



243 High Street Room 110
Morgantown, WV 26505
(304) 291-9571
www.plantgether.org

Agenda

Transportation Technical Advisory Committee Meeting
MPO Offices
243 High Street Room 110
Morgantown WV
June 18, 2019
1:30 PM

1. Call To Order
2. Approval of Minutes
3. Transportation Improvement Program Amendments
4. Metropolitan Transportation Improvement Program Performance Measures
5. Draft Willey Street/Richwood Avenue Intersection Study
6. Draft 2018 Traffic Count Report
7. Update on Bicycle and Pedestrian Study
8. Other Business
9. Meeting Adjournment



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Memorandum

Date: June 13, 2019
To: Transportation Technical Advisory Committee Members
From: Bill Austin, AICP
Subject: June 18, 2019 TTAC Meeting Agenda Items

This memorandum is to inform you of the action items for the June 18th Transportation Technical Advisory Committee Meeting to be held in the MPO's Offices 243 High Street at 1:30 PM.

-Transportation Improvement Program Amendments-

West Virginia University Parking and Transportation has requested the following TIP Amendments

2019 Add

MPRT Modernization Program:

Portion of PRT Vehicle Fleet Power and related upgrades: Total Cost: \$30,000,000
Federal Funds: \$25,000,000 Local Match (WVU) \$5,000,000
Federal Fixed Guideway Funding

The West Virginia University MPRT TIP Amendments are in anticipation of submitting a BUILD grant application to the United States Department of Transportation. The proposed amendment has been duly advertised as required by the MPO's Public Involvement Policy.

The West Virginia Department of Transportation has requested the following TIP Amendments.

2019 Add

WV 43 Colonel Zackquill Morgan Bridge-Milepost .28 Engineering-Bridge Inspection-Federal Project Number NHPP043137D-Total Cost \$600,000 Federal Funds \$480,000

Caperton Trail-Engineering for installation of lighting-Project Number-NRT 2018217D-Total Cost \$25,000 Federal Funds \$25,000

The proposed TIP Amendments were not received in time for regular advertising under the MPO's Public Involvement Policy. However, WVDOH needs to authorize this work quickly and therefore MPO Staff is proposing that the MPO Policy Board tentatively approve these projects in the same fashion as was done with the TIP Amendments in May. WVDOH also requested three other TIP amendments with the two that are under consideration. However, those amendments are not as urgent since it is proposed that the work on those items will begin at a later date. MPO Staff has recommended that those items be considered at the August Policy Board meeting since properly advertising them will not delay implementation.

Please note that the proposed projects impacts on the MPO's Performance Measures are documented in a separate attachment.

Staff respectfully requests that the TTAC recommend tentative approval of the two requested TIP Amendments pending the completion of the required public involvement period on or about July 2nd.

In addition to requesting TIP Amendments WVDOH has requested the following TIP Adjustments.

Deckers Creek Trail Cut Repair-Project NRT2012886D-Total Cost \$98,200 Federal Funds \$78,615 Move to FY 2020

Beechurst Avenue/Campus Drive Intersection Realignment-Project CMAP001941D-Total Funds \$530,000 Federal Funds \$424,000 Move to FY 2020

-I-68 Coopers Rock Pipe Replacement-Change Project number to NHPP0068179-Change moves project from Garvee funding to programmed funding.

The TIP Adjustments are informational only and take no action by the TTAC.

-TIP Performance Measures-As noted that the last meeting the MPO needs to evaluate how the projects in its Transportation Improvement Program (TIP) address the State's and the MPO's performance measures. The MPO's Committee's including the TTAC and the CAC as well as the Policy Board agreed on a methodology for evaluating project impacts on the Metropolitan Transportation Plan. The MPO's committee's also agreed that the same methodology should be utilized for the TIP. The enclosed document provides the agreed upon evaluation. We will be working with the MPO's committee's to evaluate this methodology so we may improve it for adoption next year. MPO Staff respectfully requests that the TTAC recommend approval of the attached addendum to the TIP so we may be fully addressing Federal requirements.

-Willey Street/Richwood Avenue Intersection Study-Please find enclosed for your information a copy of a draft study of the Willey Street/Richwood Avenue intersection prepared at the request of the City of Morgantown in the Unified Planning Work Program. The draft Study has been reviewed with the Woodburn Neighborhood Association and the technical work has been completed. MPO Staff will assist the City of Morgantown with public involvement and addressing any technical questions that may arise from the Study. It is respectfully requested that the TTAC recommend to the Policy Board that they accept this report as complete for the end of the current fiscal year.

-Draft 2018 Traffic Count Report-Please find enclosed the MPO's draft 2018 Traffic Count Report. This document was delayed by the need to analyze the 2018 count data and an urgent project that came up unexpectedly. Traffic counts in this report were taken during both the spring and fall of 2018 so we may prepare localized seasonal factors for the urban area. We anticipate that the traffic counts performed during 2019 will provide us with enough data to complete the seasonal factors. We also plan that the 2019 traffic count report will be a complete report with peak period volumes available for analysis



243 High St. Room 110
Morgantown WV, 26505
www.planttogether.org

MINUTES

MPO Transportation Technical Advisory Committee
MMMPO Conference Room
243 High St. Room 110, Morgantown, WV
March 5, 2019, 1:30 PM

Members Present

Bill Austin, Damien Davis, Dave Bruffy, John Whitmore, Chris Fletcher, Bill Oliver

Others Present

Jing Zhang

1. Call to Order

With a quorum present, Mr. Austin called the meeting of the TTAC to order at 1:30 PM.

2. Approval of the Minutes

Mr. Austin noted that the minutes of the last meeting were included in the agenda packet. Mr. Bruffy moved to approve the minutes as presented, seconded by Mr. Davis. With no discussion, the motion was unanimously approved.

3. Metropolitan Transportation Plan Performance Measures

Mr. Austin noted that a draft of the MPO's planned performance measures was provided to the TTAC at the last meeting. Since then MPO staff has made some minor changes on the evaluation method. Mr. Austin noted that the MPO must adopt the performance measures, including the impact evaluation methodology at the May meeting to satisfy federal requirements. Mr. Jing Zhang, the MPO's Transportation Planner II, made a brief presentation on the proposed methodology for evaluating the MPO's performance measures.

Mr. Austin noted the evaluation method is not to prioritize the MTP projects, but to provide complementary information on the project's impact to the established performance measures.

