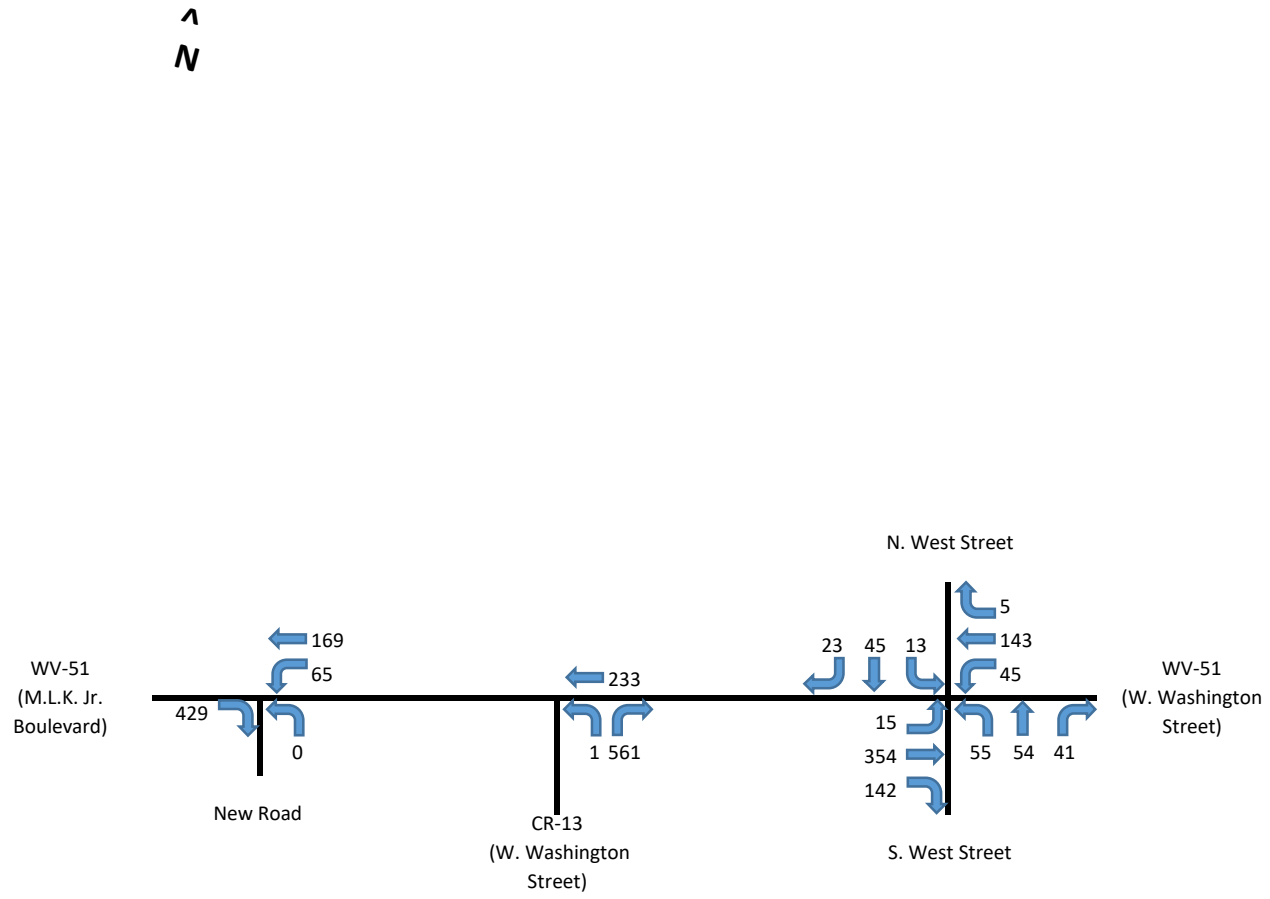
N



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	AM	Alternative 2	B1

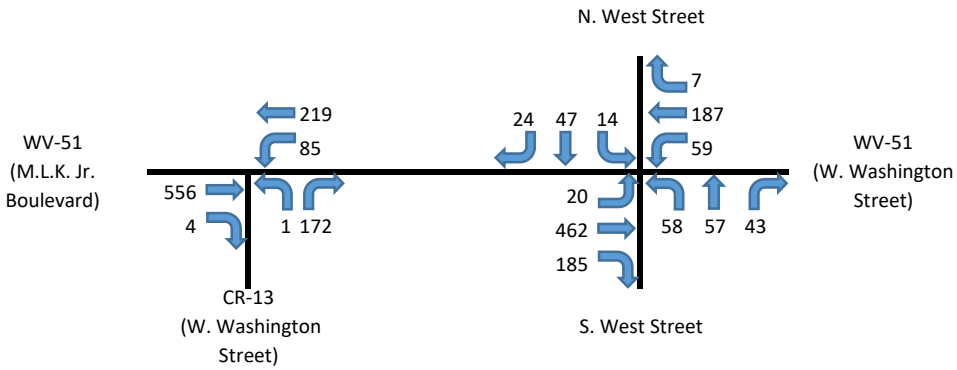


CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	AM	Alternative 3	C1



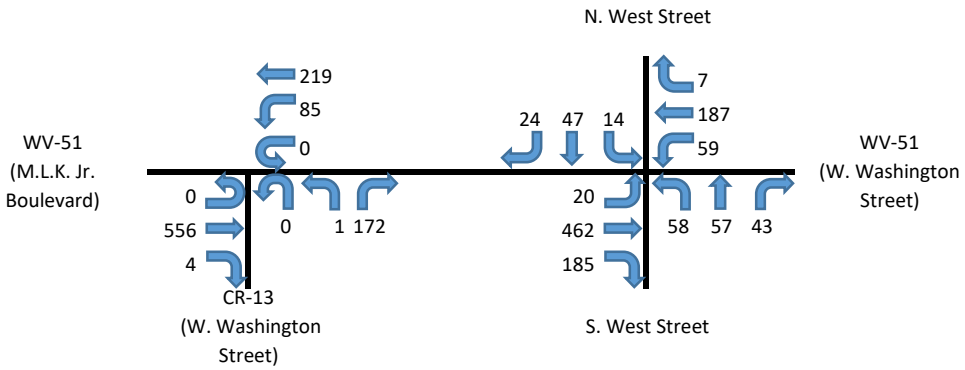
CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2039	AM	Peak Hour Count Data (7:30-8:30)	

N



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2039	AM	Alternative 1	A2

N



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
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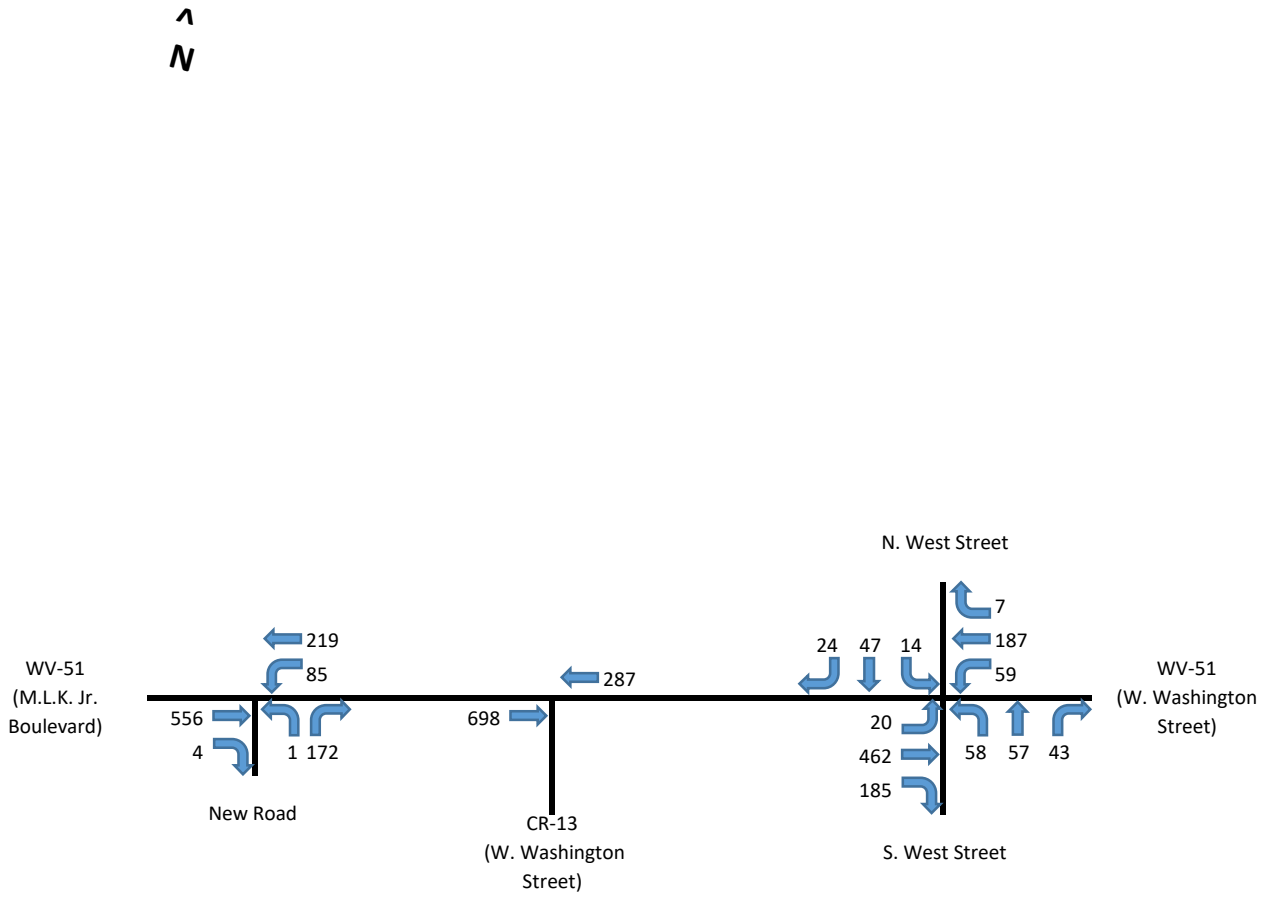

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
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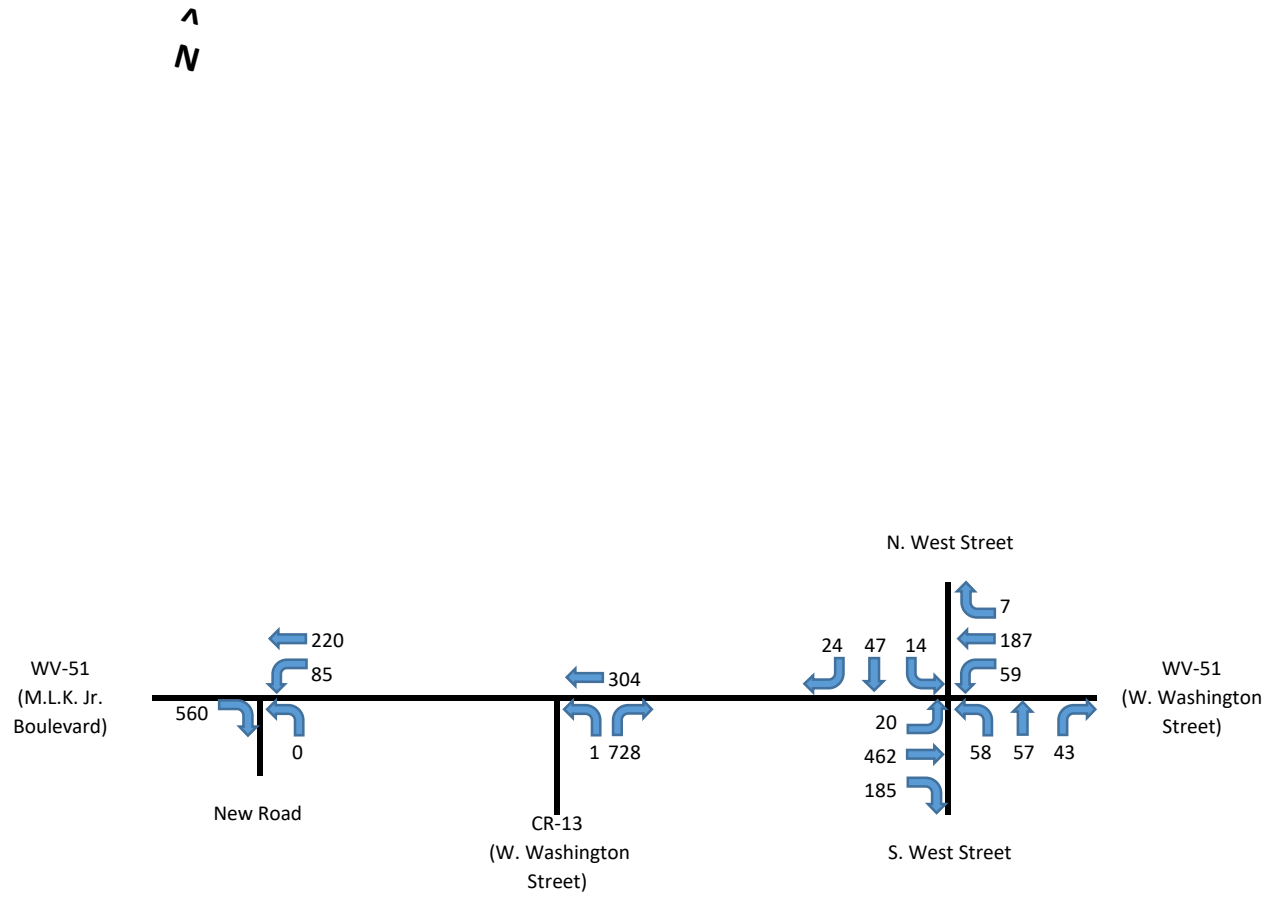

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	PM	Peak Hour Count Data (4:45-5:45)	

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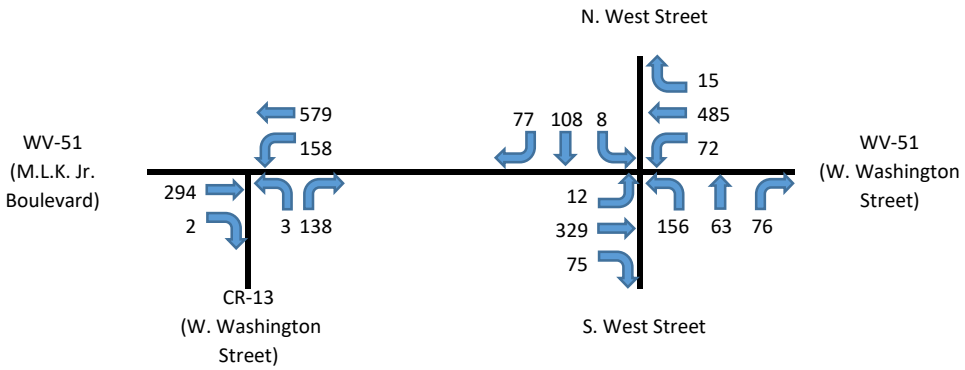

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	PM	Alternative 1	A3

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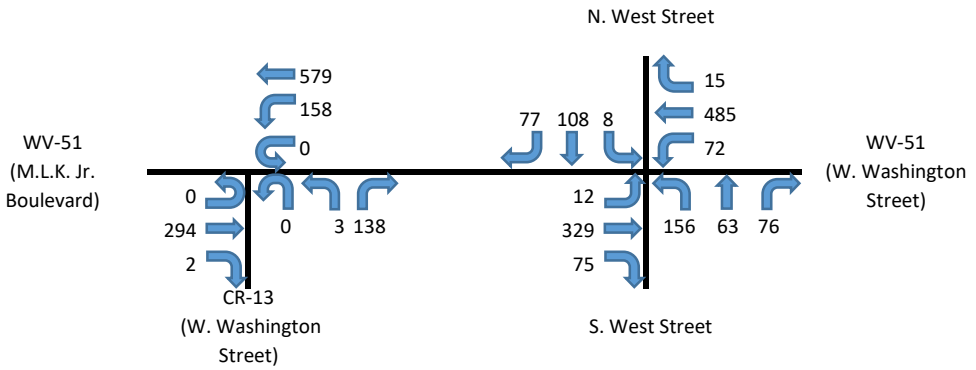
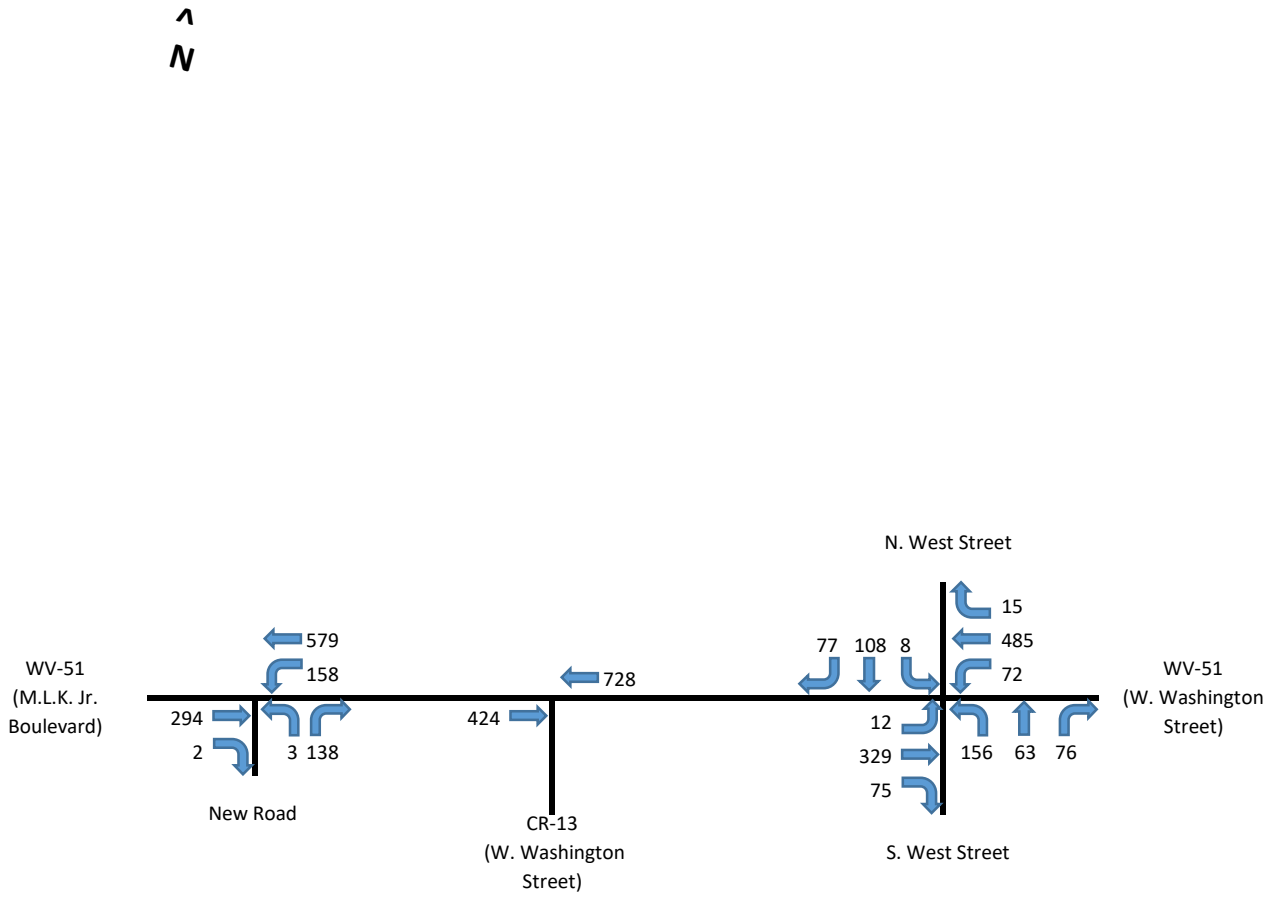
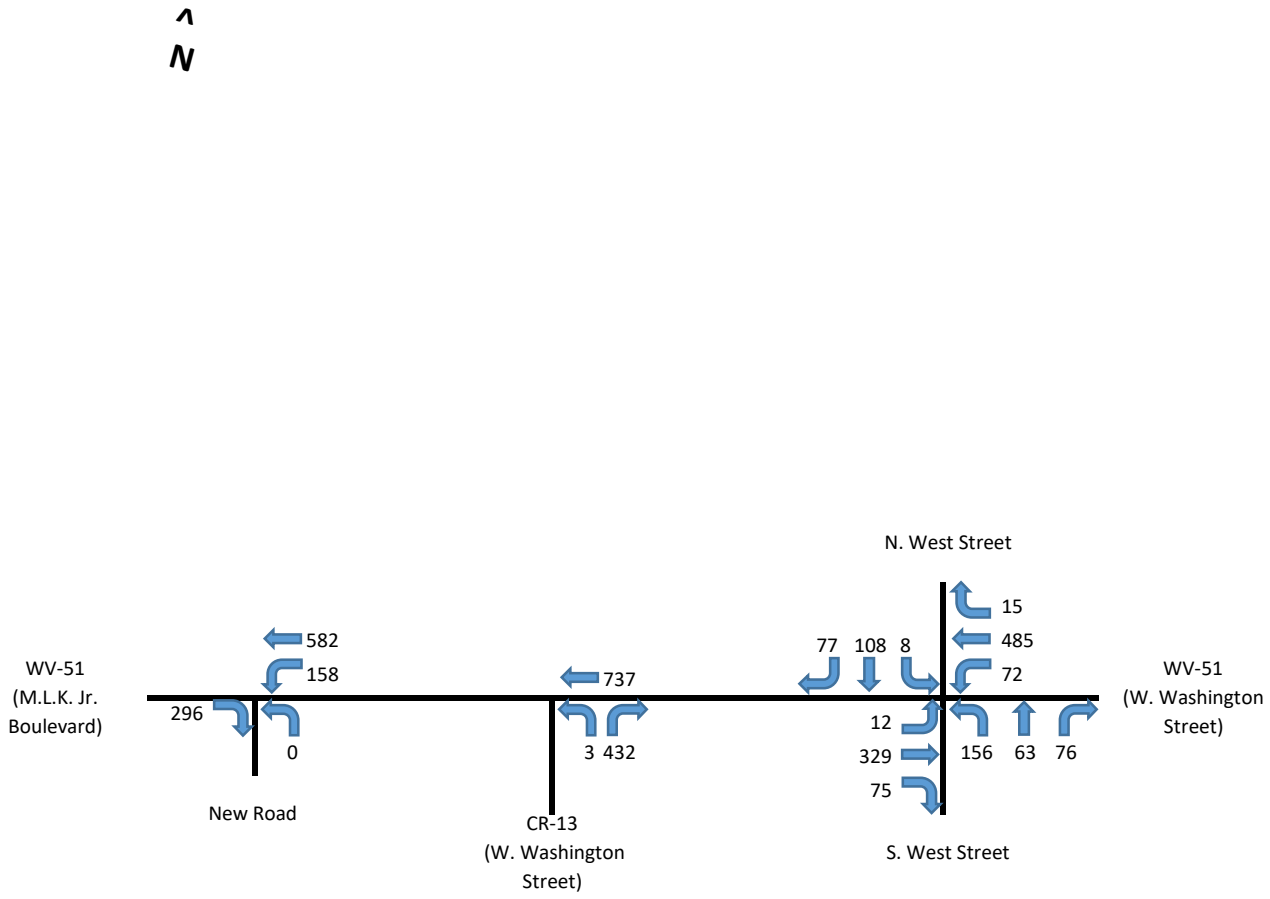


CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	PM	Alternative 2	B3

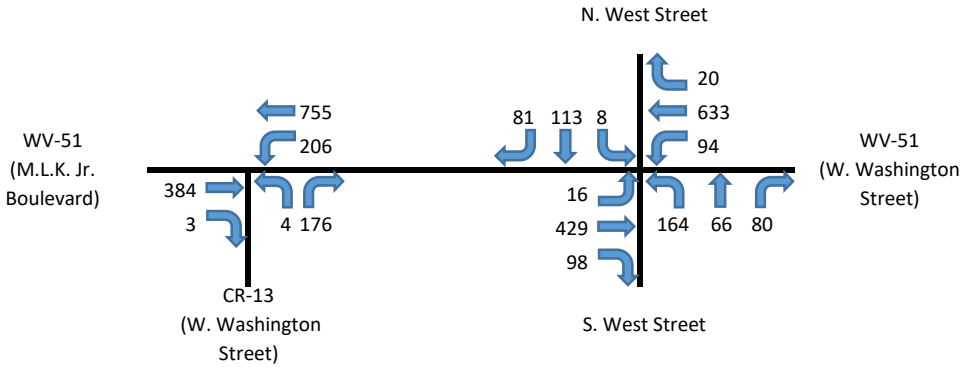


CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2019	PM	Alternative 3	C3



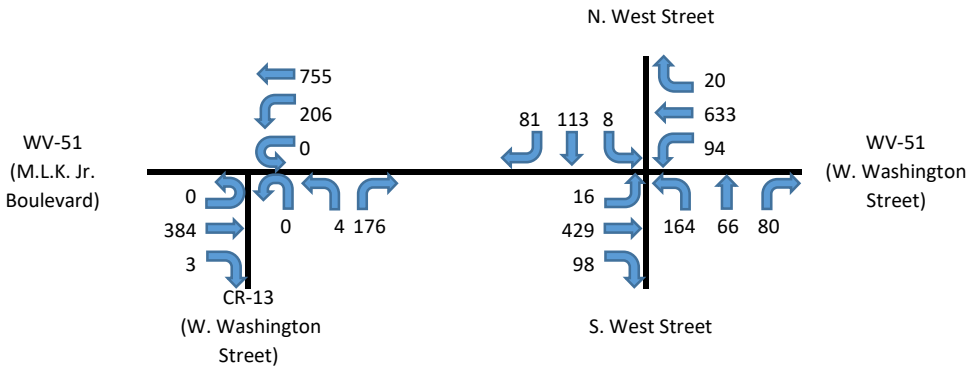
CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2039	PM	Peak Hour Count Data (7:30-8:30)	

N

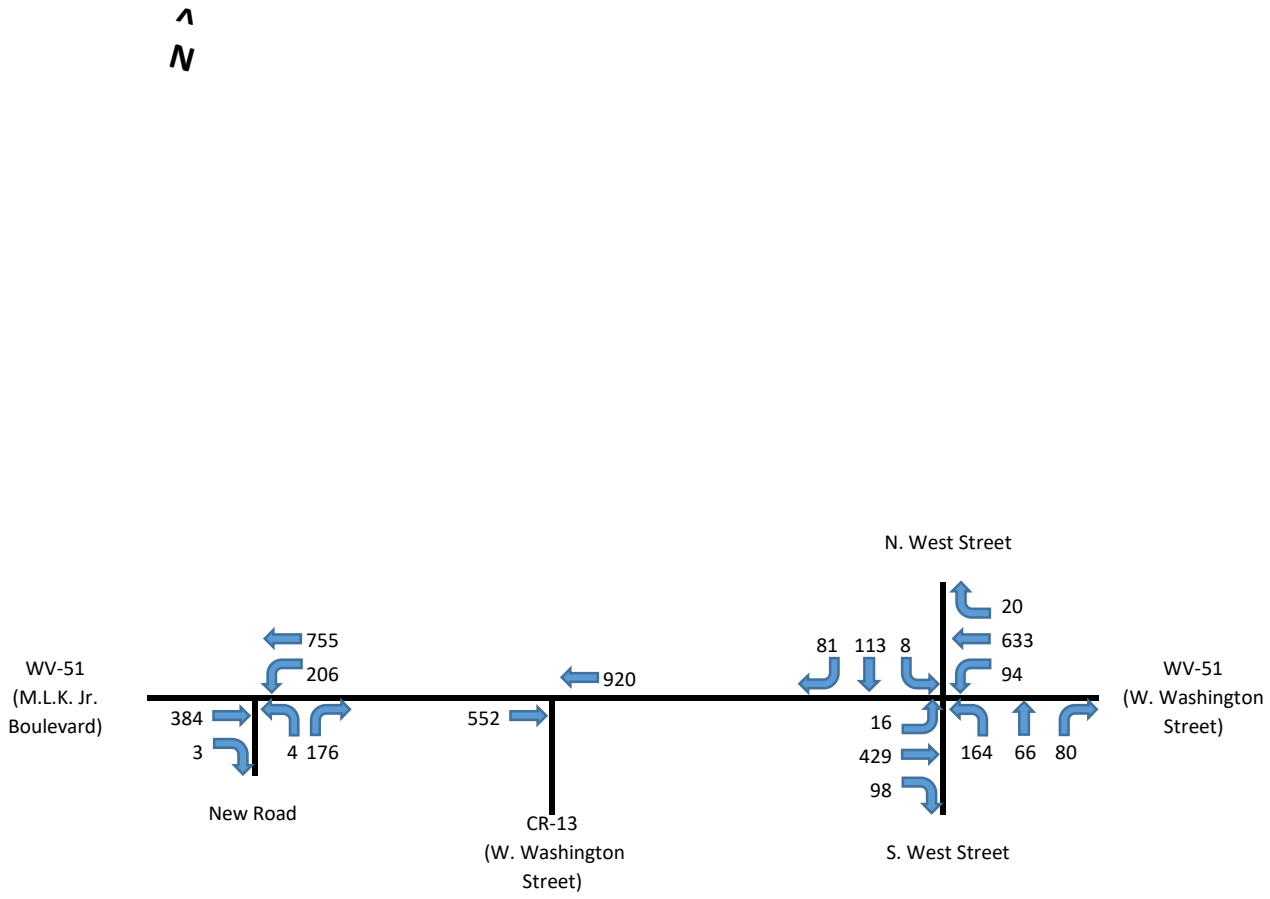


CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2039	PM	Alternative 1	A3

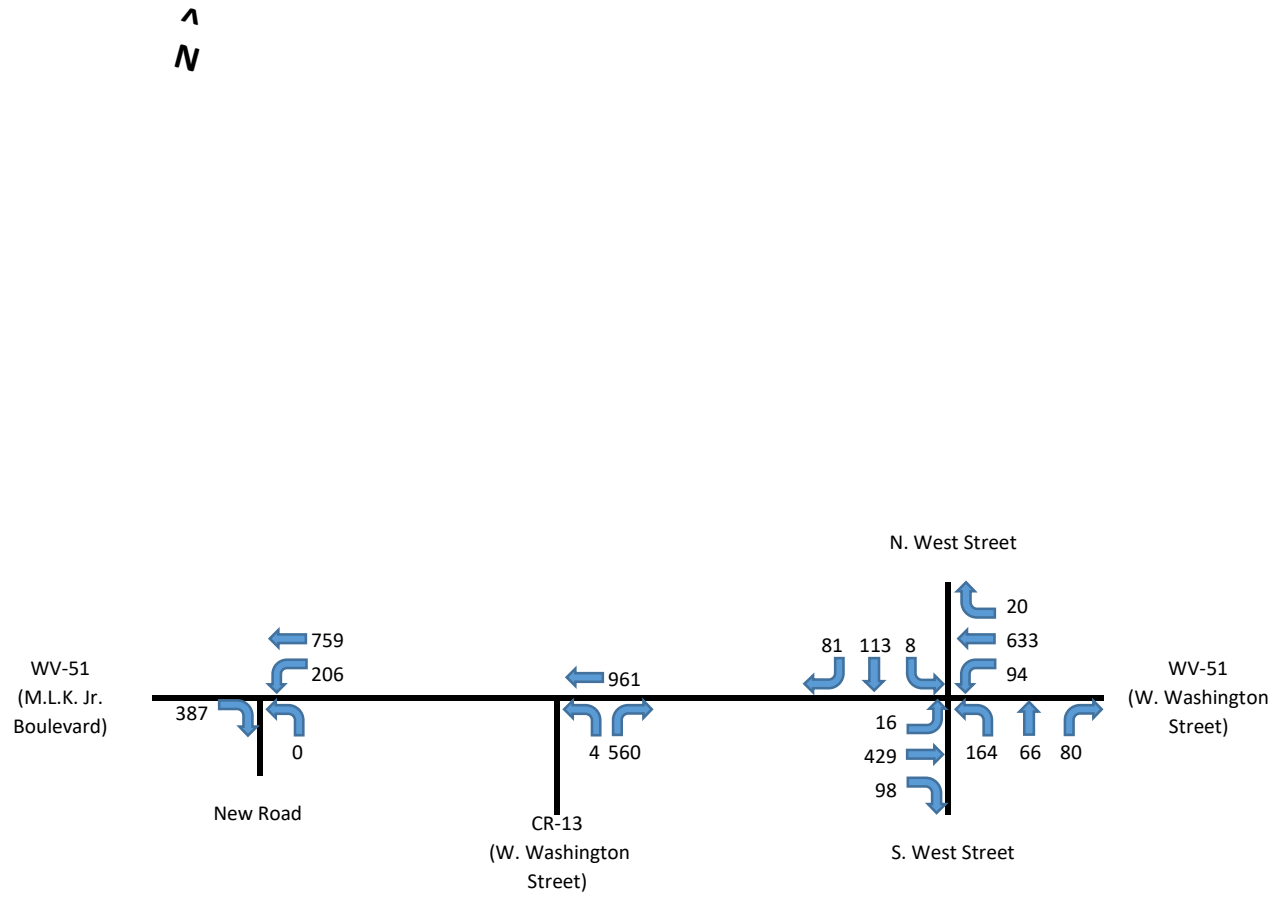
N



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2039	PM	Alternative 2	B3



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2039	PM	Alternative 3	C3



CARPENTER MARTY transportation

WV-51 & NS Train Count Data

Date: April 29, 2021
Time period observed: 7am - 11am
Data collected by: Ryan Mose

Train Crossing #1	
Time gates went down: ~~7:32 AM~~	7:32AM
Time gates went up:	7:33 AM
Approximate number of queued WB vehicles or approximate location of back of queue	3
General observations (e.g., drivers turning around, erratic vehicle movements, queue impacts)	East Bound Queue - 6

Train Crossing #2	
Time gates went down:	9:37am
Time gates went up:	9:38 Am
Approximate number of queued WB vehicles or approximate location of back of queue	3
General observations (e.g., drivers turning around, erratic vehicle movements, queue impacts)	6 - East Bound in Queue

Train Crossing #3	
Time gates went down:	
Time gates went up:	
Approximate number of queued WB vehicles or approximate location of back of queue	
General observations (e.g., drivers turning around, erratic vehicle movements, queue impacts)	

CARPENTER MARTY transportation

WV-51 & NS Train Count Data

Date: April 29, 2021 (Thursday)
Time period observed: 2:00-6:00pm
Data collected by: Matt Mullenax, HEPMPO

Train Crossing #1	
Time gates went down:	2:17 pm
Time gates went up:	2:20 pm
Approximate number of queued WB vehicles or approximate location of back of queue	24
General observations (e.g., drivers turning around, erratic vehicle movements, queue impacts)	EB took much longer to clear; presence of school (3 min vs. 1.5 min) buses slowed down; jammed up intersection, saw at least one car turn left onto Eagle Ave

NB train

Train Crossing #2	
Time gates went down:	3:16 pm
Time gates went up:	3:20 pm
Approximate number of queued WB vehicles or approximate location of back of queue	28
General observations (e.g., drivers turning around, erratic vehicle movements, queue impacts)	from side mirror looked like traffic backed to intersection

SB Train

110 cars

Started raining 3:25pm

- light rain

Train Crossing #3	
Time gates went down:	4:05 pm
Time gates went up:	4:08 pm
Approximate number of queued WB vehicles or approximate location of back of queue	41
General observations (e.g., drivers turning around, erratic vehicle movements, queue impacts)	- Someone turned around in driveway 11065 Millbury Pike after gate went up and turned around - one WB car trying turn left to a residence added to queue clearing time

SB train

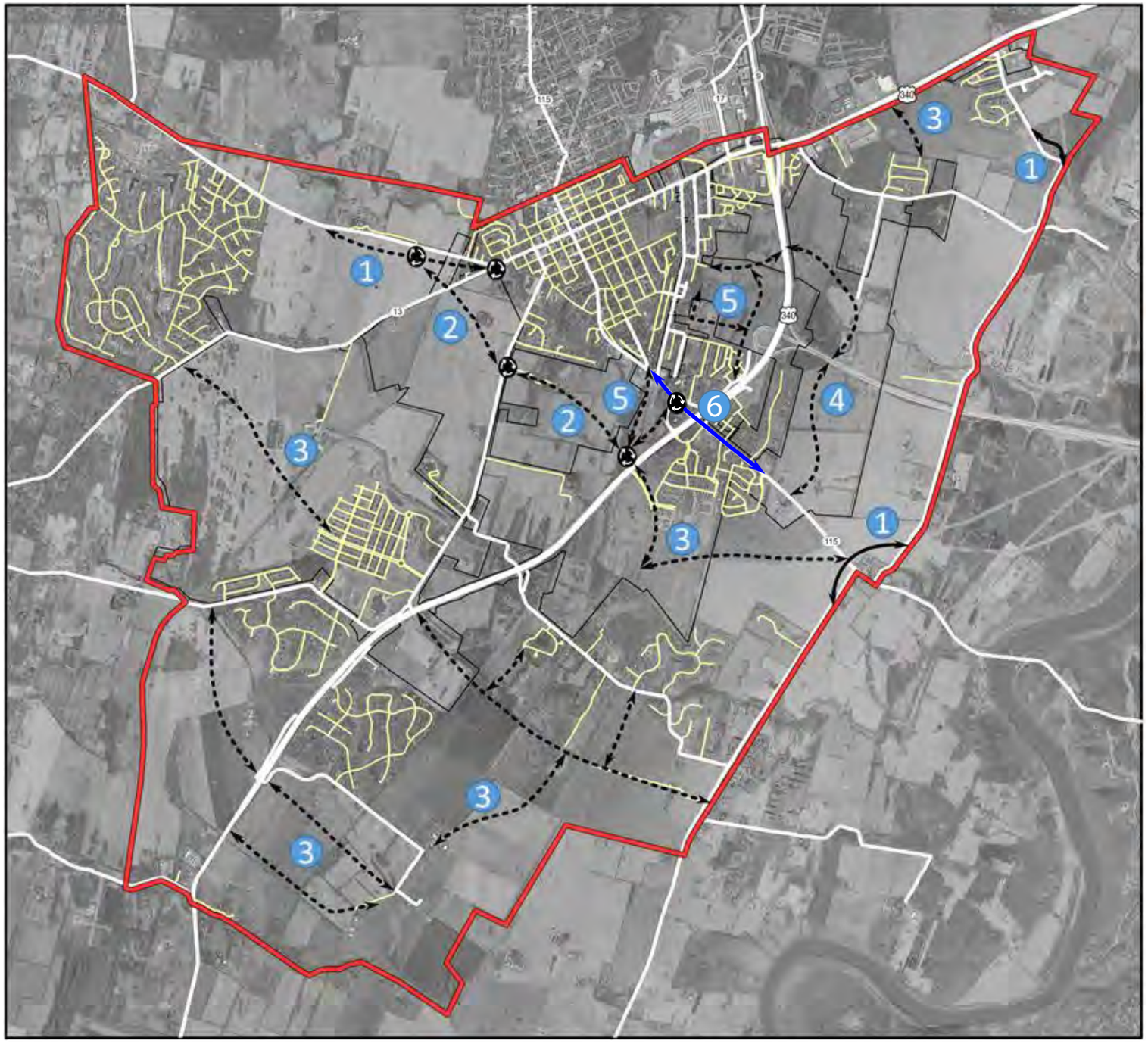
86 cars

Appendix C
Corridor Planning References

Appendix C

CARPENTER MARTY transportation

Future Roadway Network Improvements



Proposed Transportation Improvement

- New Road
- Local Road
- Complete Streets Improvements

Additional Map Elements

- State Road
- Local Road
- Urban Growth Boundary (UGB)
- City Boundary
- New Roundabout

Improvement Description

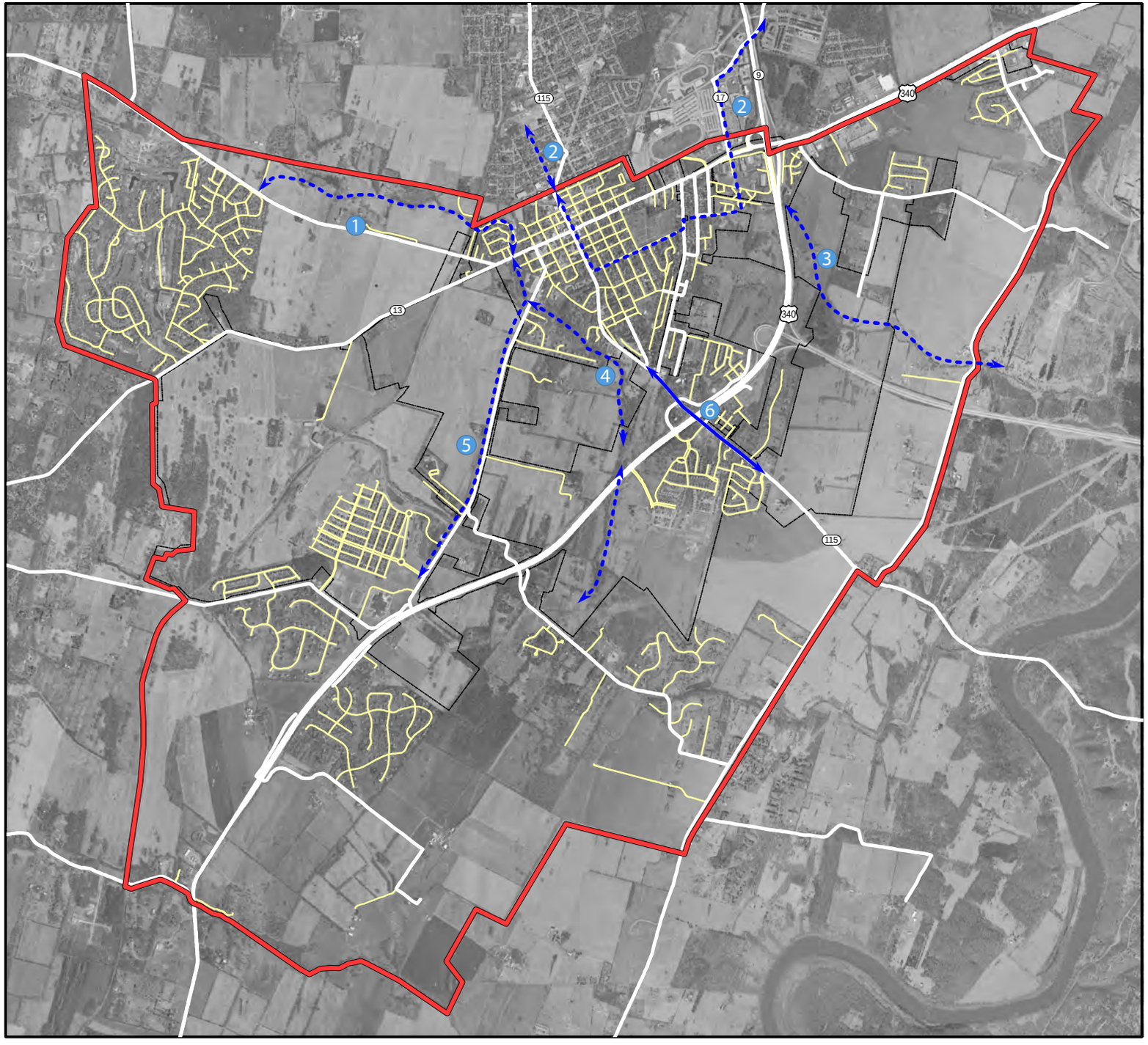
1. Safety improvements to existing roadways
2. New boulevard to connect WV-51 to US-340 to alleviate commercial vehicle congestion in Old Town Charles Town
3. New roadway connections between existing neighborhood developments and regional arterials to expand the grid network
4. New boulevard through the proposed medical arts campus
5. Local roadway enhancements to complete the grid network
6. Complete streets improvements on S. George Street from S. Samuel Street to Crosswinds Drive

0 0.5 1 2 Miles

N

Map created by the City of Charles Town Department of Community Development 2/1/2018

Future Bicycle and Pedestrian Network Improvements



Proposed Transportation Improvement

- New Bicycle & Pedestrian Path
- Complete Streets Improvements

Additional Map Elements

- State Road
- Local Road
- Urban Growth Boundary (UGB)
- City Boundary

Improvement Description

1. Evitts Run Trail Connection to the West End as envisioned in the West End Master Plan
2. New connections to existing networks in Ranson and the Route 9 Bike Trail
3. Cattail Run Trail to expand recreational access to natural resources
4. Evitts Run Trail connecting Evitts Run Park and Willingham Knolls Park
5. Augustine Avenue multi-use path
6. Complete streets improvements on S. George Street from S. Samuel Street to Crosswinds Drive

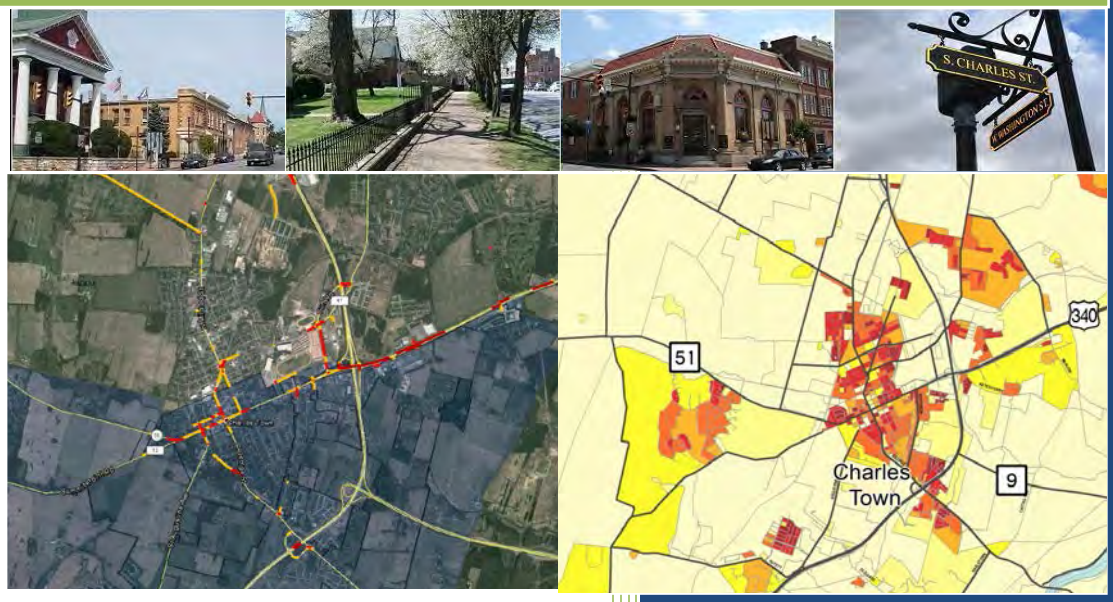
0 0.5 1 2 Miles

N

Map created by the City of Charles Town Department of Community Development 2/1/2018

the city of Charles Town, WV

Transportation Study



Prepared By:

Michael Baker Jr., Inc.

Baker

Prepared For:

City of Charles Town, WV

Hagerstown/Eastern Panhandle MPO

4/23/2014

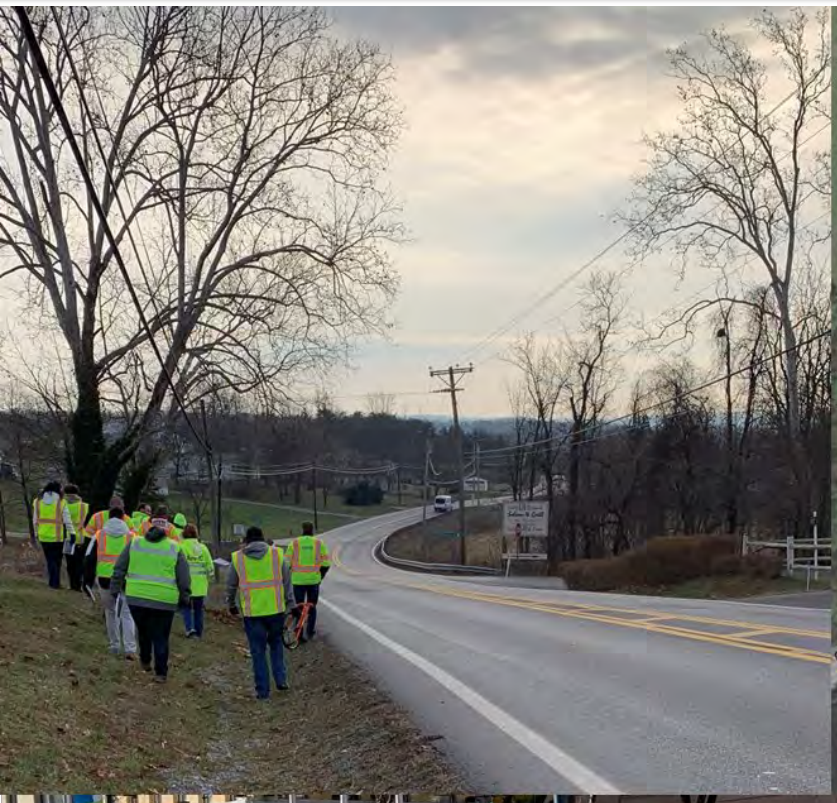
Exhibit 24: Transportation Projects (continued)

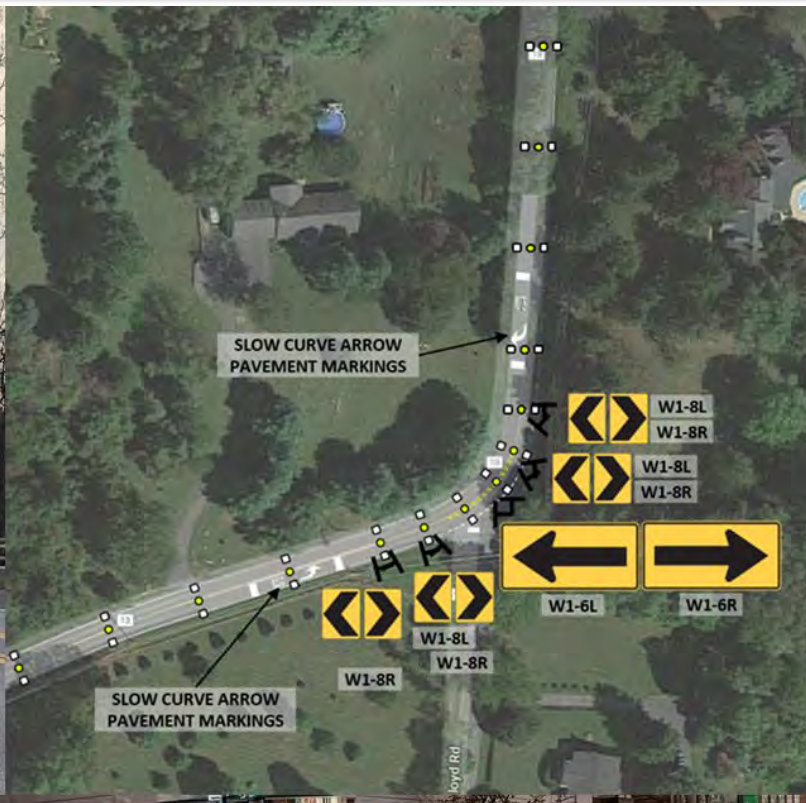
(Project MAP ID does not indicate Priority Order)

Map ID	Roadway / Location	Description	Developer Funded	Identified in LRTP	In Other Studies*	Estimated Cost ($2013)
12	WV 51 Reconstruction	New 2-lane alignment from W. Washington Street to Berkeley County that includes intersection improvements.		x		$9.3M
13	West Washington Street Improvements	Intersection improvements along West Washington Street from WV 51 to South George Street. Includes intersection redesign for WV 51/Summit Point Road/West Washington Street (potential roundabout) and pedestrian improvements along corridor.		x	(1)	$0.8M
14	Lawrence St. CSX Rail Crossing	Signal upgrade or elimination of rail crossing for safety purposes.		x	(1)	$0.4M
15	Church St. CSX Rail Crossing	Elimination of rail crossing for safety purposes.		x	(1)	$0.3M
16	Jefferson Ave. / Washington St.	Intersection improvements to address future congestion.		x	(1)	$4.3M
17	North-South Roadway Connection	New roadway to provide a north-south connection from US 340 to Keyes Ferry Road.	x	x	(2)	$2.5M
18	Keyes Ferry / Southerly Lane	Intersection improvements including possible intersection signalization to address potential future traffic volume increases due to Hospital and new roadway connections.				$0.3M
19	North-South Roadway Connection	New roadway to provide a north-south connection between Keyes Ferry Road and Somerset Blvd.		x	(2)	$1.8M
20	Currie Lane Extension	Extend Currie Lane (possibly as 4-lane roadway) from Leetown Pike to WV 51		x	(1)	$17.8M
21	Beltline Extension	Extend Beltline Avenue from Curie Lane to possible junction with 5th Avenue or Sun Road. Requires multiple rail crossings.		x	(1)	$20.1M
22	US 340 Widening	Extension of turn lanes on US 340 between WV 9 interchange and Jefferson Terrace Road		x	(2)	$4.9M
23	US 340 Frontage Road	East-West frontage road on northern side of US 340 from Jefferson Terrace Road to Halltown Road.		x	(2)	$9.8M
24	US 340/ Country Club Road	Construct interchange at US 340 and Country Club Road. Interchange may be located west of current intersection requiring roadway reconfiguration.		x	(2)	$30.6M

** (1) Ranson – Charles Town Transportation Development Fee Study*

(2) East Gateway Study





Regional Traffic Safety Study

Prepared for:
Hagerstown / Eastern Panhandle MPO

June 25, 2019

Prepared by:
Michael Baker International

Table 5: West Virginia Priority Corridors – Total Crashes (2013-2017)

Map ID*	Corridor Name	Corridor Starting Point	Corridor Ending Point	Location	County	# of Crashes
1	Route 45 (Apple Harvest Drive)	Advent Drive	New York Avenue	Martinsburg	Berkeley	399
2	US 11 (Winchester Avenue)	Loraine Avenue	Raleigh Street	Martinsburg	Berkeley	237
3	Route 51	Railroad Tracks	N. Seminary Street	Charles Town	Jefferson	144
4	Route 9 (Edwin Miller Blvd)	I-81	Meridian Parkway	Martinsburg	Berkeley	141
5	Flowing Spring Road	Jefferson High School	Duffields Marc Train Station	Shenandoah Junction	Jefferson	138
6	Route 9	Railroad Tracks	US 340	Charles Town	Jefferson	132
7	US 340	Candlewood Drive	Route 9	Charles Town	Jefferson	132
8	US 11 (Williamsport Pike to Edwin Miller Boulevard)	Hinton Court	Union Avenue	Martinsburg	Berkeley	113
9	Route 51 (Gerrardstown Road)	Bentley Drive	Sader Drive	Inwood	Berkeley	111
10	I-81 NB	Exit 12 (Apple Harvest Drive)	Exit 13 (King Street)	Martinsburg	Berkeley	108
11	Route 9 (Hedgesville Road)	US Postal Service	Ben Speck Road	Hedgesville	Berkeley	102
12	I-81 NB	Mile 23	Mile 24	Falling Waters	Berkeley	97
13	Route 9 (Hedgesville Rd/Edwin Miller Blvd)	Welltown Road	I-81	Martinsburg	Berkeley	97
14	I-81 NB	Exit 13 (King Street)	Exit 14 (Dry Run Road)	Martinsburg	Berkeley	92
15	Mission Road	Shannondale Springs Chapel	Speaks Lane	Shannondale	Jefferson	91
16	Route 9 (Edwin Miller Blvd)	ALDI	Raleigh Street/Williamsport Pike	Martinsburg	Berkeley	87
17	US 340	Route 9	Mile 10	Charles Town	Jefferson	80
18	I-81 NB	Exit 16 (Route 9)	Mile 17	Martinsburg	Berkeley	78
19	Leetown Road	Marshall Street	Electrical Substation	Middleway	Jefferson	75
20	Summit Point Road	Lloyd Road	McCormack Lane	Charles Town	Jefferson	73

** Bold Map ID [RED] means Corridor overlaps with a TIP/LRTP project*

Table 9: West Virginia Priority Corridors – Total Crash Rate (2013-2017)

Map ID*	Corridor Name	Corridor Starting Point	Corridor Ending Point	Location	County
1	Summit Point Road	McCormack Lane	Lloyd Road	Charles Town	Jefferson
2	US 11 (Winchester Avenue)	Loraine Ave	Raleigh Street	Martinsburg	Berkeley
3	Back Creek Valley Road	Messenger Farm Lane	Sleepy Creek Road	Jones Spring	Berkeley
4	Leetown Road	Electrical Substation	Marshall Street	Charles Town	Jefferson
5	Flowing Spring Road	Jefferson High School	Duffields Marc Train Station	Shenandoah Junction	Jefferson
6	Chestnut Hill Road	Mountain View Drive	Grove Springs Lane	Silver Grove	Jefferson
7	Paynes Ford Road	Compassion Drive	Sulphur Spring Branch	Martinsburg	Berkeley
8	Van Metre Drive	Charles Town Road	Short Road	Kearneysville	Berkeley
9	Ridge Road	Edgewood School Road	The Barns at York Hill	Shepherdstown	Jefferson
10	Grapevine Road	Route 9 Charles Town Road	McDaniel Lane	Martinsburg	Berkeley
11	Wiltshire Road	Jefferson County Health Department	Johnstown Road	Charles Town	Jefferson
12	Mission Road	Shannondale Springs Chapel	Speaks Lane	Shannondale	Jefferson
13	Butts Mill Road	Mauve Road	Baxter Road	Hedgesville	Berkeley
14	Route 51	Seminary Street	Railroad Tracks	Charles Town	Jefferson
15	Hammonds Mill Road	Little Georgetown Road	Vineyard Road	Hedgesville	Berkeley
16	Apple Harvest Drive	Advent Drive	New York Avenue	Martinsburg	Berkeley
17	Cattail Run Road	Route 9	Keyes Ferry Road	Mechanicstown	Jefferson
18	Eagle School Road	Edwin Mill Blvd/Queens Street	Belview Drive	Martinsburg	Berkeley
19	Allensville Road	Gough Run	Beards Crossing Road	Hedgesville	Berkeley
20	Mildred Street	E. 10th Avenue	Wescott Drive	Ranson	Jefferson

** Bold Map ID [RED] means Corridor overlaps with a TIP/LRTP project*

Table 13: West Virginia Priority Corridors – Fatalities and Injuries (2013-2017)

Map ID*	Corridor Name	Corridor Starting Point	Corridor Ending Point	Location	County
1	Route 45 (Apple Harvest Drive)	Advent Drive	New York Avenue	Martinsburg	Berkeley
2	US 11 (Winchester Avenue)	Loraine Ave	Raleigh Street	Martinsburg	Berkeley
3	Route 9 (Edwin Miller Blvd)	I-81	Meridian Parkway	Martinsburg	Berkeley
4	US 340 NB	Candlewood Drive	Route 9	Charles Town	Jefferson
5	Flowing Spring Road	Jefferson High School	Duffields Marc Train Station	Shenandoah Junction	Jefferson
6	Route 51	Railroad Tracks	N. Seminary Street	Charles Town	Jefferson
7	Route 9	Railroad Tracks	US 340	Charles Town	Jefferson
8	Route 9 (Edwin Miller Boulevard)	ALDI	Raleigh Street/Williamsport Pike	Martinsburg	Berkeley
9	Mission Road	Shannondale Springs Chapel	Speaks Lane	Shannondale	Jefferson
10	US 340	Route 9	Mile 10	Charles Town	Jefferson
11	Route 51 (Gerradstown Road)	Bentley Drive	Sader Drive	Inwood	Berkeley
12	Route 9 (Hedgesville Road)	Welltown Road	I-81	Martinsburg	Berkeley
13	Summit Point Road	McCormack Lane	Lloyd Road	Charles Town	Jefferson
14	Route 9 (Hedgesville Road)	US Postal Service	Ben Speck Road	Hedgesville	Berkeley
15	I-81 NB	Exit 13 (King Street)	Exit 14 (Dry Run Road)	Martinsburg	Berkeley
16	Chestnut Hill Road	Mountain View Drive	Grove Springs Lane	Silver Grove	Jefferson
17	Hammonds Mill Road	Little Georgetown Road	Vineyard Road	Hedgesville	Berkeley
18	Grapevine Road	Route 9 Charles Town Road	McDaniel Lane	Martinsburg	Berkeley
19	I-81 NB	Mile 23	Mile 24	Falling Waters	Berkeley
20	US 11	Bunker Hill United Methodist	Mill Creek Intermediate	Bunker Hill	Berkeley

** Bold Map ID [RED] means Corridor overlaps with a TIP/LRTP project*

Table 20: West Virginia Crash Intersections

Map ID	Intersection	Location	County	Crash Count
1	William L Wilson Freeway at US 9	Charles Town	Jefferson	116
2	Apple Harvest Drive at Foxcroft Avenue	Martinsburg	Berkeley	55
3	Apple Harvest Drive at Winchester Avenue	Martinsburg	Berkeley	46
4	Washington Street at Flowing Springs Road	Charles Town	Jefferson	33
5	Edwin Miller Boulevard at Warm Springs Avenue	Martinsburg	Berkeley	27
6	Edwin Miller Boulevard at Williamsport Pike	Martinsburg	Berkeley	26
7	Apple Harvest Drive at New York Avenue	Martinsburg	Berkeley	26
8	Williamsport Pike at Meadow Lane	Martinsburg	Berkeley	24
9	US 340 at Patrick Henry Way	Charles Town	Jefferson	21
10	Queen Street at Woodbury Avenue	Martinsburg	Berkeley	20
11	Middleway Pike at Leetown Road	Kearneysville	Jefferson	19
12	Washington Street at Jefferson Avenue	Charles Town	Jefferson	18
13	Edwin Miller Boulevard at Jennings Drive	Martinsburg	Berkeley	12
14	US 340 at Marlow Road	Charles Town	Jefferson	12
15	Queen Street at Moler Avenue	Martinsburg	Berkeley	12
16	Summit Point Road/WV51/W Washington Street at MLK Jr Boulevard	Charles Town	Jefferson	12
17	Winchester Avenue at Henshaw Road	Bunker Hill	Berkeley	11
18	Washington Street at Mildred Street	Charles Town	Jefferson	10
19	Hedgesville Road at Rock Cliff Drive	Martinsburg	Berkeley	10
20	US 340 at Shepherdstown Pike	Charles Town	Jefferson	9

** Bold Map ID [RED] means Corridor overlaps with a TIP/LRTP project*

*** Further evaluation needed to determine intersection crash rates using approach traffic volumes for each cross-street*

City of Charles Town

Walkability and Connectivity Study

August 2016

Figure 2: Sidewalk Width Conditions within the Priority Study Area

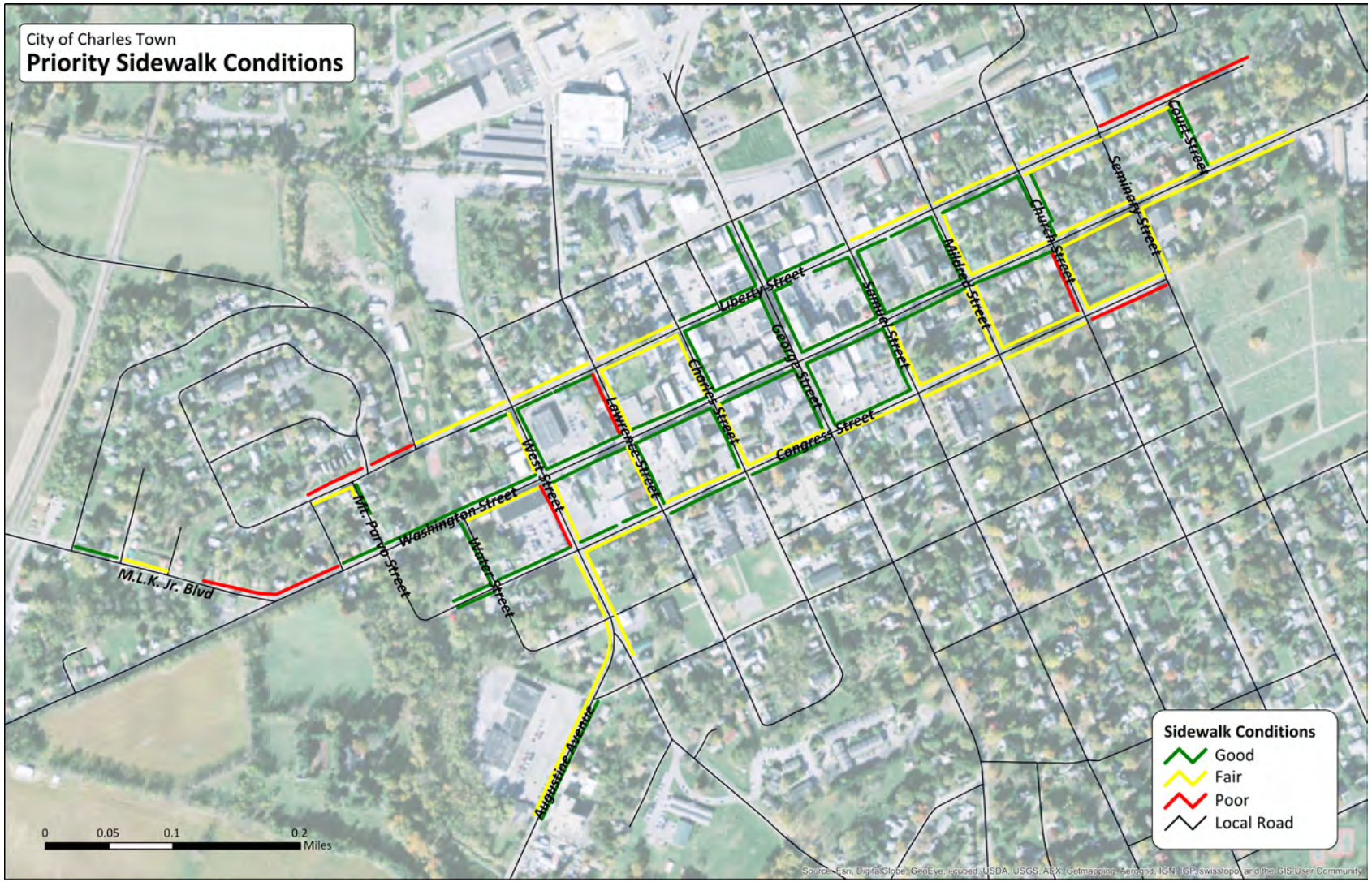


Figure 3: Sidewalk Conditions within the Priority Study Area

Overall Condition Assessment

While both sidewalk width and condition are independently important, overlaying the two assessments provides a better picture of overall condition. Based on the good, fair, poor assessment criteria, there are nine potential combined conditions. Each of these condition assessment combinations has been assigned a relative priority based on the overall condition. Higher priority ratings indicate worse overall condition and more deserving of timely investment. Sidewalk segments that are narrow with poor physical conditions received a higher priority rating, while segments that are in good and fair condition with appropriate width are not rated as highly.