Mr. Bruffy move to recommend approval of the performance measures evaluation to the MPO's Policy Board, seconded by Mr. Fletcher. With no further discussion, the motion was unanimously approved.

4. Draft Public Involvement Policy Amendments

Mr. Austin noted that a recent proposal to amend the MPO's Metropolitan Transportation Plan raised the issue of refining the MPO's Public Involvement Policy. Two matters were identified during the discussion of this issue. The first is to make sure that the members of the MPO's Committees are aware of any public meetings associated with proposed projects or changes to the MPO's MTP and TIP. The second is to identify the process needed to amend the MPO's MTP, particularly the fiscally constrained Tier One Project List. Mr. Austin then outlined the draft language for the Public Involvement Policy Amendment.

Mr. Bruffy noted that Tier One Project List is critically important to the MPO's long range planning, reflecting value and priority of the community. An amendment to add a project to the list should avoid making an impression that the amendment circumvents the MPO's planning process. A super majority, if not unanimity, of the MPO's Policy Board should be required to adopt any MTP amendment.

Mr. Fletcher agreed and noted that the process for MTP update has a multi-month public involvement period, in which projects are thoroughly vetted, and the MTP is updated in every 5 years, a relatively short period of time, compared with its planning horizon of 40 years. For these reasons, any project of significant community interest is supposed to be included in the MTP. Amendment for emerging projects outside of the MTP's formal process should be limited, unless it is to deal with the occurrence of unforeseeable events which will significantly impact the community's transportation system.

Mr. Austin noted that he will revise the draft language of the policy amendment to include that 1) the public must be allowed, a minimum of 45, instead of 30, day comment period and a minimum of two public meetings on the proposed new project and projects proposed to be impacted by the proposed change to the Tier One List; and 2) A supermajority vote of the MPO's Policy Board is required to approve any amendment to the MPO's Metropolitan Transportation Plan.

Mr. Bruffy moved to recommend approval of the draft public involvement policy amendment with modifications; seconded by Mr. Fletcher. With no further discussion, the motion was unanimously approved.

5. Update on Bicycle and Pedestrian Study

Mr. Austin noted that pedestrian and bicycle study consultant will hold community meetings in the next two weeks to solicit community input on proposed infrastructure improvements for pedestrians and cyclists in the area.

Mr. Austin noted that he is working a quick actions group to identify locations for immediate pedestrian safety improvements. The group consists of representatives from WVU, DOH, the City of Morgantown, and the Monongalia County.

Three locations have been selected by this group demonstration projects: the intersection of University Ave and Falling Run Rd, the section on University Ave near Pizza Al's, and the intersection of Campus Dr and Grant Ave. Measures to be taken at those locations include flashing signals, high visibility crosswalks, enhanced pavement, and lighting.

6. Other Business

Mr. Austin noted that the WV Local Technical Assistance Program will hold the 2019 Pedestrian Safety Symposium and Summit in Morgantown from June 11 to 13. MPO Staff will participate in this event.

Mr. Austin noted that WV DOH proposed TIP amendments. The information of the amendments is included in the agenda package for review. The MPO will run the advertisement for these amendments on Friday. The MPO's Policy Board will consider provisional approval of the amendments upon completion of the required public comment period, assuming that the MPO receive no significant public comment relating to proposed amendments. If significant public comment is received, the amendments will be re-presented to the Policy Board for further discussion.

Mr. Austin noted that the proposed TIP amendments are: 1) the Morgantown Pedestrian Improvement Design Study on WV 705; 2) the I-79 Access Preliminary Investigation and Environmental Study; 3) I-79 Halleck Rd Overpass Construction; 4) Caperton Trail Drainage Construction; and 5) a Modification on the I-79 Star City Interchange Improvement.

Mr. Davis moved to recommend provisional approval of the proposed amendments to the Policy Board; seconded by Mr. Fletcher. With no discussion, the motion was unanimously approved.

7. Meeting Adjournment

The meeting adjourned at 2:25 PM.



2018 Traffic Count Report

(Draft)

Prepared by

Morgantown Monongalia MPO

Introduction

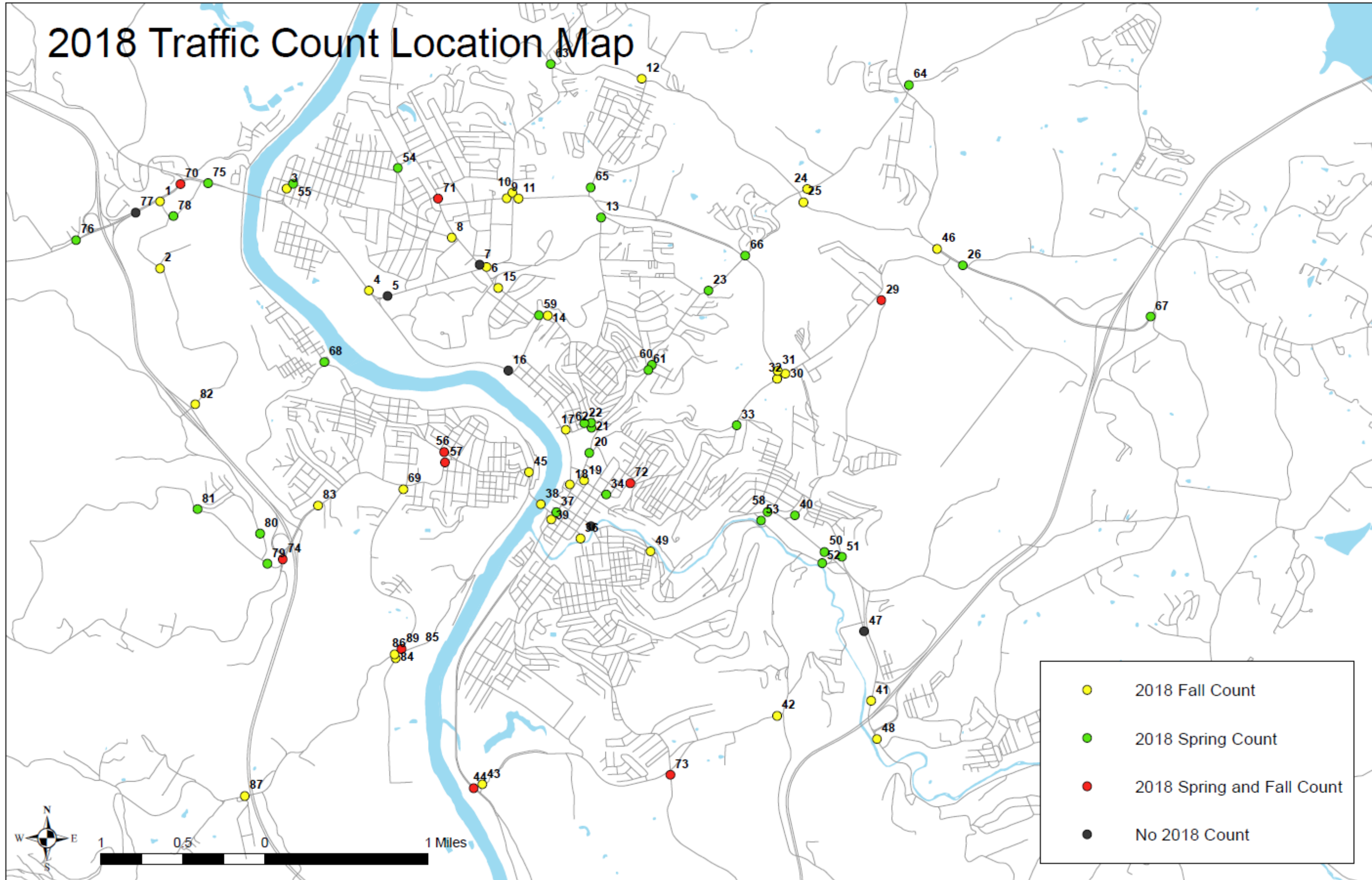
The purpose of this report is to provide traffic information for the greater Morgantown metropolitan area. This data is used to analyze traffic flows, monitor the impact of regional development, calibrate the regional travel demand model, justify highway investments, track the performance of traffic projects once they are implemented, and other transportation-related purposes.

The spring count was conducted on April 17 and 18, 2018, for a 48-hour period, at 45 locations. The fall count was conducted on August 29 and 30, 2018, for a 48-hour period, at 49 locations. Among those locations, 12 were counted both in the spring and fall of 2018. The document was prepared by MMMPO staff. The funding for this report was provided by the Federal Highway Administration, the West Virginia Department of Transportation, Monongalia County, and the City of Morgantown as provided for in the MMMPO's Unified Planning Work Program. The traffic count data in this report was collected for the MPO by the Traffic Group following WV DOH practices.

Data Use and Availability

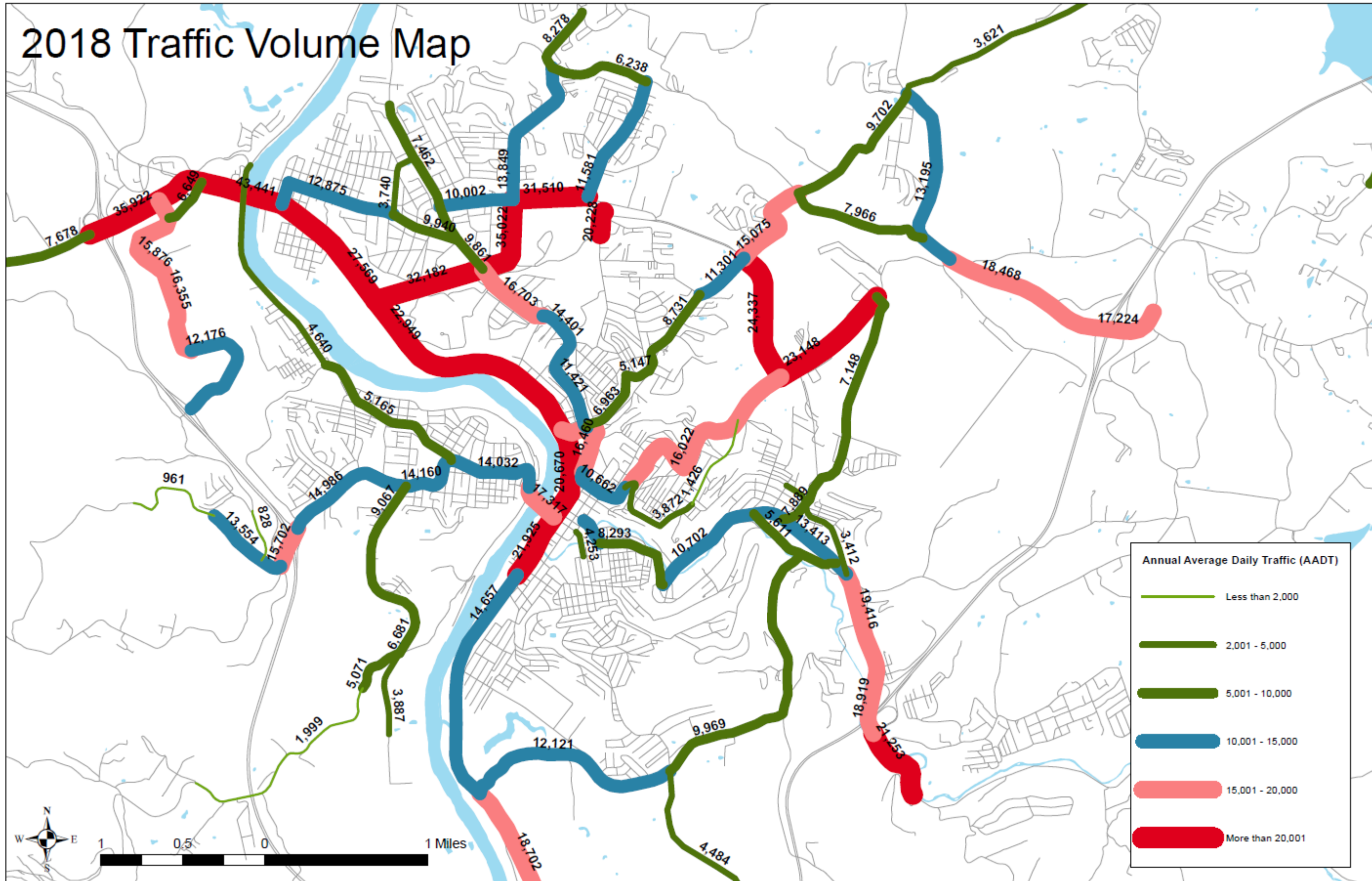
The best use of the traffic volume data in this report is the average value over previous three years. This report is available at the MMMPO website, www.plantgether.org. The data was collected with 15-minute intervals. The raw data is available upon request.