Priority	Width Assessment	Condition Assessment
1	Poor	Poor
2	Fair	Poor
3	Poor	Fair
4	Good	Poor
5	Poor	Good
6	Fair	Fair
7	Good	Fair
8	Fair	Good
9	Good	Good

The majority of the City's sidewalks in the downtown center are in good condition. However, when making sidewalk investments, Charles Town must weigh each of the assessment priorities identified above against areas that have no sidewalks at all. In respect to pedestrian connectivity, the lack of a sidewalk will be more important to address than most of the priority sidewalks based on condition. **Figure 4** depicts sidewalk conditions ratings based on the field assessment and identifies sidewalk gaps in the study area network.

Priority Sidewalk Investment Area

Based on the combined condition ranking, the City of Charles Town should identify priority sidewalk segments for incremental improvements. Probable costs for such improvements, as well as the legal and policy roles and responsibilities are identified in later sections. Using the combined condition rating, there are several specific areas that should be considered for priority investment:

1. **Sidewalk gaps in the immediate downtown area** – filling gaps in sidewalks in a mostly-complete network is the most important improvement that can be made. Sidewalk gaps inhibit mobility and stop pedestrians from travelling further along a path. They can also be unsafe if a pedestrian chooses to continue on and are inherently not ADA compliance.
2. **Repair and/or replace sidewalks with the worst overall condition** – Based on the condition ranking, eight (8) segments have been identified for prioritized improvements. The segments are not identified in any particular order, and should be further prioritized by City officials and local stakeholders.

Figure 5, shown on page 14, displays the priority sidewalk investment area based on the above criteria.

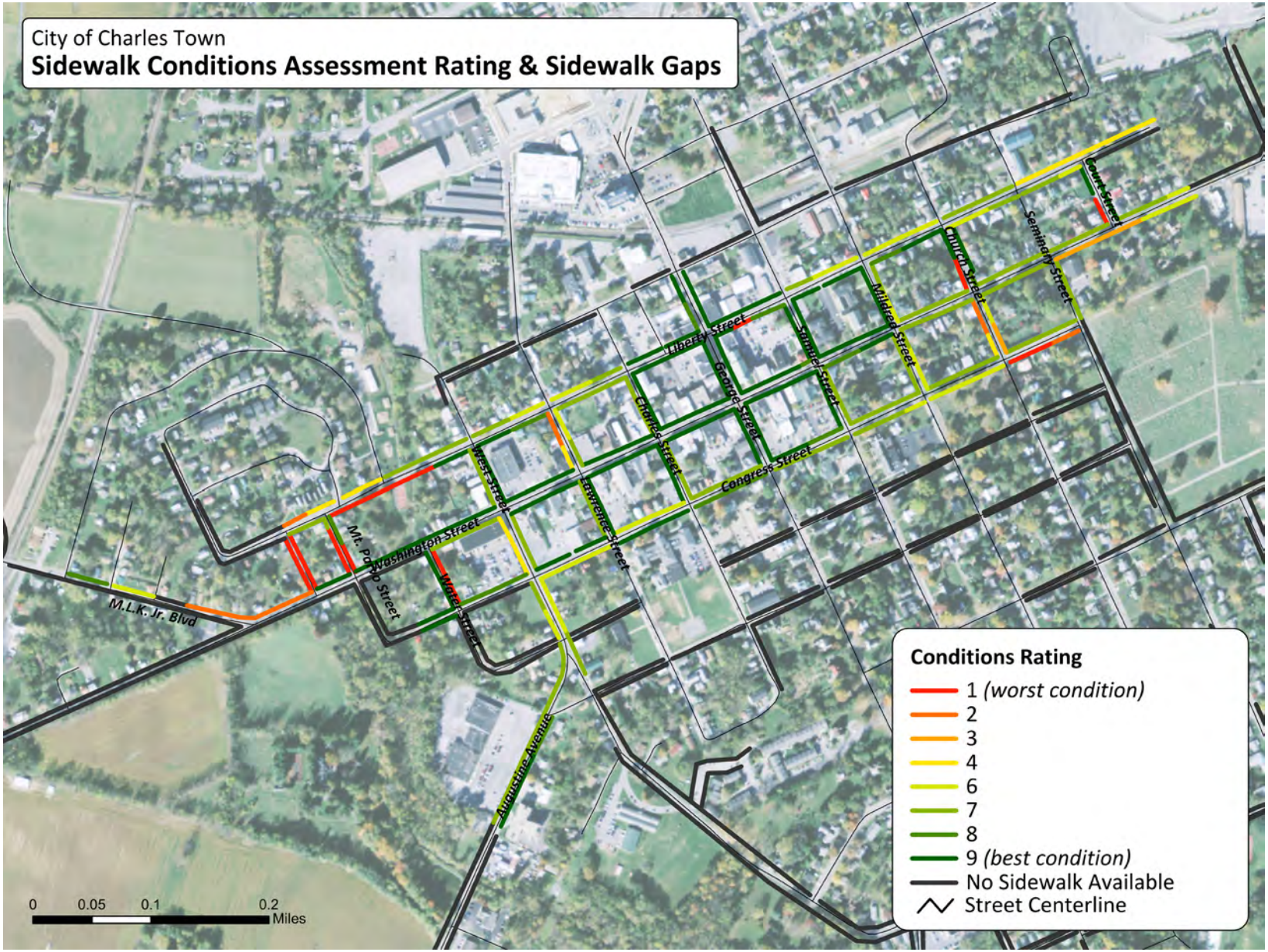


Figure 4: Sidewalk Conditions Assessment Rating & Sidewalk Gaps in Downtown


1
M.L.K. Jr. Blvd & Washington St.


5
Church St.


2
Liberty St.


6
Congress St.


3
West St.


7
Liberty St.


4
Lawrence St.


8
Washington St.

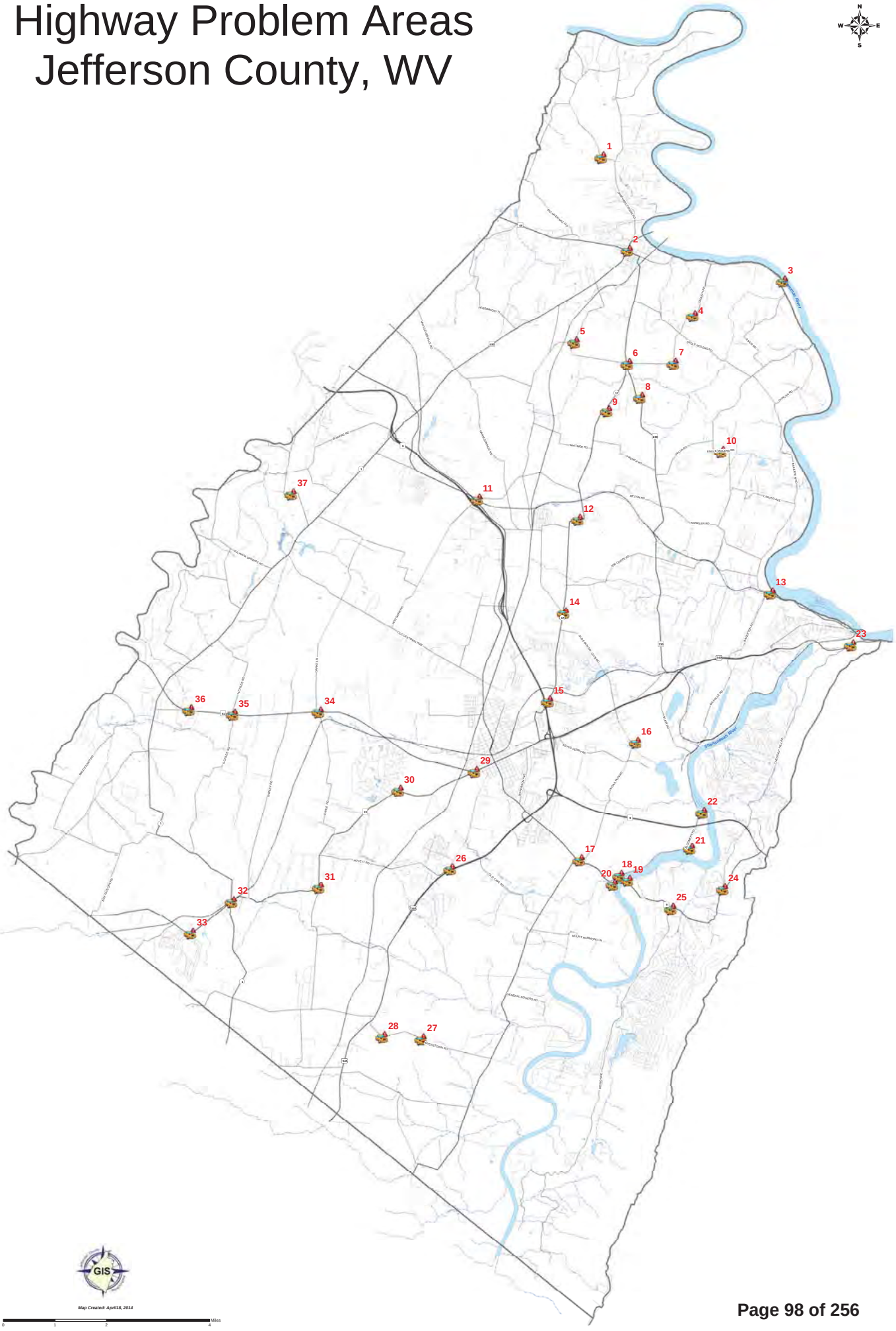
Figure 5: Priority Sidewalk Investment Areas in Downtown Charles Town

ENVISION JEFFERSON 2035

Comprehensive Plan

Jefferson County, West Virginia

Highway Problem Areas
Jefferson County, WV



Highway Problem Areas in Jefferson County			
Number	**Route/Road**	**Location**	**Problem**
1	Scrabble Road	1/4 mile West of Sheperherd Grade Road	90 Degree turn
2	WV 45	Intersection with WV 480, WV 45 and WV 230	Road width through historic area limits turn movements
3	River Road	Near Potomac Ridge Lane	Prone to flooding
4	Trough Road	One mile east of WV 230	90 Degree turn
5	Ridge Road	Intersection with Gardners Lane	Poor intersection angle causing poor visibility
6	Intersection of WV 230 and Flowing Springs Road	Intersection of WV 230, Flowing Springs Road, Gardners Lane and Trough Road	High number of access and turning movements, visibility constraints
7	Trough Road	1/2 mile north of Engle Molers	Two 90 degree turns
8	WV 230	1 mile south of Flowing Springs Rd	S Curve
9	Flowing Springs Road	Approximately 1 south of WV 230 intersection	Curve
10	Engle Molers Road	1/4 mile south of Uvilla	Two 90 degree turns
11	Luther Jones Road	Intersection with Wiltshire Road and Old Charlestown Road	Limited stacking area at light due to tracks. Development is expected to take place in this area over next two decades
12	Flowing Springs Road	Approximately 700 feet north of Shenandoah Junction Road	Two 90 degree turns
13	Bakerton Road	Bakerton Road Tunnel	Sharp Curve, Poor Sight Distance, One Lane Tunnel
14	Daniel Road	Intersection with Flowing Springs Road just north of Old Country Club Road	Poor intersection angle causing poor visibility
15	Sun Road	Intersection with WV 9 West	No merge lane on Route 9
16	Cattail Run Road	Intersection with Marlow RD and Cattail RD	90 Degree turn
17	Cattail Run Road	At intersection with WV 115	Poor sight distance pulling onto WV 115
18	Bloomery Road	1,000 north of WV 115	Within 100 Year Floodplain, periodic flooding
19	Wilt Road	From WV 115 at to dead end	Within 100 Year Floodplain, periodic flooding
20	John Rissler Road	From WV 115 at Bloomery to dead end	Within 100 Year Floodplain, periodic flooding
21	Bloomery Road	2,500 South of Rt. 9 tunnel	90 Degree turn
22	Bloomery Road	1,250 north of WV 115	90 Degree turn
23	US 340 and Chestnut Hill Road	Intersection with Chestnut Hill Road	Inadequate Turning Area onto Chestnut Hill Road; Poor intersection angle causing poor visability, steep slope
24	WV 115	At Chestnut Hill	Poor intersection angle causing poor visibility
25	WV 115	At Mission Road	Multiple Accident Location Long dead-end road with only 1 point of ingress/egress
26	Augustine Ave	Intersection with US 340	Adjacent intersection with Hyuett Road may lead to stacking during peak hours.
27	Meyerstown Road	One mile east of US 340	Two 90 degree turns
28	Meyerstown Road	1/2 mile east of US 340	90 degree turn
29	Summit Point Road	Intersection with WV 51 (Washington St)	Poor intersection angle causing poor visibility, intersection at capacity
30	Summit Point Road	Near Lindsay Drive	90 Degree turn
31	Summit Point Road	Intersection with Lloyd Road	90 Degree Turn
32	Summit Point Road	At intersection with Leetown Road and Summit Point Road	Poor intersection angle causing poor visibility
33	Summit Point Road	In vicinity of Summit Point Raceway	90 Degree turn
34	WV 51	Intersection with Earl and Darke Lane	Misalingment of intersection
35	WV 51	Intersection with Childs Road	Poor sight distance turning onto WV 51
36	Old Middleway Road	Intersection with WV 51	Poor sight distance and intersection angle
37	Paynes Ford Road	3,500 feet west of Leetown Road	Two 90 degree turns

DIRECTION 2045

LONG RANGE TRANSPORTATION PLAN

HEPMPO Hagerstown/Eastern Panhandle Metropolitan Planning Organization

DIRECTION 2045

FINAL REPORT • APRIL 11, 2018

Table 9-10: Jefferson County Fiscally Constrained Projects

Phase	Project ID	Facility	Recommendation	2017 Cost	YOE Cost	Local Priority	Initial Prioritiz. Score	Benefit Cost Score
PHASE 1: Post TIP Short Term (2023-2030)	J105.0	WV 9 / Fairfax Blvd.	Intersection Improvements	$.3M	$.4M	HIGH	9.2	34.2
	J308.0	Huyett Rd. / Augustine Ave.	Intersection improvements	$.4M	$.6M	HIGH	5.1	12.7
	J104.1	US 340 / Country Club Rd. - Phase 1	Restriping / Turn Lanes	$.8M	$1.2M	HIGH	8.1	10.0
	J305.0	CR 34 / Washington St.	Intersection improvements	$1.2M	$1.8M	HIGH	6.7	5.6
	J312.0	Washington St.	Traffic Safety and Pedestrian Mobility Improvements	$.9M	$1.4M	HIGH	5.1	5.4
	J107.0	WV 115	Access management improvements	$.9M	$1.4M	HIGH	4.4	4.7
	J301.0	5th Ave. / Route 9 / Flowing Springs Rd.	Intersection Improvements	$3.0M	$4.4M	HIGH	7.6	2.6
	J310.0	Mildred St. / Old Leetown Pk. / 16th Ave.	Travel lane alignment and turn lane improvements	$3.3M	$5.0M	HIGH	8.4	2.5
	J309.0	Mildred St.	Complete Street Corridor	$3.4M	$5.0M	HIGH	7.2	2.1
	J101.0	US 340	Extension of turn lanes	$5.8M	$8.7M	HIGH	11.7	2.0
	J402.0	New Frontage Road	US 340 frontage road	$.4M	$.7M	LOW	2.5	5.7
	J208.0	Flowing Springs Rd. / Country Club Rd.	Intersection Improvements	$2.0M	$3.0M	LOW	5.7	2.9
	J404.0	New Roadway	New two lane roadway	$1.9M	$2.8M	LOW	2.3	1.2
	J405.2	Rockwool Blvd. - Phase 2	New two lane roadway	$4.7M	$7.0M	MEDIUM	2.5	0.5

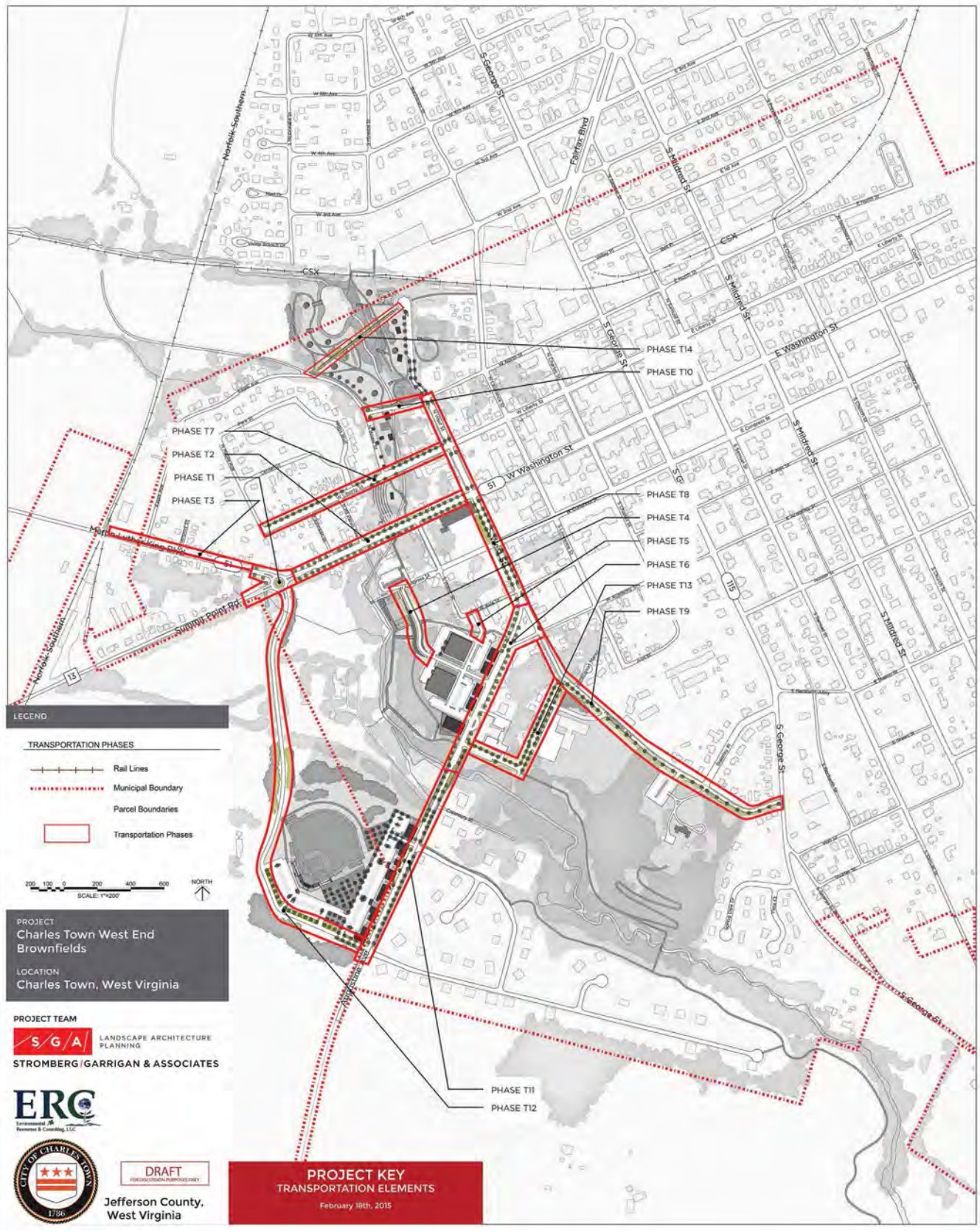
CHARLES TOWN WEST END MASTER PLAN
AND BROWNFIELDS REUSE STRATEGY

CITY OF CHARLES TOWN
CHARLES TOWN, WV
APRIL 2015

DRAFT
FOR DISCUSSION PURPOSES ONLY

ECONOMIC DEVELOPMENT & PARK MASTER PLAN PROJECT KEY

[TRANSPORTATION ELEMENTS]



Transportation Phasing - DRAFT

2/18/2015

Map Key #	Priority	Project	Description
T1	near term	W. Washington Street and Martin Luther King Blvd. roundabout	• Requires ROW acquisition, traffic feasibility study, and historical impact assessment. • Development of a 3-leg roundabout to receive a fourth roundabout leg at a later date. • Priority pedestrian access and safety upgrades and roadway design that reduces design speed of road to 25 mph.
T2	near term	W. Washington Street Streetscape	• Streetscape improvement project that prioritizes and promotes pedestrian access and safety upgrades. These upgrades include installing sidewalks on both sides of Washington street where feasible and widening existing sidewalks; removal of S. Mt. Parvo vehicular access; clearly defined and striped on-street parking areas; ADA accessibility upgrades, reduced travel lane width to promote reduced vehicle speed, on-street stormwater management infrastructure and locate street trees where feasible. • Establish mid-block crossing at Evitts Run park to promote park connectivity and improve trail access.
T3	near term	Martin Luther King Blvd. Sidewalk improvements and safety upgrades	• Address poor pedestrian safety conditions along Martin Luther King Jr. Boulevard from the Norfolk Southern at-grade railroad crossing to the intersection of W. Washington Street. • Traffic calming techniques should be implemented including narrowing of travel lane widths landscape bump-outs and tight street tree spacing. Priority should be placed on installation of sidewalks where feasible. • Pedestrian sidewalks should be generous in width promoting a walkable community that includes safety features, ADA accessibility and techniques that prioritize a pedestrian connection to the retail corridor along W. Washington Street.
T4	near term	Hilldale Shopping Center/ Park Service road	• The Hilldale Shopping Center/park service road provides a strong linkage between the first phase of Evitts Run Greenway/Supertane park improvement project phase and the recommended redevelopment/revitalization scenario for Hilldale Shopping Center. • The Hilldale Shopping Center/park service road also can provide a secondary road connection that would balance and distribute traffic volumes coming to and from the Hilldale Shopping Center.
T5	mid term	Hilldale Shopping Center Development Connector to W. Avis Street	• Much in the same way as the Hilldale Shopping Center/park service road the Hilldale Shopping Center/W. Avis Street connector that can provide an additional secondary road connection to further balance and distribute traffic volumes coming to and from the Hilldale Shopping Center.
T6	near term	Augustine Streetscape improvements Segment A	• Augustine Avenue segment A focuses on streetscape improvements that upgrades and expands pedestrian connections from West Street to the Evitts Run Bridge. • The streetscape project should focus on sidewalk improvements that strengthens pedestrian connections from Fisherman Hall to the Senior housing facility and the Hilldale Shopping Center. • The streetscape improvements should include street trees, opportunities for seating, clearly defined pedestrian crossings that meet ADA accessibility requirements and interpretative design themes.

THE CITY OF
CHARLES TOWN
WEST VIRGINIA

Pavement Condition Assessment

November 25, 2020
Revised February 19, 2021

PREPARED BY:
Michael Baker INTERNATIONAL
80 YEARS

APPENDIX A – NETWORK PRIORITY RATING

THE CITY OF CHARLES TOWN WEST VIRGINIA

UPI	Street Name	Network Priority Ranking	PCI	Length	Width	Area	Road Classification	Roadway Material	Pavement Repair Type	Improvement Funding
1	Ball Circle	4	95.9	549	21.0	11,529	Neighborhood Street	Asphalt	Minor to No Repair	700
2	Brownville Lane	13.75	80.0	1,684	11.0	18,524	Neighborhood Street	Asphalt	Preventitive Maintenance	2,300
3	Corbin Circle	4	97.5	597	21.0	12,537	Neighborhood Street	Asphalt	Minor to No Repair	700
4	Haversack Circle	8	93.5	628	30.0	18,840	Neighborhood Center Street	Asphalt	Minor to No Repair	1,100
5	Hessy Street	13.75	73.0	729	11.0	8,019	Neighborhood Street	Asphalt	Preventitive Maintenance	2,300
6	Johnson Street	4	91.0	322	13.0	4,186	Neighborhood Street	Asphalt	Minor to No Repair	300
8	North Mt. Parvo Ave	13.75	75.0	317	18.0	5,706	Neighborhood Street	Asphalt	Preventitive Maintenance	1,600
10	West Academy Street	13.75	84.0	1,368	22.0	30,096	Neighborhood Street	Asphalt	Preventitive Maintenance	3,700
11	4th Circle	4	86.0	206	36.0	7,416	Neighborhood Street	Asphalt	Minor to No Repair	900
12	4th Street	4	90.0	343	38.0	13,034	Neighborhood Street	Asphalt	Minor to No Repair	800
13	Alla Willa Drive	13.75	84.8	597	38.0	22,686	Neighborhood Street	Asphalt	Preventitive Maintenance	2,800
14	Ann Street	13.75	71.0	375	14.0	5,250	Neighborhood Street	Asphalt	Preventitive Maintenance	1,500
15	Bailey Brooks Way	13.75	75.5	480	22.0	10,560	Neighborhood Street	Asphalt	Preventitive Maintenance	3,000
16	Barksdale Court	4	88.3	317	29.5	9,352	Neighborhood Street	Asphalt	Minor to No Repair	1,200
17	Barksdale Drive	8	93.0	3,627	29.5	106,997	Neighborhood Center Street	Asphalt	Minor to No Repair	5,900
18	Barley Lane	13.75	85.0	628	20.5	12,874	Neighborhood Street	Asphalt	Preventitive Maintenance	1,600
19	Battlefield Drive	4	99.0	1,320	27.0	35,640	Neighborhood Street	Asphalt	Minor to No Repair	2,000
20	Baylor Street	4	94.8	259	17.0	4,403	Neighborhood Street	Asphalt	Minor to No Repair	300
21	Beckwith Street	4	88.8	1,125	16.0	18,000	Neighborhood Street	Asphalt	Minor to No Repair	2,200
22	Bell Place	4	93.0	385	15.0	5,775	Neighborhood Street	Asphalt	Minor to No Repair	400
23	Belvedere Drive	13.75	73.5	1,959	19.0	37,221	Neighborhood Street	Asphalt	Preventitive Maintenance	10,300
24	Blakeley Place	4	81.5	665	40.0	26,600	Neighborhood Street	Asphalt	Preventitive Maintenance	3,300
25	Bouldin Road	4	100.0	1,362	38.0	51,756	Neighborhood Street	Asphalt	Minor to No Repair	0
26	Braddock Street	13.75	99.5	1,917	27.0	51,759	Neighborhood Street	Asphalt	Minor to No Repair	2,900
27	Bramble Drive	23.5	83.0	444	29.0	12,876	Neighborhood Street	Asphalt	Preventitive Maintenance	1,600
28	Brooke Street	4	66.0	935	36.0	33,660	Neighborhood Street	Asphalt	Light Rehabilitation	37,100
29	Bullskin Street	4	100.0	2,049	20.0	40,980	Neighborhood Street	Asphalt	Minor to No Repair	0
30	Burberry Lane	4	99.5	1,563	30.0	46,890	Neighborhood Street	Asphalt	Minor to No Repair	2,600
31	Burnlea Road	4	100.0	1,003	22.0	22,066	Neighborhood Street	Asphalt	Minor to No Repair	0
32	Butler Street	4	97.0	1,246	37.0	46,102	Neighborhood Street	Asphalt	Minor to No Repair	2,600
33	Calmes Street	4	100.0	1,943	21.0	40,803	Neighborhood Street	Asphalt	Minor to No Repair	0
34	Campbell Drive	8	92.8	2,619	28.0	73,332	Neighborhood Center Street	Asphalt	Minor to No Repair	4,100
35	Candlewood Drive	8	100.0	4,092	26.0	106,392	Neighborhood Center Street	Asphalt	Minor to No Repair	0
36	Caperton Drive	4	96.0	639	38.0	24,282	Neighborhood Street	Asphalt	Minor to No Repair	1,400
37	Casorsa Drive	4	100.0	1,304	29.0	37,816	Neighborhood Street	Asphalt	Minor to No Repair	0
38	Center Street	4	89.3	676	28.0	18,928	Neighborhood Street	Asphalt	Minor to No Repair	2,300
39	Chadwick Drive	23.5	99.9	1,262	27.0	34,074	Neighborhood Street	Asphalt	Minor to No Repair	1,900
40	Cherry Tree Drive	13.75	63.0	1,531	20.0	30,620	Neighborhood Street	Asphalt	Light Rehabilitation	33,700
41	Cold Storage Road	8	72.5	2,730	14.0	38,220	Neighborhood Center Street	Asphalt	Preventitive Maintenance	10,600
42	Colonial Drive	4	96.0	1,399	27.0	37,773	Neighborhood Street	Asphalt	Minor to No Repair	2,100
43	Colston Drive	4	98.0	1,156	27.0	31,212	Neighborhood Street	Asphalt	Minor to No Repair	1,800
44	Courier Drive	4	100.0	1,558	31.0	48,298	Neighborhood Street	Asphalt	Minor to No Repair	0
45	Court Street	13.75	77.8	333	43.0	14,319	Neighborhood Street	Asphalt	Preventitive Maintenance	4,000
46	Crab Apple Tree Court	4	100.0	275	22.0	6,050	Neighborhood Street	Asphalt	Minor to No Repair	0
47	Craighill Drive	4	94.3	2,424	29.0	70,296	Neighborhood Street	Asphalt	Minor to No Repair	3,900
48	Crawford Way	4	95.8	343	25.0	8,575	Neighborhood Street	Asphalt	Minor to No Repair	500
49	Creamery Place	13.75	78.5	554	23.0	12,742	Neighborhood Street	Asphalt	Preventitive Maintenance	3,600
50	Cresent Drive	8	86.5	1,822	40.0	72,880	Neighborhood Center Street	Asphalt	Minor to No Repair	8,900
51	Crosswinds Court	4	100.0	60	28.0	1,680	Neighborhood Street	Asphalt	Minor to No Repair	0
52	Crosswinds Drive	8	87.0	5,386	25.0	134,650	Neighborhood Center Street	Asphalt	Minor to No Repair	16,300
53	Davenport Street	4	91.0	407	23.0	9,361	Neighborhood Street	Asphalt	Minor to No Repair	600
54	Davis Street	4	100.0	2,249	27.0	60,723	Neighborhood Street	Asphalt	Minor to No Repair	0
55	Deerbrook Drive	4	100.0	565	28.0	15,820	Neighborhood Street	Asphalt	Minor to No Repair	0
56	Doseff Court	4	100.0	90	25.0	2,250	Neighborhood Street	Asphalt	Minor to No Repair	0
57	East Forrest Avenue	27.5	57.0	1,304	21.0	27,384	Neighborhood Center Street	Asphalt	Light Rehabilitation	45,200
58	East Wall Street	13.75	78.9	1,082	11.5	12,443	Neighborhood Street	Asphalt	Preventitive Maintenance	3,500
59	Eagle Avenue	17.75	81.0	1,605	19.0	30,495	Neighborhood Center Street	Asphalt	Preventitive Maintenance	3,700
60	East Academy Street	4	90.6	1,510	16.0	24,160	Neighborhood Street	Asphalt	Minor to No Repair	1,400
61	East Avis Street	13.75	79.0	1,515	15.0	22,725	Neighborhood Street	Asphalt	Preventitive Maintenance	6,300
62	East Congress Street	17.75	74.8	1,531	42.0	64,302	Neighborhood Center Street	Asphalt	Preventitive Maintenance	17,700
63	East First Avenue	4	90.8	2,075	30.0	62,250	Neighborhood Street	Asphalt	Minor to No Repair	3,500
64	East Liberty Street	8	87.5	2,186	43.0	93,998	Neighborhood Center Street	Asphalt	Minor to No Repair	11,400
65	East North Street	13.75	80.0	1,922	20.0	38,440	Neighborhood Street	Asphalt	Preventitive Maintenance	4,700
66	Edaw Drive	13.75	83.0	523	29.0	15,167	Neighborhood Street	Asphalt	Preventitive Maintenance	1,900
67	Fairleigh Drive	17.75	84.0	1,246	29.0	36,134	Neighborhood Center Street	Asphalt	Preventitive Maintenance	4,400
68	Featherstone Drive	8	99.0	723	29.0	20,967	Neighborhood Center Street	Asphalt	Minor to No Repair	1,200
69	Federal Way	23.5	61.5	433	14.0	6,062	Neighborhood Street	Asphalt	Light Rehabilitation	6,700
70	Flag Court	4	100.0	232	29.0	6,728	Neighborhood Street	Asphalt	Minor to No Repair	0
71	Flowing Springs Way	4	89.7	956	30.0	28,680	Neighborhood Street	Asphalt	Minor to No Repair	3,500
72	Grassy Meadows Road	4	92.0	438	29.0	12,702	Neighborhood Street	Asphalt	Minor to No Repair	700
73	Graywood Lane	4	100.0	253	29.0	7,337	Neighborhood Street	Asphalt	Minor to No Repair	0
74	Green Street	13.75	83.3	380	12.0	4,560	Neighborhood Street	Asphalt	Preventitive Maintenance	600
75	Hickory Tree Court	4	100.0	586	22.0	12,892	Neighborhood Street	Asphalt	Minor to No Repair	0
76	Higgs Boulevard	4	92.5	718	28.0	20,104	Neighborhood Street	Asphalt	Minor to No Repair	1,200
77	Hillside Drive	4	94.3	1,832	24.0	43,968	Neighborhood Street	Asphalt	Minor to No Repair	2,500
78	Holly Springs Drive	4	99.6	855	28.0	23,940	Neighborhood Street	Asphalt	Minor to No Repair	1,400
79	Holmes Way	4	99.5	327	25.0	8,175	Neighborhood Street	Asphalt	Minor to No Repair	500
80	Hughs Road	4	96.0	2,830	39.0	110,370	Neighborhood Street	Asphalt	Minor to No Repair	6,100
81	Hunter Street	4	91.1	2,746	28.0	76,888	Neighborhood Street	Asphalt	Minor to No Repair	4,300
82	Jenkins Way	13.75	81.5	660	12.5	8,250	Neighborhood Street	Asphalt	Preventitive Maintenance	1,000
83	Lincoln Drive	13.75	79.5	422	28.0	11,816	Neighborhood Street	Asphalt	Preventitive Maintenance	3,300
84	Lord Fairfax Street	8	96.7	6,721	17.0	114,257	Neighborhood Center Street	Asphalt	Minor to No Repair	6,300
85	Maple Avenue	23.5	68.0	618	19.0	11,742	Neighborhood Street	Asphalt	Light Rehabilitation	13,000
86	Maple Tree Drive	13.75	85.0	285	20.0	5,700	Neighborhood Street	Asphalt	Preventitive Maintenance	700
87	Mason Street	13.75	81.0	1,563	13.0	20,319	Neighborhood Street	Asphalt	Preventitive Maintenance	2,500
88	Moore Court	4	92.5	301	29.0	8,729	Neighborhood Street	Asphalt	Minor to No Repair	500
89	Mordington Avenue	4	100.0	1,605	24.0	38,520	Neighborhood Street	Asphalt	Minor to No Repair	0
90	Mordington Circle	4	90.0	153	20.0	3,060	Neighborhood Street	Asphalt	Minor to No Repair	200
91	Morgan Street	13.75	84.0	206	10.0	2,060	Neighborhood Street	Asphalt	Preventitive Maintenance	300
92	Morison Street	13.75	81.0	3,057	21.0	64,197	Neighborhood Street	Asphalt	Preventitive Maintenance	7,800
93	Mulberry Tree Street	4	97.5	718	40.0	28,720	Neighborhood Street	Asphalt	Minor to No Repair	1,600
94	North Church Street	13.75	73.0	649	29.0	18,821	Neighborhood Street	Asphalt	Preventitive Maintenance	5,200
95	North Mildred Street	8	88.5	1,320	35.0	46,200	Neighborhood Center Street	Asphalt	Minor to No Repair	5,600
96	North Preston Street	13.75	84.0	855	26.5	22,658	Neighborhood Street	Asphalt	Preventitive Maintenance	2,800
97	North Samuel Street	17.75	75.3	1,320	34.0	44,880	Neighborhood Center Street	Asphalt	Preventitive Maintenance	12,400
98	North Seminary Street	13.75	79.0	628	15.0	9,420	Neighborhood Street	Asphalt	Preventitive Maintenance	2,600
99	North Water Street	17.75	85.0	803	19.0	15,257	Neighborhood Center Street	Asphalt	Preventitive Maintenance	1,900
100	North West Street	13.75	78.0	861	32.0	27,552	Neighborhood Street	Asphalt	Preventitive Maintenance	7,600
101	Nathaniel Drive	13.75	80.8	887	27.0	23,949	Neighborhood Street	Asphalt	Preventitive Maintenance	2,900
102	North Charles Street	13.75	72.0	639	21.0	13,419	Neighborhood Street	Asphalt	Preventitive Maintenance	3,700
103	North Lawrence Street	13.75	79.0	1,341	28.0	37,548	Neighborhood Street	Asphalt	Preventitive Maintenance	10,400
104	Northwinds Drive	8	97.9	1,431	20.5	29,336	Neighborhood Center Street	Asphalt	Minor to No Repair	1,700
105	Oden Drive	4	100.0	602	38.0	22,876	Neighborhood Street	Asphalt	Minor to No Repair	0
106	Okanagan Drive	4	100.0	1,357	29.0	39,353	Neighborhood Street	Asphalt	Minor to No Repair	0
107	Opera House Way	13.75	84.5	317	19.0	6,023	Neighborhood Street	Asphalt	Preventitive Maintenance	800
108	Park Street	4	88.0	649	18.0	11,682	Neighborhood Street	Asphalt	Minor to No Repair	1,500
109	Payne Street	4	95.8	803	28.0	22,484	Neighborhood Street	Asphalt	Minor to No Repair	1,300
110	Pentictor Way	4	100.0	1,014	21.0	21,294	Neighborhood Street	Asphalt	Minor to No Repair	0
111	Perry Drive	4	95.5	1,199	29.0	34,771	Neighborhood Street	Asphalt	Minor to No Repair	2,000
112	Prospect Hill Boulebard	8	96.0	6,220	29.0	180,380	Neighborhood Center Street	Asphalt	Minor to No Repair	10,000
113	Revere Drive	4	96.0	1,278	32.0	40,896	Neighborhood Street	Asphalt	Minor to No Repair	2,300
114	Rider Court	4	94.8	433	17.0	7,361	Neighborhood Street	Asphalt	Minor to No Repair	500
115	Rosemont Way	4	100.0	1,769	10.0	17,690	Neighborhood Street	Asphalt	Minor to No Repair	0
116	South Charles Street	23.5	68.9	1,283	32.0	41,056	Neighborhood Street	Asphalt	Light Rehabilitation	45,200
117	South Lawrence Street	13.75	70.5	1,315	26.0	34,190	Neighborhood Street	Asphalt	Preventitive Maintenance	9,500
118	South Water Street	13.75	78.5	623	19.0	11,837	Neighborhood Street	Asphalt	Preventitive Maintenance	3,300
119	South Reymann Street	4	98.5	169	26.0	4,394	Neighborhood Street	Asphalt	Minor to No Repair	300
120	Santmyer Way	8	100.0	1,457	20.5	29,869	Neighborhood Center Street	Asphalt	Minor to No Repair	0
121	Seaton Lane	4	100.0	692	29.0	20,068	Neighborhood Street	Asphalt	Minor to No Repair	0
122	Shutt Court	4	98.0	354	29.0	10,266	Neighborhood Street	Asphalt	Minor to No Repair	600
123	Shutter Street	4	89.8	1,040	14.0	14,560	Neighborhood Street	Asphalt	Minor to No Repair	1,800
124	Silverleaf Drive	4	99.9	676	28.0	18,928	Neighborhood Street	Asphalt	Minor to No Repair	1,100
125	South Church Street	13.75	85.0	2,640	35.0	92,400	Neighborhood Street	Asphalt	Preventitive Maintenance	11,200
126	South Fritts Way	4	91.5	333	12.0	3,996	Neighborhood Street	Asphalt	Minor to No Repair	300
128	South Mildred Street	8	87.4	3,078	35.0	107,730	Neighborhood Center Street	Asphalt	Minor to No Repair	13,100
129	South Mount Parvo Avenue	8	86.0	348	10.0	3,480	Neighborhood Center Street	Asphalt	Minor to No Repair	500

UPI	Street Name	Network Priority Ranking	PCI	Length	Width	Area	Road Classification	Roadway Material	Pavement Repair Type	Improvement Funding
130	South Samuel Street	27.5	70.0	4,551	18.0	81,918	Neighborhood Center Street	Asphalt	Light Rehabilitation	22,600
131	South Seminary Street	13.75	81.5	2,645	25.0	66,125	Neighborhood Street	Asphalt	Preventitive Maintenance	8,100
132	South West Street	16	94.0	1,214	24.0	29,136	Major Collector Street	Asphalt	Minor to No Repair	1,700
133	Southwinds Drive	4	100.0	655	38.0	24,890	Neighborhood Street	Asphalt	Minor to No Repair	0
134	Spanos Drive	4	93.8	771	38.0	29,298	Neighborhood Street	Asphalt	Minor to No Repair	1,700
135	Spring Dale Drive	13.75	84.5	671	29.0	19,459	Neighborhood Street	Asphalt	Preventitive Maintenance	2,400
136	Streeternway Drive	4	87.0	766	29.0	22,214	Neighborhood Street	Asphalt	Minor to No Repair	2,700
137	Tornworth Drive	4	100.0	607	29.5	17,907	Neighborhood Street	Asphalt	Minor to No Repair	0
138	Union Ridge Drive	13.75	82.7	1,610	27.0	43,470	Neighborhood Street	Asphalt	Preventitive Maintenance	5,300
139	Valley Place	4	87.0	391	17.0	6,647	Neighborhood Street	Asphalt	Minor to No Repair	900
140	Vinton Lane	4	94.5	2,930	11.0	32,230	Neighborhood Street	Gravel	Minor to No Repair	1,800
141	Vista Court	13.75	77.5	438	29.0	12,702	Neighborhood Street	Asphalt	Preventitive Maintenance	3,500
142	West Avis Street	13.75	73.0	1,140	15.0	17,100	Neighborhood Street	Asphalt	Preventitive Maintenance	4,800
143	West Congress Street	4	86.0	1,843	40.0	73,720	Neighborhood Street	Asphalt	Minor to No Repair	9,000
144	West Liberty Street	8	85.3	2,381	42.0	100,002	Neighborhood Center Street	Asphalt	Minor to No Repair	12,200
145	West North Street	13.75	82.0	1,151	20.0	23,020	Neighborhood Street	Asphalt	Preventitive Maintenance	2,800
146	Washington Patriots Drive	4	92.8	2,344	25.0	58,608	Neighborhood Street	Asphalt	Minor to No Repair	3,300
147	Weirick Row	4	88.6	612	12.0	7,344	Neighborhood Street	Asphalt	Minor to No Repair	900
148	Westwinds Court	4	100.0	137	29.0	3,973	Neighborhood Street	Asphalt	Minor to No Repair	0
149	Willow Spring Drive	17.75	71.0	4,308	17.0	73,236	Neighborhood Center Street	Asphalt	Preventitive Maintenance	20,200
150	Bruce Drive	4	100.0	312	25.0	7,800	Neighborhood Street	Asphalt	Minor to No Repair	0
151	Citizens Way	8	93.8	1,954	30.0	58,620	Neighborhood Center Street	Asphalt	Minor to No Repair	3,300
152	Dodson Drive	4	98.5	148	25.0	3,700	Neighborhood Street	Asphalt	Minor to No Repair	300
153	Dunlap Drive	4	99.9	1,014	25.0	25,350	Neighborhood Street	Asphalt	Minor to No Repair	1,400
154	East Washington Street	65.5	27.8	8,163	35.0	285,705	Primary Street	Asphalt	Rehabilitation	1,188,000
155	Eldon Drive	4	99.5	803	25.0	20,075	Neighborhood Street	Asphalt	Minor to No Repair	1,200
156	Martin Luther King Jr Avenue	29.75	81.0	892	24.0	21,408	Primary Street	Asphalt	Preventitive Maintenance	2,600
157	North George Street	20	93.0	1,278	30.0	38,340	Primary Street	Asphalt	Minor to No Repair	2,200
158	South George Street	20	100.0	6,912	30.0	207,360	Primary Street	Asphalt	Minor to No Repair	0
159	West Washington Street	39.5	66.0	3,622	20.0	72,440	Primary Street	Asphalt	Light Rehabilitation	79,700

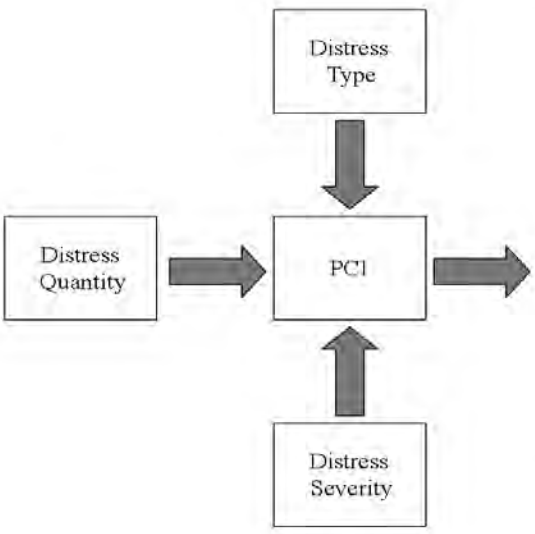
APPENDIX B – PAVEMENT CONDITION INDEX

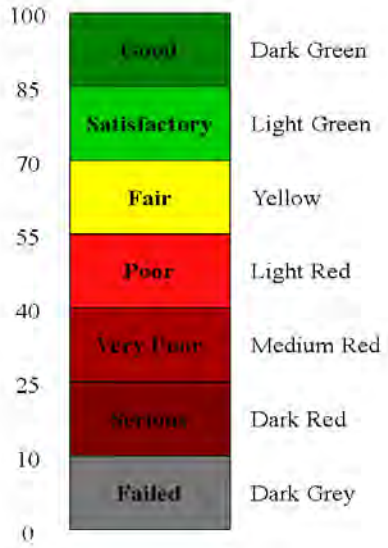
CHARLES TOWN, WEST VIRGINIA
PAVEMENT CONDITION INDEX

UPI: 156 **Length: 892'** **Width: 24'**

	Low		Medium		High		Total
	% Defect	PCI	% Defect	PCI	% Defect	PCI	
Fatigue (Alligator) Cracking	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Potholes	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Edge Cracking	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Longitudinal Cracking	1.22%	2.5	0.25%	1.0	0.00%	0.0	3.5
Transverse Cracking	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Slippage Cracking	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Block Cracking	2.19%	2.5	0.00%	0.0	0.00%	0.0	2.5
Rutting	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Patching	1.06%	4.0	0.00%	0.0	0.00%	0.0	4.0
Bleeding	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Depression	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Shoving	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Corrugation	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Weathering/Raveling	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Bumps and Sags	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
RailRoad Crossing	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Shoulder Dropoff	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Reflective Cracking	0.00%	0.0	2.12%	12.0	0.00%	0.0	12.0

Pavement Condition Index 81.0
Description of Condition Index Satisfactory
Satisfactory
81.0



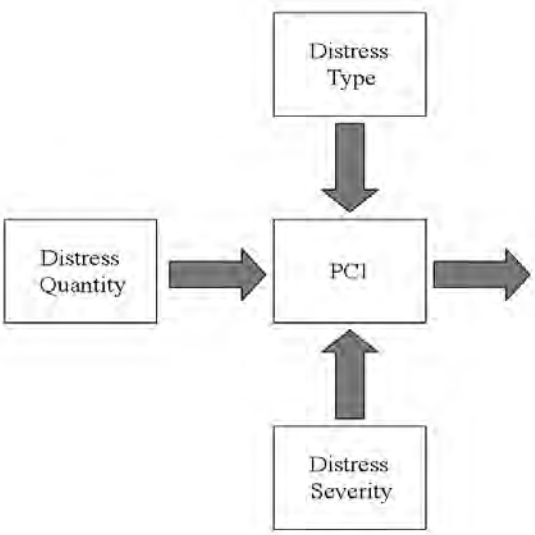


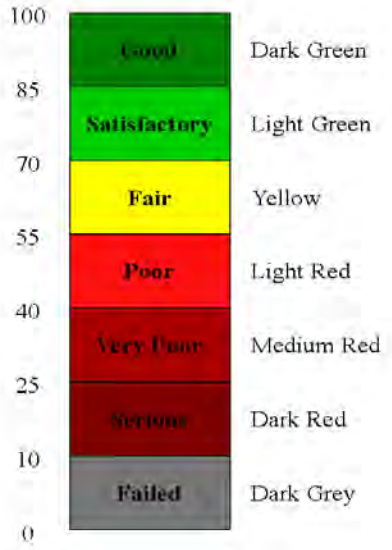
CHARLES TOWN, WEST VIRGINIA
PAVEMENT CONDITION INDEX

UPI: 159 **Length: 3622'** **Width: 20'**

	Low		Medium		High		Total
	% Defect	PCI	% Defect	PCI	% Defect	PCI	
Fatigue (Alligator) Cracking	1.13%	11.0	0.01%	0.0	0.00%	0.0	11.0
Potholes	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Edge Cracking	0.09%	0.0	0.10%	4.0	0.00%	0.0	4.0
Longitudinal Cracking	0.64%	1.0	0.00%	0.0	0.00%	0.0	1.0
Transverse Cracking	0.16%	0.0	0.00%	0.0	0.00%	0.0	0.0
Slippage Cracking	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Block Cracking	3.74%	3.5	0.00%	0.0	0.00%	0.0	3.5
Rutting	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Patching	3.08%	7.0	3.29%	17.0	0.00%	0.0	24.0
Bleeding	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Depression	0.21%	4.0	0.94%	8.5	0.00%	0.0	12.5
Shoving	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Corrugation	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Weathering/Raveling	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Bumps and Sags	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
RailRoad Crossing	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Shoulder Dropoff	0.00%	0.0	0.00%	0.0	0.00%	0.0	0.0
Reflective Cracking	0.00%	0.0	1.34%	8.0	0.20%	2.0	10.0

Pavement Condition Index	66.0
Description of Condition Index	Fair
	Fair
	66.0

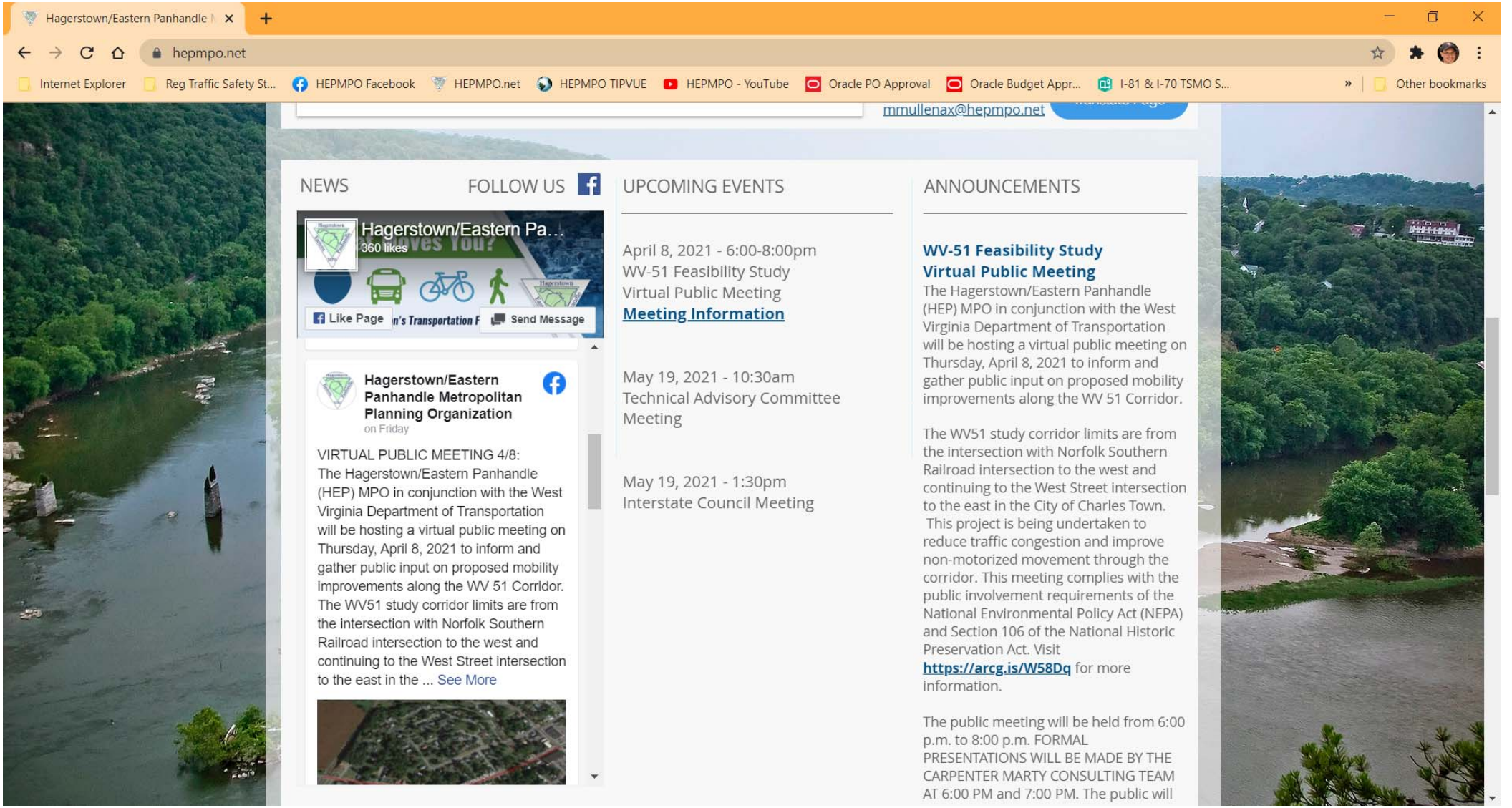




Appendix D
Stakeholder and Public Meeting Information

CARPENTER MARTY transportation

Appendix D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VIRTUAL PUBLIC MEETING 4/8:
The Hagerstown/Eastern Panhandle (HEP) MPO in conjunction with the West Virginia Department of Transportation will be hosting a virtual public meeting on Thursday, April 8, 2021 to inform and gather public input on proposed mobility improvements along the WV 51 Corridor. The WV51 study corridor limits are from the intersection with Norfolk Southern Railroad intersection to the west and continuing to the West Street intersection to the east in the ... See More
UPCOMING EVENTS
April 8, 2021 - 6:00-8:00pm
WV-51 Feasibility Study
Virtual Public Meeting
Meeting Information
May 19, 2021 - 10:30am
Technical Advisory Committee Meeting
May 19, 2021 - 1:30pm
Interstate Council Meeting
ANNOUNCEMENTS
WV-51 Feasibility Study
Virtual Public Meeting
The Hagerstown/Eastern Panhandle (HEP) MPO in conjunction with the West Virginia Department of Transportation will be hosting a virtual public meeting on Thursday, April 8, 2021 to inform and gather public input on proposed mobility improvements along the WV 51 Corridor.
The WV51 study corridor limits are from the intersection with Norfolk Southern Railroad intersection to the west and continuing to the West Street intersection to the east in the City of Charles Town. This project is being undertaken to reduce traffic congestion and improve non-motorized movement through the corridor. This meeting complies with the public involvement requirements of the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act. Visit https://arcg.is/W58Dq for more information.
The public meeting will be held from 6:00 p.m. to 8:00 p.m. FORMAL PRESENTATIONS WILL BE MADE BY THE CARPENTER MARTY CONSULTING TEAM AT 6:00 PM and 7:00 PM. The public will

1

The Hagerstown/Eastern Panhandle (HEP) MPO in conjunction with the West Virginia Department of Transportation will be hosting a virtual public meeting on Thursday, April 8, 2021 to inform and gather public input on proposed mobility improvements along the WV 51 Corridor. The WV51 study corridor limits are from the intersection with Norfolk Southern Railroad intersection to the west and continuing to the West Street intersection to the east in the City of Charles Town. This project is being undertaken to reduce traffic congestion and improve non-motorized movement through the corridor. This meeting complies with the public involvement requirements of the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act. Visit https://arcg.is/W58Dq for more information.