2018 Traffic Count Location Map



For DOH station ID inquiry, add 311400 at the beginning of the station ID number.

2018 Traffic Volume Map



For DOH station ID inquiry, add 311400 at the beginning of the station ID number.

Station*	Location	2015	2016	2017	2018 (S=Spring, F=Fall)	Compared to the Average of Previous 3 Years	% of Truck Traffic	AM Peak		PM Peak	
								Time	Volume (%)*	Time	Volume (%)*
1	University Town Center Dr / South of Chaplin Hill Rd	19,100	18,351	12,948	15,876 (F)	-5%	--	11:00-12:00	1449 (8.7%)	16:45-17:45	1,358 (8.1%)
2	University Town Center Dr / South of Mountaineer Dr	17,675	18,441	18,046	16355 (F)	-9%	--	11:00-12:00	1221 (7.1%)	16:45-17:45	1529 (8.9%)
3	Boyers Ave / Btw Leeway St and University Ave	11,980	12,096	12,670	14065 (F)	15%	--	7:30-8:30	1071 (7.2%)	17:15-18:15	1160 (7.8%)
4	Monongahela Blvd / Northwest of Patterson Dr	31,030	31,641	31,110	27569 (F)	-12%	--	7:45-8:45	1759 (6.1%)	16:45-17:45	2337 (8.1%)
5	Patteson Dr / East of Monongahela Blvd	33,311	32,411	30,823	X		--	8:30-9:30	1931 (6%)	16:45-17:45	2578 (7.9%)
6	Van Voorhis Rd / Northeast of University Ave	37,467	34,784	37,924	35022 (F)	-5%	3.8%	7:45-8:45	2481 (6.2%)	15:45-16:45	2751 (6.9%)
7	University Ave / Northwest of Patterson Dr	9,817	9,919	9,848	X		3%	7:45-8:45	834 (8%)	15:45-16:45	754 (7.3%)
8	University Ave / West of Collins Ferry Rd	10,571	8,632	8,917	9940 (F)	6%	--	7:45-8:45	791 (7.6%)	16:45-17:45	830 (7.9%)
9	Burroughs St / West of Van Voorhis Rd	9,821	8,734	9,504	10002 (F)	7%	--	7:45-8:45	732 (7.0%)	16:15-17:15	795 (7.5%)
10	Van Voorhis Rd / North of Burroughs St	15,661	17,184	13,707	13849 (F)	-11%	--	7:30-8:30	880 (6%)	16:45-17:45	1227 (8.4%)
11	Chestnut Ridge Rd / East of Van Voorhis Rd	34,849	35,425	31,997	31510 (F)	-8%	--	7:45-8:45	2201 (6.6%)	16:45-17:45	2453 (7.4%)
12	West Run Rd / West of Riddle Ave	5,086	5,858	7,256	6238 (F)	3%	--	7:30-8:30	480 (7.3%)	16:45-17:45	654 (10%)
13	Willowdale Rd / South of Chestnut Ridge Rd	15,868	15,479	10,706	20228 (S)	44%	--	7:45-8:45	1663 (7.8%)	16:45-27:45	1998 (9.4%)
14	University Ave / Southeast of 8th St	14,104	13,148	14,286	14401 (F)	4%	--	7:45-8:45	980 (6.5%)	17:00-18:00	1215 (8%)
15	University Ave / Southeast of Evansdale Dr	18,951	17,927	16,508	16703 (F)	-6%	--	8:00-9:00	1022 (5.8%)	17:15-18:15	1348 (7.7%)

Station	Location	2015	2016	2017	2018 (S=Spring, F=Fall)	Compared to the Average of Previous 3 Years	Truck Traffic	AM Peak		PM Peak	
								Time	Volume (%)*	Time	Volume (%)*
16	Beechurst Ave / North of 8th St	24,715	22,345	21,788	X		--	9:00- 10:00	1346 (5.9%)	15:15- 16:15	1713 (7.5%)
17	Campus Dr / Northeast of US 19	6,477	8,959	7,265	17146 (F)	127%	--	8:00- 9:00	1274 (7.1%)	18:00- 19:00	1123 (6.2%)
18	Beechurst Ave / North of Fayette St	22,539	22,819	20,313	20670 (F)	-6%	--	7:30- 8:30	1412 (6.5%)	16:30- 17:30	1590 (7.3%)
19	Willey St / Northwest of Chestnut St	13,026	10,357	11,503	10662 (F)	-8%	--	7:30- 8:30	808 (7.2%)	17:45- 18:45	781 (7%)
20	University Ave / South of College Ave	18,480	18,232	16,393	18130 (S)	2%	--	7:45- 8:45	1056 (5.5%)	17:00- 18:00	1566 (8.2%)
21	Stewart St / East of University Ave	10,612	11,893	7,536	6963 (S)	-30%	--	7:30- 8:30	492 (6.7%)	17:00- 18:00	542 (7.4%)
22	University Ave / South of 2nd St	11,380	8,497	11,121	11421 (S)	11%	--	7:45- 8:45	628 (5.2%)	17:45- 18:45	832 (6.9%)
23	Stewartstown Rd / Northeast of School St	11,319	--	11,399	11301 (S)	-1%	--	8:15- 9:15	587 (4.9%)	17:15- 18:15	1047 (8.8%)
24	Stewartstown Rd / Northeast of West Run Rd	10,710	9,584	10,577	9702 (F)	-6%	2%	7:30- 8:30	787 (7.7%)	16:00- 17:00	886 (8.7%)
25	West Run Rd / Southeast of Stewartstown Rd	8,693	6,527	7,290	7966 (F)	6%	--	7:45- 8:45	568 (6.8%)	16:45- 17:45	799 (9.5%)
26	Cheat Rd / South of Old Cheat Rd	29,491	26,936	25,212	18468 (S)	-32%	5%	7:15- 8:15	1734 (8.9%)	16:45- 17:45	1511 (7.8%)
27	Cheat Rd / North of County Route 88	3,528	3,811	8,378	4036 (F) 4615 (S)	-17%	--	8:15- 9:15	3.4 (7.2%)	16:00- 17:00	383 (9%)
28	Fairchance Rd / North of County Route 69	5,000	4,804	11,340	5062 (F) 4991 (S)	-29%	--	7:45- 8:45	377 (7.1%)	16:00- 17:00	426 (8%)
29	Hartman Run Rd / Southeast of Mileground Rd	8,403	11,005	8,490	7148 (F) 7772 (S)	-20%	--	7:30- 8:30	542 (7.2%)	16:30- 17:30	668 (8.9%)
30	Mileground Rd / East of WV 705	22,593	21,681	22,905	23148 (F)	3%	--	7:30- 8:30	1863 (7.7%)	16:15- 17:15	1741 (7.1%)