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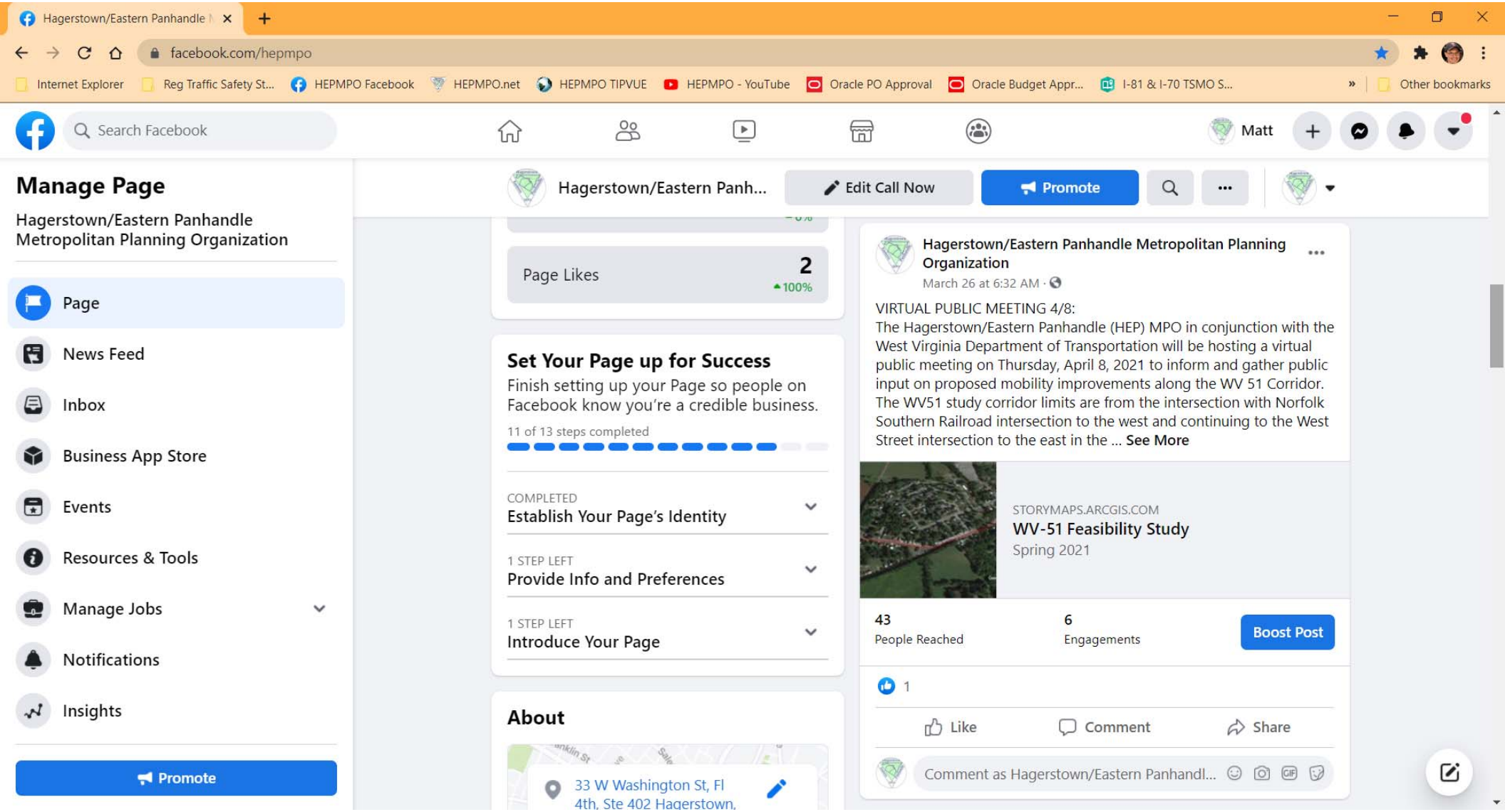
You may comment online or in writing. The comment period for this study ends on May 8, 2021.

Those wishing to file written comments may send them to:
Mr. Elwood Penn, P.E.
Director, Planning Division
West Virginia Division of Highways
1900 Kanawha Boulevard, Building 5, Room 740
Charleston, West Virginia 25305

Join Zoom Meeting
https://us02web.zoom.us/j/89584430778?pwd=UGlQdTVMNHBEazN0T0lTaDJzVkdTQT09

Meeting ID: 895 8443 0778
Passcode: 107938
One tap mobile
+13017158592,,89584430778#,,,,*107938# US (Washington DC)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Promote
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100%
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Finish setting up your Page so people on Facebook know you're a credible business.
11 of 13 steps completed
COMPLETED
Establish Your Page's Identity
1 STEP LEFT
Provide Info and Preferences
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March 26 at 6:32 AM
VIRTUAL PUBLIC MEETING 4/8:
The Hagerstown/Eastern Panhandle (HEP) MPO in conjunction with the West Virginia Department of Transportation will be hosting a virtual public meeting on Thursday, April 8, 2021 to inform and gather public input on proposed mobility improvements along the WV 51 Corridor. The WV51 study corridor limits are from the intersection with Norfolk Southern Railroad intersection to the west and continuing to the West Street intersection to the east in the ... See More
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6
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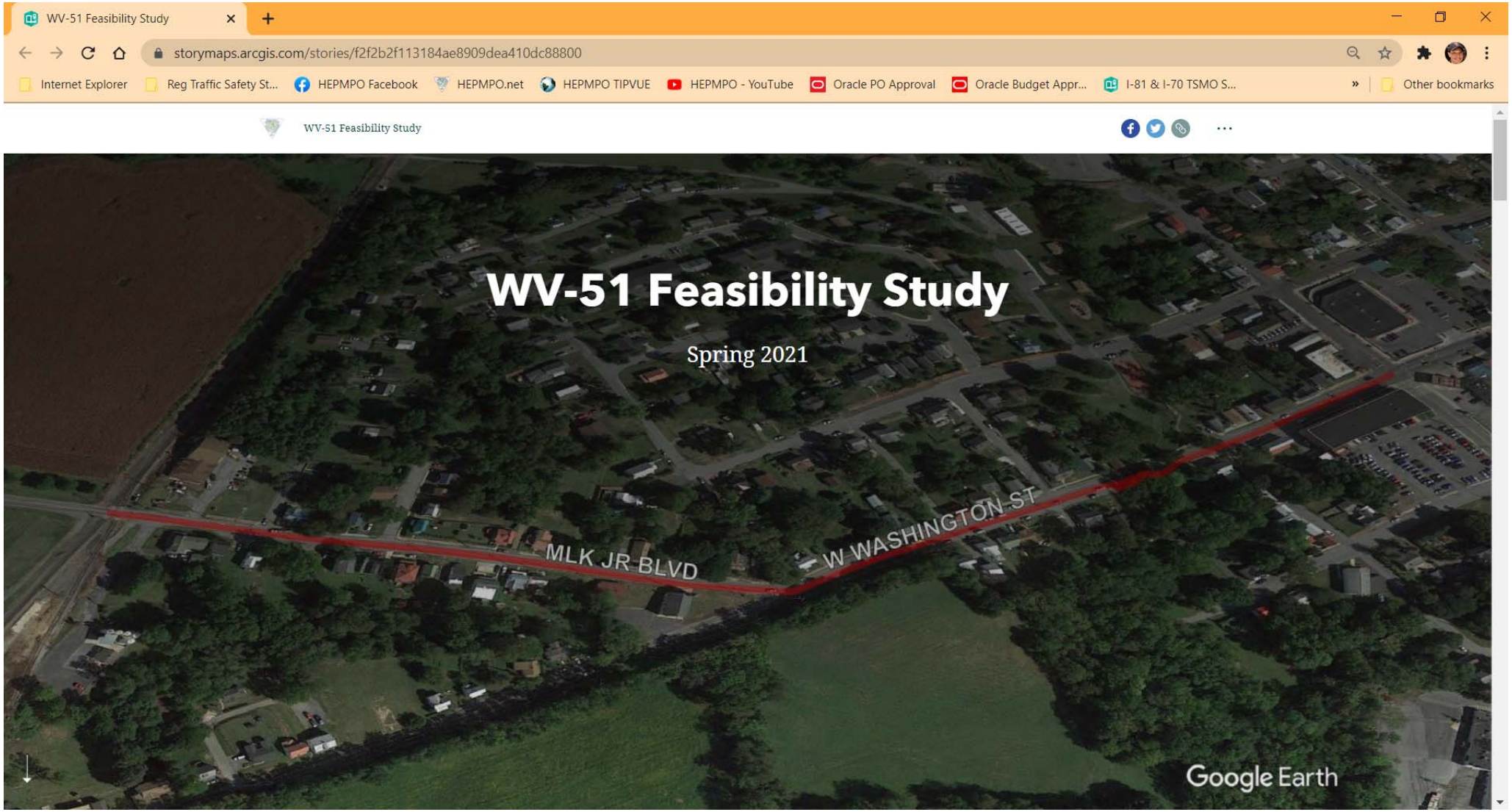
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Other bookmarks
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WV-51 Feasibility Study
Spring 2021
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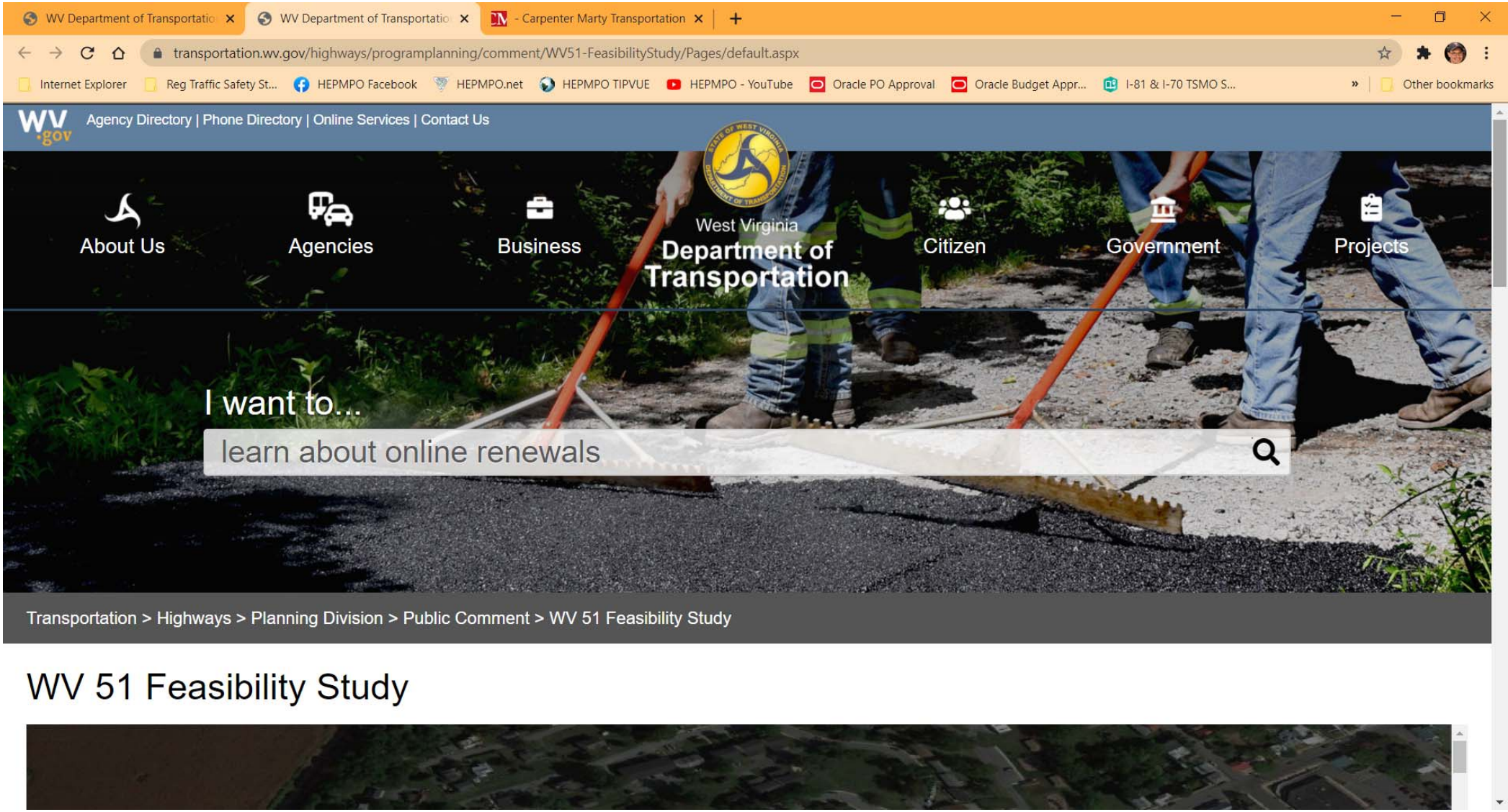

WV 51 Feasibility Study

- Carpenter Marty Transportation

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CARPENTER MARTY transportation

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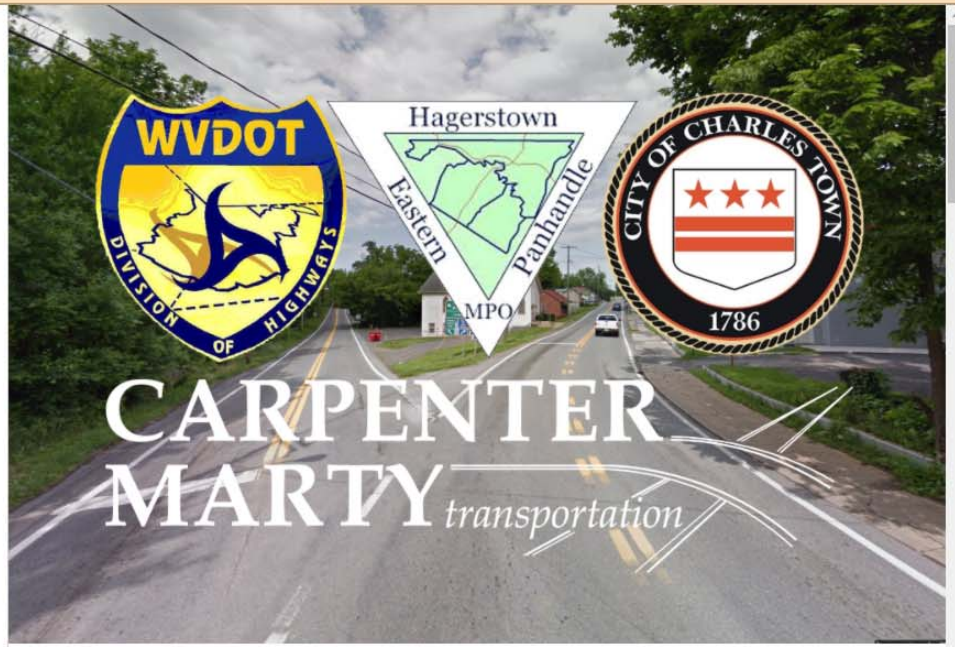

WV 51 - Feasibility Study

1. What are the top three issues with vehicular

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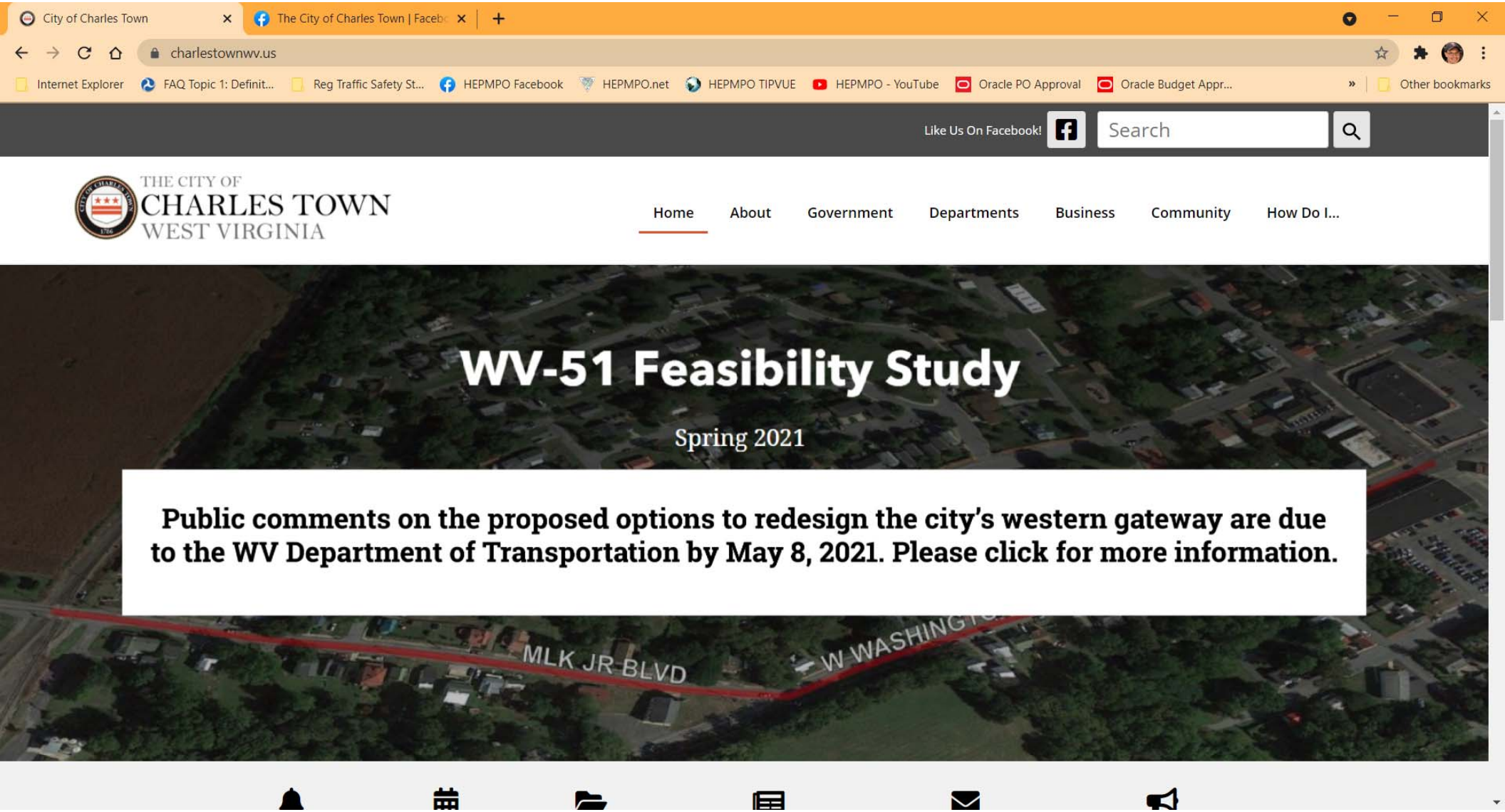
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WV-51 Feasibility Study
Spring 2021
Public comments on the proposed options to redesign the city's western gateway are due to the WV Department of Transportation by May 8, 2021. Please click for more information.
MLK JR BLVD
W WASHING

PUBLIC ZOOM MEETING

The Hagerstown/Eastern Panhandle (HEP) MPO in conjunction with the West Virginia Department of Transportation will be hosting a **virtual public meeting on Thursday, April 8, 2021** to inform and gather public input on proposed mobility improvements along the WV 51 Corridor. The WV51 study corridor limits are from the intersection with Norfolk Southern Railroad intersection to the west and continuing to the West Street intersection to the east in the City of Charles Town. This project is being undertaken to reduce traffic congestion and improve non-motorized movement through the corridor. This meeting complies with the public involvement requirements of the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act. Visit HEPMPO/WVDOT website(s) for more information.

Meeting Information

The public meeting will be held from 6:00 p.m. to 8:00 p.m. FORMAL PRESENTATIONS WILL BE MADE BY THE CARPENTER MARTY CONSULTING TEAM AT 6:00 PM and 7:00 PM.

The public will be afforded the opportunity to ask questions and give written comments on the project throughout the meeting.

You may comment online or in writing. The comment period for this study ends on May 8, 2021.

Those wishing to file written comments may send them to:
Mr. Elwood Penn,
P.E.Director,
Planning Division
West Virginia Division of Highways
1900 Kanawha Boulevard,
Building 5, Room 740
Charleston,
West Virginia 25305

Join Zoom Meeting :
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Meeting ID:
895 8443 0778
Passcode: 107938

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(Washington DC)

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Dial by your location

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(Washington DC)

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Passcode: 10793

The West Virginia Department of Transportation will, upon request, provide reasonable accommodations including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in our services, programs and activities. Please contact us at (304) 558-3931. Persons with hearing or speech impairments can reach all state agencies by calling (800) 928-8772 (voice to TDD) or (800) 982-8771 (TDD to voice), toll free.

4:1 (1t)

Certificate of Publication

This is to certify the annexed advertisement

Public Zoom

appeared for one **consecutive days/weeks in The Journal Publishing Company, a newspaper published in the City of Martinsburg, WV in its issue beginning:**

1 Apr 2021

and ending:

1 Apr 2021

The Journal
207 W. King Street
Martinsburg, WV 25401

Fee $ 90.30

THE STATE OF WEST VIRGINIA
COUNTY OF BERKELEY

The foregoing instrument was acknowledged before me this 6 Apr 2021

Carol Rush **by**

My commission expires Apr 29 2023

Carol Rush
Notary Public

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
Carol Rush
[illegible]
My Commission Expires April 29, 2023

Improvement

FROM PAGE 1

explained Matt Mullenax, executive director of the Hagerstown/Eastern Panhandle Metropolitan Planning Organization, a regional transportation planning agency assisting with the Charles Town improvement project. "As a project, it has come up in plans and so now it's kind of moving to that next stage, which is design."

The project's study area extends about a half-mile along West Washington Street from the railroad tracks crossing Middleway Pike and Summit Point Road to West Street intersection right beside of CVS Pharmacy in the commercial downtown.

"It's actually a corridor study," Mullenax said of the project.

Highway officials recognize that the three-way intersection that feeds traffic from Middleway Pike and Summit Point Road onto West Washington Street is unusual and deserves more study, Mullenax said.

Traffic patterns and accident data at and through the intersection are being reviewed, he said. The design study will help determine whether better signage might be necessary at the intersection or whether a more ambitious solution such as a traffic circle might be appropriate or even feasible.

"A traffic circle may be an option," he said, "but this is kind of the first step in actually moving the project from kind of the planning level to something more concrete."

A HISTORICAL SITE

Mullenax said highway officials are well aware that Zion Baptist Church and the former Free Black School, both local African-American landmarks, stand on a triangle of land next to the intersection.

Enhancing safe pedestrian access to those sites will be looked at during the design study, he said. Project planners are also aware that Charles Town received a $60,000 federal grant last year to help renovate the school building.

The school building was constructed in 1867-68 from bricks from a federal armory in Harpers Ferry that was destroyed during the Civil War. The school later became a store, community center and church social hall for the African-American community.

"My hope is that we would be able to complement the work that's already been done and is underway right now," he said.

Meanwhile, improving sidewalks throughout the West Washington Street corridor, including walking access to nearby Evitts Run Park, will be a prominent project goal, Mullenax said. So will improving on-street parking and managing stormwater through the corridor.

State highway officials have hired a consulting company to prepare the design study for $65,800, Mullenax said.

The consultant is gathering traffic data and talking with Charles Town officials, Mullenax said. County officials and a few West Washington Street residents also have or will be contacted to share needs and concerns, he said.

Public forums will be scheduled to gather more suggestions from the public and to review any proposed plans for the corridor, Mullenax said. An initial public forum to seek public comments could occur as soon as next month or in April. A second forum where some preliminary ideas of improvements will be discussed might occur as early as May.

As an extension of WV 51/Middleway Pike, West Washington Street through downtown Charles Town is a state road maintained by the West Virginia Department of Highways.

Nevertheless, Charles Town officials are slated to be a "full partner" in the design study and other steps the project will take, Mullenax said. The city could have a significant role in helping to improve sidewalks, possibly extending walkways into neighborhoods off West Washington Street, he said.

The city has offered a sidewalk improvement program with limited funding to help homeowners replace or repair sidewalks in front of their properties.

The Charles Town City Council was scheduled to receive a briefing on the project this past Tuesday night.

Mullenax said it's too soon to estimate when any project improvements might become a tangible reality. It's also too soon to determine how much the overall project might cost, he said.

HONORING OUR OWN: PART 2

Shown above is Meuse-Argonne American Cemetery and Memorial, Romaine-sous-Montfaucon, Lorraine, France, where Solomon Johnson is listed on the Tablets of the Missing.

BLACK HISTORY MONTH

His name was Solomon Johnson. Born in Summit Point in 1894, he was the son of Barger and Nancy Robinson Johnson. In response to the Selective Service Act, Solomon Johnson registered in the United States Armed Services on June 5, 1917. He is described as short and slender with brown eyes. His age is listed as 22 years. His marital status is earmarked as single. Private Johnson was summoned to active duty to serve in the United States Army to support World War I.

Private Johnson was dispatched to Camp Lee in Prince George County, VA, for his basic training. He was assigned to the 369th Infantry Regiment, 93rd Division. The 93rd Division was an all-Black combat Division. On March 14, 1918, he, along with his comrades, boarded the USS Pocahontas at Port Hoboken, NJ, the main point of embarkation for the American Expeditionary Forces headed to battle in Europe. Private Johnson, along with his comrades, disembarked in France.

The 369th Infantry was among the first forces to arrive in France to participate in trench warfare. They were assigned to the 16th and 161st Divisions of the French Army under French command and assigned French wartime gear, including weapons, helmets, belts and pouches, but wore American uniforms. The U.S. officials refused to integrate combat forces. The 369th participated in the occupation of Champagne (April 8-July 4), participated in the Champagne-Marne Operation (July15-18), occupied the Calvaire Subsector (July 23-August 19), occupied the Beausejour Subsector (Sept. 11-15), participated in the Meuse-Argonne Operation (Sept. 26 to Oct. 8) after which rehabilitation efforts began, and participated in the occupation of a Thur subsector, Alsace, (Oct. 17 – Nov. 11). On December 12, 1918, the regiment was relieved from duty with the French Army. The 369th spent 191 days in combat, longer than any other American unit in World War I. The entire regiment was awarded the Croix de Guerre from France.

On October 2, 1918, Private Solomon Johnson was killed in battle in the Meuse-Argonne Offensive, the largest, deadliest offensive which led to ending World War I. His name is on the Tablets of the Missing at the Meuse-Argonne American Cemetery and Memorial, Romagne-sous-Montfaucon, Lorraine, France.

Sources: World War I Draft Registration Cards; West Virginia Division of Culture and History; U. S. Army WWI Transport Service, Passenger Lists; Order of Battle of the United States Land Forces in the World War, American Expeditionary Forces; The National Archives; World War I Dead, American Expeditionary Forces; and The American Battle Monuments Commission.

Written and submitted by the Marshall-Holley-Mason Auxiliary American Legion Unit 102

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20 pages in an easy-to-read single section

For the week of
February 17 to
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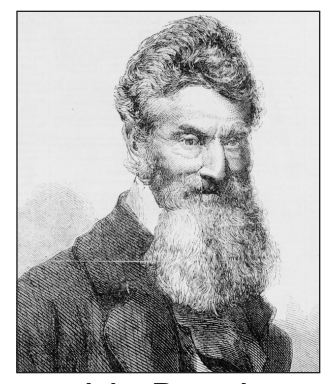
SOME OF WHAT'S INSIDE THIS WEEK

Honoring Our own, Page 3



John Brown's final journey, Page 9

Horse racing, Page 20

CHARLES TOWN

Improvement project on West Washington St. takes first steps

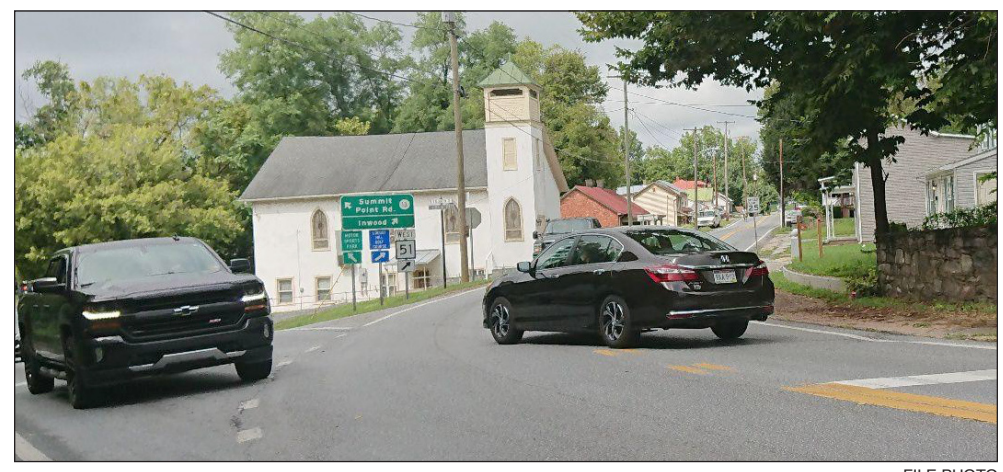
By TIM COOK
Staff writer

CHARLES TOWN – The first steps toward putting ideas on paper to revamp and possibly reconfigure the western traffic entrance into downtown Charles Town are underway.

Adding a traffic circle to replace the three-way intersection at the western end of West Washington Street is a major consideration for the state highway project. But improving overall traffic safety and flow in addition to parking and pedestrian accessibility are also goals of the design study kicking off for the two-lane West Washington Street corridor.

"This is probably at the very beginning stage,"

(See **IMPROVEMENT** Page 3)



FILE PHOTO

Ideas are currently being put to paper for a traffic circle at the three-way intersection where West Washington Street ends in Charles Town. Improving overall traffic safety and flow, in addition to parking and pedestrian accessibility are goals of the design study kicking off for the two-lane West Washington Street corridor.

RANSON

TIM COOK

The Ranson Police Department recently hired five new police officers. From left are officers Tim Hood, Joshua Portner, Aaron Hutcherson, Arlyn Black and Ty Carroll.

An eye on service

Ranson's newest police officers focus on people

By TIM COOK
Staff writer

RANSON – Five new officers have joined the 17-member Ranson Police Department. The police force recruits include two military combat veterans, two former businessmen and a recent university graduate.

Each new officer said he was drawn to the community policing model that Ranson follows to protect and serve the city's more than 5,000 residents. Three have graduated from the West Virginia Police Academy in Charleston, and two are at the academy's intensive training now.

Each new officer said he is looking forward to getting to know more and more people in the community they only recently began to serve.

PATROLMAN HOOD

Officer Tim Hood, 35, went into the Marine Corps right out of high school. Moving from military service and a policing career was a natural transition, he said.

"For me, serving your country, serving your people, was something that I thought was important and really enjoyed doing," he explained. "So after getting out [of the military] law enforcement was sort of a similar set in a way for me to keep serving the community."

Hood previously worked seven combined years as a police officer for the Virginia communities of Purcellville and Haymarket. He said he made the career jump to Ranson's police force to be closer to home in Jefferson County. He learned the city's police force had a "shining and very good" reputation, he said, for community policing-style law enforcement.

"It sounded like the same type of law enforcement style that I enjoy doing," he said.

Hood said he enjoys police work "for the gratification that you get for helping your fellow man.

"I've learned that I have the heart of a servant, so being in public service and

(See **SERVICE** Page 18)

PANDEMIC UPDATE

Is Jefferson County receiving its fair share of vaccines?

By TIM COOK
Staff writer

CHARLES TOWN – Gov. Jim Justice has been widely touting West Virginia's ability to efficiently distribute coronavirus vaccines as a praiseworthy feat and a national model to emulate.

As of Tuesday, statewide 252,098 doses of vaccine have been dispensed, about 14 percent of the state's population. That statistic included 144,250 for people who received a second booster shot to receive the fullest protection available against the virus.

(See **VACCINES** Page 6)

EMERGENCY SERVICES

Blue Ridge Fire Company operations under review

By TIM COOK
Staff writer

HARPERS FERRY – West Virginia State Fire Marshal officials and Jefferson County fire and rescue leaders are conducting separate safety and operational reviews of the Blue Ridge Mountain Volunteer Fire Company.

"I will tell you that review is underway by multiple agencies within the state of West Virginia," said Allen Keyser, director of the Jefferson County Emergency Services Agency (JCESA), the agency employing about six dozen full- and part-time county emergency rescue workers.

(See **REVIEW** Page 15)

Thanks for subscribing!

John Magaha
of Ranson

6 89076 92596 9

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WV-51 Feasibility Study

VIRTUAL PUBLIC MEETING

April 8th, 2021 6:00-8:00 PM

** Formal presentations at 6:00 and 7:00 PM*

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* **Meeting ID:** *895 8443 0778* | **Passcode:** *107938*

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MARC TRAIN

Blair takes credit for ending commuter service funding

By TIM COOK
Staff writer

CHARLES TOWN – West Virginia's lawmakers passed a $4.5 billion general fund budget on Saturday to set another year of state government spending starting July 1. And, as previously reported, the budget doesn't include $3.5 million for the MARC train service in Jefferson and Berkeley counties.

During Senate floor remarks on Saturday before the state budget was adopted, Senate President Craig Blair, R-Berkeley, acknowledged that he personally nixed the MARC funding.

With MARC commuter trains operating virtually empty during the coronavirus pandemic, Blair said giving the state of Maryland money to subsidize three station stops in Jefferson and Berkeley counties was not fiscally practical or responsible.

"I'm actually the guy who's been the architect of getting the budget out in the 60-day session for the last three years," Blair told his Senate colleagues during the final hours session.

Noting that he represents Berkeley County, where the MARC Brunswick Line stops start and ends in Martinsburg, Blair underscored how his personal hand in stopping MARC funding bucked typical political constituency pleas that lawmakers make.

"Isn't that odd that the Senate president is saying take something out of the budget for his area," he said, "when most of the time, you hear people barking, "I need this, I need that for my district. I got to have it. I got to have it.'"

Public officials from Berkeley County have emphasized the need to continue MARC service to Martinsburg to support the city's and county's economic development goals.

TIM COOK PHOTO

The MARC train leaves the Harpers Ferry station in the morning.

Blair said he recently obtained MARC ridership figures from West Virginia Transportation Secretary Byrd White that showed few commuters have been using the train service from the stations in Martinsburg, Duffields and Harpers Ferry during the pandemic.

Many commuters in Jefferson County drive to a station in Brunswick, Maryland, where fares are less expensive and more parking is available.

Spending $3.4 million annually for a service that few people use was not fiscally appropriate, the senator indicated.

Officials with the Maryland Transit Administration, the agency that operates the MARC, recently released ridership figures showing that 21 people a day on average used the service from West Virginia from last April through February.

In 2019, before the coronavirus pandemic, about 255 people rode the MARC daily from the three West Virginia stations.

Even then, some public officials in Jefferson County openly questioned the financial justification for spending $3.4 million—or about $13,300 annually per average passenger based on pre-pandemic ridership numbers—to continue operating the MARC in West Virginia.

Delegate John Doyle, a Democrat representing Jefferson County, has been outspoken in support of providing state or federal funding to continue MARC in West Virginia.

Doyle said stopping the MARC now would be shortsighted, especially since he expects the 27,000 highly paid employees coming to Amazon's new headquarters in Crystal City, Virginia, will create greater housing demand throughout the Washington metro area that will only push more people to the Eastern Panhandle to live.

"That's my most serious concern," he said, "is the potential that we would be throwing away for about four, five or six years from now [the potential for population growth] if we don't keep the trains running."

Meanwhile, to draw more commuters onto the MARC, Doyle advocates eventually extending the train service to Berkeley Springs and Hancock, Maryland and West Virginia. "And Maryland should pay for at least part of that—because it would be serving part of Maryland," he said.

Doyle contends that MARC might not be necessary for future growth in the Panhandle if a four- to six-lane highway were available to funnel commuter traffic into the Washington metro area. But such highway infrastructure isn't coming to the Panhandle anytime soon, he said.

Doyle said he was certain that a $2 trillion "infrastructure" legislation proposed by President Biden would pay for various commuter rail services across the country, including the MARC. "Commuter rail around the country is not supported by fares only," but primarily through state and federal funding, he said. "Particularly the Brunswick Line has a much higher than average percentage of its operations funded by fares from the riders."

In 2018, Maryland threatened to cut back or terminate the MARC in Jefferson and Berkeley if West Virginia failed to provide at least $3.4 million annually to defray the service's operational costs. Afterward, West Virginia transportation officials quietly arranged a five-year funding agreement with Maryland to continue three weekday round trips from Martinsburg to Union Station in Washington, D.C.

But then back in February, White informed county and municipal officials that West Virginia lawmakers had decided to no longer fund the MARC service after June 30. No mention was made of Blair's influence.

Meanwhile, Maryland's transportation officials have not indicated what this might hold for MARC's future in West Virginia.

Brittany Marshall, an MTA spokesperson, has reported that any change in MARC service in West Virginia wouldn't be made until an "equity analysis" of the service's operations funding is completed. The agency would hold a public hearing and gather public comments before implementing any proposed service changes, she stated.

Public comments welcomed for improvements to WV 51

FROM STAFF REPORTS

CHARLES TOWN – State highway officials are gathering public ideas and insights until May 8 on how to improve traffic safety and flow along a half-mile section of West Virginia 51, a major traffic artery through Charles Town.

A major focus of the West Virginia 51 roadway project would be to improve the intersection of West Washington Street with Martin Luther King Boulevard.

One of three draft alternative plans calls for possibly adding a traffic circle at the intersection. Another alternative would create two new intersections to divert traffic on Summit Point Road away from the current crossroads of West Washington and Martin Luther King.

In addition to enhancing other intersections, other improvements envisioned include new sidewalks, parking spaces, pedestrian crossings and a bike lane.

Traffic calming "solutions," street lighting and stormwater management changes are also proposed.

The project's study area extends about a half-mile along West Washington Street from the railroad tracks crossing Middleway Pike and Summit Point Road to the West Street intersection in the commercial downtown.

Information and illustrations on the ideas that state highway officials have drafted are posted online at https://arcg.is/W58Dq. Where to send written ideas and suggestions are included on the web page.

ERA Liberty Realty earns Silver Award from Realogy Leads Group

FROM SUBMITTED REPORTS

CHARLES TOWN – Today ERA Liberty Realty was announced as one of the select winners of the Silver Award for outstanding performance, which will be presented by Realogy Leads Group at the annual Realogy Advantage Network conference, held virtually this year on March 23-24, 2021.

Realogy Leads Group is a dedicated organization within Realogy Holdings Corp, the largest full-service residential real estate services company in the United States, focused on delivering high-quality, high-converting leads to its affiliated brokers and agents in the Realogy Advantage Network, of which ERA Liberty Realty is a member.

The Silver Award is one of three Excellence Awards presented to premier brokers. Excellence Award recognition is based on performance results related to a wide variety of metrics, including customer service, cost management, and effective analysis and marketing of homes.

"ERA Liberty Realty has delivered superior performance over the past year, and we are thrilled to recognize their team for all their accomplishments to exceed their goals." said Robert Way, Senior Vice President of Realogy Leads Group. "Thanks to their hard work and success, they are able to provide trusted advice and important support to our clients and their customers."

"It is an honor to receive the Silver Award, which celebrates our team's achievements over the past year, which was unlike any other. I am proud of all we have accomplished together and want to thank Realogy Leads Group for the recognition," said broker John Kilroy.

WV51 Feasibility Study - Stakeholders

First Name	Last Name	Organization
Sean	Boyle	AutoServ
Jennie	Brockman	Jefferson Co. Planning Department
Ken	Clohan	WVDOT - District 5
Henry	Davenport	Property Owner
Rashedul	Deepon	Charles Town
Donna	Hardy	WVDOT - Safety
Chet	Hines	Charles Town Councilmember (Ward 1)
Jim	Kratovil	Charles Town Councilmember (Ward 1)
Chris	Kutcher	Charles Town Police
Kevin	McDonald	WVDOT - District 5
Don	Meadows	WVDOT - Traffic
Ray	Patrick	WVDOT - ADA
Matthew	Pennington	Region 9 Planning and Development Council
Julie	Philabaum	Charles Town Parks and Rec
Travis	Ray	WVDOT - District 5
Julia	Rice	Property Owner
Timothy	Robinson	Zion Baptist Church
Matt	Skiles	WVDOT - Traffic
Heather	Sprenger	Charles Town Planning Commission/ Councilmember (Ward 2)
Kristen	Stolipher	Charles Town Utilities
Bob	Trainor	Charles Town Mayor
Daphne	Wahl	Charles Town Now
Jeff	Whitaker	Charles Town Historic Landmarks Commission
Larry	Willingham	Jefferson County Schools - Transportation Department
Todd	Wilt	Charles Town Public Works
Nick	Zaglifa	Charles Town Parks and Rec

MEETING SIGN-IN SHEET			
Project:	WV 51 – Feasibility Study Stakeholder Meeting	**Meeting Date:**	3/4/2021, 9:00 am
Facilitator:	WVDOH/Carpenter Marty/HEPMPO	**Place/Room:**	Zoom - Virtual

Name	Company
Presentation Beginning at 6:00 pm	
Patrick Park	Carpenter Marty
Gina Balsamo	Carpenter Marty
Dustin Gohs	Carpenter Marty
Ali Sadeghian	Carpenter Marty
Brian Carr	WVDOH
Daryl Hennessy	City of Charles Town
Matt Mullenax	HEPMPO
Daphne Wahl	
Mayor Robert M. Trainor	City of Charles Town
Timothy Robinson	
Chris Kutcher	
Jim Kratovil	
Don Meadows	

MEETING SIGN-IN SHEET

Project:	WV 51 – Feasibility Study Public Meeting	**Meeting Date:**	4/8/2021
Facilitator:	WVDOH/Carpenter Marty/HEPMPO	**Place/Room:**	Zoom - Virtual

Name	Company
Presentation Beginning at 6:00 pm	
Patrick Park	Carpenter Marty
Gina Balsamo	Carpenter Marty
Dustin Gohs	Carpenter Marty
Ali Sadeghian	Carpenter Marty
Brian Carr	WVDOH
Daryl Hennessy	City of Charles Town
Matt Mullenax	HEPMPO
Daphne Wahl	
Dow Meadows	
Elizabeth Ricketts	
Ken Clohan	
Kevin Tester	
Michael Tolbert	
Michael George	
Perry Su	WVDOH
Mayor Robert M. Trainor	City of Charles Town
Seth Rivard	
Todd Coyle	

MEETING SIGN-IN SHEET			
Project:	WV 51 – Feasibility Study Public Meeting	**Meeting Date:**	4/8/2021
Facilitator:	WVDOH/Carpenter Marty/HEPMPO	**Place/Room:**	Zoom - Virtual

Name	Company
Jean Petti	
Julia Rice	
Jennie Brockman	
Timothy Robinson	
KFrench	
Todd	
Duke4	
Henry	
Presentation Beginning at 7:00 pm (duplicates from 6:00 PM removed for brevity)	
Name	**Company**
Jeff Hynes	
Rikki Twyford	
Timothy Robinson	
Chet Hines	
Virginie Bauer	
Kratovil	
1-717-418-7323	

Welcome to our Virtual Public Meeting

- Getting Started
  - The presentation will start soon
  - You may not hear sound until the meeting begins
- Submitting Questions/Comments
  - Click on the “Chat”
  - Type your question/comment in the chat box
  - Send your comment
  - Questions and comments will be addressed at the end of the presentation
- We will be with you soon!

CARPENTER MARTY transportation

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Virtual Public Meeting Format

- PowerPoint presentation at 6:00 PM and 7:00 PM
  - (same presentation at both times)
- Questions can be sent to the presenters using the chat box during the presentations. This can be used throughout the meeting.
- Questions and comments will be read and addressed at the end of the presentation
- The meeting will be recorded and available on the project website for viewing after the meeting
  - https://arcg.is/W58Dq

CARPENTER MARTY transportation

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Virtual Public Meeting Format

- This meeting will be recorded, and all comments are public record
- Please keep comments/concerns relevant to this project and as specific as possible
- When submitting comments/concerns, please keep them respectful. Comments using demeaning, derogatory, or inflammatory language will not be responded to.
- The moderator will receive public comments/concerns in real time as they are submitted and read them aloud during the question-and-answer period at the end of the presentation
- There will be instances in which we will respond to questions in writing following the meeting if there is not adequate time to answer or if information must be gathered to respond.

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Comments

- You may comment online
  - http://www.cmtran.com/wv51
  - https://arcg.is/W58Dq
- You may comment in writing (via email or USPS) or phone call
  - Email: Matt Mullenax at mmullenax@hepmpo.net
  - Phone: Matt Mullenax at (240) 313-2081
  - USPS mail (postmarked by May 8, 2021):

Mr. Elwood Penn, IV, PE
Director, Planning Division
West Virginia Division of Highways
Building 5, Room 740
1900 Kanawha Boulevard East
Charleston, WV, 25305

- The comment period ends May 8, 2021

CARPENTER MARTY transportation

CARPENTER MARTY transportation

Team Overview

Brian Carr, PE

West Virginia Division of Highways (WVDOH) will be leading and managing the project

Matt Mullenax, GISP

Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO)

Robert M. Trainor, Mayor

City of Charles Town

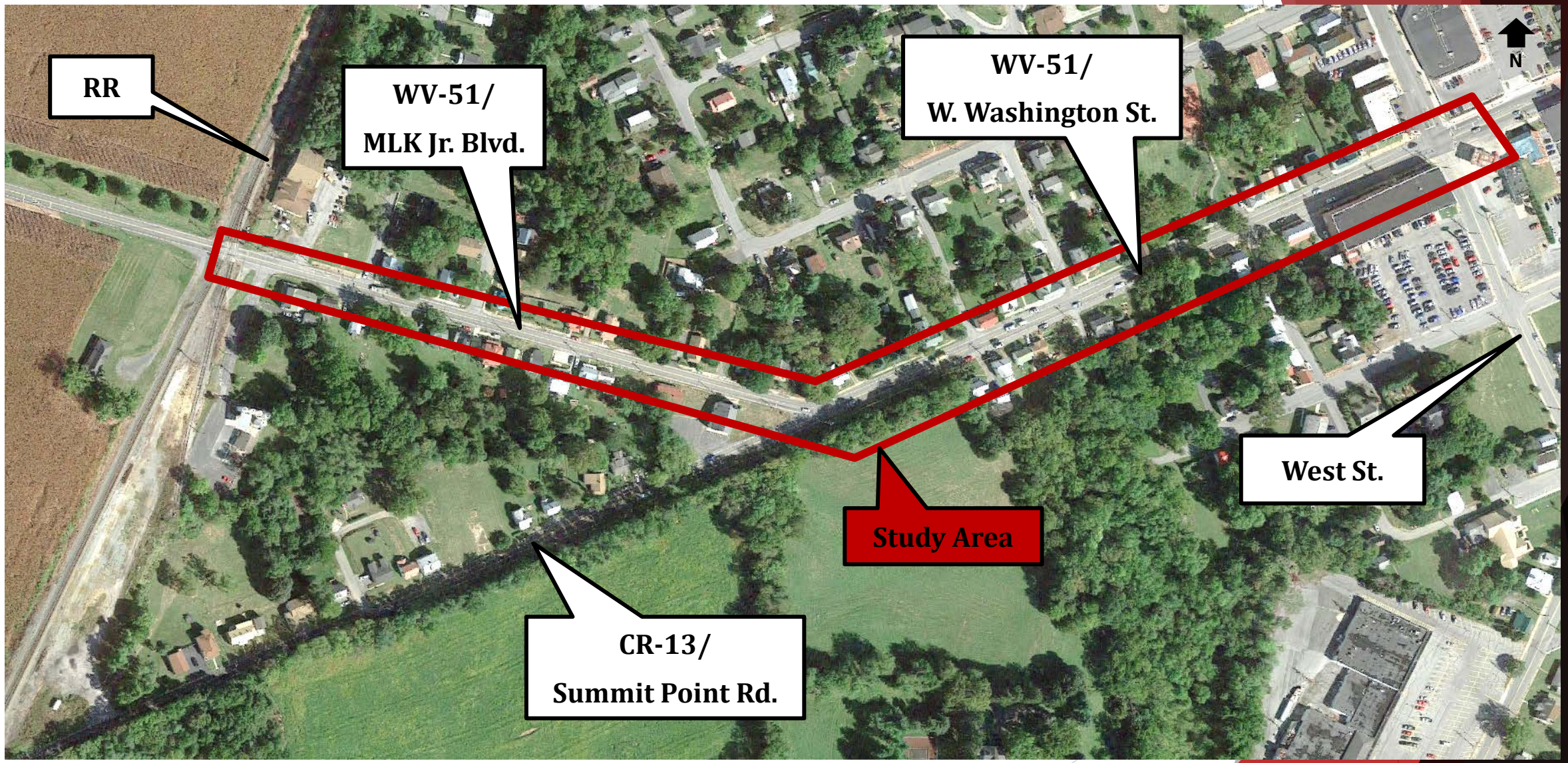
Gina Balsamo, PE

Engineering and Traffic Analysis Consultant working on the feasibility study

CARPENTER MARTY transportation

WV 51 Feasibility Study
Public Meeting
4.8.2021

Project Area Overview



CARPENTER MARTY transportation

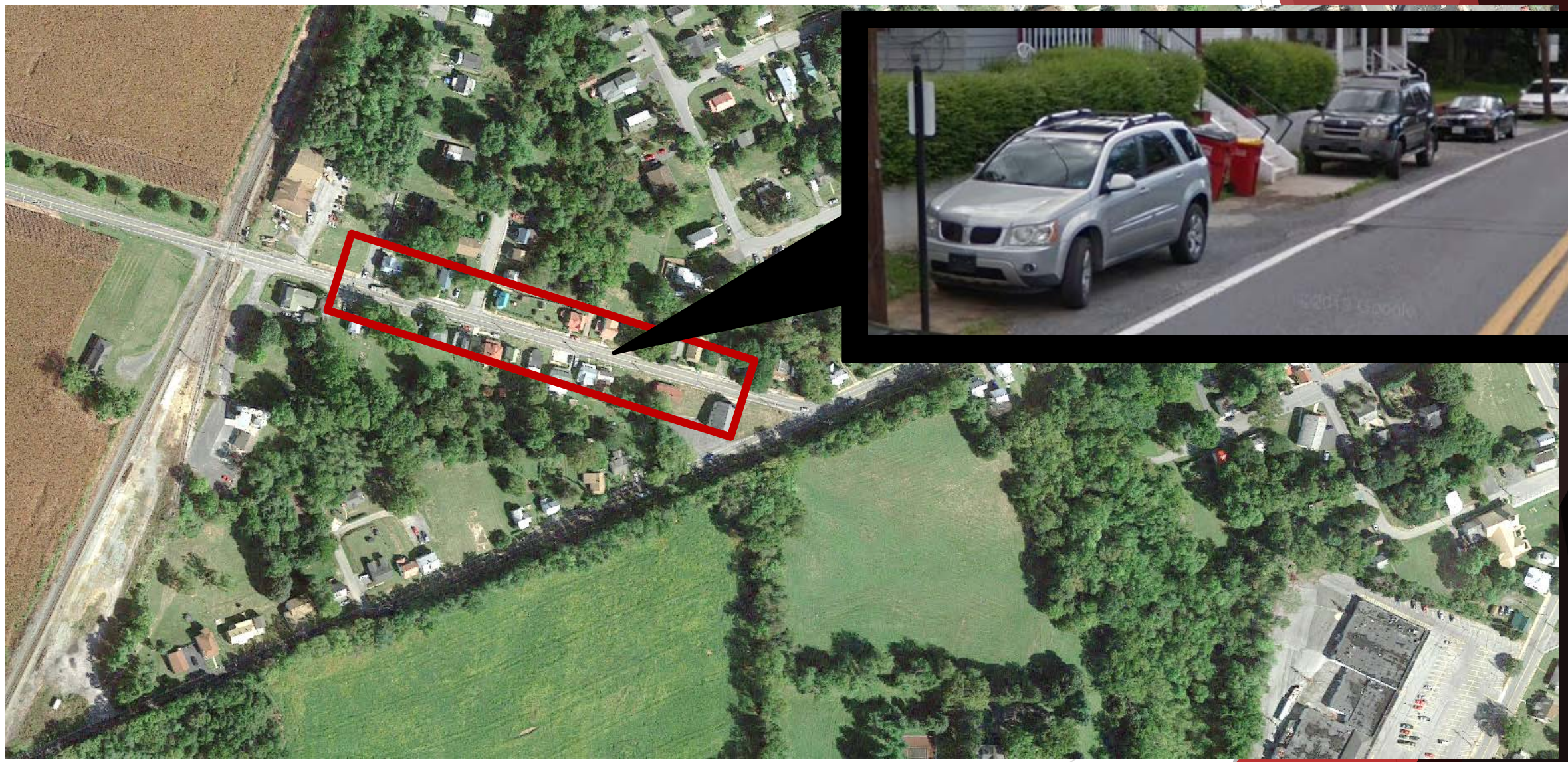
Project Scope Overview

CM is determining the feasibility of:

- Installation of a roundabout, traffic signal, or other alternative at WV-51 & CR-13 intersection
- Vehicular, pedestrian, and bicycle safety and mobility improvements
- Sidewalk installation
- ADA accessibility of sidewalks and curb ramps
- Bicycle lane
- Stormwater management
- Midblock crossing at Evitts Run Park
- Lighting
- Landscaping
- Traffic calming solutions
- Existing on-street parking
- Utility relocation
- Right-of-way impacts

CARPENTER MARTY transportation

Summary of Field Review Findings



CARPENTER MARTY transportation

Summary of Field Review Findings

CARPENTER MARTY transportation

Summary of Field Review Findings

Summary of Field Review Findings

CARPENTER MARTY transportation

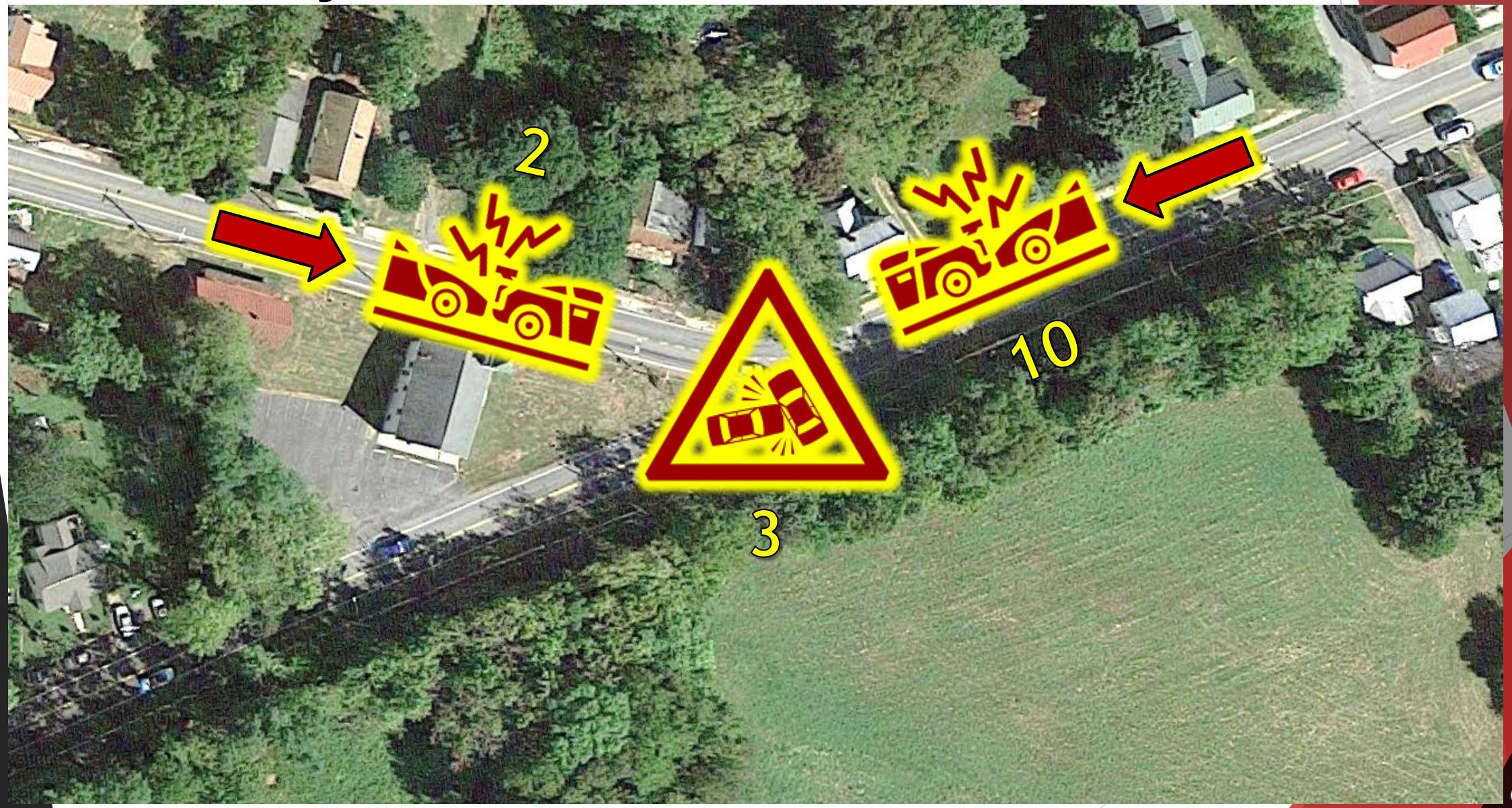
Summary of Field Review Findings

CARPENTER MARTY transportation

Summary of Crash Information

- Crash data from 2015-2019 was obtained
- 45 crashes in the study area
- 17 injuries total
- Primary crash types include rear end, sideswipe-passing, angle, and fixed object
- One bicycle crash occurred west of Evitts Run Park
- One pedestrian crash occurred east of West Street
- Crash rate on the roadway segment is 2.6x higher than the statewide average based on the segment length and daily traffic volumes

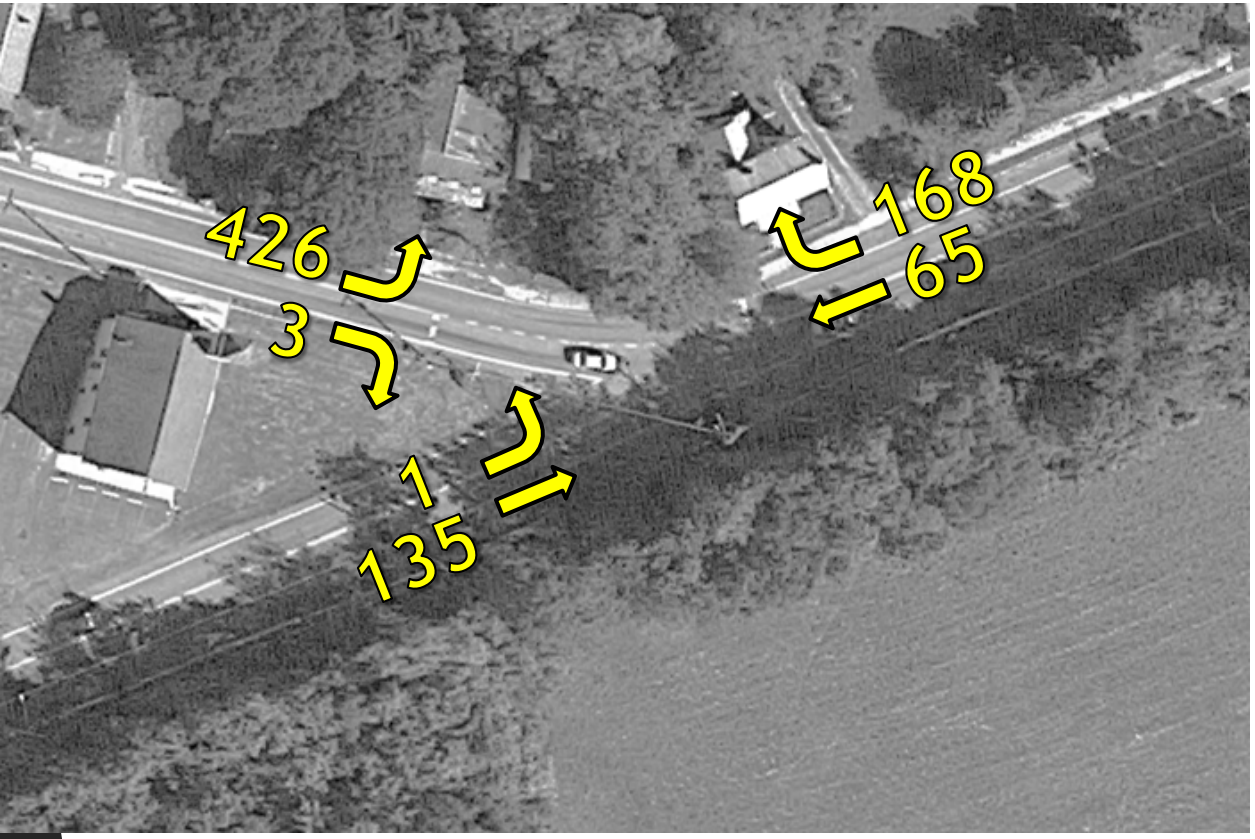
Summary of Crash Information



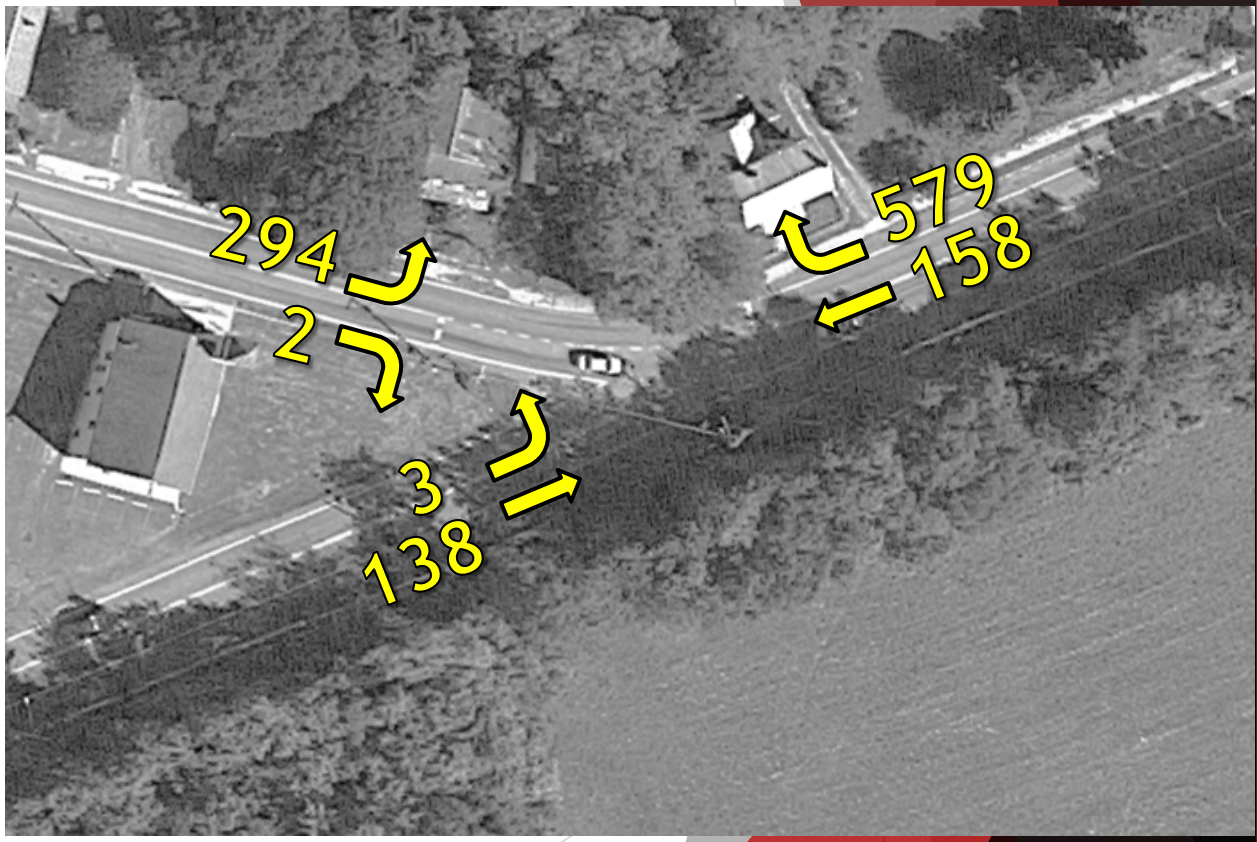
CARPENTER MARTY transportation

Summary Traffic Count Data

AM Peak (7:30-8:30)