Station	Location	2015	2016	2017	2018	Compared to the Average of Previous 3 Years	Truck Traffic	AM Peak		PM Peak	
								Time	Volume (%)*	Time	Volume (%)*
31	WV 705 / North of Mileground	24,730	26,895	25,521	24337 (F)	-5%	2%	7:30-8:30	2066 (8.1%)	16:30-17:30	1866 (7.3%)
32	Mileground Rd / South of WV 705	14,497	14,337	15,315	16022 (F)	9%	--	7:45-8:45	1384 (8.2%)	15:30-16:30	1756 (10.4%)
33	Charles Ave / Southeast of US 119	1,914	n/a	3,169	1426 (S)	-44%	--	7:45-8:45	265 (7.9%)	16:15-17:15	145 (9.7%)
34	Willey St / Northeast of Spruce St	12,408	11,421	13,133	11316 (S)	-8%	--	8:00-9:00	639 (5.4%)	15:45-16:45	983 (8.3%)
35	Walnut St / North of Brockway Ave	10,735	10,540	9,994	X		--	8:00-9:00	746 (7.1%)	16:45-17:45	774 (7.4%)
36	Pleasant St / Pleasant Street Bridge	2,780	3,898	4,302	4253 (F)	16%	--	7:00-8:00	353 (7.9%)	17:15-18:15	404 (9%)
37	University Ave / Northeast of Pleasant St	26,803	31,283	28,297	24735 (S)	-14%	--	7:30-8:30	1812 (6.8%)	16:30-17:30	1982 (7.6%)
38	Pleasant St / Westover Bridge	18,872	19,034	19,281	17317 (F)	-9%	--	7:30-8:30	1157 (6.3%)	17:00-18:00	1551 (8.5%)
39	University Ave / South of Westover Bridge	24,294	26,568	22,670	21925 (F)	-11%	--	7:30-8:30	1745 (7.6%)	16:45-17:45	1866 (8.1%)
40	Hartman Run Rd / North of Richwood Ave	7,699	8,066	8,196	7889 (S)	-1%	--	7:30-8:30	584 (7%)	16:45-17:45	785 (9.4%)
41	Earl Core Rd / Btw EB & WB Ramps of I-68	n/a	22,113	21,084	18919 (F)	-12%	6%	7:15-8:15	1508 (7.6%)	16:00-17:00	1590 (8%)
42	Greenbag Rd / West of Lower Aarons Creek	9,878	9,930	9,882	9969 (F)	1%	--	7:15-8:15	828 (7.9%)	16:45-17:45	966 (9.2%)
43	Greenbag Rd / North of US 119	13,049	12,869	12,765	12121 (F)	-6%	--	7:15-8:15	1108 (8.3%)	16:45-17:45	1176 (9.2%)
44	University Ave / North of Greenbag Rd	19,034	13,579	17,911	14657 (F) 15329 (S)	-11%	4%	7:15-8:15	1350 (8.7%)	16:45-17:45	1358 (8.8%)
45	Holland Ave / South of W Park Ave	14,204	13,755	14,498	14032 (F)	-1%	5%	12:30-1:30	992 (6.7%)	16:45-17:45	1261 (8.5%)

Station	Location	2015	2016	2017	2018	Compared to the Average of Previous 3 Years	Truck Traffic	AM Peak		PM Peak	
								Time	Volume (%)*	Time	Volume (%)*
46	Point Marion Rd / North of Mileground Rd	11,684	13,227	11,555	13195 (F)	9%	4%	7:00-8:00	887 (6.4%)	14:45-15:45	1214 (8.7%)
47	Earl L Core Rd / Btw Eljadid St & Sturgiss Ave	17,788	18,908	21,552	X		4%	7:30-8:30	1490 (6.6%)	16:45-17:45	1848 (8.1%)
48	Earl L Core Rd / North of Brookhaven Rd	19,393	19,052	20,759	21253 (F)	8%	--	7:15-8:15	1565 (7%)	17:00-18:00	1785 (8%)
49	Brockway Ave / East of Pennsylvania Ave	8,614	8,299	8,326	8293 (F)	-1%	5%	7:15-8:15	588 (6.7%)	16:30-17:30	761 (8.7%)
50	Earl Core Rd / North of Greenbag Rd	17,648	12,981	13,329	13413 (S)	-8%	--	8:15-9:15	838 (5.9%)	17:00-18:30	1088 (7.7%)
51	Sabraton Ave / Northeast of Earl Core Rd	1,613	1,310	4,616	3412 (S)	36%	--	7:30-8:30	335 (9.3%)	16:45-17:45	344 (9.6%)
52	Greenbag Rd / Southwest of Earl Core Rd	8,087	7,493	14,937	7248 (S)	-29%	--	7:30-8:30	534 (7%)	17:00-18:00	595 (7.8%)
53	Deckers Creek Rd / Southeast of Powell Ave	6,278	5,276	11,509	5611 (S)	-27%	--	8:00-9:00	387 (6.5%)	16:45-17:45	561 (9.5%)
54	Aspen Rd / Btw Collins Ferry & Western	3,151	2,944	3,254	3740 (S)	20%	--	7:45-8:45	352 (8.9%)	16:45-17:45	393 (10%)
55	University Ave / Btw Boyers & Pleasant	13,631	12,407	8,940	12875 (S)	10%	--	7:30-8:30	972 (7.2%)	17:15-18:15	1004 (7.4%)
56	Holland Ave / Northwest of Fairmont Rd	5,820	7,620	5,209	5165 (F) 4543 (S)	-22%	--	8:15-9:15	314 (5.8%)	17:15-18:15	425 (7.8%)
57	Fairmont Rd / Southwest of Fairmont Rd	12,313	8,775	12,584	14160 (F) 14664 (S)	28%	--	7:30-8:30	927 (6.2%)	17:00-18:00	1271 (8.5%)
58	Earl L Core Rd / Northeast of Hartman Run Rd	11,716	9,853	10,721	10702 (S)	-1%	--	7:30-8:30	774 (6.9%)	16:45-17:45	972 (8.6%)
59	University Ave / East of 8th St	--	14,413	14,589	16415 (S)	13%	--	7:45-8:45	990 (5.7%)	16:45-17:45	1312 (7.7%)
60	Stewart St / South of Stewart Ln	7,994	6,689	9,099	8731 (S)	10%	--	8:00-9:00	486 (4.3%)	17:00-18:00	782 (8.5%)