PM Peak (4:45-5:45)

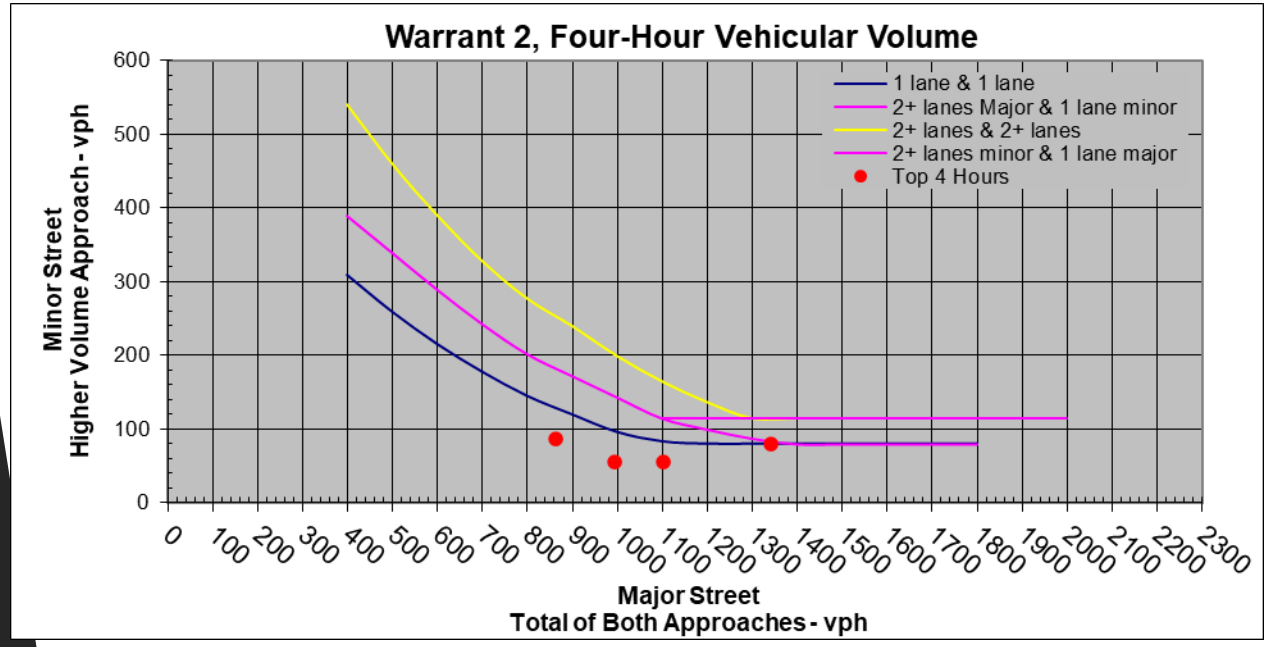


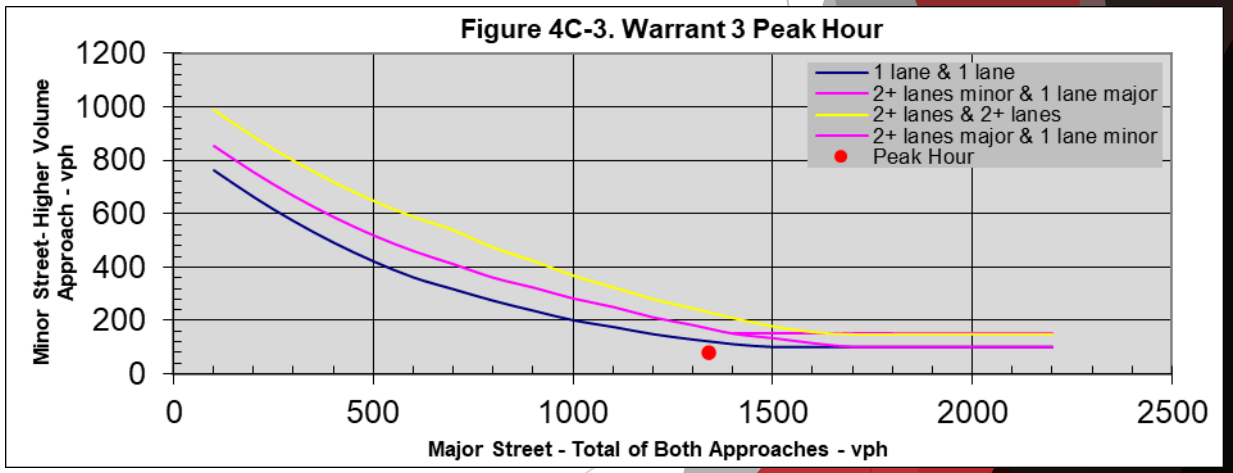
Collected June 12, 2019

CARPENTER MARTY transportation

Signal Warrant Analysis

- Warrant 1: Eight-Hour Vehicular Volume
- Warrant 2: Four-Hour Vehicular Volume
- Warrant 3: Peak Hour



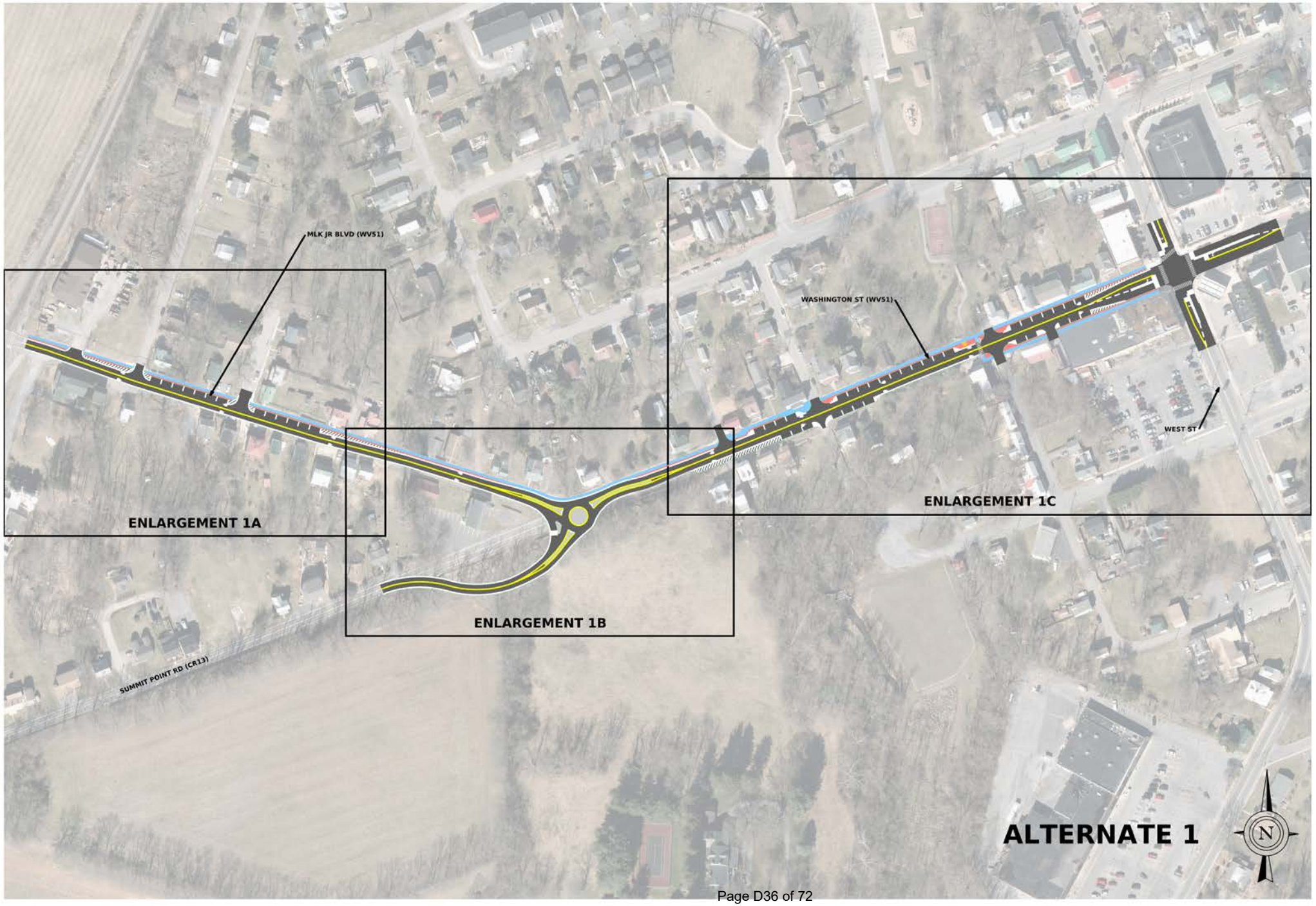


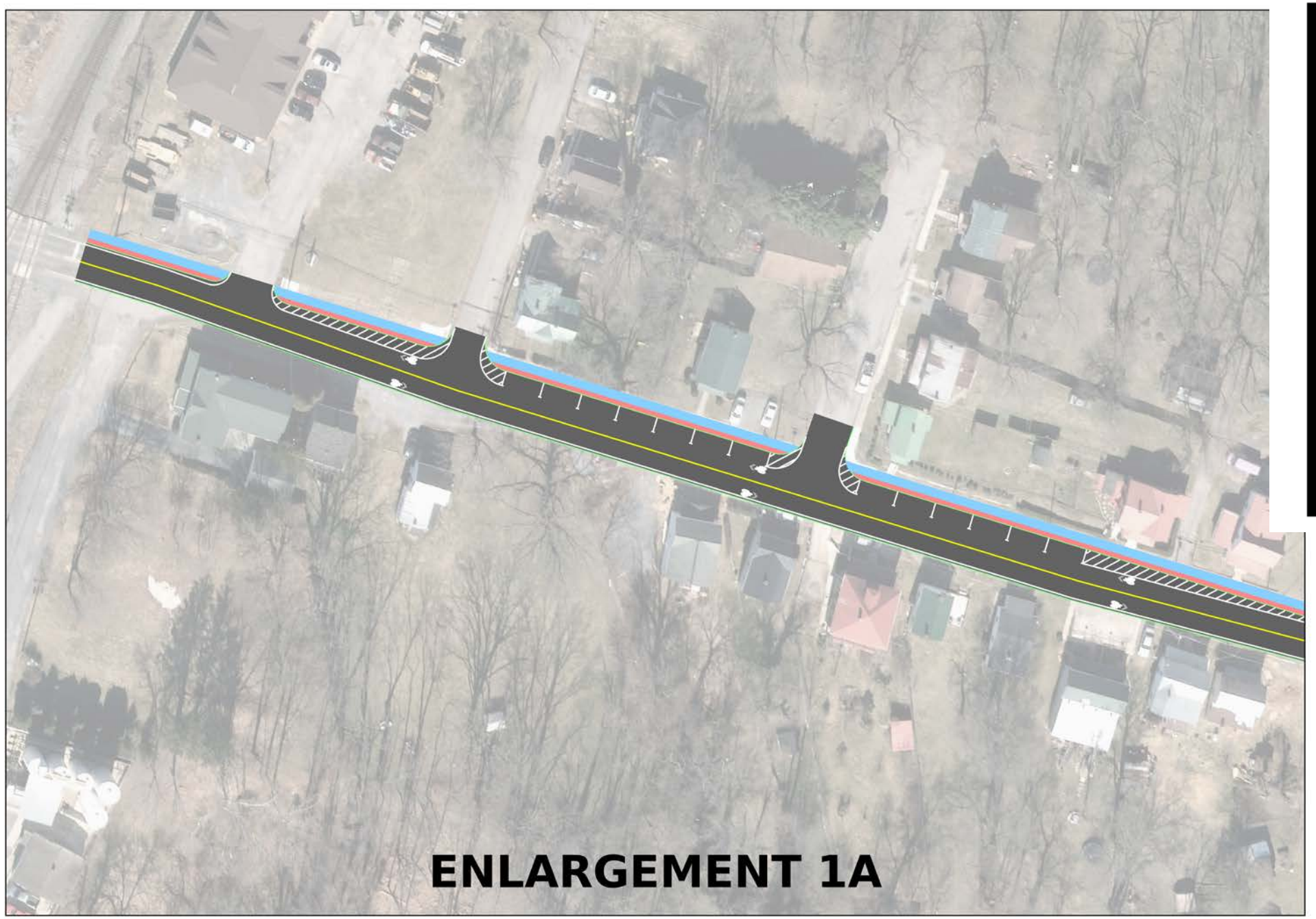
CARPENTER MARTY transportation

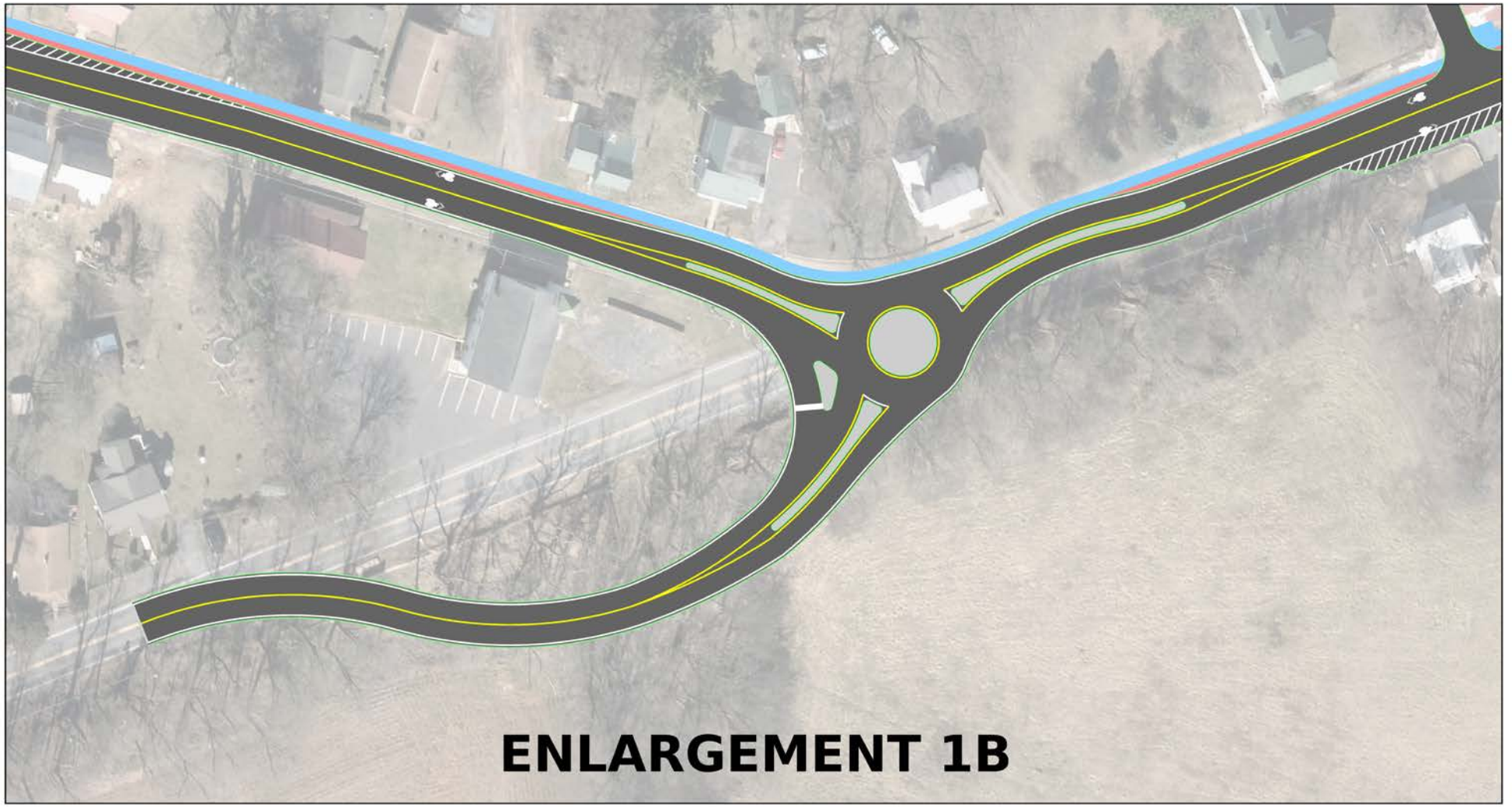
Summary of Alternatives Being Investigated

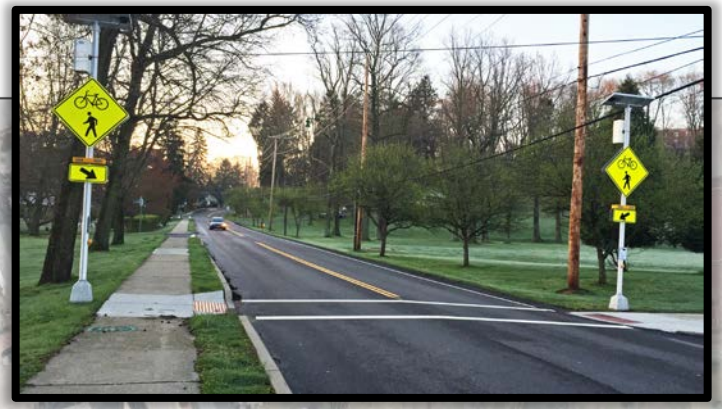
- Alternatives 1-3
- Places where intersections are shown, different options of stop-control, roundabout, or signal can be considered
- Some recommendations are common with all
- Some other high-level recommendations will be made, such as railroad crossing treatments, lighting, utilities underground, curb ramps, drainage
- These are preliminary
- We want your feedback!

CARPENTER MARTY transportation


MLK JR BLVD (WV51)
WASHINGTON ST (WV51)
WEST ST
ENLARGEMENT 1A
ENLARGEMENT 1B
ENLARGEMENT 1C
SUMMIT POINT RD (CR13)
ALTERNATE 1
N


ENLARGEMENT 1A

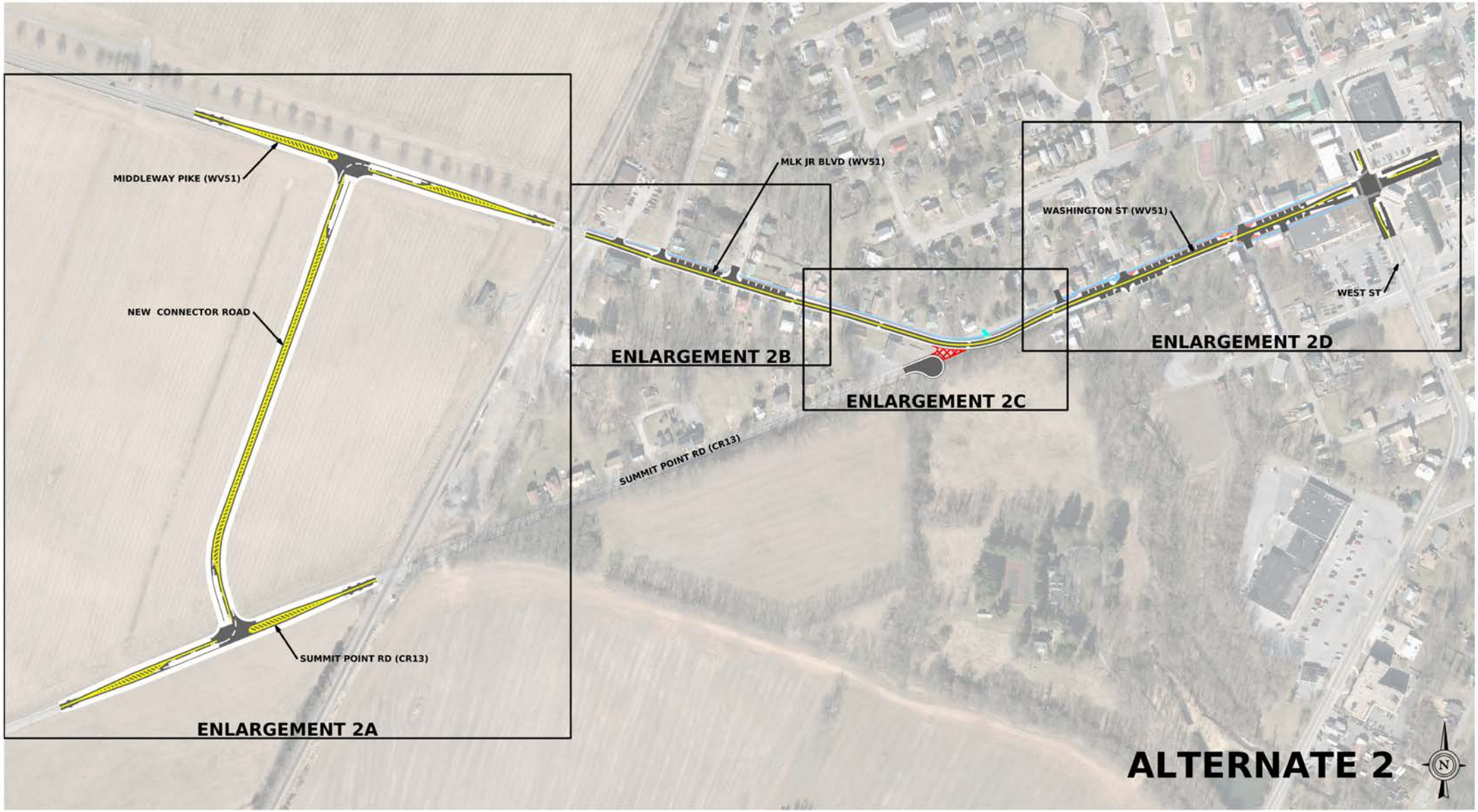

ENLARGEMENT 1B

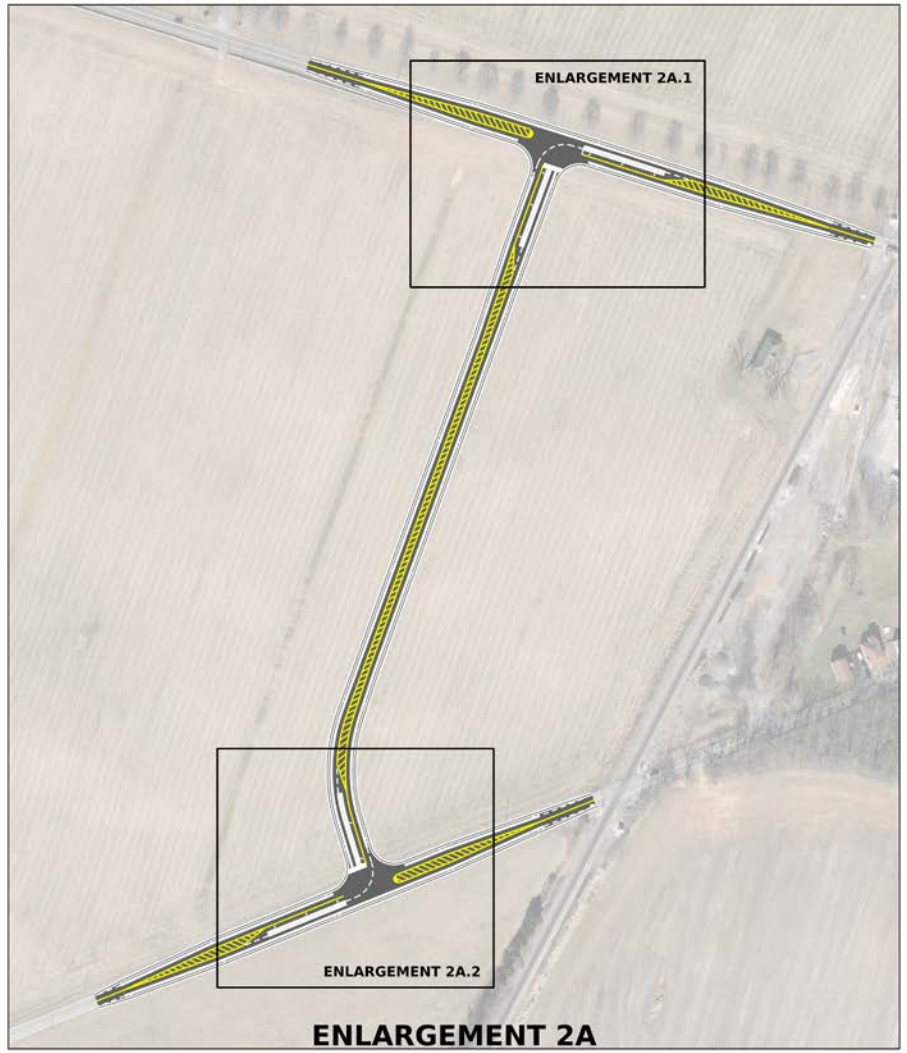


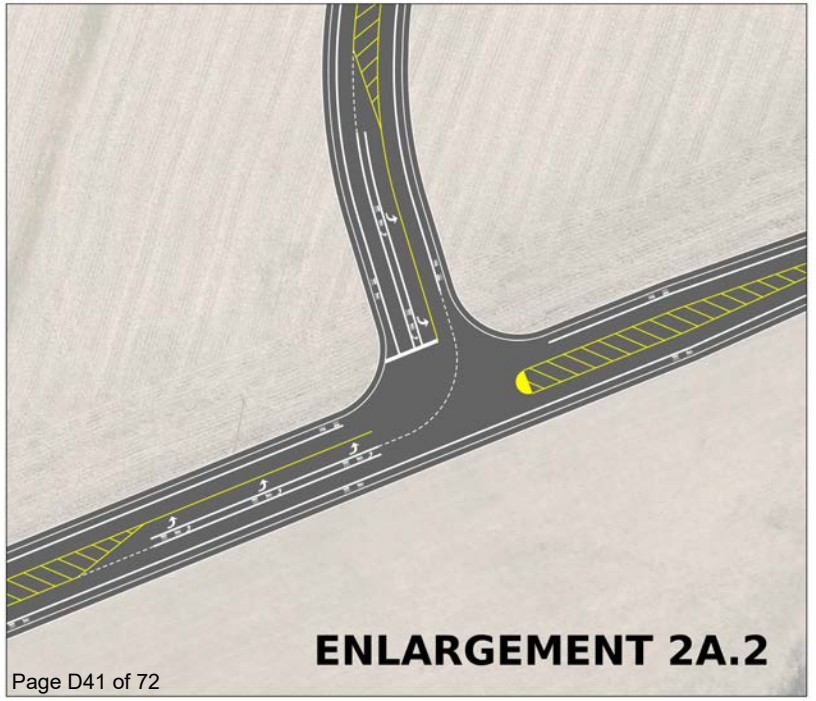
MID-BLOCK CROSSING
WITH RECTANGULAR
RAPID FLASHING BEACONS
(RRFBS)

ENLARGEMENT 1C

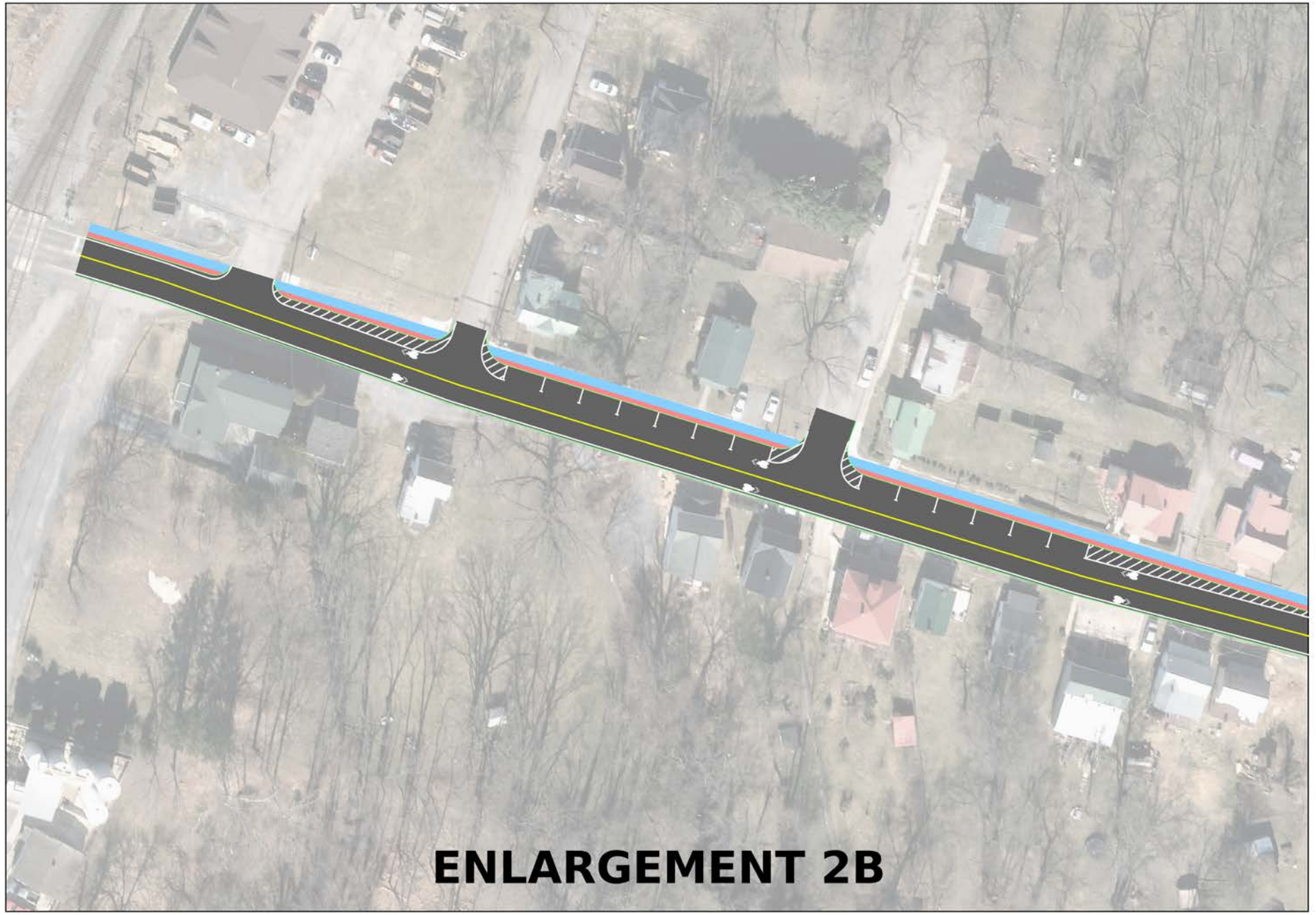
CARPENTER MARTY transportation

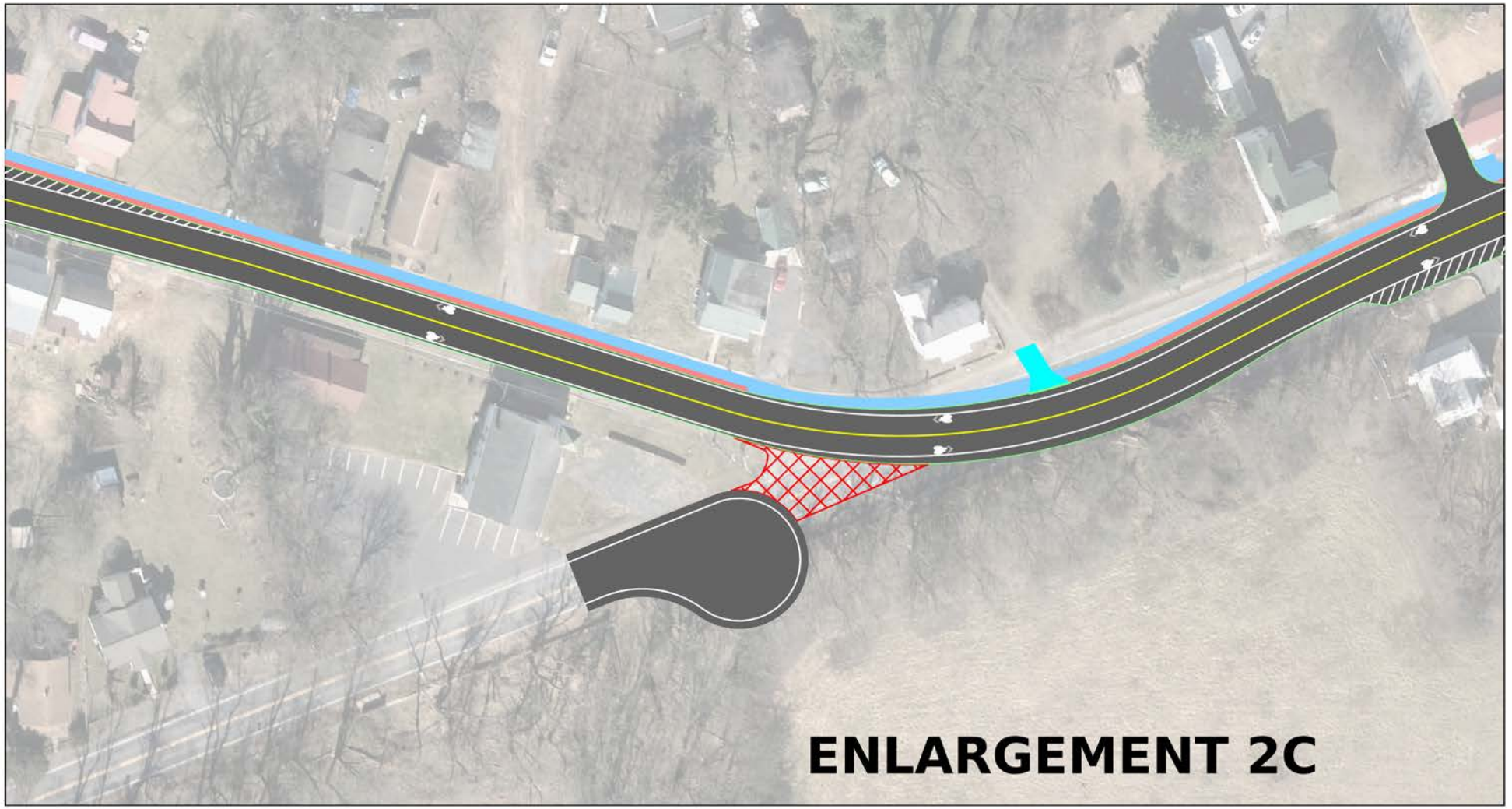

MIDDLEWAY PIKE (WV51)
NEW CONNECTOR ROAD
SUMMIT POINT RD (CR13)
ENLARGEMENT 2A
MLK JR BLVD (WV51)
ENLARGEMENT 2B
SUMMIT POINT RD (CR13)
ENLARGEMENT 2C
WASHINGTON ST (WV51)
WEST ST
ENLARGEMENT 2D
ALTERNATE 2
N





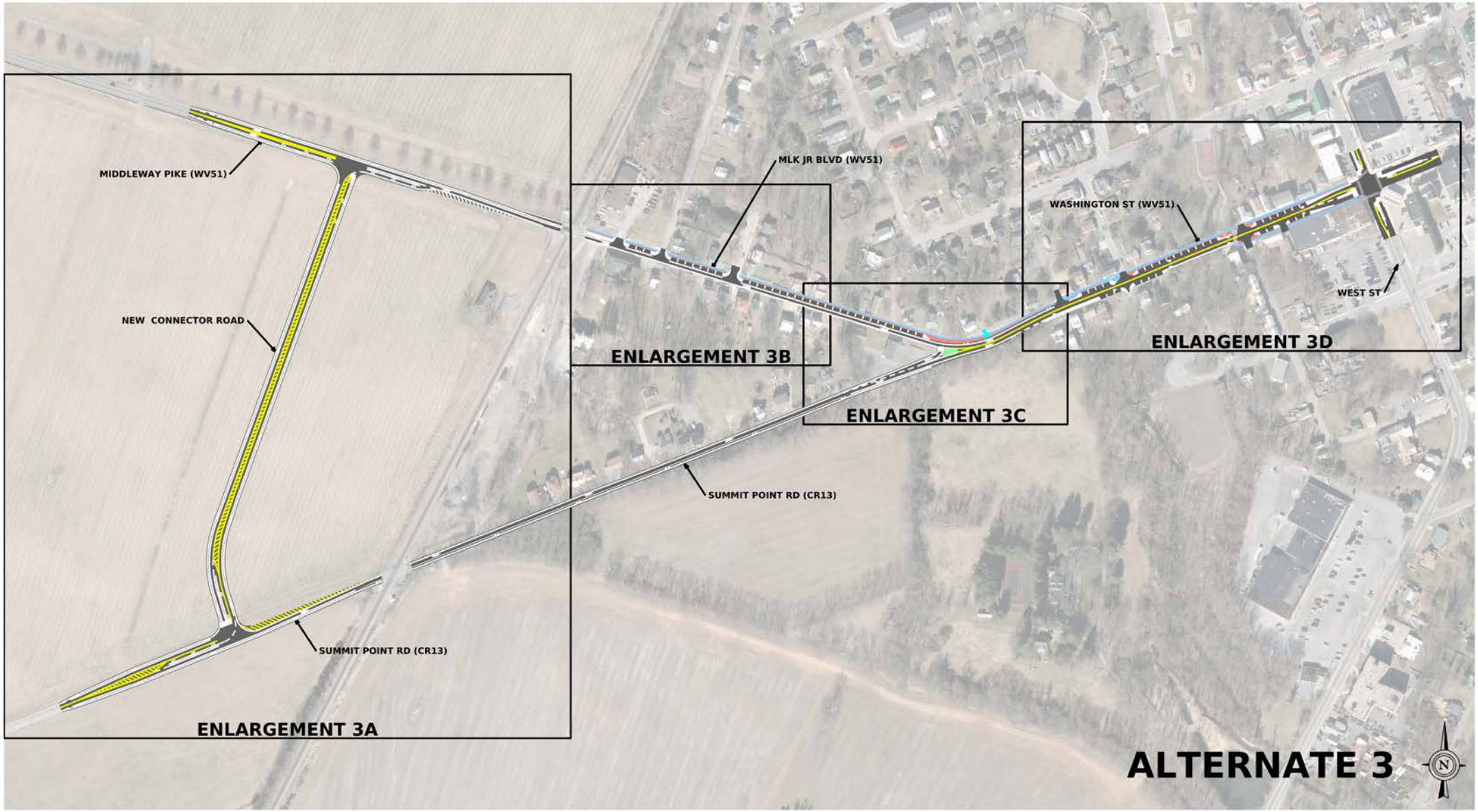
CARPENTER MARTY transportation


ENLARGEMENT 2B



CARPENTER MARTY transportation


MID-BLOCK CROSSING
WITH RECTANGULAR
RAPID FLASHING BEACONS
(RRFBS)
ENLARGEMENT 2D


MIDDLEWAY PIKE (WV51)
NEW CONNECTOR ROAD
SUMMIT POINT RD (CR13)
ENLARGEMENT 3A
MLK JR BLVD (WV51)
ENLARGEMENT 3B
ENLARGEMENT 3C
SUMMIT POINT RD (CR13)
WASHINGTON ST (WV51)
WEST ST
ENLARGEMENT 3D
ALTERNATE 3
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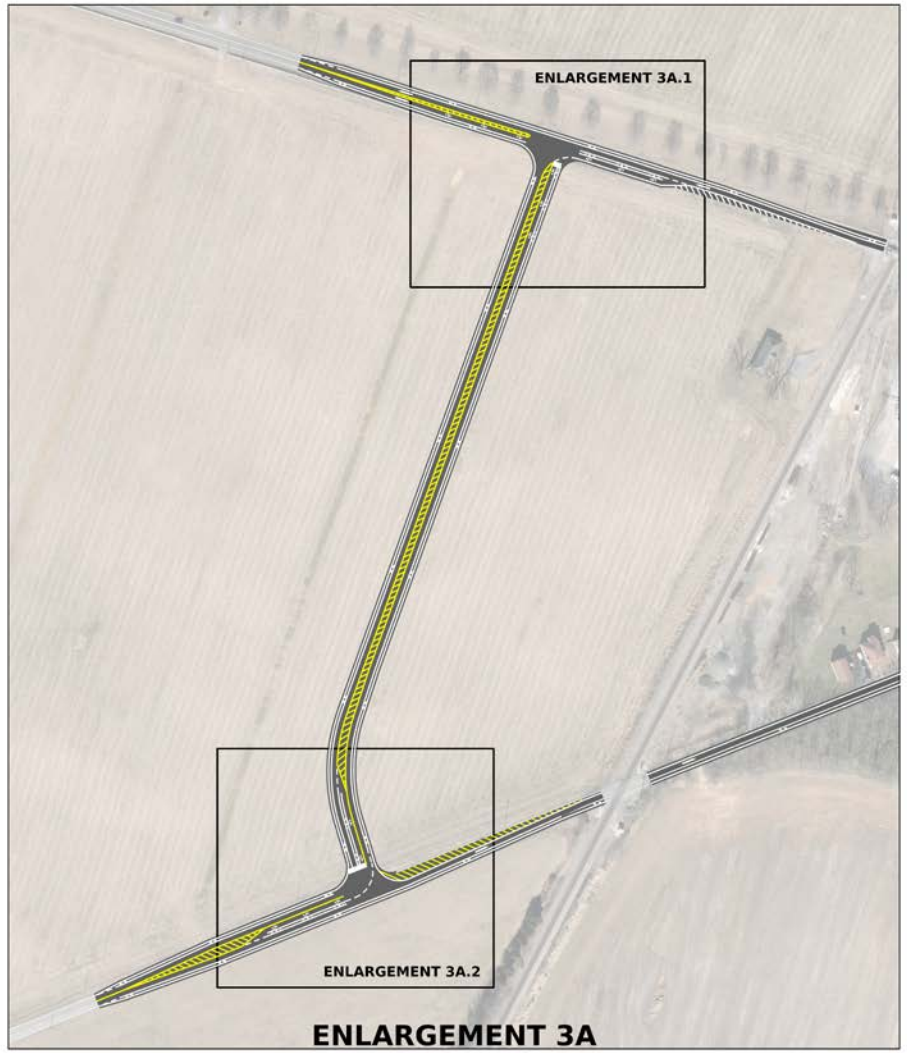

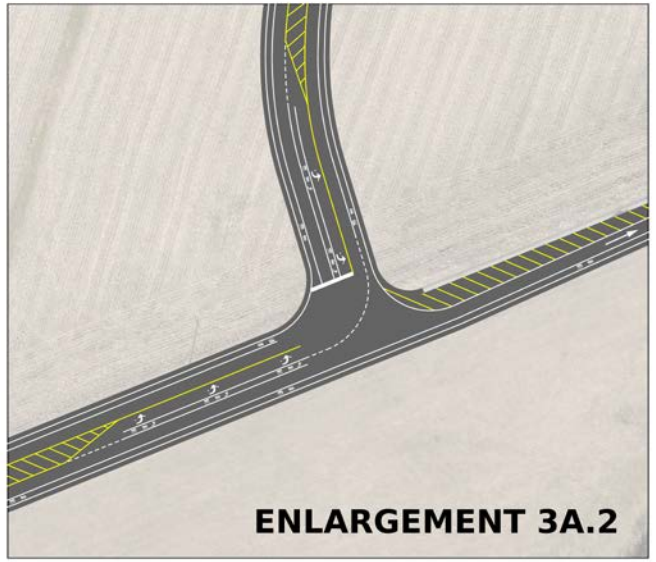

CARPENTER MARTY transportation

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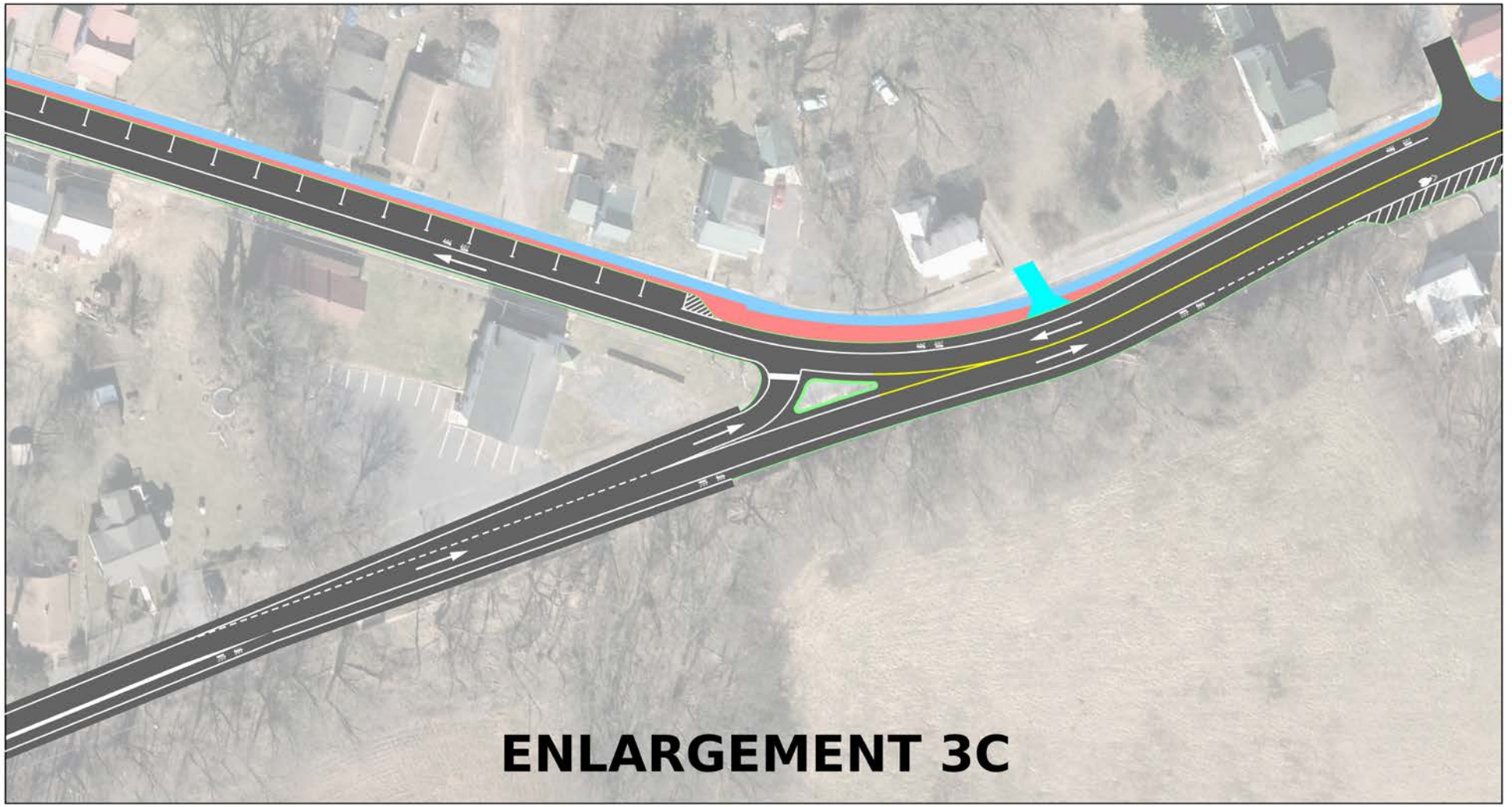
ENLARGEMENT 3C


MID-BLOCK CROSSING
WITH RECTANGULAR
RAPID FLASHING BEACONS
(RRFBS)
ENLARGEMENT 3D

Schedule

- February Field Review
- March Stakeholder Meeting
- 4/8/21 Public Meeting
- 4/26/21 Submit Draft Report
- ~5/3/21 Stakeholder Meeting & Report Comments
- 5/8/21 Public Comment Period Ends
- 5/17/21 Submit Final Report

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Comments

- You may comment online
  - http://www.cmtran.com/wv51
  - https://arcg.is/W58Dq
- You may comment in writing (via email or USPS) or phone call
  - Email: Matt Mullenax at mmullenax@hepmpo.net
  - Phone: Matt Mullenax at (240) 313-2081
  - USPS mail (postmarked by May 8, 2021):

Mr. Elwood Penn, IV, PE
Director, Planning Division
West Virginia Division of Highways
Building 5, Room 740
1900 Kanawha Boulevard East
Charleston, WV, 25305

- The comment period ends May 8, 2021

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Questions?

- Submit your questions/comments now!
  - Click on the “Chat”
  - Type your question/comment in the chat box
  - Send your comment
- We will start addressing your questions/comments now


Thank you!

Date Received	Format	Sender	Comment
4/8/2021	Email	Jean Petti	First, thank you so much for the careful consideration of options to enhance safety and efficiency at our western gateway. As a councilmember, I have heard concerns from residents regularly about the difficulty parking or walking along MLK Blvd. I support Option 1 (the roundabout) as it seems to best serve to slow the traffic coming into town. Parking and sidewalks are also public needs along that corridor. Bike lanes are less of a priority, in my opinion, as WV-51 is moderately dangerous and we may not want to encourage folks to mingle with traffic on that road. Thank you for including us, Jean
4/10/2021	Email	Odbert C Courtney	Mr. Mullenax; Presentation was very informative and the only comment that I have at the moment (storm water treatment not defined yet) is in regards to the roundabout. I feel that if the roundabout is not sufficiently large enough then then there will be many accidents there due to the relative closeness of the entrance points of the roundabout. I fear that people will not show sufficient caution entering the roundabout to allow time enough to determine what other people's intentions are. Most people don't use turn signals properly in roundabouts anyway so accidents are going to happen. Since I live at the base of the hills, across from Evitts Run park I am very much interested in what the storm water treatment changes will be. This area floods easily under heavy rain. Thanks for letting us know about the zoom meeting, very much appreciagted. Odbert C Courtney
4/11/2021	Email	Hines Ward 1 Councilman	Hey Matt, Darryl said to send you a note if I have a comment about the purposed change to the intersection. One of the things with your maps was the new road connecting 51 to Summit point. The problem the citizens would have living on the Church side on Summit road is they would have to go out 51 turn on the new road then come back towards. Charles Town to get to their homes. Then if they wanted to come to CT they would have to go towards Summit Point turn on the new cross road to 51 to get back into CT. To me that is not helpful to those residents and I'm sure they would be very unhappy with that change. But looking at the oneway on MLK map seemed like a good idea. Thanks Chet
4/12/2021	E-mail	Michael Tolbert	Gentlemen, I am sending this to you because your names and email addresses are at the back of this slide deck. I've searched your website every day since your presentation. I've found no concise description of the problem, the proposed solution or the decision-making process. Does Marty Carpenter Transportation's contract not include enough funding to provide a written document. Even the City's $70-plus million-dollar boondoggle, the "West End Revitalization Plan" of several years ago included 50 pages of sentences. In a few minutes I am heading to the first of what are likely to be several neighborhood meetings on these proposals. This leaves us to discuss the major highway problem only using a jumble of pretty pictures on numerous slides. Does the State now accept PowerPoint slides when deciding to fund millions of dollars of roadwork? Many of the people who will attend were not lucky enough to watch the meeting as they really found it difficult to understand what was the little, non-descript cards that were passed out announcing the public meeting in mailboxes so very close to the day of the meeting. These proposals are likely to increase the amount and flow of traffic through the rest of one neighborhood, while dropping more traffic straight onto the main street of the City because it will alter/spur the growth/development scheme of the southern part of the County, along two of the County's most dangerous roads. Did anyone in you group read the County's Strategic Plan? A written document is also needed for law enforcement and other emergency service personal since these three proposals will significantly alter the movement of their vehicles, that constantly fly out these two roads at all hours. Your study totally ignored two very active two railroad track intersections that would be located less than two blocks away from your proposed circle. Heaven help us if these vehicles get stuck into your new traffic pattens and can't free themselves. Did anyone ask these folks, their opinion, as those two roads are the only way to access large parts of southern Jefferson County. Since you did not study the impact of the road clogging train intersections, your analysis uses a faulty premise that many of the reported accidents were caused by the Y intersection, instead of occurring at the Y intersection because the cars had to abruptly stops due to long trains passing through or stopping on the railroad tracks, which they often do, many times a day. This is just one of the many faulty premises that you came up with since your scope of study was so unfathomably narrow to effictive five long blocks. Just two weeks ago (I have pictures) one train actually decoupled at the intersection. Half the train blocked one intersection while the other half blocked the other intersection. It took a while for the railroad folks to connect that train back together. Subsequent trains for several days ran much slower, causing longer traffic backups, as railroad crews inspected and tested the tracks. So, unless you do not wish to receive true public opinion since your project has already been wired with one of the proposed solutions and you simply needed to satisfy the public meeting requirements, please be professional, respectful and transparent. Post a document on your website that starts with a capitol letter and ends in periods and describes, maybe with a few organized drawings, the three option that you are proposing.
4/14/2021	E-mail	Michael Tolbert	This is why I had reservations concerning being on this workgroup. You folks don't swing out wide enough when didvyour scope and now you a majority of the community has no clue this thing is in the works as there is no summary. The press has no summary to write a story to inform folks of how this may generate more traffic through a middle of the city that has spent so much treasure attempting to be walkable. I'm sorry but the video snippet just don't say transparency for such a massive project. You have walked into a city and about to alter the inside of a existing city with these proposal s and nobody knows about it. That is how Rockwool began and the City 's East Liberty Street development revolt began. Can't anyone just write a page-long official summary?

Comments and Questions Received in Chat Box Durning Public Meeting - Held 4/8/2021

From Daphne Wahl to Me: (Privately) 06:29 PM

Q1. Will there be enough room for large trucks heading east to be able to make the right hand turn onto West street with out going into the oncoming lane like they do now.
2. How will the people that live on summit point road after the rail road track by the church get access?

Under example 2 (question above as well) will there be a new entrance for the church?

From Julia Rice to Me: (Privately) 06:32 PM

If private property is included in the changes how is this handled? Would that fall under eminent (sp?) domain and is their compensation?

From Duke4 to Me: (Privately) 06:32 PM

Are there details available on the storm water management aspect of the project?

From Julia Rice to Me: (Privately) 06:32 PM

Both our property and the Davenport property fall in this category.

From Jean Petti to Me: (Privately) 06:32 PM

Are there plans to add bike lanes on 51? If so, that raises them in importance to include. If not, parking may be more valuable to our citizens

From Julia Rice to Me: (Privately) 06:33 PM

typing too fast - would there be compensation for private property used for the changes.

From Duke4 to Me: (Privately) 06:35 PM

Will any existing homes be directly affected by any of the three options? If so, which ones.

From Jean Petti to Me: (Privately) 06:37 PM

Does one Option have an advantage over the others in respect to slowing traffic as it enters town?

From Duke4 to Me: (Privately) 06:43 PM

Thank you!

From Daphne Wahl to Me: (Privately) 06:43 PM

How will you ultimately decide the alternative that will be used

From Duke4 to Me: (Privately) 06:44 PM

Does the project team currently favor one of these alternatives over the others?

From Daphne Wahl to Me: (Privately) 06:46 PM

Is there a concern that with #2 option that you will have a lot of people having to turn around and causing problems since the road has to stay open for the local people to get home on that short length

From Timothy Robinson to Everyone: 07:32 PM

Is there a study done on the train? How often does is run and what are times?

From Jeff Hynes to Me: (Privately) 07:33 PM

I am curious how the various options will manage the large truck traffic that comes through town from this direction? Would the various new turns or the single lane circle accommodate those large vehicles or are there other plans to account for those?
sorry. meant to send that to everyone

thank you
What will happen to traffic while this Is being built?
so to keep asking you but oi do not seem to have the option to message everyone
Thank you
Will cub cuts be made for private driveways or just public streets?

curb cuts

From Timothy Robinson to Me: (Privately) 07:39 PM

If Project 2 or 3are picked they will affect the traffic to the church and schoolhouse, what would be a fix?

From Rikki Twyford to Me: (Privately) 07:41 PM

Will there be a citizen outreach effort to poll at least the residents nearby regarding preference of parking vs bike lane and alternatives in general?

From Michael Tolbert to Me: (Privately) 07:42 PM

In the interest or transparency, where will these slides be posted? Where will the written description of the three options posted?

From Jeff Hynes to Me: (Privately) 07:44 PM

i saw mentioned underground utilities and storm water improvements. Can you expand on that. Will existing above ground lines be put below ground? In terms of storm water, would the installed system be set-up to allow side streets to tap in later if the City decides to build improvements?

From Timothy Robinson to Me: (Privately) 07:51 PM

What is the state mandate for the properties alone this route?

From Jeff Hynes to Me: (Privately) 07:58 PM

Patrick mentioned that costs have not considered yet. Are we blind at the moment in regards of cost or do we have any idea of the costs of the various options. What portion of any of this project would be born by the City?
Also, roughly how far away would we be from breaking ground?

thank you

From Michael Tolbert to Me: (Privately) 07:59 PM

For option 2 and 3 how far out in feet past the railroad track travelling west toward Tuscawilla Hills will this new road be built?

WV 51 - Feasibility Study

View Only | 0

SUMMARY → DESIGN SURVEY → PREVIEW & SCORE → COLLECT RESPONSES → ANALYZE RESULTS → PRESENT RESULTS

RULES

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RESPONDENTS: 3 of 3

QUESTION SUMMARIES | INSIGHTS AND DATA TRENDS | INDIVIDUAL RESPONSES

Respondent #3

Edit | D

COMPLETE

Started: Thursday, April 08, 2021 1:29:10 PM
Last Modified: Thursday, April 08, 2021 1:39:46 PM
Time Spent: 00:10:35

Page 1

Q1

What are the top three issues with vehicular transportation in the project area?

Traffic congestion. Pedestrian safety. Needs bike lane/path.

Q2

What are the top three issues with pedestrian/bicycle transportation in the project area?

Uneven sidewalks. Crossing areas. Limited lighting/visibility

Q3

What is the primary issue with the west end of the project area?

sidewalks uneven but worry about impact on private properties and historic church

Q4

What is the primary issue with the WV-51 & Summit Point Road intersection?

people not understanding the right away signage - no pedestrian safety- no bike rider safety

Q5

What is the primary issue with the east end of the project area?

This area is alright except for the traffic congestion at the West Street stoplight

Q6

What improvements do you believe will improve vehicular travel in the project area?

Adjust traffic light timing.

Q7

What improvements do you believe will improve pedestrian/bicycle travel in the project area?

Bike lane or parallel path. Clearer pedestrian walkways. Even sidewalks

Q8

Please provide additional comments/concerns with the study area.

Improvements are needed but I hope the construction does not negatively impact the historic sites at Harewood School House or th Church which. I urge Carpenter Marty to consult with the local community. Thank you!

RESPONDENTS: 1 of 1

SA

QUESTION SUMMARIES | INSIGHTS AND DATA TRENDS | INDIVIDUAL RESPONSES

Edit | Delete

COMPLETE

Started: Friday, March 05, 2021 1:14:24 PM
Last Modified: Friday, March 05, 2021 1:17:49 PM
Time Spent: 00:03:25

Page 1: Stakeholder Survey

Q1

What is your name?

James T. Kratovil

Q2

What are the top three issues with vehicular transportation in the project area?

sight lines, congestion, rear end collisions.

Q3

What are the top three issues with pedestrian/bicycle transportation in the project area?

Respondent skipped this question

Q4

What is the primary issue with the west end of the project area?

same

Q5

What is the primary issue with the WV-51 & Summit Point Road intersection?

uncertainty, sight lines

Q6

What is the primary issue with the east end of the project area?

traffic flow

Q7

What improvements do you believe will improve vehicular travel in the project area?

roundabout west of railroad tracks

Q8

What improvements do you believe will improve pedestrian/bicycle travel in the project area?

same

Q9

Please provide additional comments/concerns with the study area.

Thanks for the meeting. I thought it was particularly valuable.

WV 51 - West Washington Street Feasibility Study

View Only 0

SUMMARY → DESIGN SURVEY → PREVIEW & SCORE → COLLECT RESPONSES → ANALYZE RESULTS → PRESENT RESULTS

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No rules applied

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RESPONDENTS: 2 of 2

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QUESTION SUMMARIES INSIGHTS AND DATA TRENDS INDIVIDUAL RESPONSES

Respondent #2

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COMPLETE

Started: Wednesday, March 24, 2021 4:51:33 PM
Last Modified: Wednesday, March 24, 2021 5:02:01 PM
Time Spent: 00:10:28

Page 1: Stakeholder Survey

Q1

What is your name?

Chet Hines

Q2

What are the top three issues with vehicular transportation in the project area?

Amount of 51 traffic. Residence parking along MLK

Q3

What are the top three issues with pedestrian/bicycle transportation in the project area?

Width of roads. Short length of purposed bike trail. Small intersection.

Q4

What is the primary issue with the west end of the project area?

Parking , railroad, side road access.

Q5

What is the primary issue with the WV-51 & Summit Point Road intersection?

It works.

Q6

What is the primary issue with the east end of the project area?

Unknown

Q7

What improvements do you believe will improve vehicular travel in the project area?

51 access to bypass.

Q8

What improvements do you believe will improve pedestrian/bicycle travel in the project area?

?

Q9

Please provide additional comments/concerns with the study area.

Done

MATT WARD

502 SOUTH SAMUEL STREET
CHARLES TOWN, WV 25414
MATT.WARD@STRATEGIESDC.COM / 202.422.2411

May 8, 2021

The Honorable Robert Trainor
Mayor of Charles Town

Daryl Hennessy
City Manager of Charles Town

Matt Mullenax., GISP
Executive Director
Hagerstown/Eastern Panhandle MPO

Director Elwood Penn, P.E.
Planning Division
West Virginia Division of Highways

Brian Carr, P.E.
Regional Planning Unit Leader
Planning Division
West Virginia Division of Highways

Gina Balsamo, P.E.
Carpenter Marty Transportation

Re: Comments on Charles Town, WV 51 Improvement Project

Dear City of Charles Town, WV Division of Highways, and HEPMPO Leadership:

I write to provide comments on the WV 51 Improvement Project being considered in Charles Town. I write as a citizen of Charles Town, and based on my personal involvement in the creation of the Charles Town West End Revitalization Plan, my role in supporting the restoration of the Free Black School historic structure on Route 51, and as someone who served 10 years on the Charles Town City Council and the Charles Town Planning Commission.