Station	Location	2015	2016	2017	2018	Compared to the Average of Previous 3 Years	Truck Traffic	AM Peak		PM Peak	
								Time	Volume (%)*	Time	Volume (%)*
61	Stewart St / Btw Hoffman Ave and Protzman St	4,909	3,817	7,547	5147 (S)	-5%	--	8:00-9:00	328 (6.1%)	17:00-18:00	536 (9.9%)
62	University Ave / Southeast of Stewart St	18,253	19,577	14,719	16460 (S)	-6%	--	7:30-8:30	895 (5.2%)	17:00-18:00	1256 (7.1%)
63	Van Voorhis Rd / North of West Run Rd	10,742	8,065	8,982	8278 (S)	-11%	--	7:15-8:15	584 (6.7%)	16:45-17:45	819 (9.4%)
64	Canyon Rd / Northeast of Point Marion Rd	4,045	3,259	7,336	3621 (S)	-26%	--	7:15-8:15	313 (8.2%)	17:00-18:00	369 (9.7%)
65	Pineview Dr / North of WV 705	22,192	14,174	11,693	11581 (S)	-28%	--	8:00-9:00	866 (7.1%)	16:45-17:45	1088 (8.9%)
66	Stewartstown Rd / Northeast of WV 705	17,002	14,725	15,258	15075 (S)	-4%	--	7:45-8:45	1082 (6.8%)	17:00-18:00	1317 (8.3%)
67	Cheat Rd / Southwest of S Pierpont Rd	18,333	18,665	18,217	17224 (S)	-6%	--	7:30-8:30	312 (7.2%)	17:00-18:00	1645 (9.1%)
68	Dunkard Ave / North of Dents Run Blvd	4,544	4,562	5,028	4640 (S)	-2%	--	7:45-8:45	248 (5.1%)	17:00-18:00	424 (8.7%)
69	DuPont Rd / South of Fairmont Rd	4,782	5,185	4,882	9067 (F)	83%	--	7:45-8:45	918 (9.6%)	16:45-17:45	809 (8.5%)
70	Chaplin Hill Rd / South of Monongahela Blvd	34,025	35,352	28,510	38663 (F) 34458 (S)	12%	--	7:30-8:30	2682 (6.6%)	16:45-17:45	3357 (8.2%)
71	Collins Ferry Rd / North of Burroughs St	7,526	6,783	6,948	7462 (F) 6902 (S)	1%	--	7:45-8:45	958 (12.2%)	16:45-17:45	619 (7.9%)
72	Richwood Ave / North of N. Willey St	3,998	3,905	3,910	3872 (F) 5417 (S)	18%	--	7:45-8:45	203 (5%)	17:00-18:00	393 (9.6%)
73	Kingwood Pike / South of Greenbag Rd	4,271	4,248	4,773	4484 (F) 4314 (S)	-1%	--	7:15-8:15	520 (11%)	16:45-17:45	449 (9.4%)
74	Fairmont Ave / Northeast of Mall Rd	13,809	14,838	14,043	15702 (F) 13688 (S)	3%	--	7:15-8:15	777 (4.7%)	17:00-18:00	1514 (9.2%)
75	Mon Blvd / East of Emmett Dr	43,999	40,981	43,079	43441 (S)	2%	--	7:30-8:30	2914 (6.4%)	17:00-18:00	3871 (8.5%)

Station	Location	2015	2016	2017	2018	Compared to the Average of Previous 3 Years	Truck Traffic	AM Peak		PM Peak	
								Time	Volume (%)*	Time	Volume (%)*
76	Chaplin Hill Rd / East of I-79	7,778	7,234	8,045	7678 (S)	0%	--	8:15-9:15	655 (8.1%)	16:30-17:30	751 (9.3%)
77	Chaplin Hill Rd / Btw I-79 and Univ. Town C Dr.	--	37,057	34,787	X		--	7:30-8:30	3064 (8.4%)	16:45-17:45	3101 (8.5%)
78	Emmett Dr / East of Univ. Town C Dr.	--	6,062	6,549	6649 (S)	5%	--	11:15-12:15	409 (5.8%)	18:15-19:15	584 (8.3%)
79	Mall Rd / Btw Lawless Rd & US 19	--	4,248	11,419	13554 (S)	73%	--	12:00-13:00	1149 (8.1%)	16:30-17:30	1438 (10.1%)
80	Lawless Rd / NE of Mall Rd	--	2,635	992	828 (S)	-54%	--	7:30-8:30	68 (7.7%)	17:15-18:15	75 (8.6%)
81	Mall Rd / South of Lawless Rd	--	2,542	890	961 (S)	-44%	--	8:45-9:45	81 (8%)	17:15-18:15	79 (7.8%)
82	University Towncenter Dr / North of I-79 Exit 152	--	--	8,856	12176 (F)	37%	--	11:00-12:00	485 (3.8%)	16:45-17:45	1248 (9.7%)
83	Fairmont Rd / West of Commerce Dr				14986 (F)			7:30-8:30	1031 (6.5%)	16:45-17:45	1307 (8.7%)
84	MGT Industrial Trail / South of River Rd				3887 (F)			7:15-8:15	336 (8.2%)	16:45-17:45	359 (8.8%)
85											
86	River Rd / West of DuPont Rd				5071 (F)			7:15-8:15	536 (10%)	15:15-16:15	578 (10.8%)
87	River Rd / West of Master Graphics Rd				1999 (F)			7:30-8:30	165 (7.8%)	17:00-18:00	173 (8.2%)
88	Grafton Rd / South of Scott Ave				18702 (F)			7:30-8:30	1903 (9.8%)	16:30-17:30	1860 (9.4%)
89	DuPont Rd / North of River Rd				6681 (F) 7968 (S)			7:45-8:45	644 (9.2%)	15:15-16:15	692 (9.8%)
90	Cheat Rd / West of Tyrone Rd				6916 (F)			8:00-9:00	586 (8%)	16:00-19:00	687 (9.4%)