THIS IS A WELCOMED INVESTMENT IN NEIGHBORHOOD CONNECTIVITY, SAFETY AND LIVABILITY

First, an overall point to local, regional and state leaders: Thank you very much for investing time, resources and effort into this Route 51 project. We welcome this investment. Charles Town's west end has been lacking public investment for decades; the street and sidewalk infrastructure is highly deteriorated and inadequate to ensure safety and livability; and the "Y Intersection" of Route 51, Summit Point Road and West Washington Street (which some call "Malfunction Junction") is ineffective in moving traffic, mitigating crashes, or promoting safe walking or biking in this neighborhood.

WV DOT, HEPMPO and Charles Town are now considering how to improve West Washington Street from downtown through the Y Intersection and along Martin Luther King, Jr. Boulevard (Route 51) and Summit Point Road to the west end of Charles Town. All of the alternatives being considered include (and should include) sidewalk improvements, streetscaping, improved

crosswalks and intersections, improved on-street parking, bike lanes, undergrounding of overhead utilities, installation of stormwater management infrastructure, and preservation of important historic structures such as Zion Baptist Church, the Free Black School, and neighborhood homes.

Note too that the West End Revitalization Plan sought to create a continuous pedestrian/bicycle path along Evitts Run Creek, stretching from the Happy Retreat community center, through Perry Fields behind the Hilldale Shopping Center, across W. Washington Street to Evitts Run Park, and up through the Skate Park, Boys & Girls Club, and Ranson Civic Center. A key to this vision for a community pedestrian/walking path is the crossing across W. Washington Street between Perry Fields and Evitts Run Park. Thus, this feasibility study's idea of a mid-block crossing on West Washington Street at S. Water Street, is an excellent idea for connectivity, and I strongly encourage you to pursue this mid-block crossing idea.

I imagine at this stage of planning, you have not yet considered the streetscape and street furniture that may be involved in project implementation, and so I would note that it would be important to consider and ensure inclusion of those elements in the project as planning progresses, such as:

- Sidewalk and crosswalk materials/styles which are similar to downtown's streetscape styles;
- Use of the black, wrought iron Victorian-style streetlights which are used downtown;
- Street furniture such as benches, trash receptacles, and bike racks, like the ones downtown;
- Wayfinding signage along the route to identify and provide directions to the historic sites, parks, and other community assets in and around the project area;
- Use of street trees, and use of raingardens and flow-through planters to support stormwater management and beautification.

With respect to the West Washington Street portion of the plan, which is essentially identical in all three alternatives, it seems that there is no bicycle lane (either dedicated or via sharrow) on that portion. While sharrow or dedicated bike lanes are considered for MLK, Jr./Route 51 from the Y Intersection to the west, they essentially terminate at the Y Intersection, and there is no further bicycle facilities going east between that Y intersection and downtown. I recommend that the planning study must consider whether bicycle infrastructure in the form of a dedicated lane or sharrow could be included on W. Washington, at least to the Evitts Run Park / Perry Park area if not all the way to the downtown. Bicycle facilities to the park system's current and the envisioned streamside bicycle path in the West End Revitalization Plan, should be connected to the future Route 51 bicycle infrastructure now being considered in this study.

These kinds of walkability, safety, and beautification investments on West Washington Street, MLK Jr. and Summit Point Road would be a welcome improvement to this neighborhood and our city, and the first major step forward on the West End Revitalization Plan. So again thank you, and please keep moving forward on this project.

INPUT ON BEST ALTERNATIVES

With respect to the three alternatives proposed for handling the inadequate Y Intersection at W. Washington, MLK Jr., and Summit Point, I have the following perspectives and questions:

1.) **Alternative 2 with a Stubbed Off Summit Point Road should not be selected:** Alternative 2, which disconnects Summit Point Road from the rest of the community for vehicle, pedestrian, and bicycle access, doesn't improve the community, and still requires the obtrusive "western bypass" to make this limited option even work. I do not believe this alternative should be pursued any further.

2.) **Alternative 1's Roundabout improves the intersection, and is least intrusive to the community:** I find this Roundabout alternative to be promising, in that it could improve traffic flow at the Y Intersection without requiring a "western bypass" west of the railroad tracks (more on that below), and is minimally intrusive and disruptive to the existing neighborhood. However, my perspective comes with four comments:

   a.) As the roundabout will be placed south of the existing Summit Point Road and Zion Church, it will encroach on the historic and beautiful Hill Farm. Of course, any taking of their land will require just compensation, which I am sure the parties will discuss. The issue that I wish to raise as a citizen, is that an ancestor, Thornton Perry, placed beautiful stone walls, bridges, and other structures around the Hill Farm that raise the charm of Charles Town, and really have become part of our history. The roundabout as proposed would be right on top of stone gateway structures that lead into the Hill Farm as a country walking lane. If Alternative 1 is selected, these stone gateways must be rebuilt further into the land, below the new roundabout. I note that the Virginia Department of Transportation, which is underway with a major upgrade to the Route 9/Charles Town Pike through historic Hillsboro VA (called the "ReThink9" project), has taken great care and expended resources to use new stone retaining walls to maintain Hillsboro's historic integrity as they conduct a major upgrade with two new roundabouts. See "Walls that Retain the Roadway – and Hillsboro's Historic Integrity" at https://rethink9.com/retaining-walls/. That kind of care is exactly what we would need at The Hill Farm's stone structures which will be impacted by the new roundabout intersection. Of course the roundabout should also have substantial landscape screening installed to minimize viewshed disruption at The Hill Farm.

   b.) It is not clear to me from the public presentation/plans whether there is walking access through and around the roundabout. If somebody wanted to walk, for instance, from the north side of MLK Jr. Boulevard, through the Y intersection, to walk along Summit Point Road, could they do that? Are there sidewalks/crosswalks at the roundabout? I would note that many in the Charles Town community appreciate the efficient traffic flow at the newish roundabout on Route 115 south of downtown where the 340 Bypass entrance/exits come in. However, many are also disappointed that this Route 115 roundabout has no pedestrian accommodations, crosswalks, or other walkability infrastructure in that design – let's not do that again at Route 51.

c.) This roundabout will essentially become the "western gateway" to downtown Charles Town, and it would be appropriate to design the roundabout so that it could have an attractive and high-quality entrance sign, public art, or other appropriate treatment in the center of the Roundabout. See, for instance, the new Hillsboro VA welcome signs in the roundabouts at the ReThink9 project at https://loudounnow.com/2021/03/30/hillsboro-unveils-roundabout-welcome-sign-as-traffic-resumes/. It would be appropriate now in this planning stage, for WV DOH and the consulting team to consider how such public signage and/or public art is not precluded by either the design, or by a failure to consider safety/sightline issues in planning for consideration of later amenity features.

d.) This feasibility study has a public perception problem (more on that below), with some people seeming to have a perspective that a roundabout will back up traffic at the new feature – even to the extent that cars will be backed onto the railroad at-grade crossing far to the west. Of course, the literature is very extensive on the benefits of roundabouts. For example, the Federal Highways Administration's studies say that a roundabout raises the capacity of intersections by 30-50% with less delays waiting at stop signs; and has fewer crashes and severe crashes with fatalities decreased by 90%, injuries reduced by 75%, and reductions of up to 40% in pedestrian/bicycle crashes. However, there are rumors among many in the Charles Town community that this roundabout will back up traffic. I urge DOT and its consultant team to provide some public education on the benefits of roundabouts, to share the experience of benefits in WV at other roundabouts, or to even calculate the expected improvements in traffic flow at this specific roundabout, to address with these public perceptions and concerns.

3.) **Alternative 3 has some clear advantages:** Although I believe the Alternative 1/Roundabout has some clear benefits as discussed above, there is one feature of the Alternative 3 / One-Way design that has major benefits – the one-way routing west on Route 51/MLK and east on Summit Point provides ample room within the rights-of-way for a "complete street" approach to the neighborhood.

The approach of Alternative 3 would allow for a dedicated bike lane, more robust sidewalks/streetscapes, and additional on-street parking on Route 51 and also on Summit Point Road, which are all positives. Further, one-way streets are easier and safer for pedestrians to cross as compared to two-way traffic.

I emphasize that one aspect of Alternative 3 (and Alternative 2) is not desirable – the "western bypass" west of the railroad tracks in a peaceful and beautiful field on historic Altona Farm. The clear demarcation between "town and country" created by the Norfolk-Southern rail line at the western border of the town now is a desirable feature to our community. In some of the best communities in the nation (and world), urban growth boundaries provide a clear demarcation between the established community (like Charles Town) and the countryside. That is what the NS rail track does. If we build a bypass road out in that field, the edge of town is now forever compromised. Development could spring up on that new bypass roadway. Development could sprawl westward. The potential long-term consequences of this turn-around bypass will likely be negative.

I encourage the WV DOH and consultant team to consider, instead, the potential to create the "bypass" road needed to make the Alternative 3 one-way method work, on the east side of the Norfolk-Southern Railroad Tracks. The area between Route 51 and Summit Point Road, immediately east/inside of the NS tracks, has a gravel roadway and scrub land with no structures running along the route, which is approximately 117 feet wide. While most of that length is in N-S's parcel map, there is an old rail siding in one area, and part of the Griffith Energy Service's parking lot in one area – this corridor of space could be ideal for creation of the bypass needed for Alternative 3. It would require purchase/compensation, swap or other accommodations to acquire the property or easement from N-S and Griffith, much like the Altona Farm would need to be taken under existing Alternative 3. But the benefits of this approach could be significant, and I ask you to revisit this potential idea.

NEED TO BOOST PUBLIC ENGAGEMENT

I understand that significant public engagement has taken place, but I do not believe that it has been sufficient, and many in the public area displeased. As I reviewed the public presentation/alternatives and considered the input I would provide, I reached out to several citizens in the neighborhood, and community organizations and leaders. Many were frustrated by what they perceived as insufficient public engagement. I encourage the City of Charles Town to take the lead on reinvigorating this public engagement, in coordination with HEPMPO and WV DOH. An outdoors or virtual "town hall meeting" with robust flier-distribution in the neighborhood beforehand and collaboration with community organizations, could hopefully dissipate some of the community frustration which, I fear, undermines the important work of gathering input on what alternatives can best bring this beneficial improvement project. I would be happy to assist the city in considering how to make this public engagement as robust and effective as possible.

Thank you for your consideration of my perspectives, and feel free to contact me if you have any questions, at 202.422.2411 or matt.ward@strategiesdc.com.

Sincerely,

Matt Ward

Gina Balsamo

From: Mullenax, Matt <mmullenax@washco-md.net>
Sent: Thursday, May 6, 2021 1:31 PM
To: Patrick Park; Gina Balsamo
Cc: Carr, Brian E; Daryl Hennessy
Subject: Public Comment - FW: WV 51 Feasibility Study

Follow Up Flag: Follow up
Flag Status: Flagged

From: Carol Kable <carolkable2465@gmail.com>
Sent: Thursday, May 6, 2021 1:29 PM
To: Mullenax, Matt <mmullenax@washco-md.net>
Cc: Steve Stolipher <stevestolipher@hotmail.com>
Subject: Re: WV 51 Feasibility Study

Dear Mr. Mullenax,

We have viewed your proposals for upgrading and changing Rt. 51 and Summit Point Road to help alleviate traffic. We cannot see that a circle will help the traffic all that much. The traffic slow down is the result of the traffic signal at the intersection of Washington Street and Augustine Avenue and the railroad crossing when being used, which is often.

Alternate #2 would seem to add even more traffic to Rt. 51 causing Summit Point Road entrance on Rt. 51
to be blocked.

Alternate #3 also seems to push more traffic onto 51 adding traffic lights and stop signs.

We don't see a crossing at Evitt's Run PARK would be that beneficial and could be possibly dangerous.

Sincerely submitted,

Marty and Carol Kable

--
Carol

Carol Kable
336 Rosemont Way
Charles Town, WV 25414
304-283-8602 cell

April 28, 2021

Matt Mullenax

mmullenax@hepmpo.net

240-313-2081

RE: WV DOH WV RT. 51 Feasibility Study comments

Matt,

Fixing the Rt. 51, Summit Point road entrances to Charles Town will not be an easy solution. The traffic on Rt. 51 seems to be getting busier all the time and most likely driven by development in the Inwood area. Most of this traffic does not have Charles Town as its destination but is seeking access to roads leading elsewhere. The Charles Town Comprehensive Plan shows an illustration of a bypass from Rt. 51 to 115 (old Rt.9). Has this proposal been considered in your plan? (Copy of plan attached) In addition, the Norfolk Southern rail crossing has not been considered and from my experience a 3-4 minute backup for the train can extend westward on Rt. 51 for 1/4 to 1/2 mile between 7-9am.

Of the options, the traffic circle near the present fork of Rt. 51 and the Summit Point Road would be the least disruptive and possibly the least costly but would not blend the traffic any better than now. It may even slow down the traffic.

These opinions are not based on the fact that two of the following routes would come across my land. The connector road between Summit Point and Rt. 51 would create two near 90 degree intersections where the road would join the current existing roads. At the very least, this would require a stop sign if not a traffic light at both ends.

Alternate #2: This would be unacceptable and totally overload Rt. 51. According to your traffic count statistics, this would add 135 additional vehicles between 7:30 & 8:30am. This plan would block the Summit Point road access to downtown Charles Town residents who have Charles Town as their destination.

Alternate #3: This plan would make the Summit Point Road and Rt. 51 one way and force traffic to use the connector and overload the intersections created by the connector road again with stop signs or lights.

The enhancements offering a traffic warning at Evitts Run park and a pedestrian cross walk would create a dangerous situation for both traffic and pedestrians.

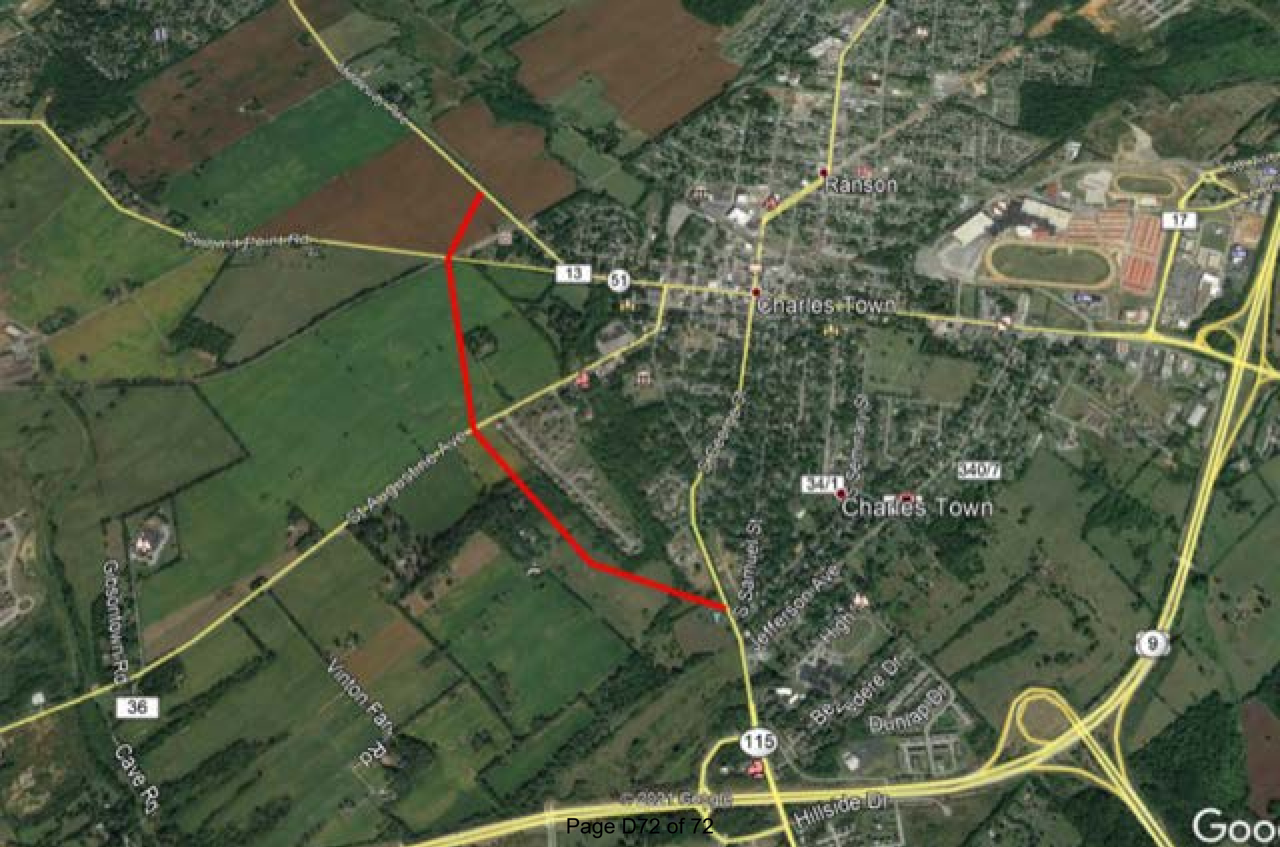
My final suggestion would be to save the money for a bypass from Rt. 9 West to Rt. 340 South. If so, this could intersect the existing bypass and would make full use of the roads already there.

I will look forward to hearing from you and being kept up to date with any proposals or plans for the future.

Yours truly,

Henry B. & Faye B. Davenport, III

Altona Farm owners


Ranson
17
13
51
Charles Town
340/1
340/7
Charles Town
St Augustine Ave
S Samuel St
Jefferson Ave
9
36
115
Dunlap Dr
Hillside Dr
Vinton Farm Rd
Cave Rd
© 2021 Google

Appendix E
Capacity Analysis

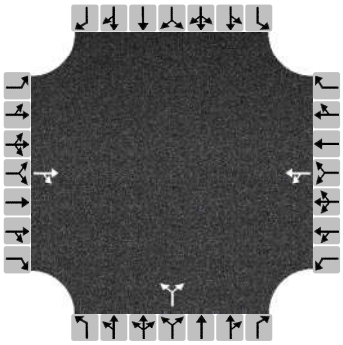
CARPENTER MARTY transportation

Existing Conditions Capacity Analysis

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	CMC	Intersection	W. Washington & MLK Jr
Agency/Co.	CMTran	Jurisdiction	WVDOT
Date Performed		East/West Street	W. Washington/MLK Jr
Analysis Year	2019	North/South Street	W. Washington Street
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM Peak - Existing		
Project Description	WV 51 - West Washington Street Feasibility Study		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume		426	3	65	168		1		135			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	466			253			148					
Percent Heavy Vehicles	0			3			0					

Departure Headway and Service Time

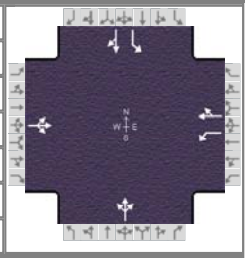
Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.414			0.225			0.131					
Final Departure Headway, hd (s)	4.60			4.94			4.96					
Final Degree of Utilization, x	0.596			0.348			0.204					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	2.60			2.94			2.96					

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	466			253			148					
Capacity	782			728			725					
95% Queue Length, Q_{95} (veh)	4.0			1.6			0.8					
Control Delay (s/veh)	14.2			10.6			9.2					
Level of Service, LOS	B			B			A					
Approach Delay (s/veh)	14.2			10.6			9.2					
Approach LOS	B			B			A					
Intersection Delay, s/veh | LOS	12.3						B					

HCS7 Signalized Intersection Results Summary

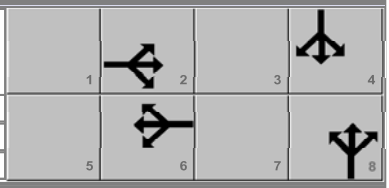
General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	CMC	Analysis Date	Apr 26, 2021	Area Type	Other
Jurisdiction	WVDOT	Time Period	AM Peak	PHF	0.92
Urban Street	W. Washington Street	Analysis Year	2019	Analysis Period	1> 7:00
Intersection	W. Washington Street &…	File Name	2019 AM Peak.xus		
Project Description	WV 51 - West Washington Street Feasibility Study				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	15	354	142	45	143	5	55	54	41	13	45	23

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	45.0	25.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		8.0		6.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, (*Y+R c*), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		3.3		3.3		3.3		3.3
Queue Clearance Time (*g s*), s		18.4		21.5		7.9		8.5
Green Extension Time (*g e*), s		1.8		1.8		0.5		0.5
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.00		0.00		0.00		0.00

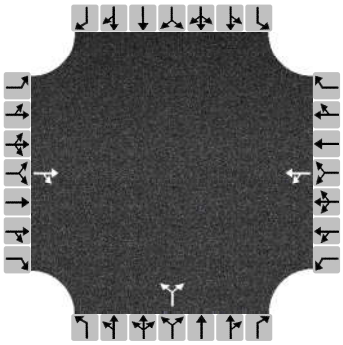
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		555		49	161			163		14	74	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1729		880	1815			1590		1312	1763	
Queue Service Time (*g s*), s		0.0		3.0	3.4			2.4		0.7	2.4	
Cycle Queue Clearance Time (*g c*), s		16.4		19.5	3.4			5.9		6.5	2.4	
Green Ratio (*g/C*)		0.56		0.56	0.56			0.31		0.31	0.31	
Capacity (*c*), veh/h		1019		404	1021			558		404	551	
Volume-to-Capacity Ratio (*X*)		0.545		0.121	0.158			0.292		0.035	0.134	
Back of Queue (*Q*), ft/ln (95 th percentile)		255.3		27.3	58.5			104.7		9.2	44.7	
Back of Queue (*Q*), veh/ln (95 th percentile)		9.8		1.1	2.2			4.1		0.4	1.8	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.38		0.42	0.18			0.40		0.23	0.17	
Uniform Delay (*d 1*), s/veh		11.2		17.5	8.4			20.9		23.4	19.7	
Incremental Delay (*d 2*), s/veh		0.3		0.0	0.0			0.1		0.0	0.0	
Initial Queue Delay (*d 3*), s/veh		0.0		0.0	0.0			0.0		0.0	0.0	
Control Delay (*d*), s/veh		11.6		17.6	8.4			21.0		23.4	19.8	
Level of Service (LOS)		B		B	A			C		C	B	
Approach Delay, s/veh / LOS	11.6	B		10.6	B		21.0	C		20.4	C	
Intersection Delay, s/veh / LOS	13.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.88	B	1.92	B	1.69	B
Bicycle LOS Score / LOS	1.40	A	0.83	A	0.76	A	0.63	A

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	CMC	Intersection	W. Washington & MLK Jr
Agency/Co.	CMTran	Jurisdiction	WVDOT
Date Performed		East/West Street	W. Washington/MLK Jr
Analysis Year	2019	North/South Street	W. Washington Street
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM Peak - Existing		
Project Description	WV 51 - West Washington Street Feasibility Study		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume		294	2	158	579		3		138			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	322			801			153					
Percent Heavy Vehicles	0			0			0					

Departure Headway and Service Time

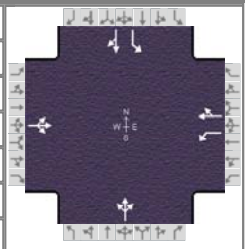
Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.286			0.712			0.136					
Final Departure Headway, hd (s)	5.25			4.86			5.76					
Final Degree of Utilization, x	0.469			1.082			0.245					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	3.25			2.86			3.76					

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	322			801			153					
Capacity	685			740			625					
95% Queue Length, Q_{95} (veh)	2.5			21.6			1.0					
Control Delay (s/veh)	12.8			78.5			10.6					
Level of Service, LOS	B			F			B					
Approach Delay (s/veh)	12.8			78.5			10.6					
Approach LOS	B			F			B					
Intersection Delay, s/veh | LOS	53.8						F					

HCS7 Signalized Intersection Results Summary

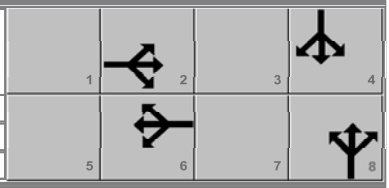
General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	CMC	Analysis Date	Apr 26, 2021	Area Type	Other
Jurisdiction	WVDOT	Time Period	PM Peak	PHF	0.92
Urban Street	W. Washington Street	Analysis Year	2019	Analysis Period	1> 7:00
Intersection	W. Washington Street &…	File Name	2019 PM Peak.xus		
Project Description	WV 51 - West Washington Street Feasibility Study				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	12	329	75	72	485	15	156	63	76	8	108	77

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	45.0	25.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		8.0		6.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, (*Y+R c*), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		3.3		3.3		3.4		3.4
Queue Clearance Time (*g s*), s		13.6		17.9		25.0		25.6
Green Extension Time (*g e*), s		2.6		2.6		0.0		0.0
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.00		0.00		1.00		1.00

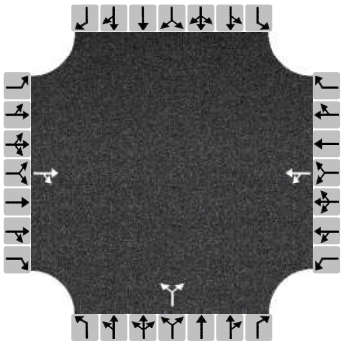
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		452		78	543			321		9	201	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1790		935	1875			1112		1256	1768	
Queue Service Time (*g s*), s		0.0		4.3	14.3			16.0		0.5	7.1	
Cycle Queue Clearance Time (*g c*), s		11.6		15.9	14.3			23.0		23.6	7.1	
Green Ratio (*g/C*)		0.56		0.56	0.56			0.31		0.31	0.31	
Capacity (*c*), veh/h		1053		480	1055			416		121	552	
Volume-to-Capacity Ratio (*X*)		0.429		0.163	0.515			0.771		0.072	0.364	
Back of Queue (*Q*), ft/ln (95 th percentile)		194.7		41.1	233.7			274.8		7.6	129.7	
Back of Queue (*Q*), veh/ln (95 th percentile)		7.7		1.6	9.3			11.0		0.3	5.2	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.29		0.63	0.73			1.06		0.19	0.48	
Uniform Delay (*d 1*), s/veh		10.2		14.8	10.8			28.8		38.3	21.3	
Incremental Delay (*d 2*), s/veh		0.1		0.1	0.2			7.8		0.1	0.1	
Initial Queue Delay (*d 3*), s/veh		0.0		0.0	0.0			0.0		0.0	0.0	
Control Delay (*d*), s/veh		10.3		14.9	11.0			36.6		38.4	21.5	
Level of Service (LOS)		B		B	B			D		D	C	
Approach Delay, s/veh / LOS	10.3	B		11.5	B		36.6	D		22.2	C	
Intersection Delay, s/veh / LOS	17.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.88	B	1.92	B	1.69	B
Bicycle LOS Score / LOS	1.23	A	1.51	B	1.02	A	0.83	A

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	CMC	Intersection	W. Washington & MLK Jr
Agency/Co.	CMTran	Jurisdiction	WVDOT
Date Performed		East/West Street	W. Washington/MLK Jr
Analysis Year	2039	North/South Street	W. Washington Street
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM Peak - Existing		
Project Description	WV 51 - West Washington Street Feasibility Study		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume		556	4	85	219		1		172			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	609			330			188					
Percent Heavy Vehicles	0			3			0					

Departure Headway and Service Time

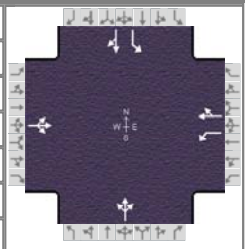
Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.541			0.294			0.167					
Final Departure Headway, hd (s)	4.93			5.37			5.58					
Final Degree of Utilization, x	0.834			0.493			0.292					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	2.93			3.37			3.58					

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	609			330			188					
Capacity	730			670			645					
95% Queue Length, Q_{95} (veh)	9.3			2.7			1.2					
Control Delay (s/veh)	27.5			13.5			10.9					
Level of Service, LOS	D			B			B					
Approach Delay (s/veh)	27.5			13.5			10.9					
Approach LOS	D			B			B					
Intersection Delay, s/veh | LOS	20.6						C					

HCS7 Signalized Intersection Results Summary

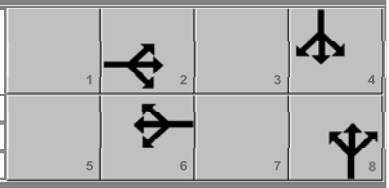
General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	CMC	Analysis Date	Apr 26, 2021	Area Type	Other
Jurisdiction	WVDOT	Time Period	AM Peak	PHF	0.92
Urban Street	W. Washington Street	Analysis Year	2039	Analysis Period	1> 7:00
Intersection	W. Washington Street &…	File Name	2039 AM Peak.xus		
Project Description	WV 51 - West Washington Street Feasibility Study				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	462	185	59	187	7	58	57	43	14	47	24

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	45.0	25.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		8.0		6.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, (*Y+R c*), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		3.4		3.4		3.3		3.3
Queue Clearance Time (*g s*), s		27.0		32.6		8.3		9.0
Green Extension Time (*g e*), s		2.6		2.3		0.5		0.5
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.02		0.08		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		725		64	211			172		15	77	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1726		756	1814			1588		1305	1763	
Queue Service Time (*g s*), s		0.9		5.6	4.6			2.8		0.7	2.5	
Cycle Queue Clearance Time (*g c*), s		25.0		30.6	4.6			6.3		7.0	2.5	
Green Ratio (*g/C*)		0.56		0.56	0.56			0.31		0.31	0.31	
Capacity (*c*), veh/h		1017		278	1020			558		396	551	
Volume-to-Capacity Ratio (*X*)		0.713		0.230	0.207			0.308		0.038	0.140	
Back of Queue (*Q*), ft/ln (95 th percentile)		373.1		44.7	79.2			110.7		10	46.8	
Back of Queue (*Q*), veh/ln (95 th percentile)		14.3		1.8	3.0			4.4		0.4	1.8	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.56		0.69	0.25			0.43		0.25	0.17	
Uniform Delay (*d 1*), s/veh		13.1		24.6	8.7			21.0		23.7	19.8	
Incremental Delay (*d 2*), s/veh		2.0		0.2	0.0			0.1		0.0	0.0	
Initial Queue Delay (*d 3*), s/veh		0.0		0.0	0.0			0.0		0.0	0.0	
Control Delay (*d*), s/veh		15.2		24.8	8.7			21.1		23.7	19.8	
Level of Service (LOS)		B		C	A			C		C	B	
Approach Delay, s/veh / LOS	15.2	B		12.5	B		21.1	C		20.5	C	
Intersection Delay, s/veh / LOS	15.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.88	B	1.92	B	1.69	B
Bicycle LOS Score / LOS	1.68	B	0.94	A	0.77	A	0.64	A

HCS7 All-Way Stop Control Report

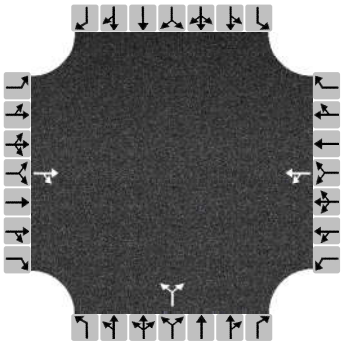
General Information

Analyst	CMC
Agency/Co.	CMTran
Date Performed	
Analysis Year	2039
Analysis Time Period (hrs)	0.25
Time Analyzed	PM Peak - Existing
Project Description	WV 51 - West Washington Street Feasibility Study

Site Information

Intersection	W. Washington & MLK Jr
Jurisdiction	WVDOT
East/West Street	W. Washington/MLK Jr
North/South Street	W. Washington Street
Peak Hour Factor	0.92

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume		384	3	206	755		4		176			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	421			1045			196					
Percent Heavy Vehicles	0			0			0					

Departure Headway and Service Time

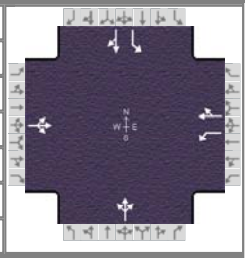
Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.374			0.929			0.174					
Final Departure Headway, hd (s)	5.43			5.19			5.96					
Final Degree of Utilization, x	0.634			1.505			0.324					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	3.43			3.19			3.96					

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	421			1045			196					
Capacity	663			694			604					
95% Queue Length, Q_{95} (veh)	4.5			51.4			1.4					
Control Delay (s/veh)	17.4			249.8			11.8					
Level of Service, LOS	C			F			B					
Approach Delay (s/veh)	17.4			249.8			11.8					
Approach LOS	C			F			B					
Intersection Delay, s/veh | LOS	162.9						F					

HCS7 Signalized Intersection Results Summary

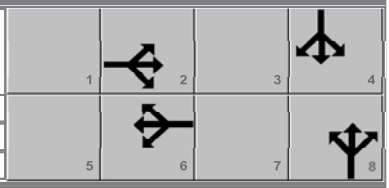
General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	CMC	Analysis Date	Apr 26, 2021	Area Type	Other
Jurisdiction	WVDOT	Time Period	PM Peak	PHF	0.92
Urban Street	W. Washington Street	Analysis Year	2039	Analysis Period	1> 7:00
Intersection	W. Washington Street &…	File Name	2039 PM Peak.xus		
Project Description	WV 51 - West Washington Street Feasibility Study				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	16	429	98	94	633	20	164	66	80	8	113	81

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	45.0	25.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		8.0		6.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, (*Y+R c*), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		3.3		3.3		3.4		3.4
Queue Clearance Time (*g s*), s		18.9		26.2		27.0		27.0
Green Extension Time (*g e*), s		3.9		3.7		0.0		0.0
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.01		0.05		1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		590		102	710			337		9	211	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1780		826	1875			1069		1247	1767	
Queue Service Time (*g s*), s		0.0		7.3	21.3			17.5		0.0	7.5	
Cycle Queue Clearance Time (*g c*), s		16.9		24.2	21.3			25.0		25.0	7.5	
Green Ratio (*g/C*)		0.56		0.56	0.56			0.31		0.31	0.31	
Capacity (*c*), veh/h		1047		380	1055			403		90	552	
Volume-to-Capacity Ratio (*X*)		0.564		0.269	0.673			0.837		0.097	0.382	
Back of Queue (*Q*), ft/ln (95 th percentile)		264.3		64.3	333.1			310.8		7.8	136.9	
Back of Queue (*Q*), veh/ln (95 th percentile)		10.4		2.5	13.2			12.4		0.3	5.5	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.39		0.99	1.04			1.20		0.20	0.51	
Uniform Delay (*d 1*), s/veh		11.4		19.2	12.3			30.0		40.0	21.5	
Incremental Delay (*d 2*), s/veh		0.4		0.1	1.4			13.5		0.2	0.2	
Initial Queue Delay (*d 3*), s/veh		0.0		0.0	0.0			0.0		0.0	0.0	
Control Delay (*d*), s/veh		11.8		19.4	13.7			43.5		40.2	21.6	
Level of Service (LOS)		B		B	B			D		D	C	
Approach Delay, s/veh / LOS	11.8	B		14.4	B		43.5	D		22.4	C	
Intersection Delay, s/veh / LOS	19.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.88	B	1.92	B	1.69	B
Bicycle LOS Score / LOS	1.46	A	1.83	B	1.04	A	0.85	A

Alternative 1 Capacity Analysis

HCS7 Roundabouts Report

General Information

Analyst	CMC
Agency or Co.	CMTran
Date Performed	
Analysis Year	2039
Time Analyzed	AM Peak
Project Description	WV 51 - West Washington St...

Site Information

Intersection	W. Washington & MLK Jr
E/W Street Name	M.L.K. Jr. Boulevard
N/S Street Name	W. Washington Street
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	WVDOT

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Lane Assignment			TR				LT				LR					
Volume (V), veh/h	0		556	4	0	85	219		0	1		172				
Percent Heavy Vehicles, %	0		4	0	0	3	6		0	0		4				
Flow Rate (v_{PCE}), pc/h	0		629	4	0	95	252		0	1		195				
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763				
Follow-Up Headway (s)		2.6087			2.6087			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		633			347			196				
Entry Volume, veh/h		609			330			188				
Circulating Flow (v_c), pc/h	95			1			629			348		
Exiting Flow (v_{ex}), pc/h	824			253			0			99		
Capacity (c_{pce}), pc/h		1253			1379			727				
Capacity (c), veh/h		1205			1311			696				
v/c Ratio (x)		0.51			0.25			0.27				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		8.5			4.9			8.4				
Lane LOS		A			A			A				
95% Queue, veh		2.9			1.0			1.1				
Approach Delay, s/veh	8.5			4.9			8.4					
Approach LOS	A			A			A					
Intersection Delay, s/veh | LOS	7.5						A					

HCS7 Roundabouts Report

General Information

Analyst	CMC
Agency or Co.	CMTran
Date Performed	
Analysis Year	2039
Time Analyzed	PM Peak
Project Description	WV 51 - West Washington St...

Site Information

Intersection	W. Washington & MLK Jr
E/W Street Name	M.L.K. Jr. Boulevard
N/S Street Name	W. Washington Street
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	WVDOT

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Lane Assignment			TR				LT				LR					
Volume (V), veh/h	0		384	3	0	206	755		0	4		176				
Percent Heavy Vehicles, %	0		1	0	0	0	2		0	0		3				
Flow Rate (v_{PCE}), pc/h	0		422	3	0	224	837		0	4		197				
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763				
Follow-Up Headway (s)		2.6087			2.6087			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		425			1061			201				
Entry Volume, veh/h		421			1045			195				
Circulating Flow (v_c), pc/h	224			4			422			1065		
Exiting Flow (v_{ex}), pc/h	619			841			0			227		
Capacity (c_{pce}), pc/h		1098			1374			897				
Capacity (c), veh/h		1087			1353			872				
v/c Ratio (x)		0.39			0.77			0.22				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.3			14.9			6.4				
Lane LOS		A			B			A				
95% Queue, veh		1.9			8.3			0.9				
Approach Delay, s/veh	7.3			14.9			6.4					
Approach LOS	A			B			A					
Intersection Delay, s/veh | LOS	12.0						B					

Alternative 2 Capacity Analysis

HCS7 Two-Way Stop-Control Report

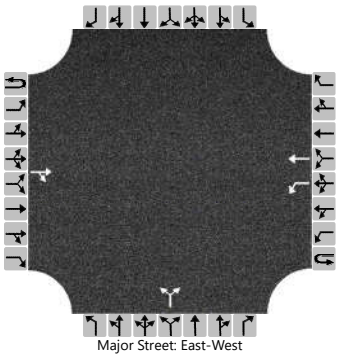
General Information

Analyst	CMC
Agency/Co.	CMTran
Date Performed	
Analysis Year	2039
Time Analyzed	AM Peak - Alt 2 New Road
Intersection Orientation	East-West
Project Description	WV 51 - West Washington Street Feasibility Study

Site Information

Intersection	MLK Jr Blvd & New Rd
Jurisdiction	WVDOT
East/West Street	MLK Jr Boulevard
North/South Street	New Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			556	4		85	219			1		172				
Percent Heavy Vehicles (%)						3				0		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.40		6.24				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						92					188					
Capacity, c (veh/h)						965					490					
v/c Ratio						0.10					0.38					
95% Queue Length, Q_{95} (veh)						0.3					1.8					
Control Delay (s/veh)						9.1					16.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						2.6				16.9						
Approach LOS										C						

HCS7 Two-Way Stop-Control Report

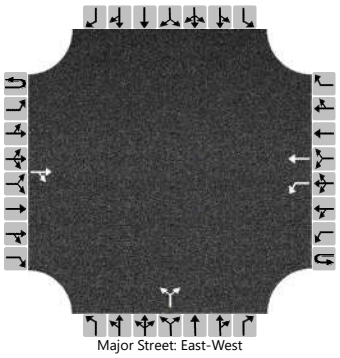
General Information

Analyst	CMC
Agency/Co.	CMTran
Date Performed	
Analysis Year	2039
Time Analyzed	PM Peak - Alt 2 New Road
Intersection Orientation	East-West
Project Description	WV 51 - West Washington Street Feasibility Study

Site Information

Intersection	MLK Jr Blvd & New Road
Jurisdiction	WVDOT
East/West Street	MLK Jr Boulevard
North/South Street	New Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			384	3		206	755			4		176				
Percent Heavy Vehicles (%)						0				0		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						224					196					
Capacity, c (veh/h)						1149					552					
v/c Ratio						0.19					0.35					
95% Queue Length, Q_{95} (veh)						0.7					1.6					
Control Delay (s/veh)						8.9					15.1					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						1.9				15.1						
Approach LOS										C						

Alternative 3 Capacity Analysis

HCS7 Two-Way Stop-Control Report

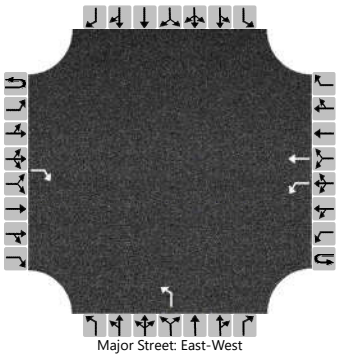
General Information

Analyst	CMC
Agency/Co.	CMTran
Date Performed	
Analysis Year	2039
Time Analyzed	AM Peak - Alt 3 New Road
Intersection Orientation	East-West
Project Description	WV 51 - West Washington Street Feasibility Study

Site Information

Intersection	MLK Jr Blvd & New Rd
Jurisdiction	WVDOT
East/West Street	MLK Jr Boulevard
North/South Street	New Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	1	0	1	1	0		1	0	0		0	0	0
Configuration				R		L	T			L						
Volume (veh/h)				560		85	220			0						
Percent Heavy Vehicles (%)						3				0						
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage				Undivided												

Critical and Follow-up Headways

Base Critical Headway (sec)						5.3				7.1						
Critical Headway (sec)						5.33				6.40						
Base Follow-Up Headway (sec)						3.1				3.5						
Follow-Up Headway (sec)						3.13				3.50						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						92				0						
Capacity, c (veh/h)						602				500						
v/c Ratio						0.15				0.00						
95% Queue Length, Q_{95} (veh)						0.5				0.0						
Control Delay (s/veh)						12.1				12.2						
Level of Service (LOS)						B				B						
Approach Delay (s/veh)						3.4										
Approach LOS																

HCS7 Two-Way Stop-Control Report

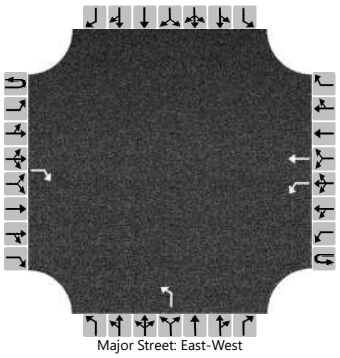
General Information

Analyst	CMC
Agency/Co.	CMTran
Date Performed	
Analysis Year	2039
Time Analyzed	PM Peak - Alt 3 New Road
Intersection Orientation	East-West
Project Description	WV 51 - West Washington Street Feasibility Study

Site Information

Intersection	MLK Jr Blvd & New Rd
Jurisdiction	WVDOT
East/West Street	MLK Jr Boulevard
North/South Street	New Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	0	1	0	1	1	0		1	0	0		0	0	0
Configuration				R		L	T			L						
Volume (veh/h)				387		206	759			0						
Percent Heavy Vehicles (%)						3				0						
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No														
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						5.3				7.1						
Critical Headway (sec)						5.33				6.40						
Base Follow-Up Headway (sec)						3.1				3.5						
Follow-Up Headway (sec)						3.13				3.50						

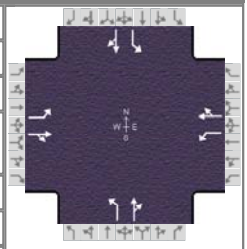
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						224				0						
Capacity, c (veh/h)						737				130						
v/c Ratio						0.30				0.00						
95% Queue Length, Q_{95} (veh)						1.3				0.0						
Control Delay (s/veh)						12.0				32.7						
Level of Service (LOS)						B				D						
Approach Delay (s/veh)						2.6										
Approach LOS																

West Street Intersection Improvements
Capacity Analysis

HCS7 Signalized Intersection Results Summary

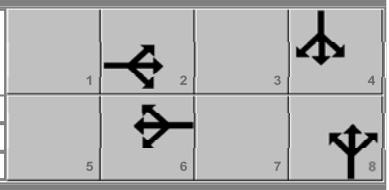
General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	CMC	Analysis Date	Apr 26, 2021	Area Type	Other
Jurisdiction	WVDOT	Time Period	AM Peak with Improvements	PHF	0.92
Urban Street	W. Washington Street	Analysis Year	2039	Analysis Period	1> 7:00
Intersection	W. Washington Street &…	File Name	2039 AM Peak w Improvements.xus		
Project Description	WV 51 - West Washington Street Feasibility Study				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	462	185	59	187	7	58	57	43	14	47	24

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	42.0	28.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



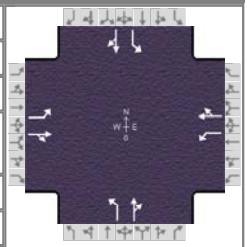
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		6.0		6.0
Phase Duration, s		47.0		47.0		33.0		33.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		3.4		3.4		3.3		3.3
Queue Clearance Time (g_s), s		27.9		33.8		7.1		6.1
Green Extension Time (g_e), s		2.4		2.0		0.5		0.5
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.05		0.26		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	22	703		64	211		63	109		15	77	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1189	1737		756	1814		1343	1736		1305	1763	
Queue Service Time (g_s), s	0.8	25.9		5.9	5.0		2.7	3.5		0.7	2.4	
Cycle Queue Clearance Time (g_c), s	5.8	25.9		31.8	5.0		5.1	3.5		4.1	2.4	
Green Ratio (*g/C*)	0.52	0.52		0.52	0.52		0.35	0.35		0.35	0.35	
Capacity (*c*), veh/h	640	912		242	952		520	608		490	617	
Volume-to-Capacity Ratio (*X*)	0.034	0.771		0.265	0.221		0.121	0.179		0.031	0.125	
Back of Queue (*Q*), ft/ln (95 th percentile)	9.3	403.4		48.2	88.5		37.3	62.8		8.9	43.7	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	15.5		1.9	3.4		1.5	2.5		0.4	1.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.19	0.60		0.74	0.28		0.75	0.24		0.22	0.16	
Uniform Delay (d_1), s/veh	11.8	15.2		27.9	10.2		19.4	18.0		19.5	17.7	
Incremental Delay (d_2), s/veh	0.0	3.7		0.2	0.0		0.0	0.1		0.0	0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	11.8	18.9		28.1	10.3		19.4	18.1		19.5	17.7	
Level of Service (LOS)	B	B		C	B		B	B		B	B	
Approach Delay, s/veh / LOS	18.7	B		14.4	B		18.6	B		18.0	B	
Intersection Delay, s/veh / LOS	17.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.89	B	1.91	B	1.91	B
Bicycle LOS Score / LOS	1.68	B	0.94	A	0.77	A	0.64	A

HCS7 Signalized Intersection Results Summary

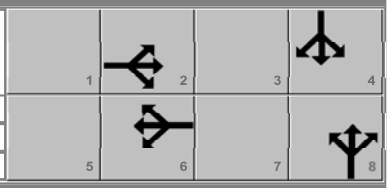
General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	CMC	Analysis Date	Apr 26, 2021	Area Type	Other
Jurisdiction	WVDOT	Time Period	PM Peak with Improvements	PHF	0.92
Urban Street	W. Washington Street	Analysis Year	2039	Analysis Period	1> 7:00
Intersection	W. Washington Street &…	File Name	2039 PM Peak w Improvements.xus		
Project Description	WV 51 - West Washington Street Feasibility Study				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	16	429	98	94	633	20	164	66	80	8	113	81

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	40.0	30.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		6.0		6.0
Phase Duration, s		45.0		45.0		35.0		35.0
Change Period, (*Y+R c*), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		3.3		3.3		3.4		3.4
Queue Clearance Time (*g s*), s		27.9		28.8		18.8		8.8
Green Extension Time (*g e*), s		3.3		3.2		1.1		1.3
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.19		0.22		0.02		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	17	573		102	710		178	159		9	211	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	751	1810		826	1875		1189	1729		1247	1767	
Queue Service Time (*g s*), s	1.5	18.5		8.3	24.4		10.0	5.1		0.4	6.8	
Cycle Queue Clearance Time (*g c*), s	25.9	18.5		26.8	24.4		16.8	5.1		5.4	6.8	
Green Ratio (*g/C*)	0.50	0.50		0.50	0.50		0.38	0.38		0.38	0.38	
Capacity (*c*), veh/h	237	905		312	937		435	649		479	663	
Volume-to-Capacity Ratio (*X*)	0.073	0.633		0.328	0.757		0.410	0.245		0.018	0.318	
Back of Queue (*Q*), ft/ln (95 th percentile)	12.3	299.4		74.6	397.9		124.9	88.7		5	121.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	11.8		2.9	15.8		5.0	3.5		0.2	4.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.25	0.45		1.15	1.24		2.50	0.34		0.13	0.45	
Uniform Delay (*d 1*), s/veh	26.5	14.6		24.4	16.1		23.7	17.2		19.1	17.7	
Incremental Delay (*d 2*), s/veh	0.0	1.1		0.2	3.2		0.2	0.1		0.0	0.1	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	26.6	15.7		24.7	19.3		23.9	17.3		19.1	17.8	
Level of Service (LOS)	C	B		C	B		C	B		B	B	
Approach Delay, s/veh / LOS	16.1	B		20.0	B		20.8	C		17.9	B	
Intersection Delay, s/veh / LOS	18.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.89	B	1.91	B	1.91	B
Bicycle LOS Score / LOS	1.46	A	1.83	B	1.04	A	0.85	A

Appendix F

Signal Warrant Analysis and Turn Lane Calculations

Appendix F

CARPENTER MARTY transportation

STUDY AND ANALYSIS INFORMATION

Municipality:	Charles Town	**Traffic Volumes Obtained By:**	B & N
County:		**Analysis Date:**	3/3/2021
District:		**Agency/ Company Name Performing Warrant Analysis:**	CMTran

Analysis Information

Data Collection Date: 6/12/2019
Day of the Week: Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 3

Major Street Information

Major Street Name and Route Number: W. Washington Street/MLK Jr. Boulevard

Major Street Approach Direction: E-Bound, W-Bound

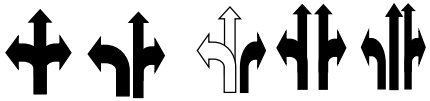
Number of Thru Lanes on Each Major Street Approach: 1 **LANE(S)**

Speed Limit or 85th Percentile Speed on the Major Street*: 25 **MPH**
*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: W. Washington Street

Minor Street Approach Configuration: 1 N-Bound; S-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 **LANE(S)**

Apply Right Turn Lane Reduction*: Yes

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**		
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**		
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 4:45 PM 5:45 PM
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the MUTCD.	**Peak Hour** 4:45 PM 5:45 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Conclusion: Do Not Install New Traffic Signal

Notes: 2019 Signal Warrant - Assuming traffic is distributed in order for the East/West legs to be the mainline and the Northbound approach to be the side street and right turn reductions.

MUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 MUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	70	2																
12:15 AM	62	2																
12:30 AM	57	3																
12:45 AM	56	2																
1:00 AM	50	2																
1:15 AM	41	2																
1:30 AM	37	1																
1:45 AM	37	1																
2:00 AM	36	2																
2:15 AM	45	2																
2:30 AM	52	3																
2:45 AM	61	4																
3:00 AM	81	4																
3:15 AM	103	7																
3:30 AM	137	12																
3:45 AM	172	15																
4:00 AM	210	18																
4:15 AM	238	21																
4:30 AM	277	21																
4:45 AM	304	23													1			
5:00 AM	325	25																
5:15 AM	360	24			1													
5:30 AM	367	27																
5:45 AM	398	28													1			
6:00 AM	450	31									1						1	
6:15 AM	476	40			1													
6:30 AM	515	45	1															
6:45 AM	590	55							1	1					1			
7:00 AM	623	64									1		1	1			1	1
7:15 AM	648	62			1													
7:30 AM	662	62	1															
7:45 AM	623	64							1	1					1			
8:00 AM	590	55									1						1	1
8:15 AM	584	53			1													
8:30 AM	558	50	1															
8:45 AM	509	49													1			
9:00 AM	500	46									1						1	1
9:15 AM	476	47			1													
9:30 AM	470	50																
9:45 AM	521	51	1												1			
10:00 AM	532	50							1		1						1	1
10:15 AM	556	48			1													
10:30 AM	591	41																
10:45 AM	591	41	1												1			
11:00 AM	609	39							1		1		1				1	
11:15 AM	624	41			1													
11:30 AM	646	43																
11:45 AM	657	46	1												1			
12:00 PM	670	47							1		1		1				1	1
12:15 PM	674	46			1													
12:30 PM	667	43																
12:45 PM	672	40	1												1			
1:00 PM	652	40							1		1		1				1	
1:15 PM	649	42			1													
1:30 PM	646	44																
1:45 PM	637	46	1												1			
2:00 PM	637	44							1		1		1				1	1
2:15 PM	659	45			1													
2:30 PM	687	45																
2:45 PM	719	45	1												1			
3:00 PM	741	48							1		1		1				1	1
3:15 PM	806	46			1		1											
3:30 PM	845	45																
3:45 PM	906	42	1												1			
4:00 PM	972	41							1		1		1				1	
4:15 PM	986	47			1		1											
4:30 PM	1032	54																
4:45 PM	1033	59	1												1			
5:00 PM	1030	56							1	1	1		1				1	1
5:15 PM	982	50			1		1											
5:30 PM	899	45																
5:45 PM	813	41	1												1			
6:00 PM	763	44							1		1		1				1	1
6:15 PM	700	42			1													
6:30 PM	662	42																
6:45 PM	674	44	1												1			
7:00 PM	630	39							1		1		1				1	
7:15 PM	630	37			1													
7:30 PM	627	29																
7:45 PM	555	23	1												1			
8:00 PM	524	19									1						1	
8:15 PM	479	17			1													
8:30 PM	426	21																
8:45 PM	404	16													1			
9:00 PM	368	16																
9:15 PM	317	14																
9:30 PM	277	8																
9:45 PM	237	9																
HOURS MET			**14**	**0**	**16**	**0**	**3**	**0**	**12**	**3**	**15**	**0**	**10**	**1**	**17**	**0**	**15**	**9**
WARRANT SATISFIED?			**NO**		**N/A**		**NO**		**N/A**		**NO**				**NO**			

Warrant Met: No

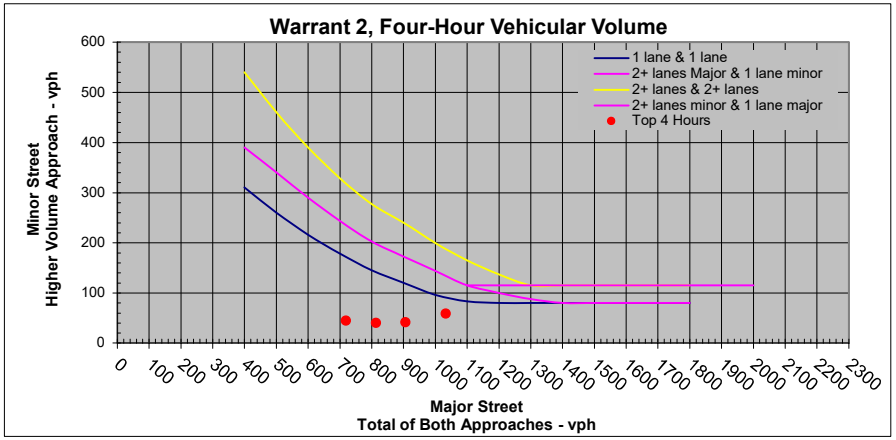
Notes:

MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	0
Major street:	1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	0
Minor Street:	1 Lane		

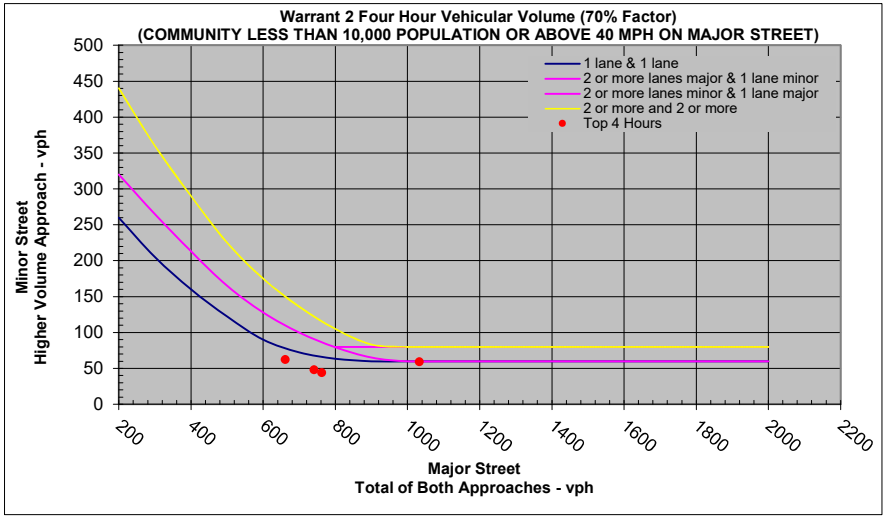
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Minor - W. Washington Street		W. Washington Street/MLK Jr. Bc					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	31	0	121	329	450	31		
6:15 AM	40	0	130	346	476	40		
6:30 AM	45	0	140	375	515	45		
6:45 AM	55	0	186	404	590	55		
7:00 AM	64	0	199	424	623	64		
7:15 AM	62	0	212	436	648	62		
7:30 AM	62	0	233	429	662	62		
7:45 AM	64	0	217	406	623	64		
8:00 AM	55	0	220	370	590	55		
8:15 AM	53	0	225	359	584	53		
8:30 AM	50	0	220	338	558	50		
8:45 AM	49	0	218	291	509	49		
9:00 AM	46	0	231	269	500	46		
9:15 AM	47	0	236	240	476	47		
9:30 AM	50	0	246	224	470	50		
9:45 AM	51	0	269	252	521	51		
10:00 AM	50	0	273	259	532	50		
10:15 AM	48	0	296	260	556	48		
10:30 AM	41	0	315	276	591	41		
10:45 AM	41	0	331	260	591	41		
11:00 AM	39	0	348	261	609	39		
11:15 AM	41	0	345	279	624	41		
11:30 AM	43	0	368	278	646	43		
11:45 AM	46	0	366	291	657	46		
12:00 PM	47	0	359	311	670	47		
12:15 PM	46	0	385	289	674	46		
12:30 PM	43	0	399	268	667	43		
12:45 PM	40	0	402	270	672	40		
1:00 PM	40	0	409	243	652	40		
1:15 PM	42	0	399	250	649	42		
1:30 PM	44	0	389	257	646	44		
1:45 PM	46	0	406	231	637	46		
2:00 PM	44	0	416	221	637	44		
2:15 PM	45	0	443	216	659	45		
2:30 PM	45	0	462	225	687	45		
2:45 PM	45	0	486	233	719	45		
3:00 PM	48	0	497	244	741	48		
3:15 PM	46	0	557	249	806	46		
3:30 PM	45	0	577	268	845	45		
3:45 PM	42	0	629	277	906	42		
4:00 PM	41	0	694	278	972	41		
4:15 PM	47	0	698	288	986	47		
4:30 PM	54	0	750	282	1032	54		
4:45 PM	59	0	737	296	1033	59		
5:00 PM	56	0	715	315	1030	56		
5:15 PM	50	0	670	312	982	50		
5:30 PM	45	0	605	294	899	45		
5:45 PM	41	0	537	276	813	41		
6:00 PM	44	0	508	255	763	44		
6:15 PM	42	0	475	225	700	42		
6:30 PM	42	0	460	202	662	42		
6:45 PM	44	0	483	191	674	44		
7:00 PM	39	0	453	177	630	39		
7:15 PM	37	0	444	186	630	37		
7:30 PM	29	0	431	196	627	29		
7:45 PM	23	0	370	185	555	23		
8:00 PM	19	0	351	173	524	19		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	4:45 PM	5:45 PM	1033	59
2nd Highest Hour	3:45 PM	4:45 PM	906	42
3rd Highest Hour	5:45 PM	6:45 PM	813	41
4th Highest Hour	2:45 PM	3:45 PM	719	45

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	4:45 PM	5:45 PM	1033	59
2nd Highest Hour	7:30 AM	8:30 AM	662	62
3rd Highest Hour	3:00 PM	4:00 PM	741	48
4th Highest Hour	6:00 PM	7:00 PM	763	44



Are the requirements for Warrant 2 met?: No

MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	Peak Hour Start time	4:45 PM
Major Street: 1 Lane	Peak Hour End Time	5:45 PM
Minor Street: 1 Lane		

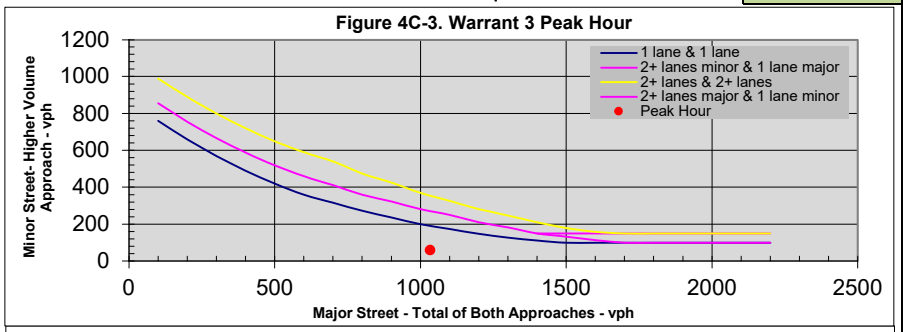
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

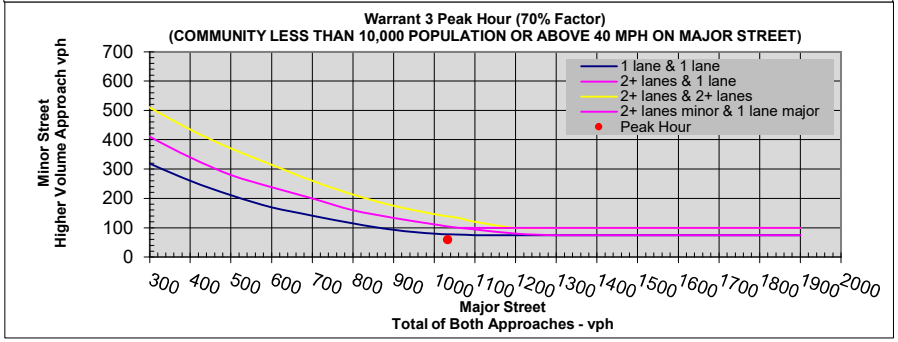
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*

Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

If applicable, attach all supporting calculations and documentation.

Are the requirements for Warrant 3 met?: No





Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
	Hour Vehicular Volume			
6:00 AM	450	31	481	481
6:15 AM	476	40	516	516
6:30 AM	515	45	560	560
6:45 AM	590	55	645	645
7:00 AM	623	64	687	687
7:15 AM	648	62	710	710
7:30 AM	662	62	724	724
7:45 AM	623	64	687	687
8:00 AM	590	55	645	645
8:15 AM	584	53	637	637
8:30 AM	558	50	608	608
8:45 AM	509	49	558	558
9:00 AM	500	46	546	546
9:15 AM	476	47	523	523
9:30 AM	470	50	520	520
9:45 AM	521	51	572	572
10:00 AM	532	50	582	582
10:15 AM	556	48	604	604
10:30 AM	591	41	632	632
10:45 AM	591	41	632	632
11:00 AM	609	39	648	648
11:15 AM	624	41	665	665
11:30 AM	646	43	689	689
11:45 AM	657	46	703	703
12:00 PM	670	47	717	717
12:15 PM	674	46	720	720
12:30 PM	667	43	710	710
12:45 PM	672	40	712	712
1:00 PM	652	40	692	692
1:15 PM	649	42	691	691
1:30 PM	646	44	690	690
1:45 PM	637	46	683	683
2:00 PM	637	44	681	681
2:15 PM	659	45	704	704
2:30 PM	687	45	732	732
2:45 PM	719	45	764	764
3:00 PM	741	48	789	789
3:15 PM	806	46	852	852
3:30 PM	845	45	890	890
3:45 PM	906	42	948	948
4:00 PM	972	41	1013	1013
4:15 PM	986	47	1033	1033
4:30 PM	1032	54	1086	1086
4:45 PM	1033	59	1092	1092
5:00 PM	1030	56	1086	1086
5:15 PM	982	50	1032	1032
5:30 PM	899	45	944	944
5:45 PM	813	41	854	854
6:00 PM	763	44	807	807
6:15 PM	700	42	742	742
6:30 PM	662	42	704	704
6:45 PM	674	44	718	718
7:00 PM	630	39	669	669
7:15 PM	630	37	667	667
7:30 PM	627	29	656	656
7:45 PM	555	23	578	578
8:00 PM	524	19	543	543

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1033	59	156.01671	84.383806

2019 Volumes

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	0	0	0	0		0	0	11	3	0		14	1	0	0	0		1	0	6	0	0		6
12:15 AM	0	0	0	0		0	0	12	1	0		13	2	0	0	0		2	0	5	0	0		5
12:30 AM	0	0	0	0		0	0	9	3	0		12	1	0	0	0		1	0	2	0	0		2
12:45 AM	0	0	0	0		0	0	11	2	0		13	1	0	0	0		1	0	5	0	0		5
Hourly Total	0	0	0	0	0	0	0	43	9	0	0	52	5	0	0	0	0	5	0	18	0	0	0	18
1:00 AM	0	0	0	0		0	0	6	0	0		6	1	0	0	0		1	0	6	0	0		6
1:15 AM	0	0	0	0		0	0	8	2	0		10	3	0	0	0		3	0	3	0	0		3
1:30 AM	0	0	0	0		0	0	6	2	0		8	0	0	0	0		0	0	5	0	0		5
1:45 AM	0	0	0	0		0	0	6	1	0		7	0	0	0	0		0	0	5	0	0		5
Hourly Total	0	0	0	0	0	0	0	26	5	0	0	31	4	0	0	0	0	4	0	19	0	0	0	19
2:00 AM	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0
2:15 AM	0	0	0	0		0	0	2	0	0		2	1	0	0	0		1	0	7	0	0		7
2:30 AM	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	9	0	0		9
2:45 AM	0	0	0	0		0	0	3	2	0		5	3	0	0	0		3	0	6	0	0		6
Hourly Total	0	0	0	0	0	0	0	12	2	0	0	14	4	0	0	0	0	4	0	22	0	0	0	22
3:00 AM	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	12	0	0		12
3:15 AM	0	0	0	0		0	0	2	1	0		3	2	0	0	0		2	0	13	0	0		13
3:30 AM	0	0	0	0		0	0	1	2	0		3	4	0	0	0		4	0	19	0	0		19
3:45 AM	0	0	0	0		0	0	5	2	0		7	2	0	0	0		2	0	24	0	0		24
Hourly Total	0	0	0	0	0	0	0	8	5	0	0	13	9	0	0	0	0	9	0	68	0	0	0	68
4:00 AM	0	0	0	0		0	0	2	3	0		5	9	0	0	0		9	0	29	0	0		29
4:15 AM	0	0	0	0		0	0	7	3	0		10	15	0	0	0		15	0	40	0	0		40
4:30 AM	0	0	0	0		0	0	5	1	0		6	10	0	0	0		10	0	51	0	0		51
4:45 AM	0	0	0	0		0	0	7	2	0		9	11	0	0	0		11	0	60	0	0		60
Hourly Total	0	0	0	0	0	0	0	21	9	0	0	30	45	0	0	0	0	45	0	180	0	0	0	180
5:00 AM	0	0	0	0		0	0	4	4	0		8	14	0	1	0		15	0	54	0	0		54
5:15 AM	0	0	0	0		0	0	14	9	0		23	11	0	1	0		12	0	66	0	0		66
5:30 AM	0	0	0	0		0	0	9	3	0		12	15	0	0	0		15	0	72	0	0		72
5:45 AM	0	0	0	0		0	0	10	5	0		15	17	0	0	0		17	0	75	0	0		75
Hourly Total	0	0	0	0	0	0	0	37	21	0	0	58	57	0	2	0	0	59	0	267	0	0	0	267
6:00 AM	0	0	0	0		0	0	24	6	0		30	13	0	0	0		13	0	67	0	0		67
6:15 AM	0	0	0	0		0	0	22	3	0		25	21	0	0	0		21	0	71	0	0		71
6:30 AM	0	0	0	0		0	0	17	8	0		25	15	0	1	0		16	0	90	0	0		90
6:45 AM	0	0	0	0		0	0	29	12	0		41	25	0	0	0		25	0	101	0	0		101
Hourly Total	0	0	0	0	0	0	0	92	29	0	0	121	74	0	1	0	0	75	0	329	0	0	0	329
7:00 AM	0	0	0	0		0	0	23	16	0		39	36	0	0	0		36	0	84	0	0		84
7:15 AM	0	0	0	0		0	0	25	10	0		35	33	0	0	0		33	0	100	0	0		100
7:30 AM	0	0	0	0		0	0	57	14	0		71	28	0	0	0		28	1	118	0	0		119
7:45 AM	0	0	0	0		0	0	40	14	0		54	44	0	0	0		44	1	120	0	0		121
Hourly Total	0	0	0	0	0	0	0	145	54	0	0	199	141	0	0	0	0	141	2	422	0	0	0	424
8:00 AM	0	0	0	0		0	0	33	19	0		52	29	0	1	0		30	0	96	0	0		96
8:15 AM	0	0	0	0		0	0	38	18	0		56	34	0	0	0		34	1	92	0	0		93
8:30 AM	0	0	0	0		0	0	41	14	0		55	32	0	0	0		32	0	96	0	0		96
8:45 AM	0	0	0	0		0	0	43	14	0		57	39	0	0	0		39	0	85	0	0		85
Hourly Total	0	0	0	0	0	0	0	155	65	0	0	220	134	0	1	0	0	135	1	369	0	0	0	370
9:00 AM	0	0	0	0		0	0	43	14	0		57	23	0	1	0		24	0	85	0	0		85
9:15 AM	0	0	0	0		0	0	36	15	0		51	28	0	0	0		28	2	70	0	0		72
9:30 AM	0	0	0	0		0	0	45	8	0		53	28	0	0	0		28	0	49	0	0		49
9:45 AM	0	0	0	0		0	0	46	24	0		70	30	0	1	0		31	0	63	0	0		63
Hourly Total	0	0	0	0	0	0	0	170	61	0	0	231	109	0	2	0	0	111	2	267	0	0	0	269
10:00 AM	0	0	0	0		0	0	45	17	0		62	26	0	1	0		27	1	55	0	0		56
10:15 AM	0	0	0	0		0	0	46	15	0		61	35	0	0	0		35	0	56	0	0		56
10:30 AM	0	0	0	0		0	0	56	20	0		76	27	0	1	0		28	0	77	0	0		77
10:45 AM	0	0	0	0		0	0	53	21	0		74	30	0	0	0		30	0	70	0	0		70
Hourly Total	0	0	0	0	0	0	0	200	73	0	0	273	118	0	2	0	0	120	1	258	0	0	0	259
11:00 AM	0	0	0	0		0	0	60	25	0		85	24	0	0	0		24	0	57	0	0		57
11:15 AM	0	0	0	0		0	0	54	26	0		80	18	0	0	0		18	0	72	0	0		72
11:30 AM	0	0	0	0		0	0	60	32	0		92	29	0	0	0		29	0	61	0	0		61
11:45 AM	0	0	0	0		0	0	67	24	0		91	25	0	0	0		25	0	71	0	0		71
Hourly Total	0	0	0	0	0	0	0	241	107	0	0	348	96	0	0	0	0	96	0	261	0	0	0	261
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12:15 PM	0	0	0	0		0	0	75	28	0		103	25	0	0	0		25	0	71	0	0		71
12:30 PM	0	0	0	0		0	0	62	28	0		90	33	0	1	0		34	0	74	0	0		74
12:45 PM	0	0	0	0		0	0	56	28	0		84	27	0	0	0		27	1	90	0	0		91
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1:15 PM	0	0	0	0		0	0	77	40	0		117	18	0	0	0		18	0	50	0	0		50
1:30 PM	0	0	0	0		0	0	68	25	0		93	25	0	1	0		26	0	76	0	0		76
1:45 PM	0	0	0	0		0	0	66	24	1		91	28	0	0	0		28	0	64	0	0		64
Hourly Total	0	0	0	0	0	0	0	274	134	1	0	409	97	0	1	0	0	98	1	242	0	0	0	243
2:00 PM	0	0	0	0		0	0	77	21	0		98	30	0	0	0		30	1	59	0	0		60
2:15 PM	0	0	0	0		0	0	76	31	0		107	24	0	0	0		24	1	56	0	0		57
2:30 PM	0	0	0	0		0	0	88	22	0		110	31	0	0	0		31	1	49	0	0		50
2:45 PM	0	0	0	0		0	0	71	30	0		101	25	0	0	0		25	1	53	0	0		54
Hourly Total	0	0	0	0	0	0	0	312	104	0	0	416	110	0	0	0	0	110	4	217	0	0	0	221
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3:30 PM	0	0	0	0		0	0	102	32	0		134	31	0	0	0		31	0	58	0	0		58
3:45 PM	0	0	0	0		0	0	78	34	0		112	30	0	1	0		31	0	65	0	0		65
Hourly Total	0	0	0	0	0	0	0	369	128	0	0	497	115	0	2	0	0	117	0	244	0	0	0	244
4:00 PM	0	0	0	0		0	0	131	54	0		185	26	0	0	0		26	1	59	0	0		60
4:15 PM	0	0	0	0		0	0	113	33	0		146	21	0	0	0		21	0	85	0	0		85
4:30 PM	0	0	0	0		0	0	137	49	0		186	25	0	0	0		25	0	67	0	0		67
4:45 PM	0	0	0	0		0	0	139	38	0		177	30	0	0	0		30	1	65	0	0		66
Hourly Total	0	0	0	0	0	0	0	520	174	0	0	694	102	0	0	0	0	102	2	276	0	0	0	278
5:00 PM	0	0	0	0		0	0	152	37	0		189	38	0	1	0		39	0	70	0	0		70
5:15 PM	0	0	0	0		0	0	159	39	0		198	36	0	1	0		37	0	79	0	0		79
5:30 PM	0	0	0	0		0	0	129	44	0		173	34	0	1	0		35	1	80	0	0		81
5:45 PM	0	0	0	0		0	0	108	47	0		155	24	0	0	0		24	1	84	0	0		85
Hourly Total	0	0	0	0	0	0	0	548	167	0	0	715	132	0	3	0	0	135	2	313	0	0	0	315
6:00 PM	0	0	0	0		0	0	99	45	0		144	24	0	0	0		24	2	65	0	0		67
6:15 PM	0	0	0	0		0	0	99	34	0		133	24	0	1	0		25	1	60	0	0		61
6:30 PM	0	0	0	0		0	0	79	26	0		105	26	0	0	0		26	0	63	0	0		63
6:45 PM	0	0	0	0		0	0	93	33	0		126	29	0	1	0		30	1	63	0	0		64
Hourly Total	0	0	0	0	0	0	0	370	138	0	0	508	103	0	2	0	0	105	4	251	0	0	0	255
7:00 PM	0	0	0	0		0	0	77	34	0		111	20	0	0	0		20	0	37	0	0		37
7:15 PM	0	0	0	0		0	0	74	44	0		118	24	0	1	0		25	1	37	0	0		38
7:30 PM	0	0	0	0		0	0	96	32	0		128	25	0	2	0		27	0	52	0	0		52
7:45 PM	0	0	0	0		0	0	65	31	0		96	17	0	1	0		18	0	50	0	0		50
Hourly Total	0	0	0	0	0	0	0	312	141	0	0	453	86	0	4	0	0	90	1	176	0	0	0	177
8:00 PM	0	0	0	0		0	0	77	25	0		102	15	0	0	0		15	0	46	0	0		46
8:15 PM	0	0	0	0		0	0	72	33	0		105	7	0	0	0		7	0	48	0	0		48
8:30 PM	0	0	0	0		0	0	42	25	0		67	13	0	1	0		14	0	41	0	0		41
8:45 PM	0	0	0	0		0	0	55	22	0		77	9	0	0	0		9	0	38	0	0		38
Hourly Total	0	0	0	0	0	0	0	246	105	0	0	351	44	0	1	0	0	45	0	173	0	0	0	173
9:00 PM	0	0	0	0		0	0	55	27	0		82	10	0	0	0		10	0	21	0	0		21
9:15 PM	0	0	0	0		0	0	56	24	0		80	14	0	1	0		15	0	20	0	0		20
9:30 PM	0	0	0	0		0	0	53	19	0		72	3	0	0	0		3	0	14	0	0		14
9:45 PM	0	0	0	0		0	0	38	18	0		56	9	0	0	0		9	0	23	0	0		23
Hourly Total	0	0	0	0	0	0	0	202	88	0	0	290	36	0	1	0	0	37	0	78	0	0	0	78
10:00 PM	0	0	0	0		0	0	25	8	0		33	6	0	0	0		6	0	19	0	0		19
10:15 PM	0	0	0	0		0	0	29	8	0		37	2	0	0	0		2	0	23	0	0		23
10:30 PM	0	0	0	0		0	0	29	8	0		37	4	0	0	0		4	0	9	0	0		9
10:45 PM	0	0	0	0		0	0	18	6	0		24	6	0	0	0		6	0	5	0	0		5
Hourly Total	0	0	0	0	0	0	0	101	30	0	0	131	18	0	0	0	0	18	0	56	0	0	0	56
11:00 PM	0	0	0	0		0	0	24	10	0		34	2	0	0	0		2	0	10	0	0		10
11:15 PM	0	0	0	0		0	0	24	7	0		31	3	0	0	0		3	0	7	0	0		7
11:30 PM	0	0	0	0		0	0	18	1	0		19	1	0	0	0		1	0	9	0	0		9
11:45 PM	0	0	0	0		0	0	15	6	0		21	1	0	0	0		1	0	6	0	0		6
Hourly Total	0	0	0	0	0	0	0	81	24	0	0	105	7	0	0	0	0	7	0	32	0	0	0	32

NOTES:

It should be noted that if data is copied overtop of the Hourly Totals or Approach Totals, that the 'AutoSum' Formula will be lost. This should not affect the actual totals if the data was copied from a program that performs the calculations for the user.

STUDY AND ANALYSIS INFORMATION

Municipality:	Charles Town	**Traffic Volumes Obtained By:**	B & N
County:		**Analysis Date:**	3/3/2021
District:		**Agency/ Company Name Performing Warrant Analysis:**	CMTran

Analysis Information

Data Collection Date: 6/12/2019
Day of the Week: Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 3

Major Street Information

Major Street Name and Route Number: W. Washington Street/MLK Jr. Boulevard

Major Street Approach Direction: E-Bound, W-Bound

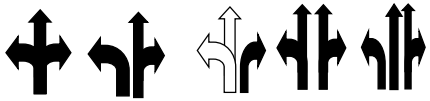
Number of Thru Lanes on Each Major Street Approach: 1 **LANE(S)**

Speed Limit or 85th Percentile Speed on the Major Street*: 25 **MPH**
*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: W. Washington Street

Minor Street Approach Configuration: 1 N-Bound; S-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 **LANE(S)**
Apply Right Turn Lane Reduction*: Yes
*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**		
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**		
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour**: 5:00 PM, 6:00 PM
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the MUTCD.	**Peak Hour**: 4:30 PM, 5:30 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Conclusion: Do Not Install New Traffic Signal

Notes: 2039 Signal Warrant - Assuming traffic is distributed in order for the East/West legs to be the mainline and the Northbound approach to be the side street and right turn reductions.

MUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 MUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	93	3																
12:15 AM	83	3																
12:30 AM	76	3																
12:45 AM	75	3																
1:00 AM	67	2																
1:15 AM	55	2																
1:30 AM	50	1																
1:45 AM	49	1																
2:00 AM	48	2																
2:15 AM	60	3																
2:30 AM	69	4																
2:45 AM	81	6																
3:00 AM	107	5																
3:15 AM	136	9																
3:30 AM	180	16																
3:45 AM	226	19																
4:00 AM	275	23																
4:15 AM	310	27													1			
4:30 AM	361	26			1													
4:45 AM	396	28																
5:00 AM	424	32									1						1	
5:15 AM	470	30													1			
5:30 AM	480	34			1													
5:45 AM	519	35	1															
6:00 AM	587	44							1		1						1	1
6:15 AM	622	57											1		1			
6:30 AM	672	64			1													
6:45 AM	770	78	1				1	1										
7:00 AM	812	90							1	1	1						1	1
7:15 AM	844	87											1	1	1	1		
7:30 AM	862	87			1													
7:45 AM	811	90	1				1	1										
8:00 AM	768	78							1	1	1						1	1
8:15 AM	760	75											1	1	1			
8:30 AM	727	72			1													
8:45 AM	664	62	1															
9:00 AM	652	58							1	1	1						1	1
9:15 AM	621	60											1	1	1			
9:30 AM	613	63			1													
9:45 AM	679	63	1															
10:00 AM	693	62							1	1	1						1	1
10:15 AM	724	61											1	1	1			
10:30 AM	769	52			1		1											
10:45 AM	770	52	1															
11:00 AM	794	50							1		1						1	1
11:15 AM	814	51											1		1			
11:30 AM	844	55			1		1											
11:45 AM	859	58	1															
12:00 PM	876	66							1	1	1						1	1
12:15 PM	881	58											1		1			
12:30 PM	870	54			1		1											
12:45 PM	876	50	1															
1:00 PM	850	51							1		1						1	1
1:15 PM	845	53											1		1			
1:30 PM	841	56			1		1											
1:45 PM	829	58	1															
2:00 PM	829	56							1	1	1						1	1
2:15 PM	859	57											1		1			
2:30 PM	896	57			1		1											
2:45 PM	938	57	1															
3:00 PM	967	61							1	1	1						1	1
3:15 PM	1051	58											1		1			
3:30 PM	1102	56			1		1											
3:45 PM	1181	53	1															
4:00 PM	1267	52							1		1						1	1
4:15 PM	1285	59											1		1			
4:30 PM	1345	68			1		1											
4:45 PM	1345	73	1															
5:00 PM	1341	79							1	1	1						1	1
5:15 PM	1280	70											1	1	1			
5:30 PM	1171	57			1		1											
5:45 PM	1060	52	1															
6:00 PM	994	55							1	1	1						1	1
6:15 PM	910	53											1		1			
6:30 PM	861	53			1		1											
6:45 PM	877	55	1															
7:00 PM	820	49							1		1						1	1
7:15 PM	821	47											1		1			
7:30 PM	818	37			1		1											
7:45 PM	724	29	1															
8:00 PM	685	24							1		1						1	
8:15 PM	626	21											1		1			
8:30 PM	556	26			1													
8:45 PM	527	20	1															
9:00 PM	479	20									1						1	
9:15 PM	413	18													1			
9:30 PM	361	11			1													
9:45 PM	309	11																
HOURS MET			**16**	**0**	**18**	**0**	**12**	**2**	**15**	**9**	**17**	**0**	**15**	**5**	**18**	**1**	**17**	**14**
WARRANT SATISFIED?			**NO**		**N/A**		**NO**		**N/A**		**NO**				**YES**			

Warrant Met: No

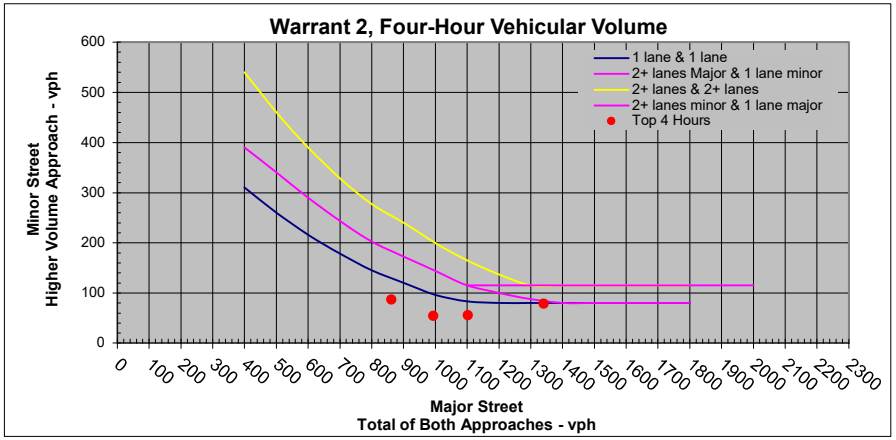
Notes:

MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	0
Major street:	1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	6
Minor Street:	1 Lane		

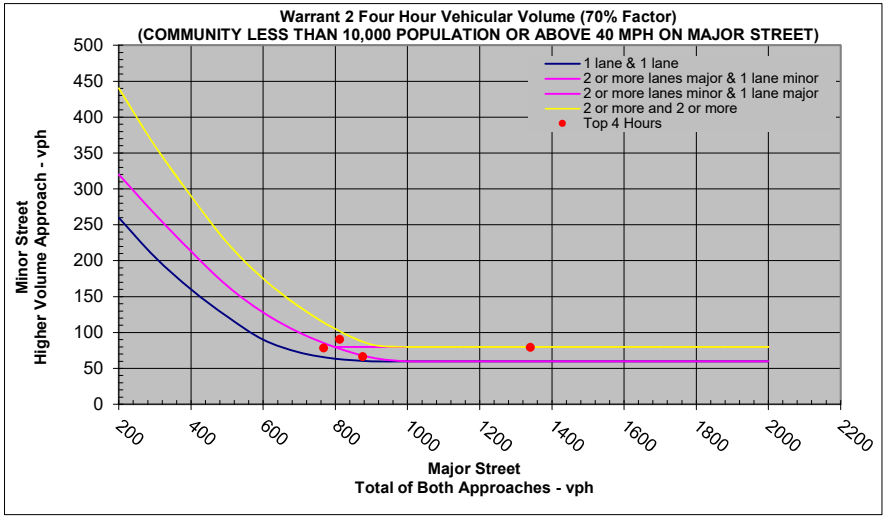
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Minor - W. Washington Street		W. Washington Street/MLK Jr. Bc					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	44	0	158	429	587	44		
6:15 AM	57	0	170	452	622	57		
6:30 AM	64	0	183	489	672	64		
6:45 AM	78	0	243	527	770	78		Met
7:00 AM	90	0	259	553	812	90		
7:15 AM	87	0	276	568	844	87		
7:30 AM	87	0	303	559	862	87		
7:45 AM	90	0	282	529	811	90		Met
8:00 AM	78	0	286	482	768	78		
8:15 AM	75	0	292	468	760	75		
8:30 AM	72	0	286	441	727	72		
8:45 AM	62	0	284	380	664	62		
9:00 AM	58	0	301	351	652	58		
9:15 AM	60	0	308	313	621	60		
9:30 AM	63	0	321	292	613	63		
9:45 AM	63	0	351	328	679	63		
10:00 AM	62	0	356	337	693	62		
10:15 AM	61	0	386	338	724	61		Met
10:30 AM	52	0	410	359	769	52		
10:45 AM	52	0	431	339	770	52		
11:00 AM	50	0	453	341	794	50		
11:15 AM	51	0	449	365	814	51		
11:30 AM	55	0	480	364	844	55		
11:45 AM	58	0	478	381	859	58		
12:00 PM	66	0	470	406	876	66		Met
12:15 PM	58	0	504	377	881	58		
12:30 PM	54	0	521	349	870	54		
12:45 PM	50	0	525	351	876	50		
1:00 PM	51	0	533	317	850	51		
1:15 PM	53	0	519	326	845	53		
1:30 PM	56	0	506	335	841	56		
1:45 PM	58	0	528	301	829	58		
2:00 PM	56	0	542	287	829	56		
2:15 PM	57	0	578	281	859	57		
2:30 PM	57	0	603	293	896	57		
2:45 PM	57	0	634	304	938	57		
3:00 PM	61	0	648	319	967	61		Met
3:15 PM	58	0	726	325	1051	58		
3:30 PM	56	0	752	350	1102	56		
3:45 PM	53	0	820	361	1181	53		
4:00 PM	52	0	905	362	1267	52		
4:15 PM	59	0	910	375	1285	59		
4:30 PM	68	0	978	367	1345	68		Met
4:45 PM	73	0	960	385	1345	73		
5:00 PM	79	0	931	410	1341	79		
5:15 PM	70	0	873	407	1280	70		
5:30 PM	57	0	788	383	1171	57		
5:45 PM	52	0	700	360	1060	52		
6:00 PM	55	0	662	332	994	55		
6:15 PM	53	0	618	292	910	53		
6:30 PM	53	0	599	262	861	53		
6:45 PM	55	0	629	248	877	55		
7:00 PM	49	0	590	230	820	49		
7:15 PM	47	0	579	242	821	47		
7:30 PM	37	0	562	256	818	37		
7:45 PM	29	0	483	241	724	29		
8:00 PM	24	0	459	226	685	24		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	5:00 PM	6:00 PM	1341	79
2nd Highest Hour	3:30 PM	4:30 PM	1102	56
3rd Highest Hour	6:00 PM	7:00 PM	994	55
4th Highest Hour	7:30 AM	8:30 AM	862	87

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	7:00 AM	8:00 AM	812	90
2nd Highest Hour	5:00 PM	6:00 PM	1341	79
3rd Highest Hour	8:00 AM	9:00 AM	768	78
4th Highest Hour	12:00 PM	1:00 PM	876	66



Are the requirements for Warrant 2 met?: No

MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	Peak Hour Start time	5:00 PM
Major Street: 1 Lane	Peak Hour End Time	6:00 PM
Minor Street: 1 Lane		

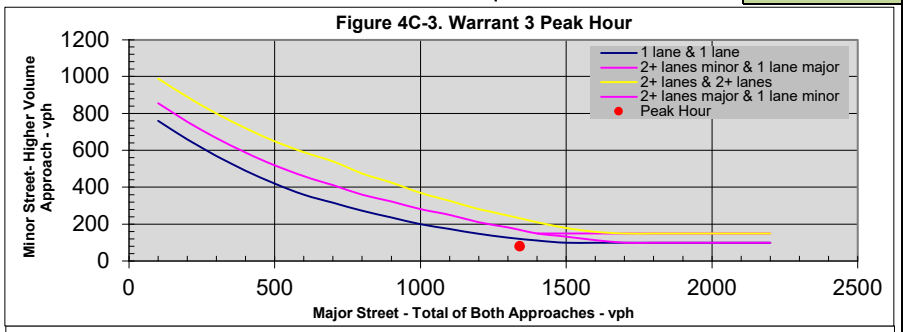
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

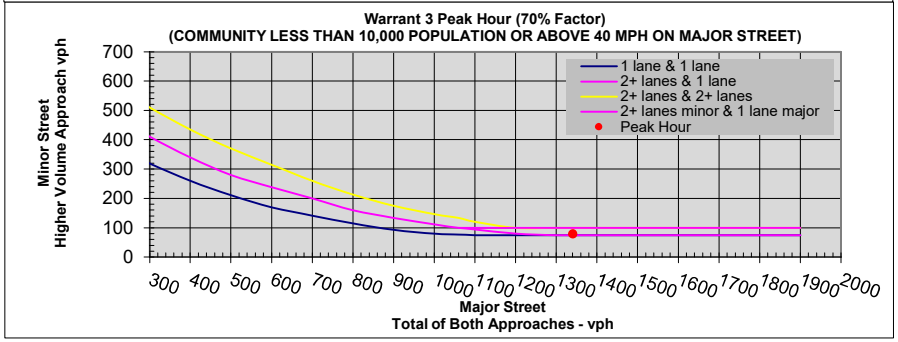
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*

Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

**If applicable, attach all supporting calculations and documentation.*

Are the requirements for Warrant 3 met?: No





Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
	Hour Vehicular Volume			
6:00 AM	587	44	631	631
6:15 AM	622	57	679	679
6:30 AM	672	64	736	736
6:45 AM	770	78	848	848
7:00 AM	812	90	902	902
7:15 AM	844	87	931	931
7:30 AM	862	87	949	949
7:45 AM	811	90	901	901
8:00 AM	768	78	846	846
8:15 AM	760	75	835	835
8:30 AM	727	72	799	799
8:45 AM	664	62	726	726
9:00 AM	652	58	710	710
9:15 AM	621	60	681	681
9:30 AM	613	63	676	676
9:45 AM	679	63	742	742
10:00 AM	693	62	755	755
10:15 AM	724	61	785	785
10:30 AM	769	52	821	821
10:45 AM	770	52	822	822
11:00 AM	794	50	844	844
11:15 AM	814	51	865	865
11:30 AM	844	55	899	899
11:45 AM	859	58	917	917
12:00 PM	876	66	942	942
12:15 PM	881	58	939	939
12:30 PM	870	54	924	924
12:45 PM	876	50	926	926
1:00 PM	850	51	901	901
1:15 PM	845	53	898	898
1:30 PM	841	56	897	897
1:45 PM	829	58	887	887
2:00 PM	829	56	885	885
2:15 PM	859	57	916	916
2:30 PM	896	57	953	953
2:45 PM	938	57	995	995
3:00 PM	967	61	1028	1028
3:15 PM	1051	58	1109	1109
3:30 PM	1102	56	1158	1158
3:45 PM	1181	53	1234	1234
4:00 PM	1267	52	1319	1319
4:15 PM	1285	59	1344	1344
4:30 PM	1345	68	1413	1413
4:45 PM	1345	73	1418	1418
5:00 PM	1341	79	1420	1420
5:15 PM	1280	70	1350	1350
5:30 PM	1171	57	1228	1228
5:45 PM	1060	52	1112	1112
6:00 PM	994	55	1049	1049
6:15 PM	910	53	963	963
6:30 PM	861	53	914	914
6:45 PM	877	55	932	932
7:00 PM	820	49	869	869
7:15 PM	821	47	868	868
7:30 PM	818	37	855	855
7:45 PM	724	29	753	753
8:00 PM	685	24	709	709

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1341	79	100	75

2019 Raw Count Data

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM						0		11	3			14	1		0			1	0	6				6
12:15 AM						0		12	1			13	2		0			2	0	5				5
12:30 AM						0		9	3			12	1		0			1	0	2				2
12:45 AM						0		11	2			13	1		0			1	0	5				5
Hourly Total	0	0	0	0	0	0	0	43	9	0	0	52	5	0	0	0	0	5	0	18	0	0	0	18
1:00 AM						0		6	0			6	1		0			1	0	6				6
1:15 AM						0		8	2			10	3		0			3	0	3				3
1:30 AM						0		6	2			8	0		0			0	0	5				5
1:45 AM						0		6	1			7	0		0			0	0	5				5
Hourly Total	0	0	0	0	0	0	0	26	5	0	0	31	4	0	0	0	0	4	0	19	0	0	0	19
2:00 AM						0		3	0			3	0		0			0	0	0				0
2:15 AM						0		2	0			2	1		0			1	0	7				7
2:30 AM						0		4	0			4	0		0			0	0	9				9
2:45 AM						0		3	2			5	3		0			3	0	6				6
Hourly Total	0	0	0	0	0	0	0	12	2	0	0	14	4	0	0	0	0	4	0	22	0	0	0	22
3:00 AM						0		2.00%	0.00%			0.02	1		0			1	0	12				12
3:15 AM						0		2	1			3	2		0			2	0	13				13
3:30 AM						0		1	2			3	4		0			4	0	19				19
3:45 AM						0		5	2			7	2		0			2	0	24				24
Hourly Total	0	0	0	0	0	0	0	8.02	5	0	0	13.02	9	0	0	0	0	9	0	68	0	0	0	68
4:00 AM						0		2	3			5	9		0			9	0	29				29
4:15 AM						0		7	3			10	15		0			15	0	40				40
4:30 AM						0		5	1			6	10		0			10	0	51				51
4:45 AM						0		7	2			9	11		0			11	0	60				60
Hourly Total	0	0	0	0	0	0	0	21	9	0	0	30	45	0	0	0	0	45	0	180	0	0	0	180
5:00 AM						0		4	4			8	14		1			15	0	54				54
5:15 AM						0		14	9			23	11		1			12	0	66				66
5:30 AM						0		9	3			12	15		0			15	0	72				72
5:45 AM						0		10	5			15	17		0			17	0	75				75
Hourly Total	0	0	0	0	0	0	0	37	21	0	0	58	57	0	2	0	0	59	0	267	0	0	0	267
6:00 AM						0		24	6			30	13		0			13	0	67				67
6:15 AM						0		22	3			25	21		0			21	0	71				71
6:30 AM						0		17	8			25	15		1			16	0	90				90
6:45 AM						0		29	12			41	25		0			25	0	101				101
Hourly Total	0	0	0	0	0	0	0	92	29	0	0	121	74	0	1	0	0	75	0	329	0	0	0	329
7:00 AM						0		23	16			39	36		0			36	0	84				84
7:15 AM						0		25	10			35	33		0			33	0	100				100
7:30 AM						0		57	14			71	28		0			28	1	118				119
7:45 AM						0		40	14			54	44		0			44	1	120				121
Hourly Total	0	0	0	0	0	0	0	145	54	0	0	199	141	0	0	0	0	141	2	422	0	0	0	424
8:00 AM						0		33	19			52	29		1			30	0	96				96
8:15 AM						0		38	18			56	34		0			34	1	92				93
8:30 AM						0		41	14			55	32		0			32	0	96				96
8:45 AM						0		43	14			57	39		0			39	0	85				85
Hourly Total	0	0	0	0	0	0	0	155	65	0	0	220	134	0	1	0	0	135	1	369	0	0	0	370
9:00 AM						0		43	14			57	23		1			24	0	85				85
9:15 AM						0		36	15			51	28		0			28	2	70				72
9:30 AM						0		45	8			53	28		0			28	0	49				49
9:45 AM						0		46	24			70	30		1			31	0	63				63
Hourly Total	0	0	0	0	0	0	0	170	61	0	0	231	109	0	2	0	0	111	2	267	0	0	0	269
10:00 AM						0		45	17			62	26		1			27	1	55				56
10:15 AM						0		46	15			61	35		0			35	0	56				56
10:30 AM						0		56	20			76	27		1			28	0	77				77
10:45 AM						0		53	21			74	30		0			30	0	70				70
Hourly Total	0	0	0	0	0	0	0	200	73	0	0	273	118	0	2	0	0	120	1	258	0	0	0	259
11:00 AM						0		60	25			85	24		0			24	0	57				57
11:15 AM						0		54	26			80	18		0			18	0	72				72
11:30 AM						0		60	32			92	29		0			29	0	61				61
11:45 AM						0		67	24			91	25		0			25	0	71				71
Hourly Total	0	0	0	0	0	0	0	241	107	0	0	348	96	0	0	0	0	96	0	261	0	0	0	261
12:00 PM						0		57	25			82	26		1			27	1	74				75
12:15 PM						0		75	28			103	25		0			25	0	71				71
12:30 PM						0		62	28			90	33		1			34	0	74				74
12:45 PM						0		56	28			84	27		0			27	1	90				91
Hourly Total	0	0	0	0	0	0	0	250	109	0	0	359	111	0	2	0	0	113	2	309	0	0	0	311
1:00 PM						0		63	45			108	26		0			26	1	52				53
1:15 PM						0		77	40			117	18		0			18	0	50				50
1:30 PM						0		68	25			93	25		1			26	0	76				76
1:45 PM						0		66	24	1		91	28		0			28	0	64				64
Hourly Total	0	0	0	0	0	0	0	274	134	1	0	409	97	0	1	0	0	98	1	242	0	0	0	243
2:00 PM						0		77	21			98	30		0			30	1	59				60
2:15 PM						0		76	31			107	24		0			24	1	56				57
2:30 PM						0		88	22			110	31		0			31	1	49				50
2:45 PM						0		71	30			101	25		0			25	1	53				54
Hourly Total	0	0	0	0	0	0	0	312	104	0	0	416	110	0	0	0	0	110	4	217	0	0	0	221
3:00 PM						0		96	29			125	29		1			30	0	55				55
3:15 PM						0		93	33			126	25		0			25	0	66				66
3:30 PM						0		102	32			134	31		0			31	0	58				58
3:45 PM						0		78	34			112	30		1			31	0	65				65
Hourly Total	0	0	0	0	0	0	0	369	128	0	0	497	115	0	2	0	0	117	0	244	0	0	0	244
4:00 PM						0		131	54			185	26		0			26	1	59				60
4:15 PM						0		113	33			146	21		0			21	0	85				85
4:30 PM						0		137	49			186	25		0			25	0	67				67
4:45 PM						0		139	38			177	30		0			30	1	65				66
Hourly Total	0	0	0	0	0	0	0	520	174	0	0	694	102	0	0	0	0	102	2	276	0	0	0	278
5:00 PM						0		152	37			189	38		1			39	0	70				70
5:15 PM						0		159	39			198	36		1			37	0	79				79
5:30 PM						0		129	44			173	34		1			35	1	80				81
5:45 PM						0		108	47			155	24		0			24	1	84				85
Hourly Total	0	0	0	0	0	0	0	548	167	0	0	715	132	0	3	0	0	135	2	313	0	0	0	315
6:00 PM						0		99	45			144	24		0			24	2	65				67
6:15 PM						0		99	34			133	24		1			25	1	60				61
6:30 PM						0		79	26			105	26		0			26	0	63				63
6:45 PM						0		93	33			126	29		1			30	1	63				64
Hourly Total	0	0	0	0	0	0	0	370	138	0	0	508	103	0	2	0	0	105	4	251	0	0	0	255
7:00 PM						0		77	34			111	20		0			20	0	37				37
7:15 PM						0		74	44			118	24		1			25	1	37				38
7:30 PM						0		96	32			128	25		2			27	0	52				52
7:45 PM						0		65	31			96	17		1			18	0	50				50
Hourly Total	0	0	0	0	0	0	0	312	141	0	0	453	86	0	4	0	0	90	1	176	0	0	0	177
8:00 PM						0		77	25			102	15		0			15	0	46				46
8:15 PM						0		72	33			105	7		0			7	0	48				48
8:30 PM						0		42	25			67	13		1			14	0	41				41
8:45 PM						0		55	22			77	9		0			9	0	38				38
Hourly Total	0	0	0	0	0	0	0	246	105	0	0	351	44	0	1	0	0	45	0	173	0	0	0	173
9:00 PM						0		55	27			82	10		0			10	0	21				21
9:15 PM						0		56	24			80	14		1			15	0	20				20
9:30 PM						0		53	19			72	3		0			3	0	14				14
9:45 PM						0		38	18			56	9		0			9	0	23				23
Hourly Total	0	0	0	0	0	0	0	202	88	0	0	290	36	0	1	0	0	37	0	78	0	0	0	78
10:00 PM						0		25	8			33	6		0			6	0	19				19
10:15 PM						0		29	8			37	2		0			2	0	23				23
10:30 PM						0		29	8			37	4		0			4	0	9				9
10:45 PM						0		18	6			24	6		0			6	0	5				5
Hourly Total	0	0	0	0	0	0	0	101	30	0	0	131	18	0	0	0	0	18	0	56	0	0	0	56
11:00 PM						0		24	10			34	2		0			2	0	10				10
11:15 PM						0		24	7			31	3		0			3	0	7				7
11:30 PM						0		18	1			19	1		0			1	0	9				9
11:45 PM						0		15	6			21	1		0			1	0	6				6
Hourly Total	0	0	0	0	0	0	0	81	24	0	0	105	7	0	0	0	0	7	0	32	0	0	0	32

NOTES:

It should be noted that if data is copied overtop of the Hourly Totals or Approach Totals, that the 'AutoSum' Formula will be lost. This should not affect the actual totals if the data was copied from a program that performs the calculations for the user.

Count Data Grown

								1.5238%						1.3632%						1.5238%		
	Southbound						Westbound						Northbound						Eastbound			
	Right	Thru	Left	U-Turn			Right	Thru	Left	U-Turn			Right	Thru	Left	U-Turn			Right	Thru	Left	U-Turn
0:00	0	0	0	0			0	14	4	0			1	0	0	0			0	8	0	0
12:15	0	0	0	0			0	16	1	0			3	0	0	0			0	7	0	0
12:30	0	0	0	0			0	12	4	0			1	0	0	0			0	3	0	0
12:45	0	0	0	0			0	14	3	0			1	0	0	0			0	7	0	0
1:00	0	0	0	0			0	8	0	0			1	0	0	0			0	8	0	0
1:15	0	0	0	0			0	10	3	0			4	0	0	0			0	4	0	0
1:30	0	0	0	0			0	8	3	0			0	0	0	0			0	7	0	0
1:45	0	0	0	0			0	8	1	0			0	0	0	0			0	7	0	0
2:00	0	0	0	0			0	4	0	0			0	0	0	0			0	0	0	0
2:15	0	0	0	0			0	3	0	0			1	0	0	0			0	9	0	0
2:30	0	0	0	0			0	5	0	0			0	0	0	0			0	12	0	0
2:45	0	0	0	0			0	4	3	0			4	0	0	0			0	8	0	0
3:00	0	0	0	0			0	0	0	0			1	0	0	0			0	16	0	0
3:15	0	0	0	0			0	3	1	0			3	0	0	0			0	17	0	0
3:30	0	0	0	0			0	1	3	0			5	0	0	0			0	25	0	0
3:45	0	0	0	0			0	7	3	0			3	0	0	0			0	31	0	0
4:00	0	0	0	0			0	3	4	0			11	0	0	0			0	38	0	0
4:15	0	0	0	0			0	9	4	0			19	0	0	0			0	52	0	0
4:30	0	0	0	0			0	7	1	0			13	0	0	0			0	67	0	0
4:45	0	0	0	0			0	9	3	0			14	0	0	0			0	78	0	0
5:00	0	0	0	0			0	5	5	0			18	0	1	0			0	70	0	0
5:15	0	0	0	0			0	18	12	0			14	0	1	0			0	86	0	0
5:30	0	0	0	0			0	12	4	0			19	0	0	0			0	94	0	0
5:45	0	0	0	0			0	13	7	0			22	0	0	0			0	98	0	0
6:00	0	0	0	0			0	31	8	0			17	0	0	0			0	87	0	0
6:15	0	0	0	0			0	29	4	0			27	0	0	0			0	93	0	0
6:30	0	0	0	0			0	22	10	0			19	0	1	0			0	117	0	0
6:45	0	0	0	0			0	38	16	0			32	0	0	0			0	132	0	0
7:00	0	0	0	0			0	30	21	0			46	0	0	0			0	110	0	0
7:15	0	0	0	0			0	33	13	0			42	0	0	0			0	130	0	0
7:30	0	0	0	0			0	74	18	0			36	0	0	0			1	154	0	0
7:45	0	0	0	0			0	52	18	0			56	0	0	0			1	157	0	0
8:00	0	0	0	0			0	43	25	0			37	0	1	0			0	125	0	0
8:15	0	0	0	0			0	50	23	0			43	0	0	0			1	120	0	0
8:30	0	0	0	0			0	53	18	0			41	0	0	0			0	125	0	0
8:45	0	0	0	0			0	56	18	0			50	0	0	0			0	111	0	0
9:00	0	0	0	0			0	56	18	0			29	0	1	0			0	111	0	0
9:15	0	0	0	0			0	47	20	0			36	0	0	0			3	91	0	0
9:30	0	0	0	0			0	59	10	0			36	0	0	0			0	64	0	0
9:45	0	0	0	0			0	60	31	0			38	0	1	0			0	82	0	0
10:00	0	0	0	0			0	59	22	0			33	0	1	0			1	72	0	0
10:15	0	0	0	0			0	60	20	0			45	0	0	0			0	73	0	0
10:30	0	0	0	0			0	73	26	0			34	0	1	0			0	100	0	0
10:45	0	0	0	0			0	69	27	0			38	0	0	0			0	91	0	0
11:00	0	0	0	0			0	78	33	0			31	0	0	0			0	74	0	0
11:15	0	0	0	0			0	70	34	0			23	0	0	0			0	94	0	0
11:30	0	0	0	0			0	78	42	0			37	0	0	0			0	80	0	0
11:45	0	0	0	0			0	87	31	0			32	0	0	0			0	93	0	0
12:00	0	0	0	0			0	74	33	0			33	0	1	0			1	97	0	0
12:15	0	0	0	0			0	98	37	0			32	0	0	0			0	93	0	0
12:30	0	0	0	0			0	81	37	0			42	0	1	0			0	97	0	0
12:45	0	0	0	0			0	73	37	0			34	0	0	0			1	117	0	0
1:00	0	0	0	0			0	82	59	0			33	0	0	0			1	68	0	0
1:15	0	0	0	0			0	100	52	0			23	0	0	0			0	65	0	0
1:30	0	0	0	0			0	89	33	0			32	0	1	0			0	99	0	0
1:45	0	0	0	0			0	86	31	1			36	0	0	0			0	84	0	0
2:00	0	0	0	0			0	100	27	0			38	0	0	0			1	77	0	0
2:15	0	0	0	0			0	99	40	0			31	0	0	0			1	73	0	0
2:30	0	0	0	0			0	115	29	0			39	0	0	0			1	64	0	0
2:45	0	0	0	0			0	93	39	0			32	0	0	0			1	69	0	0
3:00	0	0	0	0			0	125	38	0			37	0	1	0			0	72	0	0
3:15	0	0	0	0			0	121	43	0			32	0	0	0			0	86	0	0
3:30	0	0	0	0			0	133	42	0			39	0	0	0			0	76	0	0
3:45	0	0	0	0			0	102	44	0			38	0	1	0			0	85	0	0
4:00	0	0	0	0			0	171	70	0			33	0	0	0			1	77	0	0
4:15	0	0	0	0			0	147	43	0			27	0	0	0			0	111	0	0
4:30	0	0	0	0			0	179	64	0			32	0	0	0			0	87	0	0
4:45	0	0	0	0			0	181	50	0			38	0	0	0			1	85	0	0
5:00	0	0	0	0			0	198	48	0			48	0	1	0			0	91	0	0
5:15	0	0	0	0			0	207	51	0			46	0	1	0			0	103	0	0
5:30	0	0	0	0			0	168	57	0			43	0	1	0			1	104	0	0
5:45	0	0	0	0			0	141	61	0			31	0	0	0			1	110	0	0
6:00	0	0	0	0			0	129	59	0			31	0	0	0			3	85	0	0
6:15	0	0	0	0			0	129	44	0			31	0	1	0			1	78	0	0
6:30	0	0	0	0			0	103	34	0			33	0	0	0			0	82	0	0
6:45	0	0	0	0			0	121	43	0			37	0	1	0			1	82	0	0
7:00	0	0	0	0			0	100	44	0			25	0	0	0			0	48	0	0
7:15	0	0	0	0			0	97	57	0			31	0	1	0			1	48	0	0
7:30	0	0	0	0			0	125	42	0			32	0	3	0			0	68	0	0
7:45	0	0	0	0			0	85	40	0			22	0	1	0			0	65	0	0
8:00	0	0	0	0			0	100	33	0			19	0	0	0			0	60	0	0
8:15	0	0	0	0			0	94	43	0			9	0	0	0			0	63	0	0
8:30	0	0	0	0			0	55	33	0			17	0	1	0			0	53	0	0
8:45	0	0	0	0			0	72	29	0			11	0	0	0			0	50	0	0
9:00	0	0	0	0			0	72	35	0			13	0	0	0			0	27	0	0
9:15	0	0	0	0			0	73	31	0			18	0	1	0			0	26	0	0
9:30	0	0	0	0			0	69	25	0			4	0	0	0			0	18	0	0
9:45	0	0	0	0			0	50	23	0			11	0	0	0			0	30	0	0
10:00	0	0	0	0			0	33	10	0			8	0	0	0			0	25	0	0
10:15	0	0	0	0			0	38	10	0			3	0	0	0			0	30	0	0
10:30	0	0	0	0			0	38	10	0			5	0	0	0			0	12	0	0
10:45	0	0	0	0			0	23	8	0			8	0	0	0			0	7	0	0
11:00	0	0	0	0			0	31	13	0			3	0	0	0			0	13	0	0
11:15	0	0	0	0			0	31	9	0			4	0	0	0			0	9	0	0
11:30	0	0	0	0			0	23	1	0			1	0	0	0			0	12	0	0
11:45	0	0	0	0			0	20	8	0			1	0	0	0			0	8	0	0

Collection Year 2019
Design Year 2039

2039 Final Count Data

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	0	0	0	0		0	0	14	4	0		18	1	0	0	0		1	0	8	0	0		8
12:15 AM	0	0	0	0		0	0	16	1	0		17	3	0	0	0		3	0	7	0	0		7
12:30 AM	0	0	0	0		0	0	12	4	0		16	1	0	0	0		1	0	3	0	0		3
12:45 AM	0	0	0	0		0	0	14	3	0		17	1	0	0	0		1	0	7	0	0		7
Hourly Total	0	0	0	0	0	0	0	56	12	0	0	68	6	0	0	0	0	6	0	25	0	0	0	25
1:00 AM	0	0	0	0		0	0	8	0	0		8	1	0	0	0		1	0	8	0	0		8
1:15 AM	0	0	0	0		0	0	10	3	0		13	4	0	0	0		4	0	4	0	0		4
1:30 AM	0	0	0	0		0	0	8	3	0		11	0	0	0	0		0	0	7	0	0		7
1:45 AM	0	0	0	0		0	0	8	1	0		9	0	0	0	0		0	0	7	0	0		7
Hourly Total	0	0	0	0	0	0	0	34	7	0	0	41	5	0	0	0	0	5	0	26	0	0	0	26
2:00 AM	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	0	0	0		0
2:15 AM	0	0	0	0		0	0	3	0	0		3	1	0	0	0		1	0	9	0	0		9
2:30 AM	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	12	0	0		12
2:45 AM	0	0	0	0		0	0	4	3	0		7	4	0	0	0		4	0	8	0	0		8
Hourly Total	0	0	0	0	0	0	0	16	3	0	0	19	5	0	0	0	0	5	0	29	0	0	0	29
3:00 AM	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	16	0	0		16
3:15 AM	0	0	0	0		0	0	3	1	0		4	3	0	0	0		3	0	17	0	0		17
3:30 AM	0	0	0	0		0	0	1	3	0		4	5	0	0	0		5	0	25	0	0		25
3:45 AM	0	0	0	0		0	0	7	3	0		10	3	0	0	0		3	0	31	0	0		31
Hourly Total	0	0	0	0	0	0	0	11	7	0	0	18	12	0	0	0	0	12	0	89	0	0	0	89
4:00 AM	0	0	0	0		0	0	3	4	0		7	11	0	0	0		11	0	38	0	0		38
4:15 AM	0	0	0	0		0	0	9	4	0		13	19	0	0	0		19	0	52	0	0		52
4:30 AM	0	0	0	0		0	0	7	1	0		8	13	0	0	0		13	0	67	0	0		67
4:45 AM	0	0	0	0		0	0	9	3	0		12	14	0	0	0		14	0	78	0	0		78
Hourly Total	0	0	0	0	0	0	0	28	12	0	0	40	57	0	0	0	0	57	0	235	0	0	0	235
5:00 AM	0	0	0	0		0	0	5	5	0		10	18	0	1	0		19	0	70	0	0		70
5:15 AM	0	0	0	0		0	0	18	12	0		30	14	0	1	0		15	0	86	0	0		86
5:30 AM	0	0	0	0		0	0	12	4	0		16	19	0	0	0		19	0	94	0	0		94
5:45 AM	0	0	0	0		0	0	13	7	0		20	22	0	0	0		22	0	98	0	0		98
Hourly Total	0	0	0	0	0	0	0	48	28	0	0	76	73	0	2	0	0	75	0	348	0	0	0	348
6:00 AM	0	0	0	0		0	0	31	8	0		39	17	0	0	0		17	0	87	0	0		87
6:15 AM	0	0	0	0		0	0	29	4	0		33	27	0	0	0		27	0	93	0	0		93
6:30 AM	0	0	0	0		0	0	22	10	0		32	19	0	1	0		20	0	117	0	0		117
6:45 AM	0	0	0	0		0	0	38	16	0		54	32	0	0	0		32	0	132	0	0		132
Hourly Total	0	0	0	0	0	0	0	120	38	0	0	158	95	0	1	0	0	96	0	429	0	0	0	429
7:00 AM	0	0	0	0		0	0	30	21	0		51	46	0	0	0		46	0	110	0	0		110
7:15 AM	0	0	0	0		0	0	33	13	0		46	42	0	0	0		42	0	130	0	0		130
7:30 AM	0	0	0	0		0	0	74	18	0		92	36	0	0	0		36	1	154	0	0		155
7:45 AM	0	0	0	0		0	0	52	18	0		70	56	0	0	0		56	1	157	0	0		158
Hourly Total	0	0	0	0	0	0	0	189	70	0	0	259	180	0	0	0	0	180	2	551	0	0	0	553
8:00 AM	0	0	0	0		0	0	43	25	0		68	37	0	1	0		38	0	125	0	0		125
8:15 AM	0	0	0	0		0	0	50	23	0		73	43	0	0	0		43	1	120	0	0		121
8:30 AM	0	0	0	0		0	0	53	18	0		71	41	0	0	0		41	0	125	0	0		125
8:45 AM	0	0	0	0		0	0	56	18	0		74	50	0	0	0		50	0	111	0	0		111
Hourly Total	0	0	0	0	0	0	0	202	84	0	0	286	171	0	1	0	0	172	1	481	0	0	0	482
9:00 AM	0	0	0	0		0	0	56	18	0		74	29	0	1	0		30	0	111	0	0		111
9:15 AM	0	0	0	0		0	0	47	20	0		67	36	0	0	0		36	3	91	0	0		94
9:30 AM	0	0	0	0		0	0	59	10	0		69	36	0	0	0		36	0	64	0	0		64
9:45 AM	0	0	0	0		0	0	60	31	0		91	38	0	1	0		39	0	82	0	0		82
Hourly Total	0	0	0	0	0	0	0	222	79	0	0	301	139	0	2	0	0	141	3	348	0	0	0	351
10:00 AM	0	0	0	0		0	0	59	22	0		81	33	0	1	0		34	1	72	0	0		73
10:15 AM	0	0	0	0		0	0	60	20	0		80	45	0	0	0		45	0	73	0	0		73
10:30 AM	0	0	0	0		0	0	73	26	0		99	34	0	1	0		35	0	100	0	0		100
10:45 AM	0	0	0	0		0	0	69	27	0		96	38	0	0	0		38	0	91	0	0		91
Hourly Total	0	0	0	0	0	0	0	261	95	0	0	356	150	0	2	0	0	152	1	336	0	0	0	337
11:00 AM	0	0	0	0		0	0	78	33	0		111	31	0	0	0		31	0	74	0	0		74
11:15 AM	0	0	0	0		0	0	70	34	0		104	23	0	0	0		23	0	94	0	0		94
11:30 AM	0	0	0	0		0	0	78	42	0		120	37	0	0	0		37	0	80	0	0		80
11:45 AM	0	0	0	0		0	0	87	31	0		118	32	0	0	0		32	0	93	0	0		93
Hourly Total	0	0	0	0	0	0	0	313	140	0	0	453	123	0	0	0	0	123	0	341	0	0	0	341
12:00 PM	0	0	0	0		0	0	74	33	0		107	33	0	1	0		34	1	97	0	0		98
12:15 PM	0	0	0	0		0	0	98	37	0		135	32	0	0	0		32	0	93	0	0		93
12:30 PM	0	0	0	0		0	0	81	37	0		118	42	0	1	0		43	0	97	0	0		97
12:45 PM	0	0	0	0		0	0	73	37	0		110	34	0	0	0		34	1	117	0	0		118
Hourly Total	0	0	0	0	0	0	0	326	144	0	0	470	141	0	2	0	0	143	2	404	0	0	0	406
1:00 PM	0	0	0	0		0	0	82	59	0		141	33	0	0	0		33	1	68	0	0		69
1:15 PM	0	0	0	0		0	0	100	52	0		152	23	0	0	0		23	0	65	0	0		65
1:30 PM	0	0	0	0		0	0	89	33	0		122	32	0	1	0		33	0	99	0	0		99
1:45 PM	0	0	0	0		0	0	86	31	1		118	36	0	0	0		36	0	84	0	0		84
Hourly Total	0	0	0	0	0	0	0	357	175	1	0	533	124	0	1	0	0	125	1	316	0	0	0	317
2:00 PM	0	0	0	0		0	0	100	27	0		127	38	0	0	0		38	1	77	0	0		78
2:15 PM	0	0	0	0		0	0	99	40	0		139	31	0	0	0		31	1	73	0	0		74
2:30 PM	0	0	0	0		0	0	115	29	0		144	39	0	0	0		39	1	64	0	0		65
2:45 PM	0	0	0	0		0	0	93	39	0		132	32	0	0	0		32	1	69	0	0		70
Hourly Total	0	0	0	0	0	0	0	407	135	0	0	542	140	0	0	0	0	140	4	283	0	0	0	287
3:00 PM	0	0	0	0		0	0	125	38	0		163	37	0	1	0		38	0	72	0	0		72
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3:30 PM	0	0	0	0		0	0	133	42	0		175	39	0	0	0		39	0	76	0	0		76
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4:15 PM	0	0	0	0		0	0	147	43	0		190	27	0	0	0		27	0	111	0	0		111
4:30 PM	0	0	0	0		0	0	179	64	0		243	32	0	0	0		32	0	87	0	0		87
4:45 PM	0	0	0	0		0	0	181	50	0		231	38	0	0	0		38	1	85	0	0		86
Hourly Total	0	0	0	0	0	0	0	678	227	0	0	905	130	0	0	0	0	130	2	360	0	0	0	362
5:00 PM	0	0	0	0		0	0	198	48	0		246	48	0	1	0		49	0	91	0	0		91
5:15 PM	0	0	0	0		0	0	207	51	0		258	46	0	1	0		47	0	103	0	0		103
5:30 PM	0	0	0	0		0	0	168	57	0		225	43	0	1	0		44	1	104	0	0		105
5:45 PM	0	0	0	0		0	0	141	61	0		202	31	0	0	0		31	1	110	0	0		111
Hourly Total	0	0	0	0	0	0	0	714	217	0	0	931	168	0	3	0	0	171	2	408	0	0	0	410
6:00 PM	0	0	0	0		0	0	129	59	0		188	31	0	0	0		31	3	85	0	0		88
6:15 PM	0	0	0	0		0	0	129	44	0		173	31	0	1	0		32	1	78	0	0		79
6:30 PM	0	0	0	0		0	0	103	34	0		137	33	0	0	0		33	0	82	0	0		82
6:45 PM	0	0	0	0		0	0	121	43	0		164	37	0	1	0		38	1	82	0	0		83
Hourly Total	0	0	0	0	0	0	0	482	180	0	0	662	132	0	2	0	0	134	5	327	0	0	0	332
7:00 PM	0	0	0	0		0	0	100	44	0		144	25	0	0	0		25	0	48	0	0		48
7:15 PM	0	0	0	0		0	0	97	57	0		154	31	0	1	0		32	1	48	0	0		49
7:30 PM	0	0	0	0		0	0	125	42	0		167	32	0	3	0		35	0	68	0	0		68
7:45 PM	0	0	0	0		0	0	85	40	0		125	22	0	1	0		23	0	65	0	0		65
Hourly Total	0	0	0	0	0	0	0	407	183	0	0	590	110	0	5	0	0	115	1	229	0	0	0	230
8:00 PM	0	0	0	0		0	0	100	33	0		133	19	0	0	0		19	0	60	0	0		60
8:15 PM	0	0	0	0		0	0	94	43	0		137	9	0	0	0		9	0	63	0	0		63
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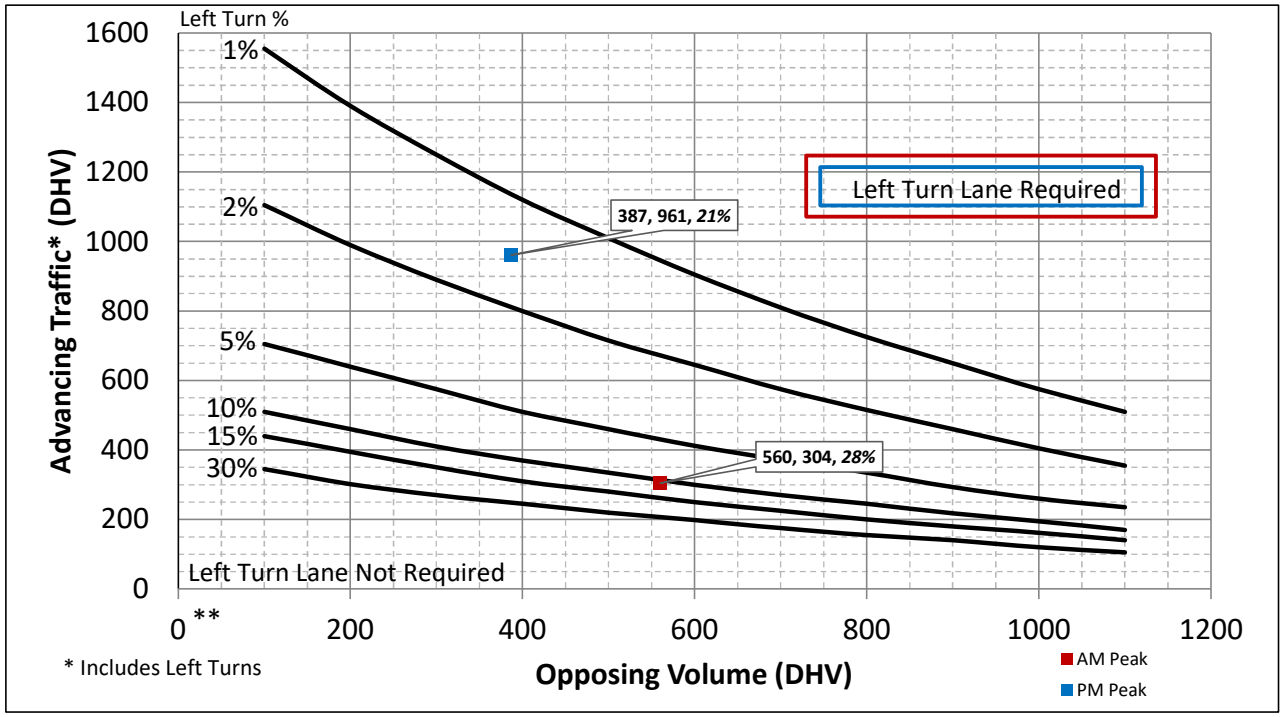
8:45 PM	0	0	0	0		0	0	72	29	0		101	11	0	0	0		11	0	50	0	0		50
Hourly Total	0	0	0	0	0	0	0	321	138	0	0	459	56	0	1	0	0	57	0	226	0	0	0	226
9:00 PM	0	0	0	0		0	0	72	35	0		107	13	0	0	0		13	0	27	0	0		27
9:15 PM	0	0	0	0		0	0	73	31	0		104	18	0	1	0		19	0	26	0	0		26
9:30 PM	0	0	0	0		0	0	69	25	0		94	4	0	0	0		4	0	18	0	0		18
9:45 PM	0	0	0	0		0	0	50	23	0		73	11	0	0	0		11	0	30	0	0		30
Hourly Total	0	0	0	0	0	0	0	264	114	0	0	378	46	0	1	0	0	47	0	101	0	0	0	101
10:00 PM	0	0	0	0		0	0	33	10	0		43	8	0	0	0		8	0	25	0	0		25
10:15 PM	0	0	0	0		0	0	38	10	0		48	3	0	0	0		3	0	30	0	0		30
10:30 PM	0	0	0	0		0	0	38	10	0		48	5	0	0	0		5	0	12	0	0		12
10:45 PM	0	0	0	0		0	0	23	8	0		31	8	0	0	0		8	0	7	0	0		7
Hourly Total	0	0	0	0	0	0	0	132	38	0	0	170	24	0	0	0	0	24	0	74	0	0	0	74
11:00 PM	0	0	0	0		0	0	31	13	0		44	3	0	0	0		3	0	13	0	0		13
11:15 PM	0	0	0	0		0	0	31	9	0		40	4	0	0	0		4	0	9	0	0		9
11:30 PM	0	0	0	0		0	0	23	1	0		24	1	0	0	0		1	0	12	0	0		12
11:45 PM	0	0	0	0		0	0	20	8	0		28	1	0	0	0		1	0	8	0	0		8
Hourly Total	0	0	0	0	0	0	0	105	31	0	0	136	9	0	0	0	0	9	0	42	0	0	0	42

NOTES:

It should be noted that if data is copied overtop of the Hourly Totals or Approach Totals, that the 'AutoSum' Formula will be lost. This should not affect the actual totals if the data was copied from a program that performs the calculations for the user.