Key Findings

Top locations with the highest AADT volume

Station	Location	2015	2016	2017	2018	Compared to the Average of Previous 3 Years
75	Mon Blvd / East of Emmett Dr	43,999	40,981	43,079	43,441	2%
70	Chaplin Hill Rd / South of Monongahela Blvd	34,025	35,352	28,510	38,663	12%
6	Van Voorhis Rd / Northeast of University Ave	37,467	34,784	37,924	35,022	-5%
11	Chestnut Ridge Rd / East of Van Voorhis Rd	34,849	35,425	31,997	31,510	-8%
4	Monongahela Blvd / Northwest of Patterson Dr	31,030	31,641	31,110	27,569	-12%
37	University Ave / Northeast of Pleasant St	26,803	31,283	28,297	24,735	-14%
31	WV 705 / North of Mileground	24,730	26,895	25,521	24,337	-5%
30	Mileground Rd / East of WV 705	22,593	21,681	22,905	23,148	3%
39	University Ave / South of Westover Bridge	24,294	26,568	22,670	21,925	-11%
48	Earl L Core Rd / North of Brookhaven Rd	19,393	19,052	20,759	21,253	8%

Top locations with the highest AADT volume increase (comparing the average of previous 3 years)

Station	Location	2015	2016	2017	2018	Compared to the Average of Previous 3 Years
17	Campus Dr / Northeast of US 19	6,477	8,959	7,265	17,146	127%
69	DuPont Rd / South of Fairmont Rd	4,782	5,185	4,882	9,067	83%
79	Mall Rd / Btw Lawless Rd & US 19	--	4,248	11,419	13,554	73%
13	Willowdale Rd / South of Chestnut Ridge Rd	15,868	15,479	10,706	20,228	44%
51	Sabraton Ave / Northeast of Earl Core Rd	1,613	1,310	4,616	3,412	36%
57	Fairmont Rd / Southwest of Holland Rd/Fairmont Rd Intersection	12,313	8,775	12,584	14,160	28%
72	Richwood Ave / North of N. Willey St	3,998	3,905	3,910	3,872	18%
54	Aspen Rd / Btw Collins Ferry & Western	3,151	2,944	3,254	3,740	16%
36	Pleasant St / Pleasant Street Bridge	2,780	3,898	4,302	4,253	16%
3	Boyers Ave / Btw Leeway St and University Ave	11,980	12,096	12,670	14,065	15%

Compared to the average traffic volume of previous 3 years, areas experiencing major traffic increase include:

- University Ave-Boyers Ave-Mon Blvd-Chaplin Hill Rd Corridor, including count station 3114070 and 3114003.
Possible explanation: New business on University Town Center and roadway work on Mon Blvd.
- West Ridge Area, including count station 3114079 and 3114082.
Possible explanation: New business on University Town Center and new interchange on I-79
- Willey St-Mileground Rd-Point Marion Rd Corridor, including count station 3114046 and 3114032.
Possible explanation: Housing development along the corridor. Increased capacity after the Eastern Hill intersection improvement construction.
- Fairmount Rd and DuPont Rd, including count station 3114069 and 3114057.
Possible explanation: Road closure on River Rd.

Compared to the average traffic volume of previous 3 years, areas experiencing major traffic decrease include:

- University Ave-Don Knotts Blvd Corridor, including count station 3114037 and 3114039.
Possible explanation: New business on University Town Center and new interchange on I-79.
- Mon Blvd-WV 705-Van Voorhis Corridor, including count station 3114004.
Possible explanation: Construction on Mon Blvd and Van Voorhis Rd during traffic count period.

Station for Further Investigation

The following stations have detected abnormal traffic volume, comparing with data from previous years. MPO staff examined raw data of those locations submitted by the traffic count consultant, no technical fault, such as losing or broken rope, was identified. MPO staff will further investigate those stations in 2019, to decide the accuracy and reliability of the 2018 counts.

- Station 3114017 on Campus Dr, abnormal increase
- Station 3114013 on Willowdale Rd, abnormal increase
- Station 3114026 on Cheat Rd, abnormal decrease

Overall Traffic Volume Trends

It is estimated that the 2018 traffic volume decreased 0.9% from 2017 at 76 locations where comparative traffic volume data is available.

Probable causes of this general decline include:

- Seasonal factors. With few exceptions, locations counted in the spring of 2018 were counted in the fall of 2017. Seasonal variations could be a key cause of the overall traffic volume change;
- Changes in traffic demand. Newly constructed student housing near campus could decrease the overall vehicle traffic volume when school is in session.
- Multimodal transportation. Mountain Line Transit changed routes in 2018 August. In the fall of 2018, the City of Morgantown installed bicycle-sharrows on major bicycle routes on city streets. Those factors could reduce vehicle traffic in the area.

Seasonal Factors

The 2017 counts were taken for different locations in the spring and in the fall. The 2018 count reversed those stations between the two seasons, to obtain seasonal factors for each count location. Specifically, with a few exceptions, a station that was counted in the spring of 2017 was counted in the fall of 2018. Similarly, a station that was counted in the fall of 2017 was counted in the spring of 2018.

Currently, the MPO use WV DOT general seasonal factors for all count locations. The traffic volume data collected in 2017 and 2018 is not sufficient to develop reliable seasonal factors. It is expected that with 3 years data the MPO will identify seasonal factors in 2020.