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)

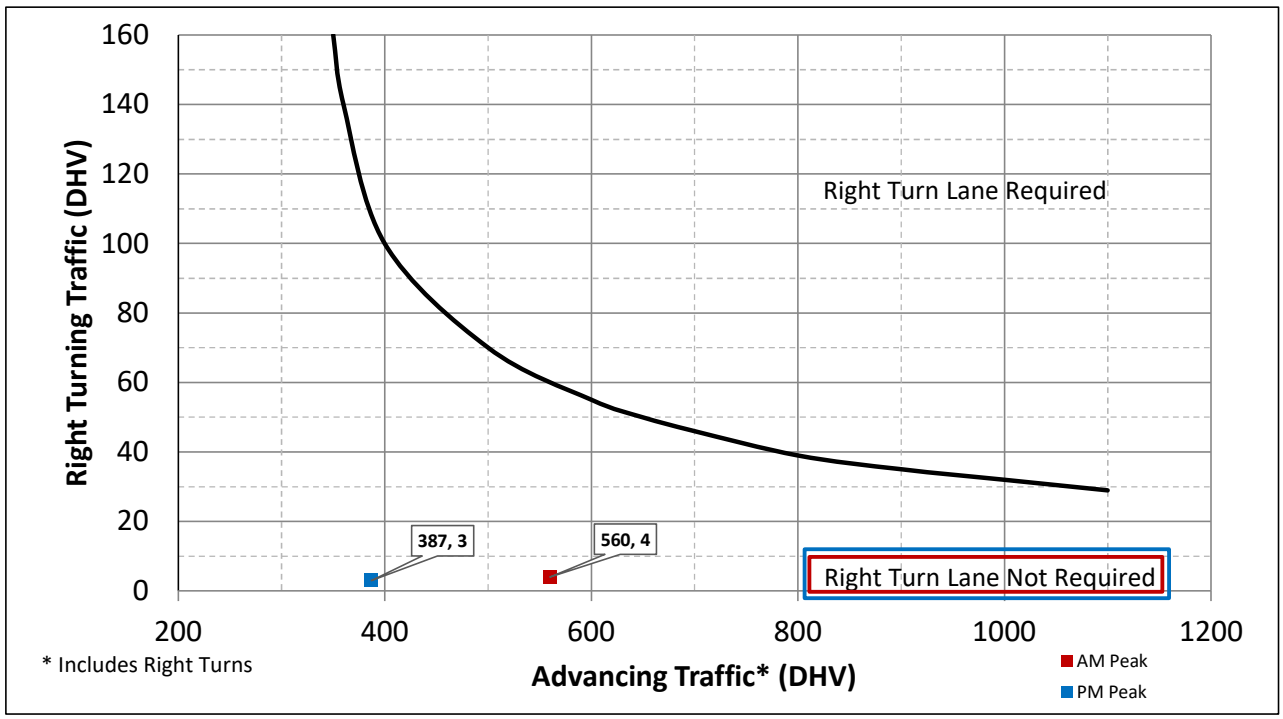


Turn Lane Length Calculations

AM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	85	VPH
	Advancing Traffic	304	VPH
	Opposing Volume	560	VPH
	Left Turn Percentage	28%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	180	
PM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	206	VPH
	Advancing Traffic	961	VPH
	Opposing Volume	387	VPH
	Left Turn Percentage	21%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	4	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	180	
Is Left Turn Warrant Met		Yes	**See Above**

2-Lane Highway Right Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	4	VPH
	Advancing Traffic	560	VPH
	Right Turn Percentage	1%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
PM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	3	VPH
	Advancing Traffic	387	VPH
	Right Turn Percentage	1%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
Is Right Turn Warrant Met		No	No Right Turn Lane Required

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

Left Turn Lane Length Calculations

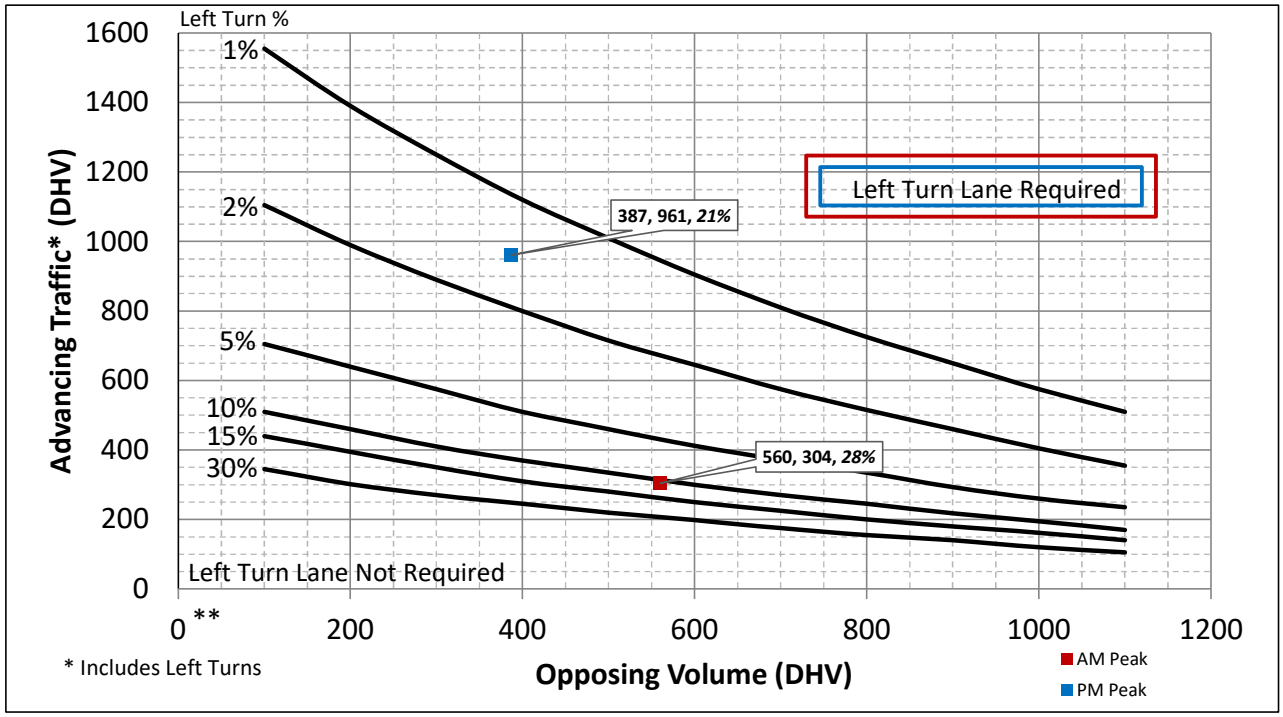
AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	1	**VPH**
	Advancing Traffic	173	**VPH**
	Left Turn Percentage	1%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	Offset Width	12	
	Approach Taper	180	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	4	**VPH**
	Advancing Traffic	180	**VPH**
	Left Turn Percentage	2%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	Offset Width	12	
	Approach Taper	180	

Right Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	172	**VPH**
	Advancing Traffic	173	**VPH**
	Right Turn Percentage	99%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	3	
	Turn Lane Length	200	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	176	**VPH**
	Advancing Traffic	180	**VPH**
	Right Turn Percentage	98%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	3	
	Turn Lane Length	200	

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)

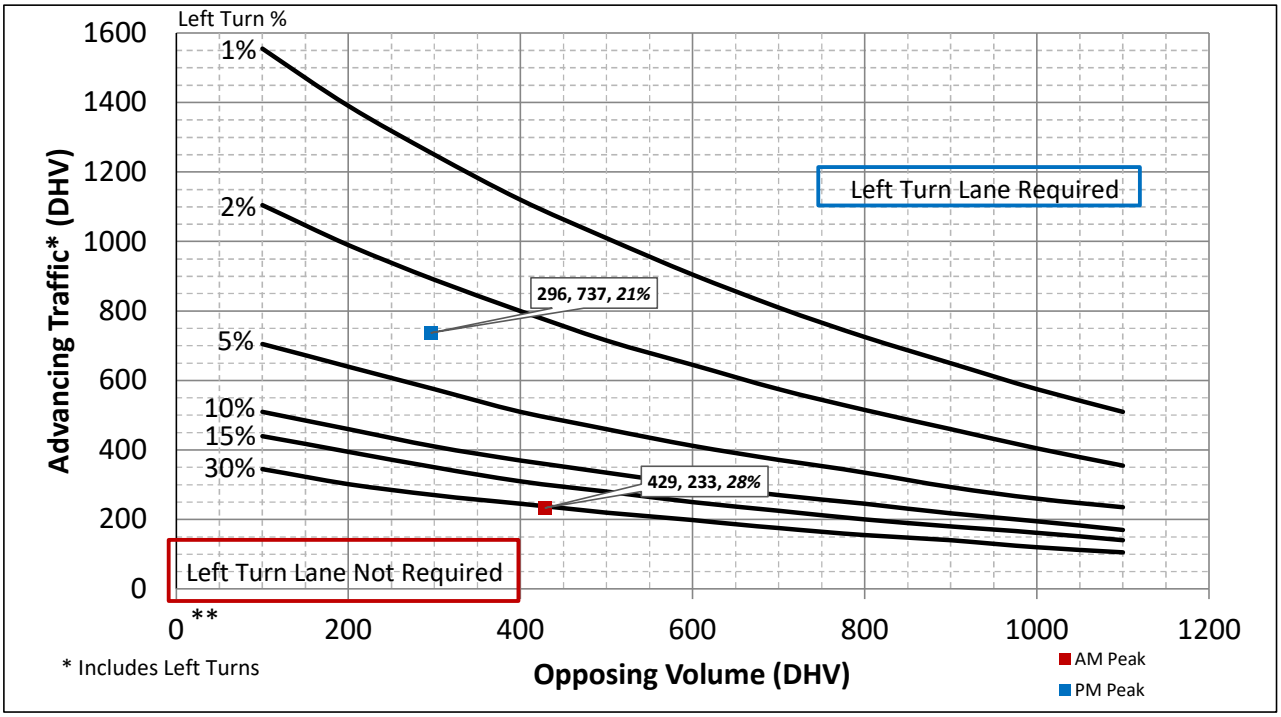


Turn Lane Length Calculations

AM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	85	VPH
	Advancing Traffic	304	VPH
	Opposing Volume	560	VPH
	Left Turn Percentage	28%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	180	
PM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	206	VPH
	Advancing Traffic	961	VPH
	Opposing Volume	387	VPH
	Left Turn Percentage	21%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	4	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	180	
Is Left Turn Warrant Met		Yes	**See Above**

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

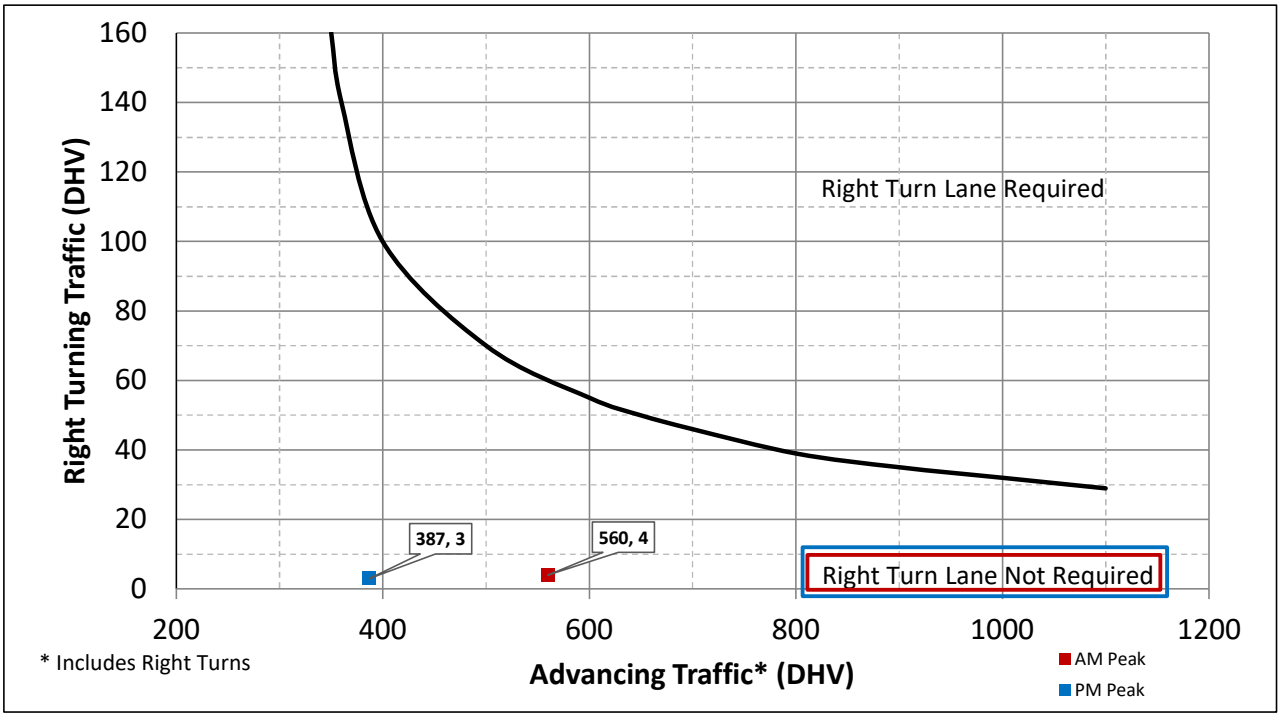
AM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	65	VPH
	Advancing Traffic	233	VPH
	Opposing Volume	429	VPH
	Left Turn Percentage	28%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	
	Offset Width	12	
	Approach Taper	180	
PM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	158	VPH
	Advancing Traffic	737	VPH
	Opposing Volume	296	VPH
	Left Turn Percentage	21%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	3	
	Turn Lane Length	200	
	Offset Width	12	
	Approach Taper	180	
Is Left Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	4	VPH
	Advancing Traffic	560	VPH
	Right Turn Percentage	1%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
PM Peak	Design Speed	30	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	3	VPH
	Advancing Traffic	387	VPH
	Right Turn Percentage	1%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
Is Right Turn Warrant Met		No	No Right Turn Lane Required

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	20	**VPH**
	Advancing Traffic	667	**VPH**
	Left Turn Percentage	3%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	Offset Width	12	
	Approach Taper	180	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	16	**VPH**
	Advancing Traffic	543	**VPH**
	Left Turn Percentage	3%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	Offset Width	12	
	Approach Taper	180	

Right Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	185	**VPH**
	Advancing Traffic	667	**VPH**
	Right Turn Percentage	28%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	4	
	Turn Lane Length	225	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	98	**VPH**
	Advancing Traffic	543	**VPH**
	Right Turn Percentage	18%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	59	**VPH**
	Advancing Traffic	253	**VPH**
	Left Turn Percentage	23%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	
	Offset Width	12	
	Approach Taper	180	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	94	**VPH**
	Advancing Traffic	747	**VPH**
	Left Turn Percentage	13%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	3	
	Turn Lane Length	200	
	Offset Width	12	
	Approach Taper	180	

Right Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	7	**VPH**
	Advancing Traffic	253	**VPH**
	Right Turn Percentage	3%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	20	**VPH**
	Advancing Traffic	747	**VPH**
	Right Turn Percentage	3%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	58	**VPH**
	Advancing Traffic	158	**VPH**
	Left Turn Percentage	37%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	
	Offset Width	12	
	Approach Taper	180	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	164	**VPH**
	Advancing Traffic	310	**VPH**
	Left Turn Percentage	53%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	4	
	Turn Lane Length	225	
	Offset Width	12	
	Approach Taper	180	

Right Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	43	**VPH**
	Advancing Traffic	158	**VPH**
	Right Turn Percentage	27%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	80	**VPH**
	Advancing Traffic	310	**VPH**
	Right Turn Percentage	26%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	14	**VPH**
	Advancing Traffic	85	**VPH**
	Left Turn Percentage	16%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	Offset Width	12	
	Approach Taper	180	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Known	
	Cycles Per Hour	45	***Enter Cycles Per Hour***
	Turn Lane Volume	8	**VPH**
	Advancing Traffic	202	**VPH**
	Left Turn Percentage	4%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	Offset Width	12	
	Approach Taper	180	

Right Turn Lane Length Calculations

AM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	24	**VPH**
	Advancing Traffic	85	**VPH**
	Right Turn Percentage	28%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
PM Peak	**Design Speed**	30	**mph**
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	81	**VPH**
	Advancing Traffic	202	**VPH**
	Right Turn Percentage	40%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	

Appendix G

Crash Diagrams and Crash Rate Calculations

CARPENTER MARTY transportation

Crash Totals

2	Property Damage Only
2	Injury or Fatal
4	Total Crashes

Symbols

Sideswipe Passing
Rear End
Fixed Object
Pedestrian
Left Turn
Angle
Bicycle
Injury

Crash Text

1. Time, day, date
2. Road condition
3. NITE - dark outside

Note: Crash text is positioned with the at fault vehicle

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CMC
CHECKED GMB

CRASH DIAGRAM
WV-51 WEST OF CR-13

WV-51 WEST WASHINGTON STREET FEASIBILITY STUDY

1/3

P:\WVH\05\0001_WV 51 W. Washington St\Analysis\Crash Analysis\Sheet_001.dgn Sheet 5/13/2021 1:29:56 PM dgohs

Crash Totals

14	Property Damage Only
6	Injury or Fatal
20	Total Crashes

Symbols

Sideswipe Passing
Rear End
Fixed Object
Pedestrian
Left Turn
Angle
Bicycle
Injury

Crash Text

1. Time, day, date
2. Road condition
3. NITE - dark outside

Note: Crash text is positioned with the at fault vehicle

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CMC
CHECKED GMB

CRASH DIAGRAM
WV-51 AND CR-13

WV-51 WEST WASHINGTON STREET FEASIBILITY STUDY

2 / 3

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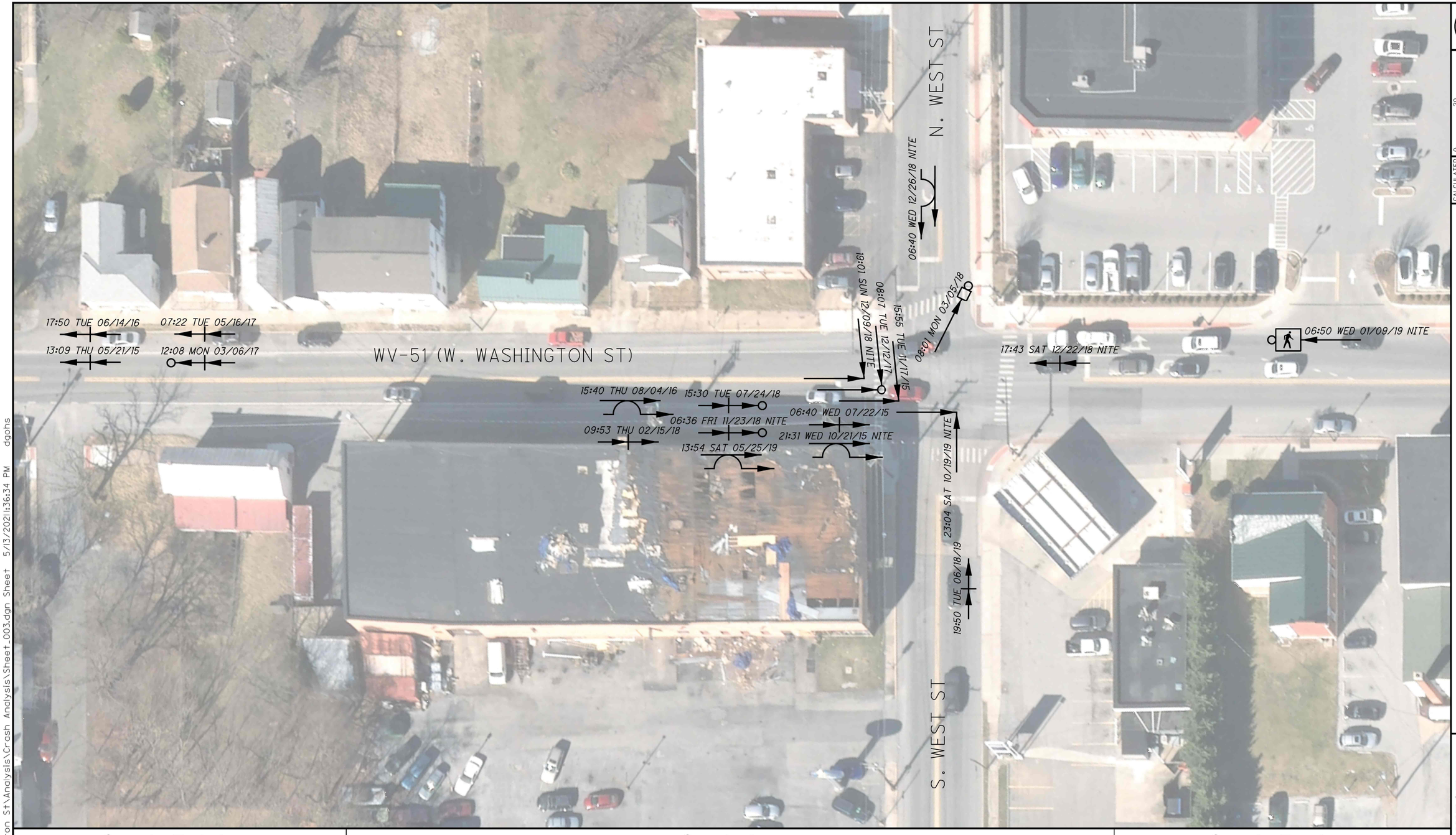


Crash Totals

14	Property Damage Only
6	Injury or Fatal
20	Total Crashes

Symbols

Sideswipe Passing · Rear End · Fixed Object · Pedestrian · Left Turn · Angle · Bicycle · Injury

Crash Text

1. Time, day, date
2. Road condition
3. NITE - dark outside

Note: Crash text is positioned with the at fault vehicle

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED CMC · CHECKED GMB

CRASH DIAGRAM
WV-51 AND WEST ST

WV-51 WEST WASHINGTON STREET FEASIBILITY STUDY

3/3

P:\WVH\05\000_WV 5\W. Washington St\Analysis\Crash Analysis\Sheet_003.dgn Sheet 5/13/2021 11:36:34 PM dgohs

MLK/Washington Intersection

Summit Point EV	1,778	(3,555 ADT-2019)
Washington EV	6,361	(12,721 ADT-2019)
MLK EV	4,817	(9,634 ADT-2019)
Crash #	16	
Crash Year #	5	
Crash Years	2015-2019	

MEV=	23.645
I/S Crash Rate=	**0.677**

"1.0-1.5/MEV as begin to watch (possibly begin to consider low cost safety improvements)"
1.5-2.0/MEV consider safety and operational improvements especially low cost options
Greater than 2.0 considered of concern (signal evaluations, more extensive operational improvements, etc.)

A crash rate is the number of crashes that occur at a given location during a specified time period (usually three to five years) divided by a measure of exposure for the same period. Typical measures of exposure for intersections and roadway segments are identified below.

- **Intersections –** the measure of exposure is the total number of vehicles entering the intersection during the specified time period – usually one year. The total number of vehicles entering the intersection is called Total Entering Vehicles (TEV). If intersection traffic counts are not available to calculate the TEV, average annual daily traffic (AADT) volumes on each approach roadway can be used instead. Because the number of vehicles entering an intersection throughout the year can be quite large, the TEV is usually expressed as Million Entering Vehicles (MEV). MEV is used as a scaling factor and is calculated by dividing the total number of vehicles per day per year by 1,000,000.

  The equation for MEV is:

$$MEV = \frac{TEV\ per\ day \times 365 \times number\ of\ years}{1{,}000{,}000}$$

- **Segments –** the measure of exposure is the total number of vehicles traveling on the road segment during the specified time period. This is called vehicle miles of travel (VMT). VMT is usually expressed as Million Vehicle Miles (MVM).

  The equation for MVM is:

$$MVM = \frac{AADT \times segment\ length \times 365 \times number\ of\ years}{1{,}000{,}000}$$

Note: 1) AADT stands for Annual Average Daily Traffic.

Crash rates are then calculated by dividing the number of crashes by the measure of exposure. The equations are:

- **Intersections (Crash Rates for *n* years):**

$$\text{Intersection Crash Rate} = \frac{\text{Number of Crashes in the n Year Period}}{\text{MEV for the n Year Period}}$$

WV51 (RR - West Street)

Crash #	44
Crash Years	2015-2019
Crash year #	5
Segment Length (mi)	0.45
ADT (2019)	12,721
Million Vehicle Miles (MVM)	10.447
Crash Rate	**4.212**

421 crashes per 100 MVMT > 163 crashes per 100 MVMT (2013 Statewide Average)

- **Segments –** the measure of exposure is the total number of vehicles traveling on the road segment during the specified time period. This is called vehicle miles of travel (VMT). VMT is usually expressed as Million Vehicle Miles (MVM).

  The equation for MVM is:

$$MVM = \frac{AADT \times segment\ length \times 365 \times number\ of\ years}{1{,}000{,}000}$$

  Note: 1) AADT stands for Annual Average Daily Traffic.

Crash rates are then calculated by dividing the number of crashes by the measure of exposure. The equations are:

- **Intersections (Crash Rates for *n* years):**

$$\text{Intersection Crash Rate} = \frac{\text{Number of Crashes in the } n \text{ Year Period}}{\text{MEV for the } n \text{ Year Period}}$$

- **Segments (Crash Rates for *n* years):**

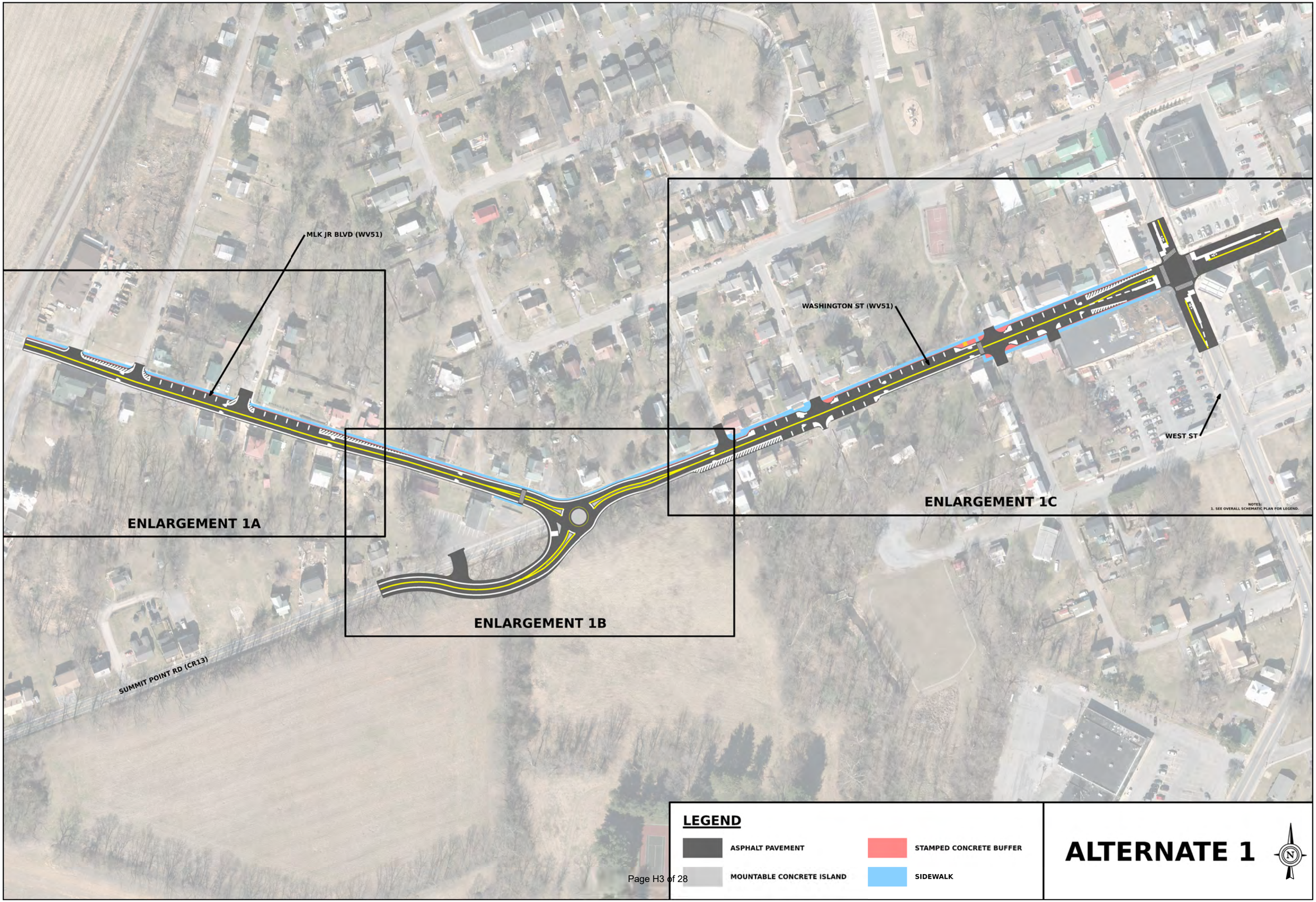
$$\text{Segment Crash Rate} = \frac{\text{Number of Crashes in the } n \text{ Year Period}}{\text{MVM for the } n \text{ Year Period}}$$

Appendix H
Concept Plans

Appendix H

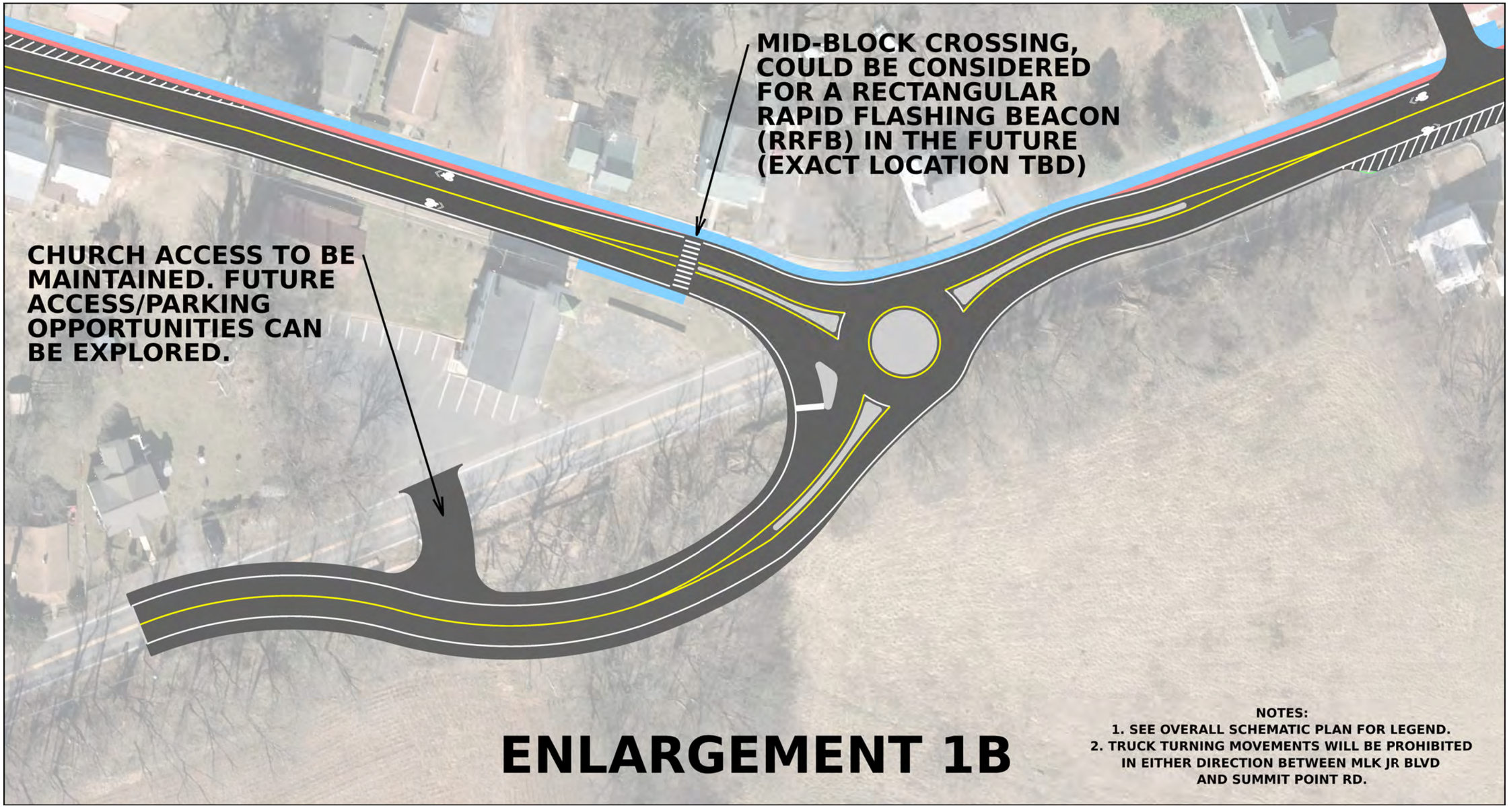
CARPENTER MARTY transportation

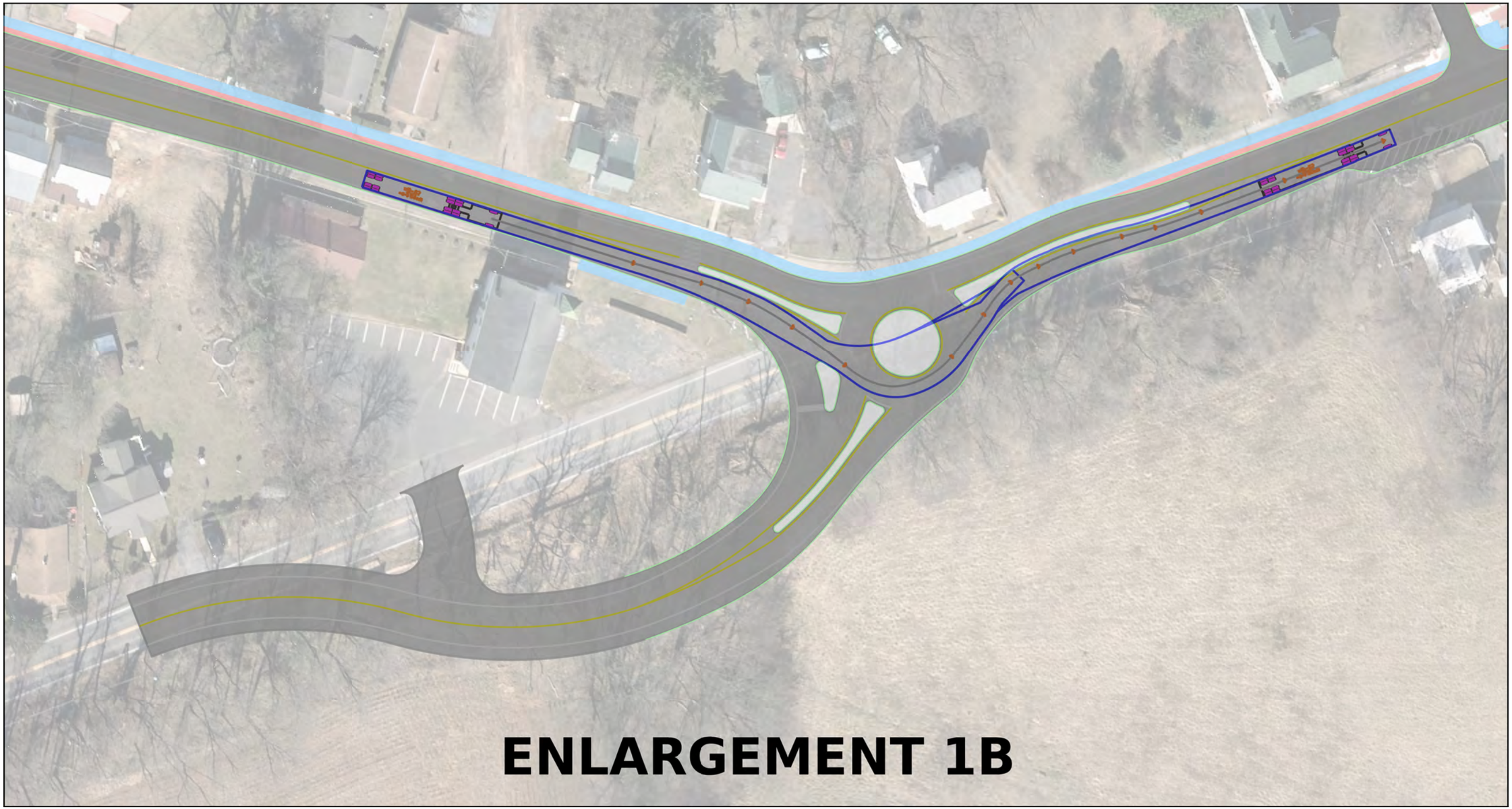
Alternative 1


MLK JR BLVD (WV51)
WASHINGTON ST (WV51)
WEST ST
SUMMIT POINT RD (CR13)
ENLARGEMENT 1A
ENLARGEMENT 1B
ENLARGEMENT 1C
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.
LEGEND
ASPHALT PAVEMENT
STAMPED CONCRETE BUFFER
MOUNTABLE CONCRETE ISLAND
SIDEWALK
ALTERNATE 1

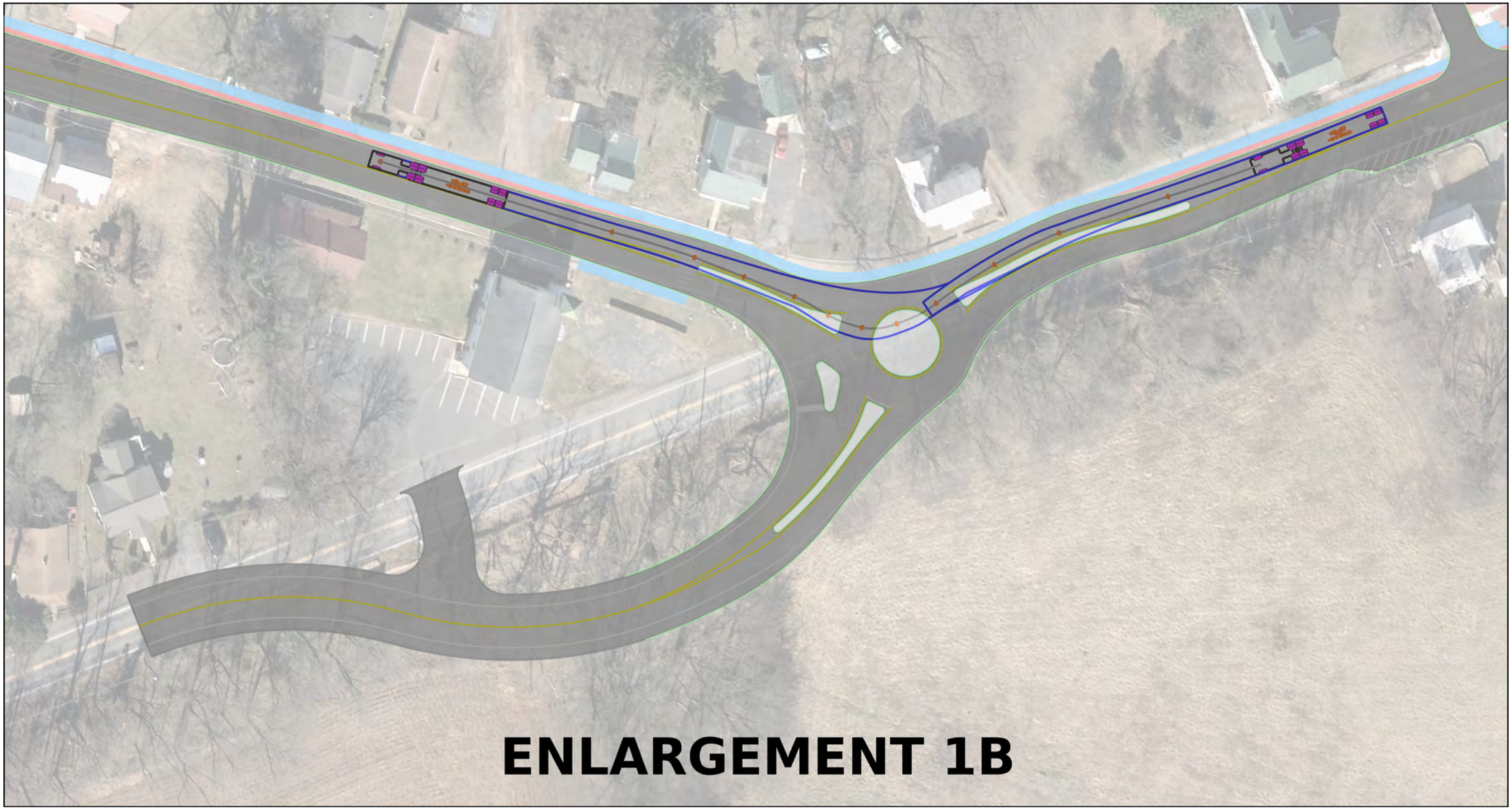
ENLARGEMENT 1A

NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.


MID-BLOCK CROSSING, COULD BE CONSIDERED FOR A RECTANGULAR RAPID FLASHING BEACON (RRFB) IN THE FUTURE (EXACT LOCATION TBD)
CHURCH ACCESS TO BE MAINTAINED. FUTURE ACCESS/PARKING OPPORTUNITIES CAN BE EXPLORED.
ENLARGEMENT 1B
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.
2. TRUCK TURNING MOVEMENTS WILL BE PROHIBITED IN EITHER DIRECTION BETWEEN MLK JR BLVD AND SUMMIT POINT RD.



ENLARGEMENT 1B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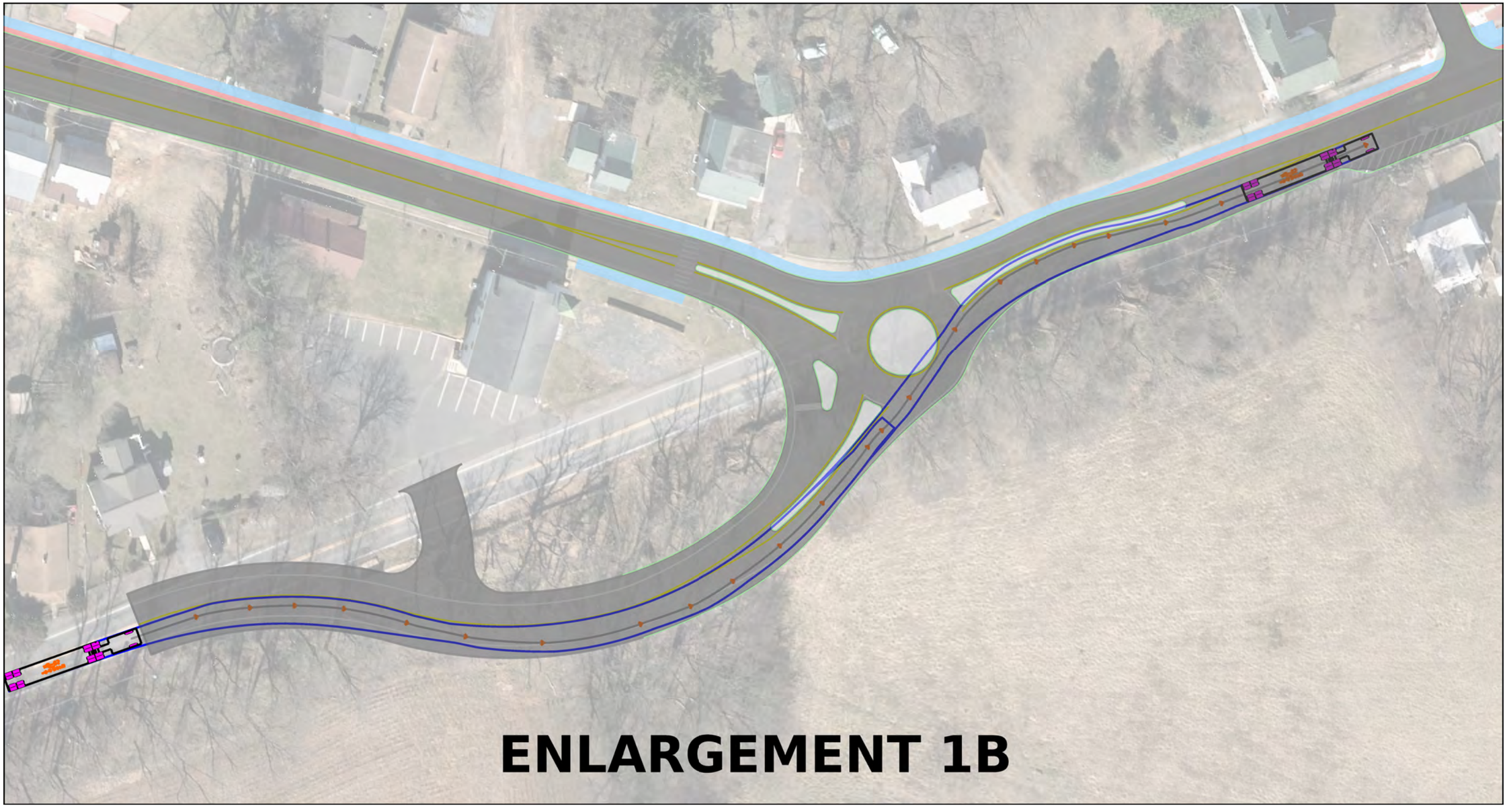
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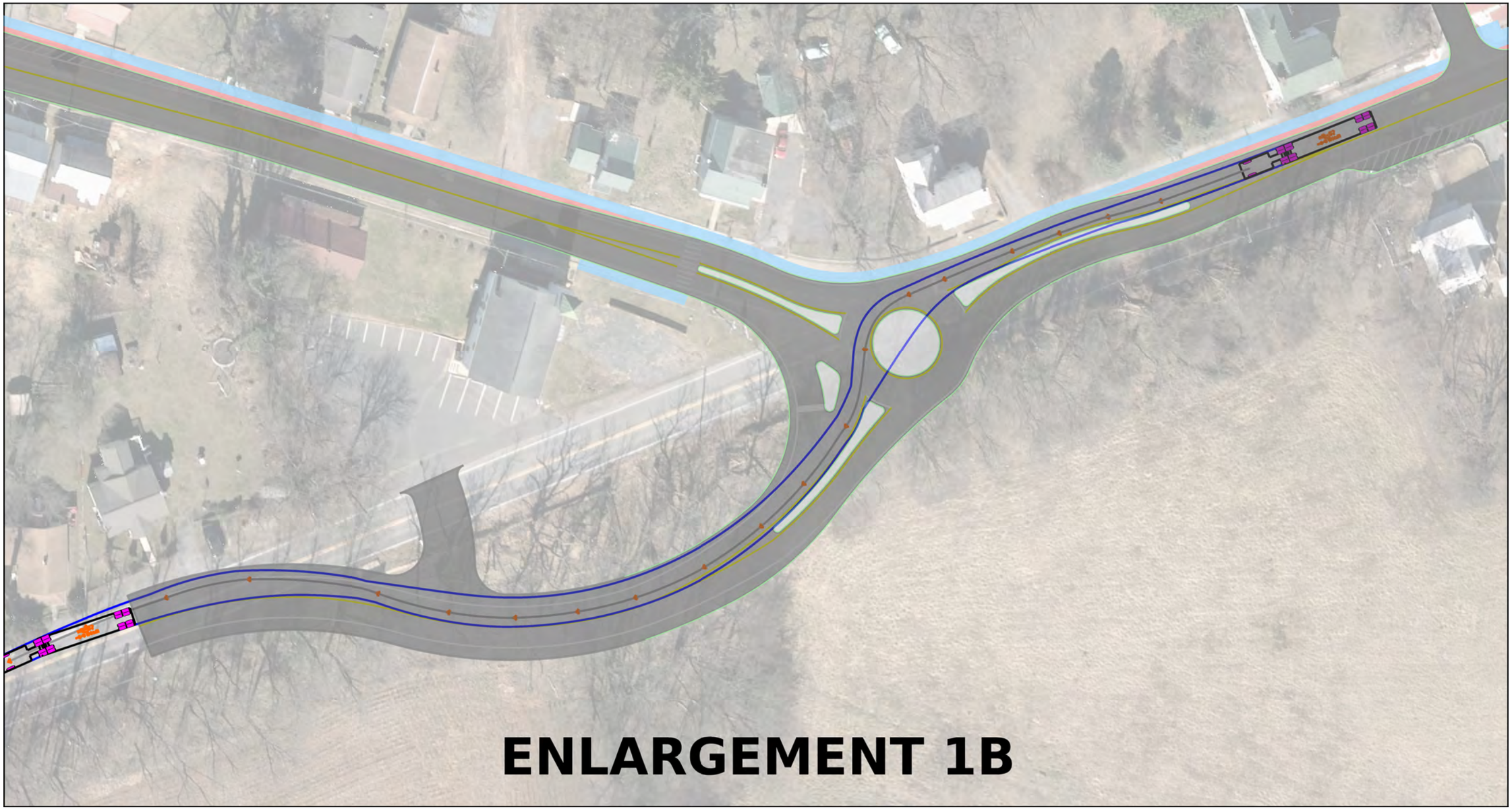
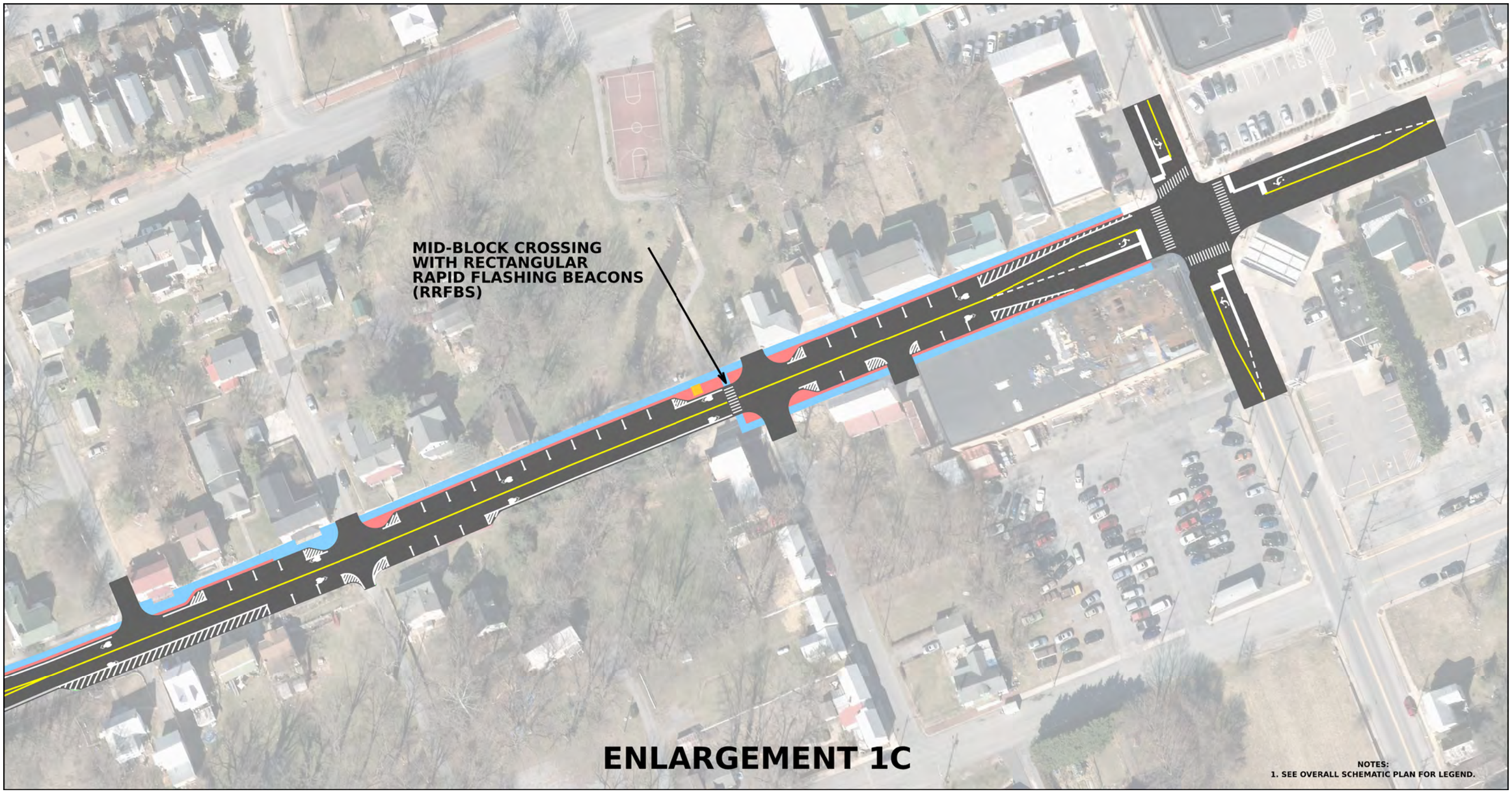
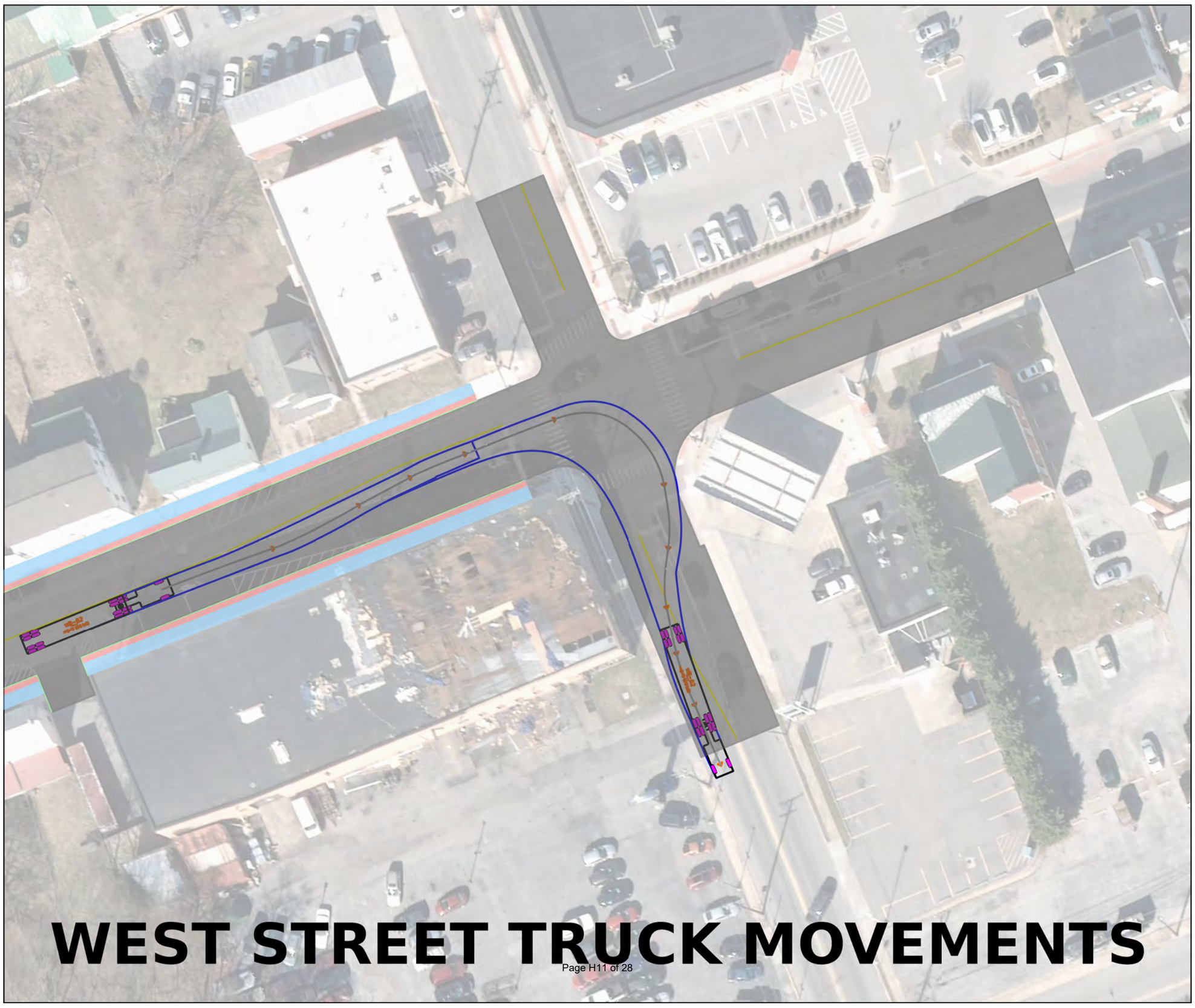
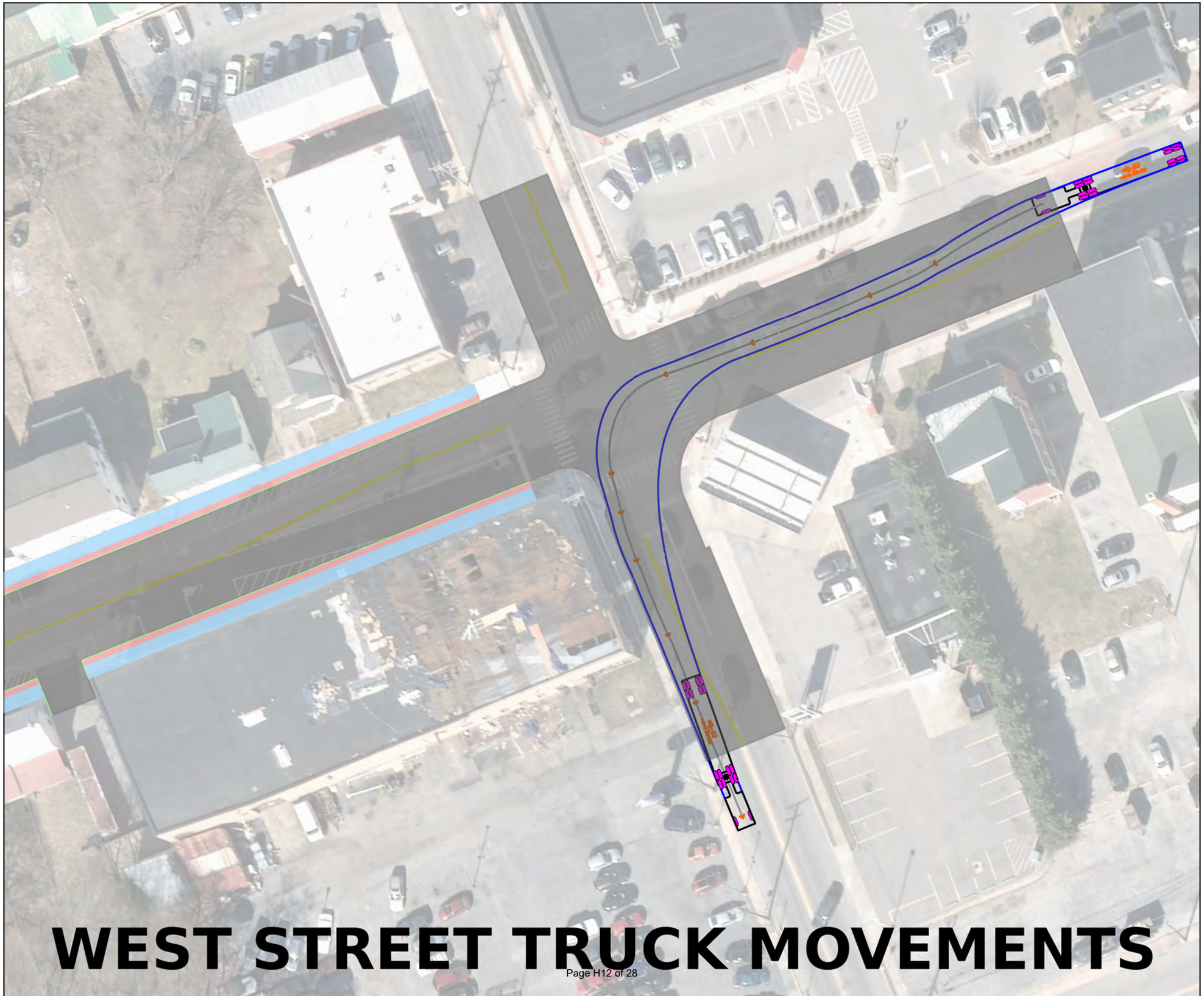

ENLARGEMENT 1B



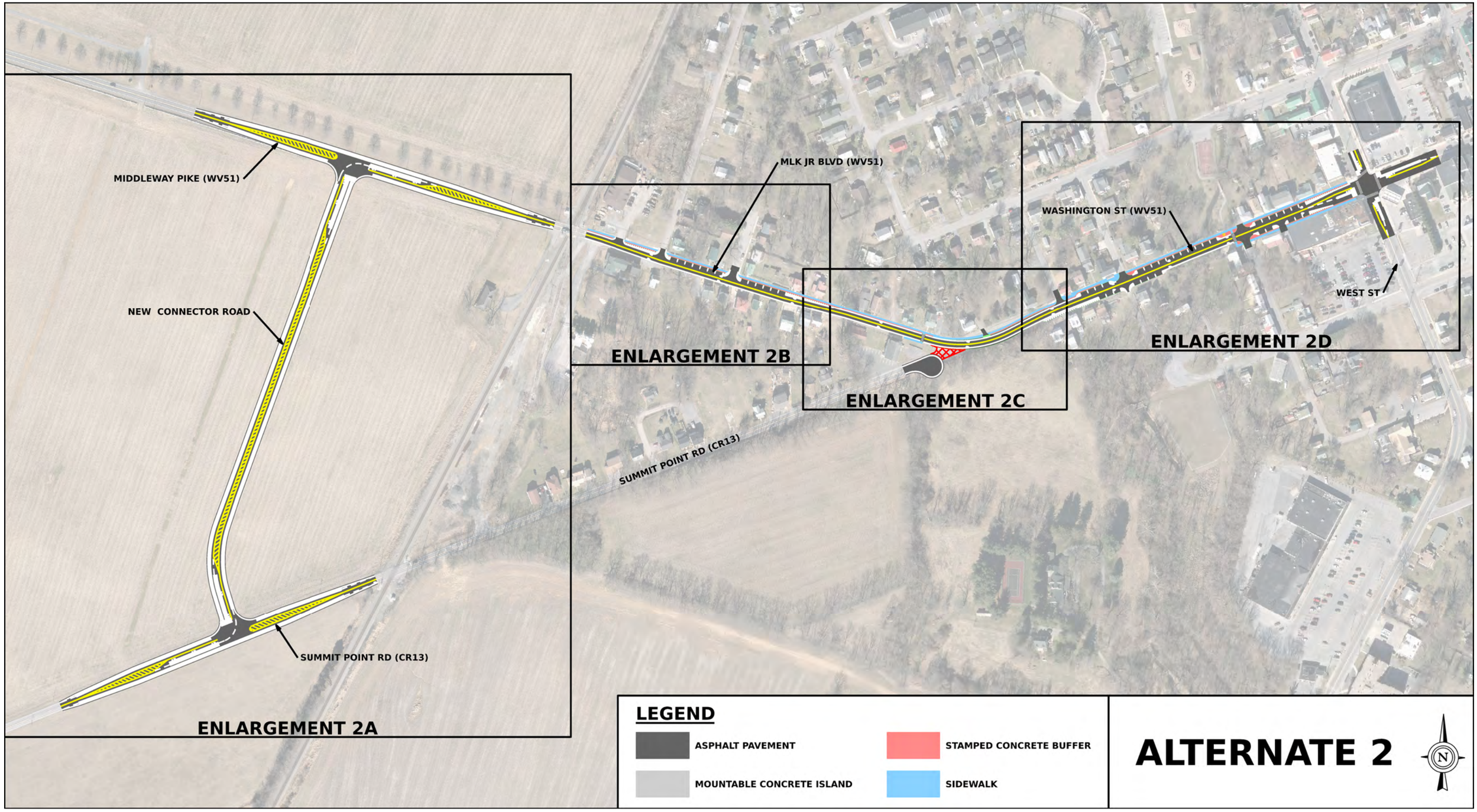
ENLARGEMENT 1C

NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.

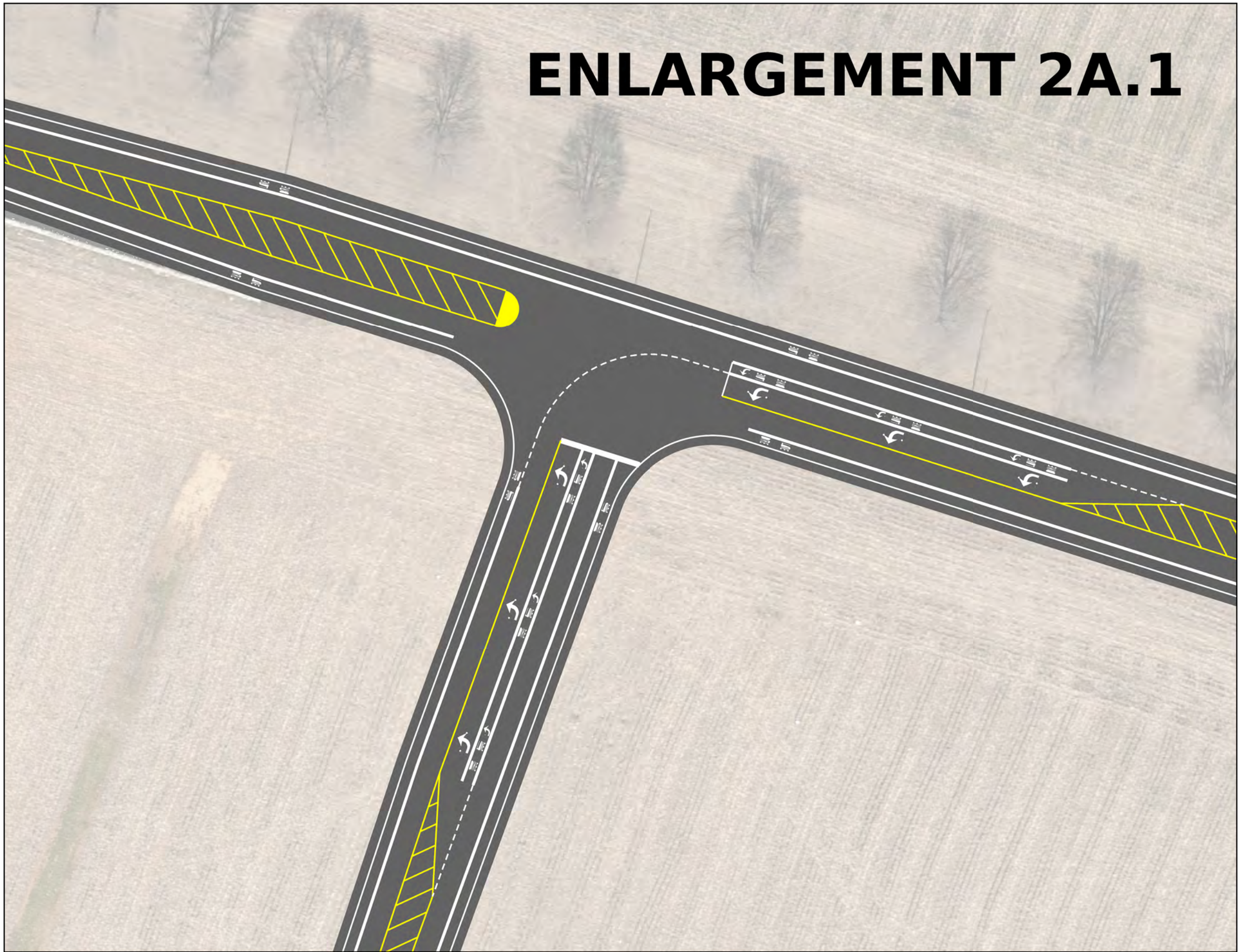

WEST STREET TRUCK MOVEMENTS

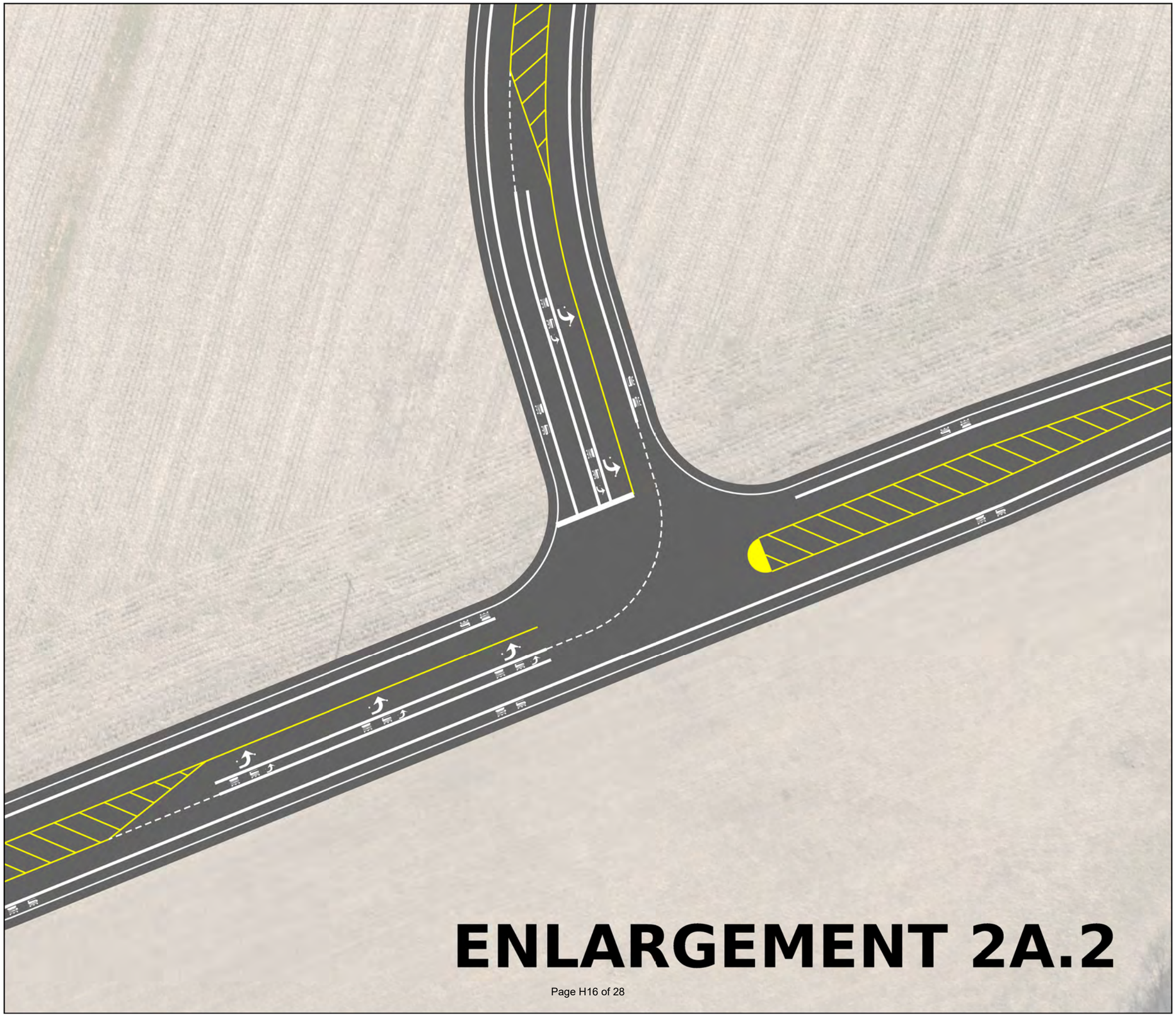

WEST STREET TRUCK MOVEMENTS

Alternative 2


MIDDLEWAY PIKE (WV51)
NEW CONNECTOR ROAD
SUMMIT POINT RD (CR13)
ENLARGEMENT 2A
MLK JR BLVD (WV51)
ENLARGEMENT 2B
ENLARGEMENT 2C
WASHINGTON ST (WV51)
WEST ST
ENLARGEMENT 2D
LEGEND
ASPHALT PAVEMENT
STAMPED CONCRETE BUFFER
MOUNTABLE CONCRETE ISLAND
SIDEWALK
ALTERNATE 2
N

ENLARGEMENT 2A.1

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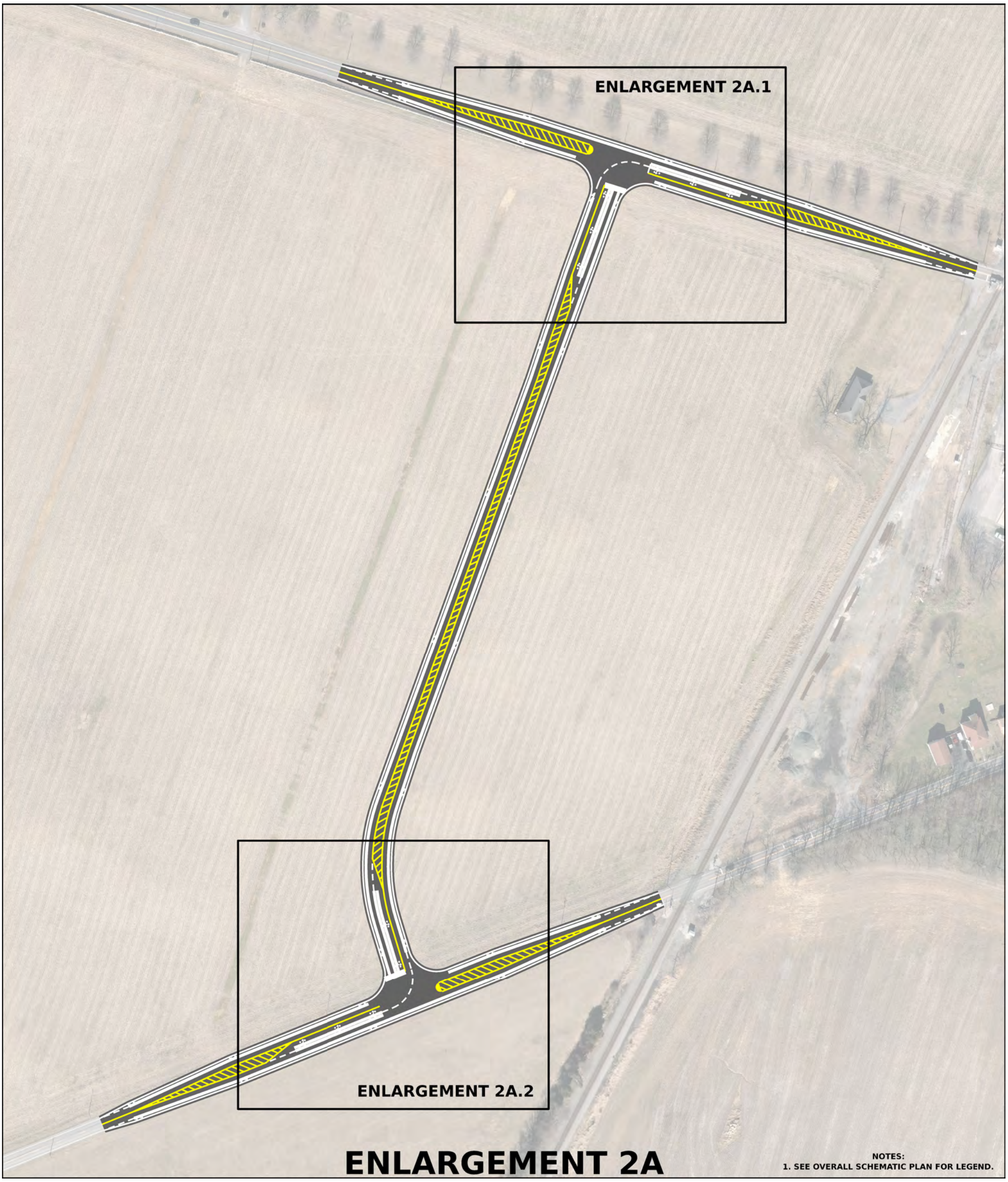
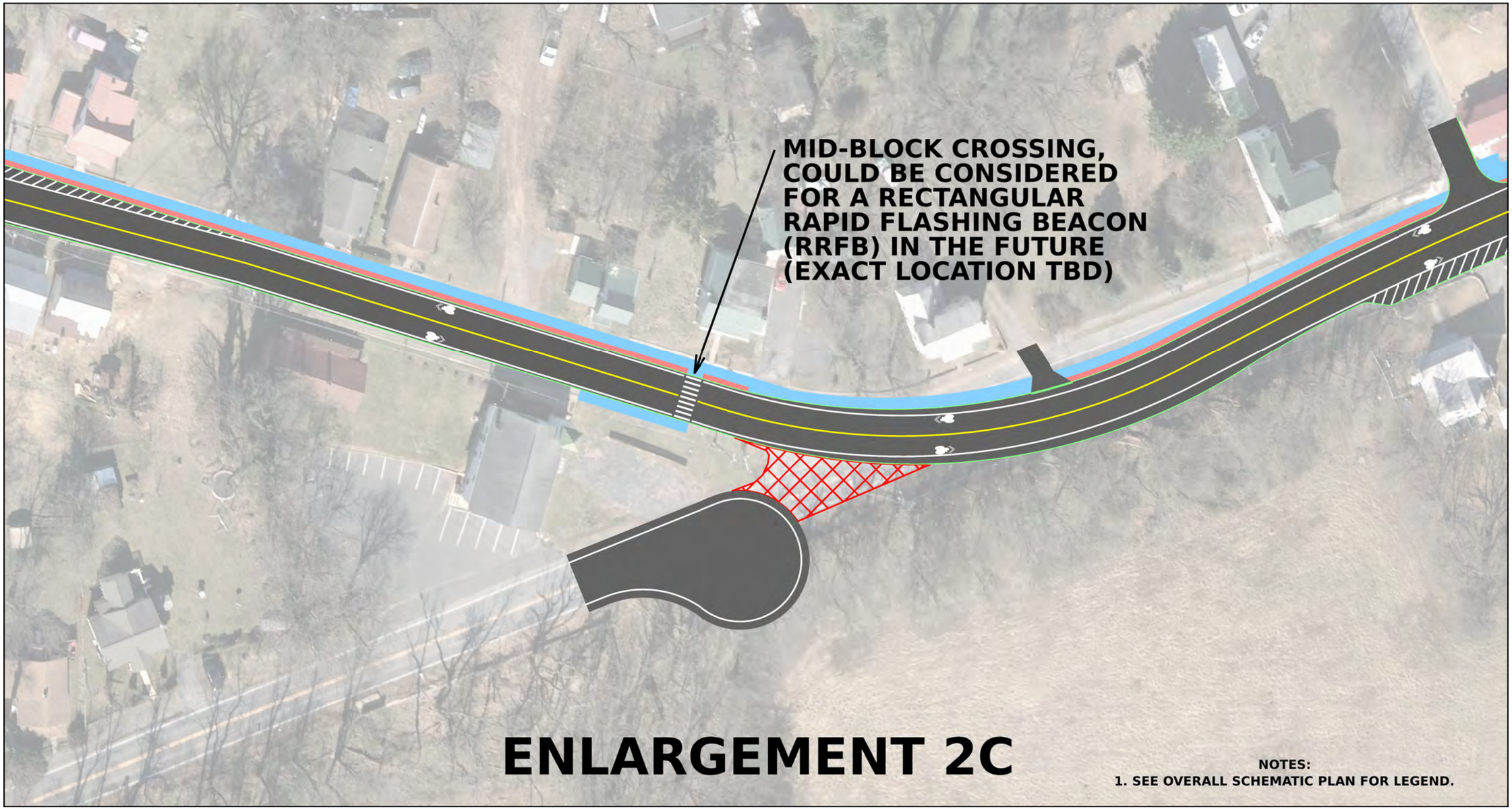
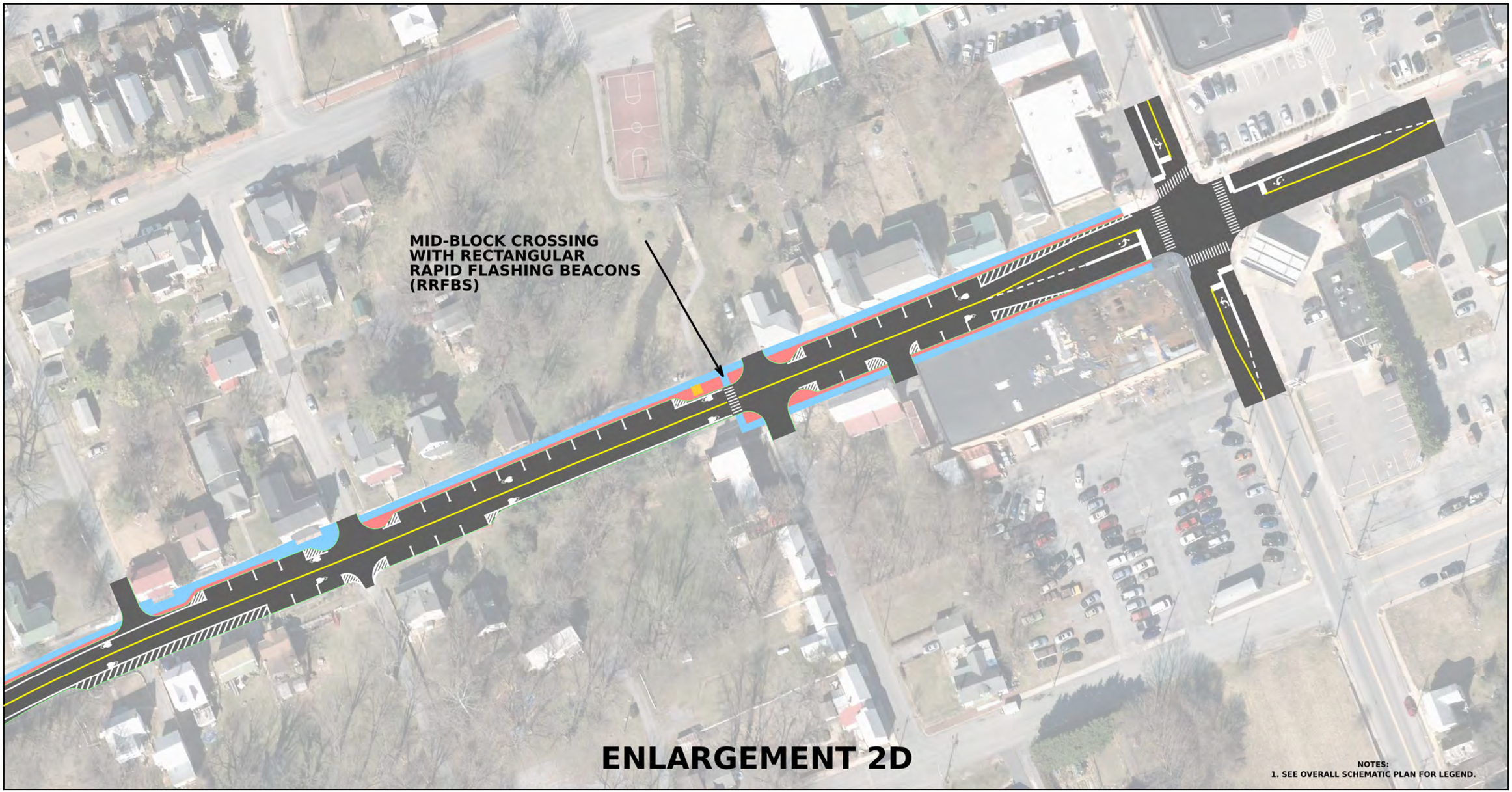

ENLARGEMENT 2A.1
ENLARGEMENT 2A.2
ENLARGEMENT 2A
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.


ENLARGEMENT 2B
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.



ENLARGEMENT 2C

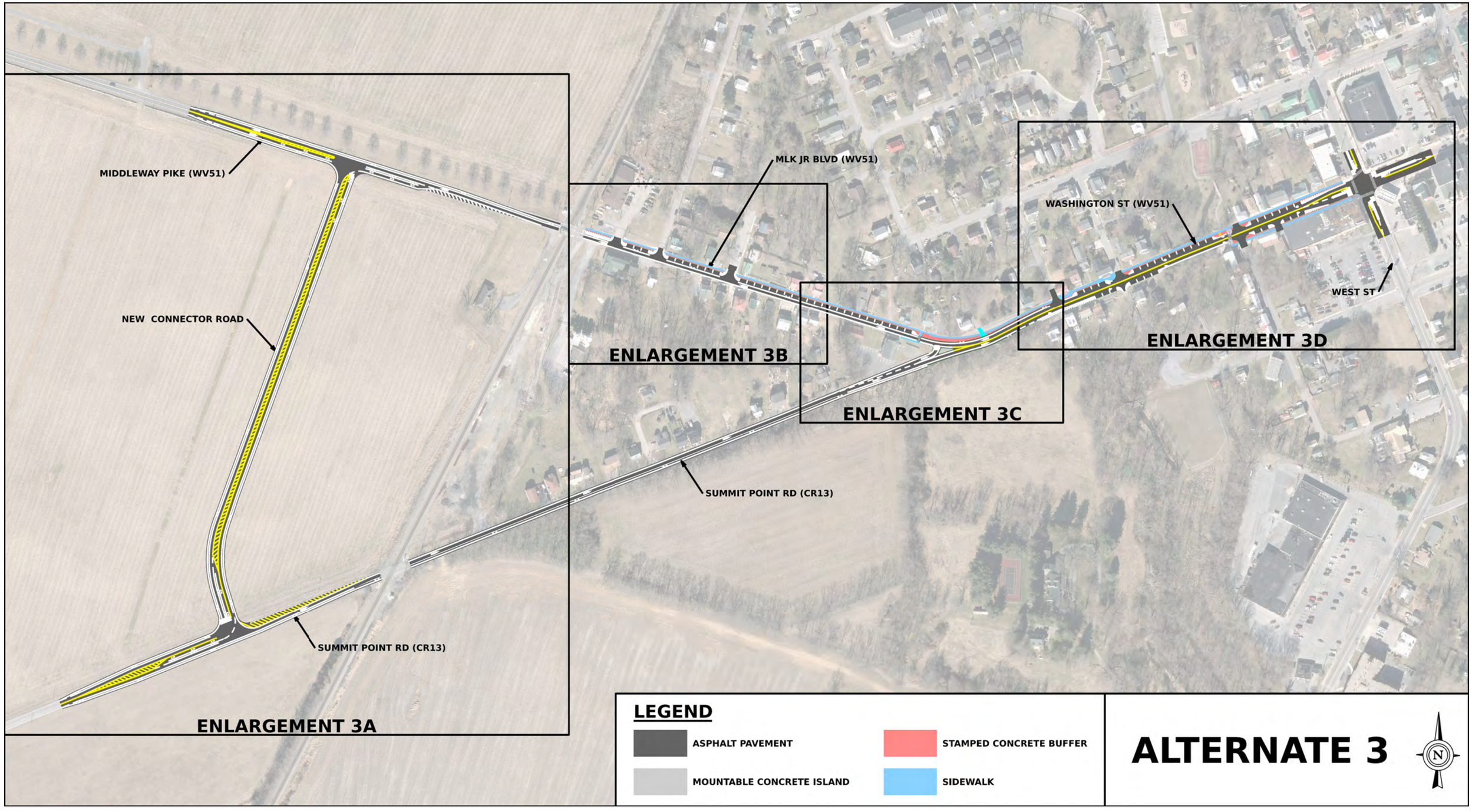
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.



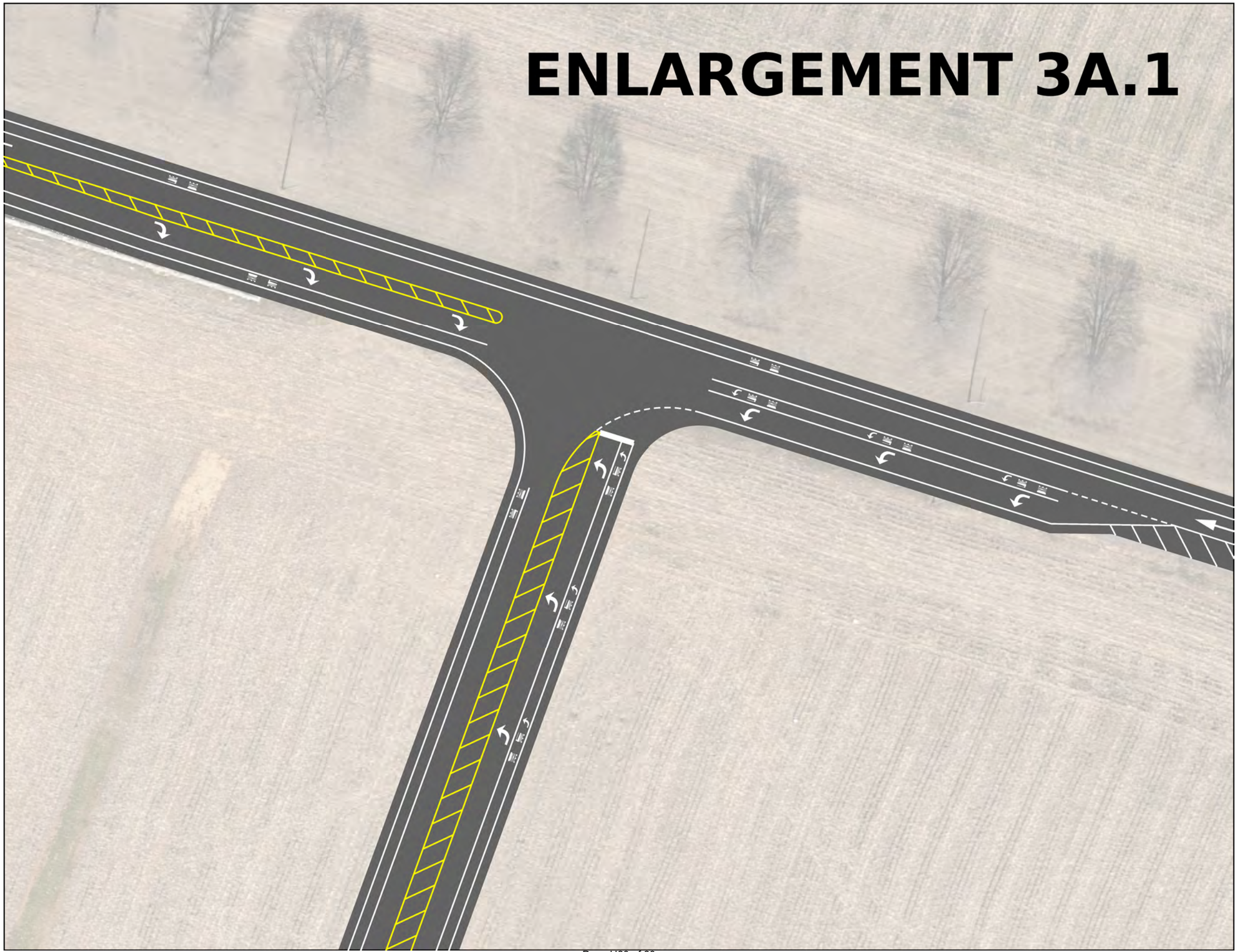
ENLARGEMENT 2D

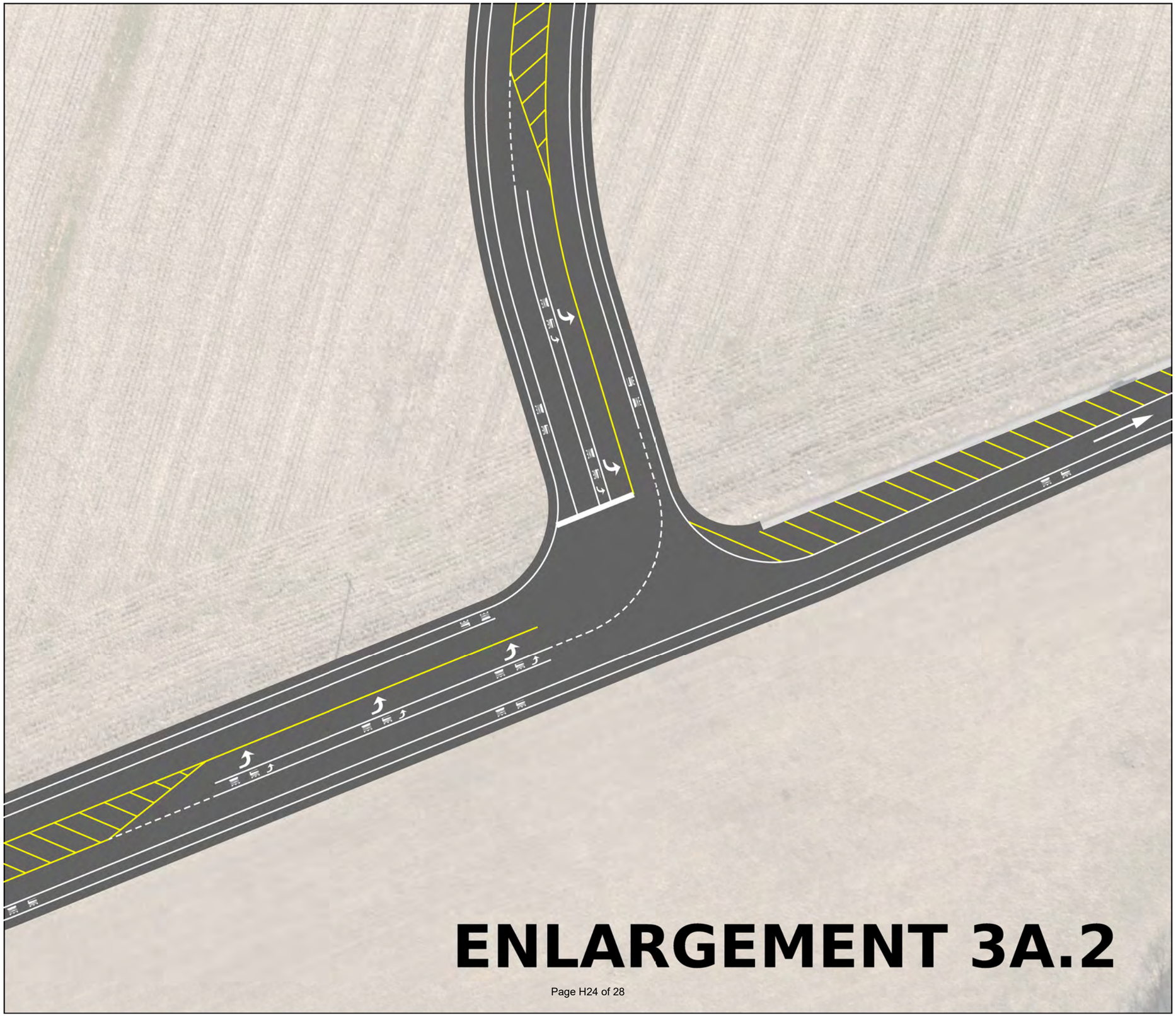
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.

Alternative 3


MIDDLEWAY PIKE (WV51)
NEW CONNECTOR ROAD
SUMMIT POINT RD (CR13)
ENLARGEMENT 3A
MLK JR BLVD (WV51)
ENLARGEMENT 3B
ENLARGEMENT 3C
SUMMIT POINT RD (CR13)
WASHINGTON ST (WV51)
WEST ST
ENLARGEMENT 3D
LEGEND
ASPHALT PAVEMENT
STAMPED CONCRETE BUFFER
MOUNTABLE CONCRETE ISLAND
SIDEWALK
ALTERNATE 3
N

ENLARGEMENT 3A.1

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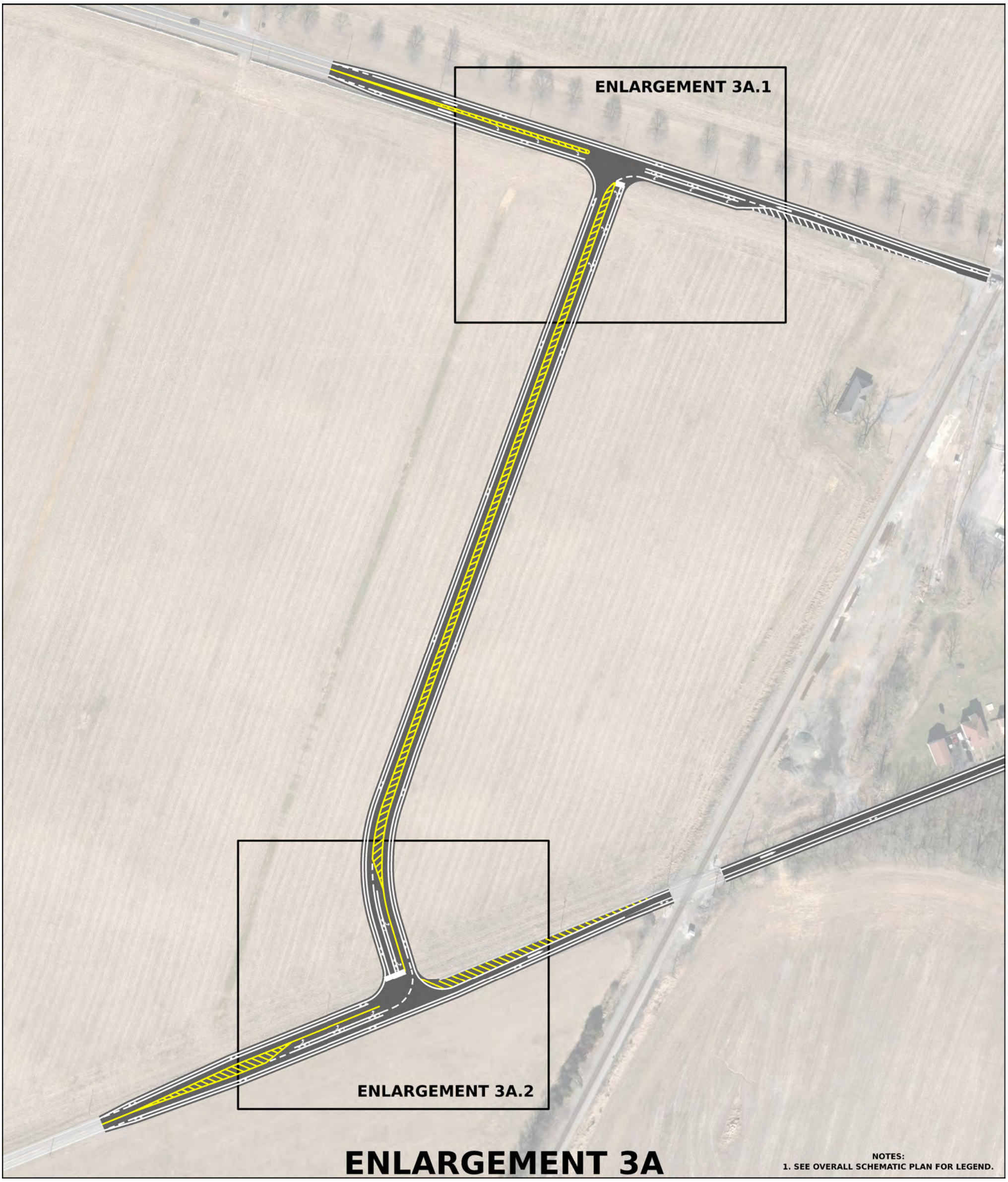
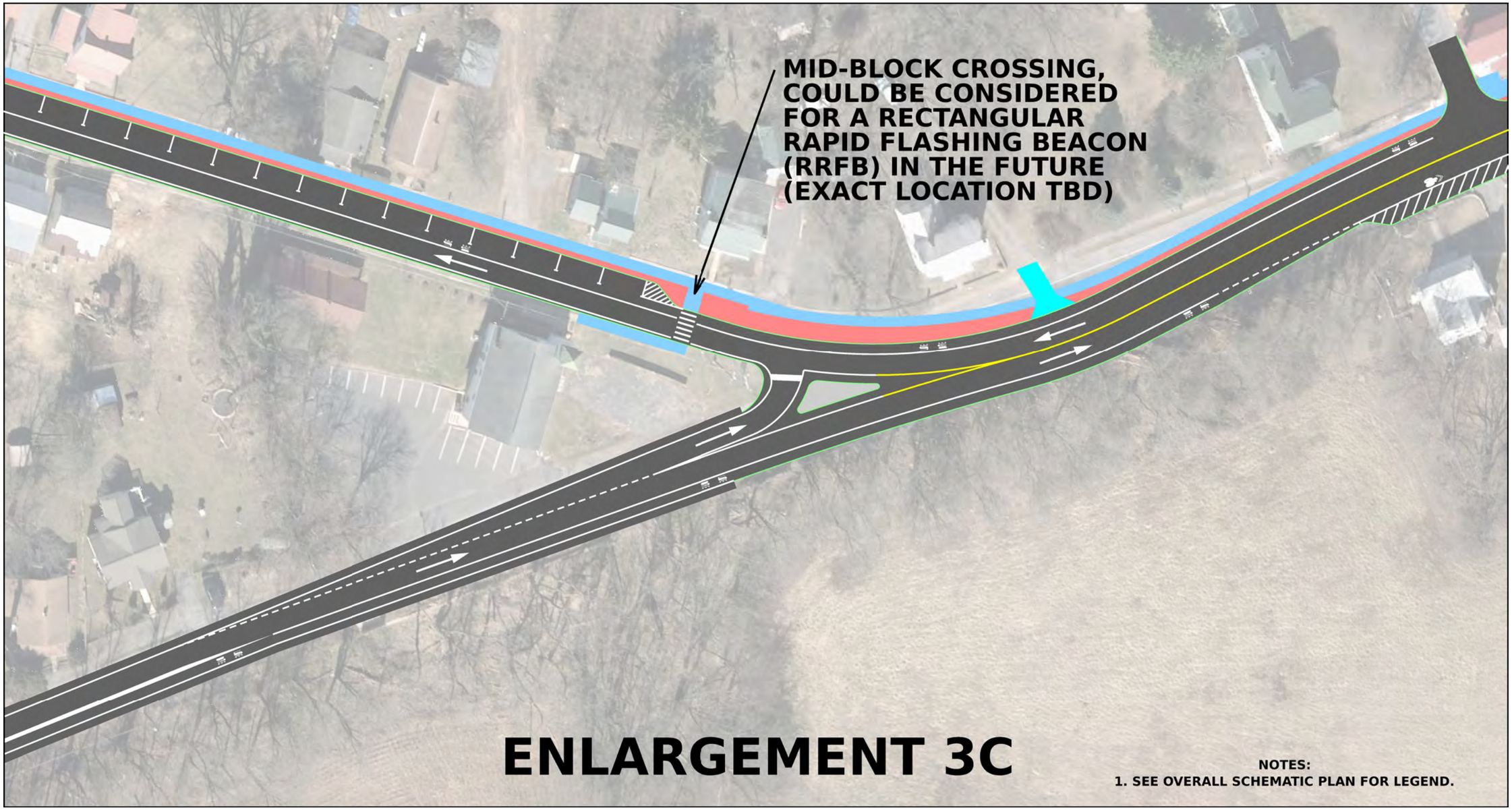


ENLARGEMENT 3A

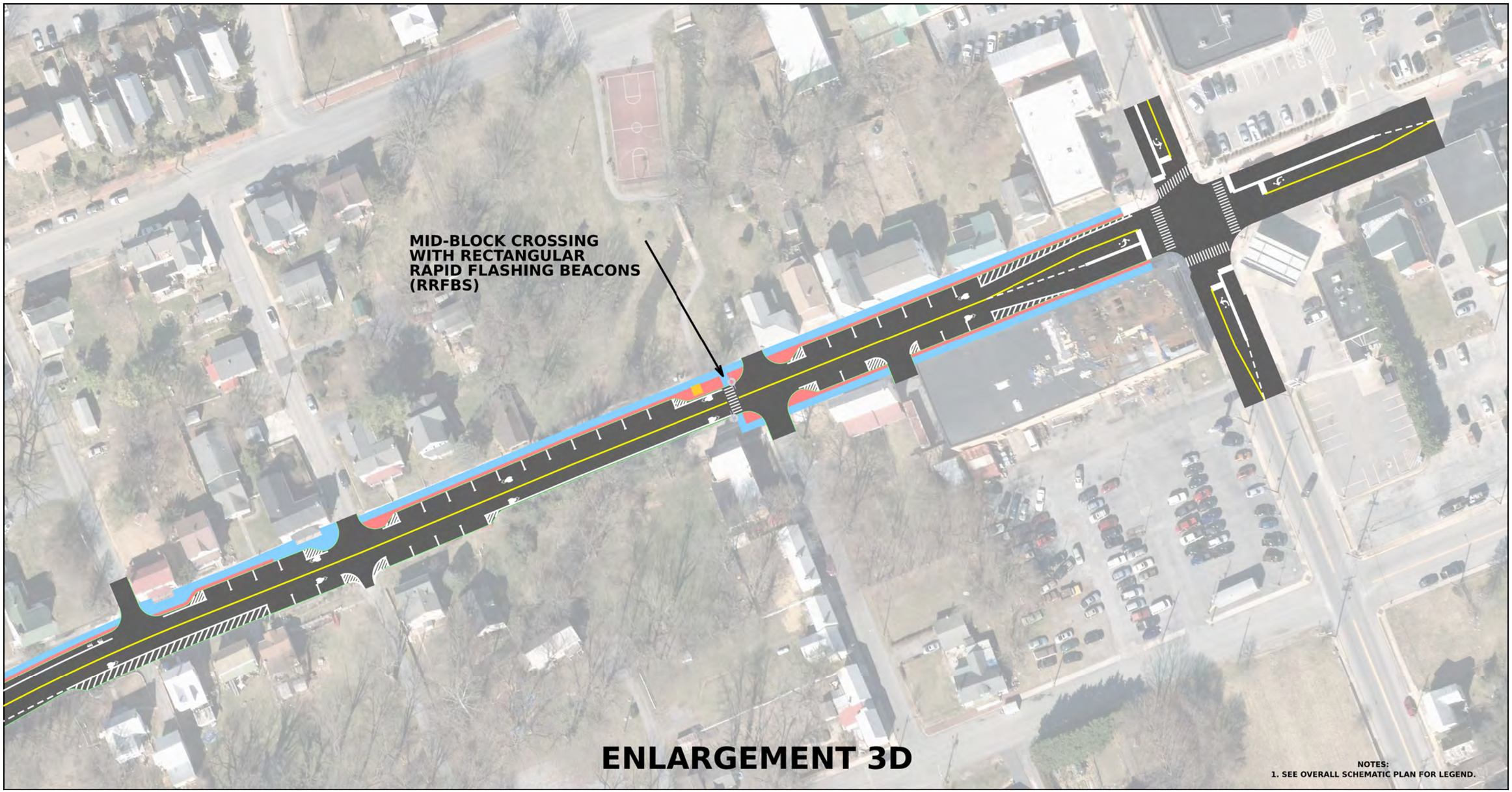
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.


ENLARGEMENT 3B
NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.



ENLARGEMENT 3C

NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.



ENLARGEMENT 3D

NOTES:
1. SEE OVERALL SCHEMATIC PLAN FOR LEGEND.

Appendix I

Cost Estimates

CARPENTER MARTY transportation

Roadway Improvements - Alternate 1

Description	Quantity	Units	Unit Cost	Total Cost
Clearing and Grubbing	1	LUMP	$ 25,000.00	$ 25,000.00
Tree Planted (Tree Grate Included)	30	EACH	$ 1,500.00	$ 45,000.00
Pavement Removed	3200	SY	$ 15.00	$ 48,000.00
Sidewalk Removed	15760	SF	$ 15.00	$ 236,400.00
Curb Removed	1500	FT	$ 20.00	$ 30,000.00
Earthwork	1	LUMP	$ 75,000.00	$ 75,000.00
Asphalt Milling and Overlay	8400	SY	$ 25.00	$ 210,000.00
Full Depth Pavement (Asphalt)	3700	SY	$ 65.00	$ 240,500.00
Sidewalk	14150	SF	$ 15.00	$ 212,250.00
Stamped Concrete	5850	SF	$ 20.00	$ 117,000.00
Concrete Curb	4950	FT	$ 25.00	$ 123,750.00
Concrete Traffic Island	225	SY	$ 55.00	$ 12,375.00
Drainage*	1	LUMP	$ 600,000.00	$ 600,000.00
Lighting	1	LUMP	$ 310,000.00	$ 310,000.00
Signage	1	LUMP	$ 17,500.00	$ 17,500.00
Stop Line	115	FT	$ 7.50	$ 862.50
Center Line	0.70	MILE	$ 4,000.00	$ 2,800.00
Edge Line	0.80	MILE	$ 2,500.00	$ 2,000.00
Crosswalk Line	200	FT	$ 8.00	$ 1,600.00
Channelizing Line	300	FT	$ 2.50	$ 750.00
Lane Arrow	4	EACH	$ 80.00	$ 320.00
Transverse Line	1350	FT	$ 2.50	$ 3,375.00
Parking Stall Line	550	FT	$ 2.50	$ 1,375.00
Dotted Line	200	FT	$ 2.50	$ 500.00
Bike Lane Symbol	18	EACH	$ 370.00	$ 6,660.00
Miscellaneous Concrete Work *(Concrete steps, retaining walls, etc.)*	1	LUMP	$ 100,000.00	$ 100,000.00
		Subtotal		**$ 2,423,020.00**

Maintenance of Traffic	1	LUMP	$ 100,000.00	$ 100,000.00
Field Office	1	LUMP	$ 15,000.00	$ 15,000.00
Construction Layout Stakes	1	LUMP	$ 25,000.00	$ 25,000.00
Erosion Control	1	LUMP	$ 50,000.00	$ 50,000.00
Mobilization	1	LUMP	$ 100,000.00	$ 100,000.00
		Incidentals Subtotal		**$ 290,000.00**
			Contingency (30%)	**$ 814,000.00**
		Construction Subtotal		**$ 3,527,020.00**

Engineering Design (15%)	**$ 529,100.00**
Environmental, Geotechnical, Miscellaneous Federal Requirements (10%)	**$ 352,800.00**
Right-of-Way**	**$ 22,800.00**
Subtotal	**$ 4,431,800.00**
Inflation* (10%)**	**$ 443,200.00**
Total	**$ 4,875,000.00**

Note: Cost estimate does not include utility relocation costs.

*Drainage estimate based on the assumption of a complete storm sewer replacement.

**See RW Cost Estimate for details.

***Inflation based on 2025 Construction

	Parcel 02 10000100000000	Parcel 03 4001400010000
Total Acreage	13.37	10.96
Total Value Today	$ 4,800.00	$ 133,100.00
Per Acre Cost	$ 359.01	$ 12,144.16
Estimated Take (ac)	0.26	0.39
Estimate value today	$ 93.34	$ 4,736.22
Relocation Costs	$ -	$ -
Consultant Labor Costs	$ 4,000.00	$ 4,000.00
Subtotal	$ 4,093.34	$ 8,736.22
Adj. for Admin Settlement	$ 736.80	$ 1,572.52
Adj. for Appropriations	$ 614.00	$ 1,310.43
Adj. for Incidentals	$ 92.10	$ 196.57
Subtotal	**$ 5,600.00**	**$ 11,900.00**
Contingency (30%)	**$ 1,700.00**	**$ 3,600.00**
Subtotal	**$ 7,300.00**	**$ 15,500.00**
Total		**$ 22,800.00**

Roadway Improvements - Alternate 2

Description	Quantity	Units	Unit Cost	Total Cost
Clearing and Grubbing	1	LUMP	$ 8,000.00	$ 8,000.00
Tree Planted (Tree Grate Included)	30	EACH	$ 1,500.00	$ 45,000.00
Pavement Removed	2700	SY	$ 15.00	$ 40,500.00
Sidewalk Removed	15760	SF	$ 15.00	$ 236,400.00
Curb Removed	1500	FT	$ 20.00	$ 30,000.00
Earthwork	1	LUMP	$ 50,000.00	$ 50,000.00
Asphalt Milling and Overlay	13250	SY	$ 25.00	$ 331,250.00
Full Depth Pavement (Asphalt)	14850	SY	$ 65.00	$ 965,250.00
Sidewalk	14300	SF	$ 15.00	$ 214,500.00
Stamped Concrete	6050	SF	$ 20.00	$ 121,000.00
Concrete Curb	4650	FT	$ 25.00	$ 116,250.00
Drainage	1	LUMP	$ 650,000.00	$ 650,000.00
Lighting	1	LUMP	$ 280,000.00	$ 280,000.00
Signage	1	LUMP	$ 12,500.00	$ 12,500.00
Stop Line	170	FT	$ 7.50	$ 1,275.00
Center Line	1.50	MILE	$ 4,000.00	$ 6,000.00
Edge Line	2.95	MILE	$ 2,500.00	$ 7,375.00
Crosswalk Line	200	FT	$ 8.00	$ 1,600.00
Channelizing Line	1475	FT	$ 2.50	$ 3,687.50
Lane Arrow	15	EACH	$ 80.00	$ 1,200.00
Transverse Line	3000	FT	$ 2.50	$ 7,500.00
Parking Stall Line	550	FT	$ 2.50	$ 1,375.00
Dotted Line	1200	FT	$ 2.50	$ 3,000.00
Bike Lane Symbol	64	EACH	$ 370.00	$ 23,680.00
Miscellaneous Concrete Work *(Concrete steps, retaining walls, etc.)*	1	LUMP	$ 100,000.00	$ 100,000.00
			Subtotal	**$ 3,257,350.00**

Maintenance of Traffic	1	LUMP	$ 60,000.00	$ 60,000.00
Field Office	1	LUMP	$ 15,000.00	$ 15,000.00
Construction Layout Stakes	1	LUMP	$ 25,000.00	$ 25,000.00
Erosion Control	1	LUMP	$ 50,000.00	$ 50,000.00
Mobilization	1	LUMP	$ 100,000.00	$ 100,000.00
			Incidentals Subtotal	**$ 250,000.00**
			Contingency (30%)	**$ 1,052,300.00**
			Construction Subtotal	**$ 4,559,650.00**
			Engineering Design (15%)	**$ 684,000.00**
			Environmental, Geotechnical, Miscellaneous Federal Requirements (10%)	**$ 456,000.00**
			Right-of-Way	**$ 53,000.00**
			Subtotal	**$ 5,752,700.00**
			Inflation* (10%)	**$ 575,300.00**
			Total	**$ 6,328,000.00**

Note: Cost estimate does not include utility relocation costs.

*Drainage estimate based on the assumption of a complete storm sewer replacement.

**See RW Cost Estimate for details.

***Inflation based on 2025 Construction

WV-51 Traffic Study
Right of Way Cost Estimate
Alternate 2 (New Connector Road - 2-Way Traffic)

	Parcel 02 110009000000000	Parcel 03 14000100000000	Parcel 02 11003000020000
Total Acreage	251.63	17.97	67.41
Total Value Today	$ 1,296,300.00	$ 216,800.00	$ 34,800.00
Per Acre Cost	$ 5,151.61	$ 12,064.55	$ 516.24
Estimated Take (ac)	2.24	0.51	0.32
Estimate value today	$ 11,539.61	$ 6,152.92	$ 165.20
Relocation Costs	$ -	$ -	$ -
Consultant Labor Costs	$ 4,000.00	$ 4,000.00	$ 4,000.00
Subtotal	$ 15,539.61	$ 10,152.92	$ 4,165.20
Adj. for Admin Settlement	$ 2,797.13	$ 1,827.53	$ 749.74
Adj. for Appropriations	$ 2,330.94	$ 1,522.94	$ 624.78
Adj. for Incidentals	$ 349.64	$ 228.44	$ 93.72
Subtotal	**$ 21,100.00**	**$ 13,800.00**	**$ 5,700.00**
Contingency (30%)	**$ 6,400.00**	**$ 4,200.00**	**$ 1,800.00**
Subtotal	**$ 27,500.00**	**$ 18,000.00**	**$ 7,500.00**
Total			**$ 53,000.00**

Roadway Improvements - Alternate 3

Description	Quantity	Units	Unit Cost	Total Cost
Clearing and Grubbing	1	LUMP	$ 8,000.00	$ 8,000.00
Tree Planted (Tree Grate Included)	30	EACH	$ 1,500.00	$ 45,000.00
Pavement Removed	3135	SY	$ 15.00	$ 47,025.00
Sidewalk Removed	15760	SF	$ 15.00	$ 236,400.00
Curb Removed	1500	FT	$ 20.00	$ 30,000.00
Earthwork	1	LUMP	$ 50,000.00	$ 50,000.00
Asphalt Milling and Overlay	16530	SY	$ 25.00	$ 413,250.00
Full Depth Pavement (Asphalt)	13750	SY	$ 65.00	$ 893,750.00
Sidewalk	14250	SF	$ 15.00	$ 213,750.00
Stamped Concrete	7440	SF	$ 20.00	$ 148,800.00
Concrete Curb	4675	FT	$ 25.00	$ 116,875.00
Concrete Traffic Island	33	SY	$ 55.00	$ 1,815.00
Drainage*	1	LUMP	$ 650,000.00	$ 650,000.00
Lighting	1	LUMP	$ 280,000.00	$ 280,000.00
Signage	1	LUMP	$ 12,500.00	$ 12,500.00
Stop Line	170	FT	$ 7.50	$ 1,275.00
Center Line	1.08	MILE	$ 4,000.00	$ 4,320.00
Edge Line	4.05	MILE	$ 2,500.00	$ 10,125.00
Crosswalk Line	190	FT	$ 8.00	$ 1,520.00
Channelizing Line	1200	FT	$ 2.50	$ 3,000.00
Lane Arrow	18	EACH	$ 80.00	$ 1,440.00
Transverse Line	3000	FT	$ 2.50	$ 7,500.00
Parking Stall Line	760	FT	$ 2.50	$ 1,900.00
Dotted Line	960	FT	$ 2.50	$ 2,400.00
Bike Lane Symbol	59	EACH	$ 370.00	$ 21,830.00
Miscellaneous Concrete Work *(Concrete steps, retaining walls, etc.)*	1	LUMP	$ 100,000.00	$ 100,000.00
		Subtotal		**$ 3,302,480.00**

Maintenance of Traffic	1	LUMP	$ 60,000.00	$ 60,000.00
Field Office	1	LUMP	$ 15,000.00	$ 15,000.00
Construction Layout Stakes	1	LUMP	$ 25,000.00	$ 25,000.00
Erosion Control	1	LUMP	$ 50,000.00	$ 50,000.00
Mobilization	1	LUMP	$ 100,000.00	$ 100,000.00
		Incidentals Subtotal		**$ 250,000.00**
			Contingency (30%)	**$ 1,065,800.00**
		Construction Subtotal		**$ 4,618,280.00**
			Engineering Design (15%)	**$ 692,800.00**
			Environmental, Geotechnical, Miscellaneous Federal Requirements (10%)	**$ 461,900.00**
			Right-of-Way**	**$ 32,400.00**
			Subtotal	**$ 5,805,400.00**
			Inflation* (10%)**	**$ 580,600.00**
			Total	**$ 6,386,000.00**

Note: Cost estimate does not include utility relocation costs.

*Drainage estimate based on the assumption of a complete storm sewer replacement.

**See RW Cost Estimate for details.

***Inflation based on 2025 Construction

WV-51 Traffic Study
Right of Way Cost Estimate
Alternate 3 - New Connector Road - 1-Way Traffic)

	Parcel 02 110009000000000	Parcel 03 14000100000000	Parcel 02 11003000020000	Parcel 03 4001400010000
Total Acreage	251.63	17.97	67.41	10.96
Total Value Today	$ 4,800.00	$ 133,100.00	$ 4,800.00	$ 133,100.00
Per Acre Cost	$ 19.08	$ 7,406.79	$ 71.21	$ 12,144.16
Estimated Take (ac)	1.99	0.23	0.27	0.03
Estimate value today	$ 37.96	$ 1,703.56	$ 19.23	$ 364.32
Relocation Costs	$ -	$ -	$ -	$ -
Consultant Labor Costs	$ 4,000.00	$ 4,000.00	$ 4,000.00	$ 4,000.00
Subtotal	$ 4,037.96	$ 5,703.56	$ 4,019.23	$ 4,364.32
Adj. for Admin Settlement	$ 726.83	$ 1,026.64	$ 723.46	$ 785.58
Adj. for Appropriations	$ 605.69	$ 855.53	$ 602.88	$ 654.65
Adj. for Incidentals	$ 90.85	$ 128.33	$ 90.43	$ 98.20
Subtotal	**$ 5,500.00**	**$ 7,800.00**	**$ 5,500.00**	**$ 6,000.00**
Contingency (30%)	**$ 1,700.00**	**$ 2,400.00**	**$ 1,700.00**	**$ 1,800.00**
Subtotal	**$ 7,200.00**	**$ 10,200.00**	**$ 7,200.00**	**$ 7,800.00**
Total				**$ 32,400.00**