Performance Measurement

May 2019, TIP Amendment Project Impact Evaluation

Project Name	FFY	Federal Project Number	Total Phase \$ Amount	1. Interstate/Non-Interstate NHS Pavement Condition				2. NHS Bridge Condition		3. System Performance		4 Freight Movement		5. Congestion Mitigation and Air Quality Measures	6. Safety Performance						Project Index	Project/Cost Ratio
				1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	4.1	4.2	5.1	6.1	6.2	6.3	6.4	6.5	6.6		
WV 43 Colonel Zackquill Morgan Bridge	2019	NHPP043137D	\$600,000	0	0	3	6	24	24	6	6	12	12	12	4	4	4	4	2	2	125	0.21
Caperton Trail	2019	NRT 2018217D	\$25,000	0	0	0	0	0	0	0	0	0	0	12	2	2	2	2	6	6	32	1.28



Transportation Improvement Program FY 2019-FY 2023

Addendum

Performance Measurement

Amended by June, 2019

Introduction

In accordance with Federal regulations, the Morgantown Monongalia Metropolitan Planning Organization adopted performance measures established by the West Virginia DOT. The measures provide a set of criteria for evaluating the impact of a project on achieving national goals for pavement condition, bridge condition, system performance (travel time reliability), freight movement, congestion mitigation, and safety.

The primary purpose of the evaluation process developed by MPO staff is to assess the effect of projects included in the MPO's Metropolitan Transportation Plan and Transportation Improvement Program, using the established performance measures. As a part of the evaluation process, a project index and an index/cost ratio are assigned to each project being assessed. Using the index value and index/cost ratio value, two or more transportation projects can be compared in terms of their individual impact to the measures. In addition, the process can also be used to compare the collective impacts of different groups of projects, which include projects currently not in the MPO's Metropolitan Transportation Plan and Transportation Improvement Program.

The evaluation outcome can be used to inform MTP project selection and prioritization, complementing with other elements in transportation planning process, such as service deficiency, community preference, environmental justice, transportation equity, and geographic balance.

Some projects in the MPO's Transportation Improvement Program are maintenance projects and non-roadway projects, which performance measurements may not always reflect the true value of the project.

Performance Measures and Targets

The MMMPO adopted the following performance measures and performance targets for its Metropolitan Transportation Plan. The measures and targets are consistent with those established by the West Virginia Department of Transportation-Division of Highways.

1. Interstate/Non-Interstate NHS Pavement Condition			
National Performance Management Measures for Assessing Pavement Condition 23 CFR 490 (Subpart A & C)			
Performance Measures	Performance Targets		
	State Targets		Target Frequency
	2-yr	4-yr	
1.1 Percent of pavements on the Interstate system in GOOD condition		75%	4-year (2018-2021)
1.2 Percent of pavements on the Interstate system in POOR condition		4.0%	
1.3 Percent of pavements on the non-Interstate NHS in GOOD condition	40.0%	45%	2-year (2018-2019) 4-year (2018-2021)
1.4 Percent of pavements on the non-Interstate NHS in POOR condition	5%	5%	
2. NHS Bridge Condition			
National Performance Management Measures for Assessing Bridge Condition 23 CFR 490 (Subpart A & D)			
Performance Measures	Performance Targets		
	State Targets		Target Frequency
	2-yr	4-yr	
2.1 Percent of NHS bridge deck area classified as in GOOD condition	14%	16%	2-year (2018-2019) 4-year (2018-2021)
2.2 Percent of NHS bridge deck area classified as in POOR condition	10%	10%	
3. System Performance			
National Performance Management Measures to Assess Performance of the National Highway System 23 CFR 490 (Subpart A & E)			
Performance Measures	Performance Targets		
	State Targets		Target Frequency
	2-yr	4-yr	
3.1 Percent of person miles traveled on the Interstate system that are	98%	96%	2-year (2018-2019)

reliable (Level of Travel Time Reliability, LOTTR)			4-year (2018-2021)
3.2 Percent of person miles traveled on the non-Interstate NHS that are reliable (Level of Travel Time Reliability, LOTTR)		87%	
4. Freight Movement			
Performance Measures	Performance Targets		
	State Targets		Target Frequency
	2-yr	4-yr	
4. Travel time reliability of trucks on the Interstate System (Truck Travel Time Reliability = average ratio of 95 th percentile travel time to 50 th percentile travel time)	1.25	1.30	2-year (2018-2019) 4-year (2018-2021)
5. Congestion Mitigation and Air Quality (CMAQ) Measures			
National Performance Management Measures for Assessing the Congestion Mitigation and Air Quality Improvement Program CFR 490 (Subpart A, G & H)			
Performance Measures	Performance Targets		
	State Targets		Target Frequency
	2-yr	4-yr	
5. On-Road Mobile Source Emissions - CMAQ Emissions Reduction	PM2.s: 0.092 kg/day	PM.o: 0.000 kg/day	2-year (2018-2019) 4-year (2018-2021)
6. Safety Performance			
Performance Measures	Performance Targets		
6.1 Number of fatalities	Reduce five year average fatalities on highways by 50% by 2030		
6.2 Number of serious injuries	Reduce the five year average number of serious injuries on highways by 66% by 2030		
6.3 Fatality rate per HMVMT*	Reduce the five year average fatality rate per HMVMT by 50% by 2030		
6.4 Serious Injury Rate per HMVMT	Reduce the five year average injury rate per HMVMT by 66% by 2030		
6.5, 6.6 Number of non-motorized fatalities and serious injuries	Reduce the five year average number of non-motorized fatalities and injuries: a. Reduce fatalities by 50% by 2030 b. Reduce non-motorized serious injuries by 66% by 2030		
*Hundred Million Vehicle Miles Traveled			

Effect of Transportation Improvement Program Projects

This section fulfills the requirement of 23 CFR 450.218(q) and 326(d): State Transportation Improvement Program (STIP)/Transportation Improvement Program (TIP) include (to the maximum extent practicable) a description of the anticipated effect of the STIP and TIP toward achieving the performance targets identified by the State in the long-range statewide transportation plan and by the MPO in the Metropolitan Transportation Plan.

Congestion Mitigation and Air Quality Measures are NOT a required for performance measure for the MMMPO. However, projects proposed in the MPO's Metropolitan Transportation Plan address traffic congestion issues to various degrees. By including CMAQ measures as a part of the evaluation, the assessment will provide a more comprehensive understanding of the projects impact to the transportation system in the region.

Evaluation Methodology

The following table illustrates the steps used to evaluate the impact of MTP Tier 1 projects to the Performance Measures.

Step 1. Impact Evaluation		
Purpose	Description	Outcome
Understand the impact of a project to each established performance measure.	Assess the impact of a project to each performance measure established by the WV DOT, using a scale of 1-5, where 1 means the lowest impact, and 5 means the highest impact	Impact Value
Step 2. Weight Evaluation		
Purpose	Description	Outcome
Understand the preference and priority of the community with respect to established performance measures.	Decide the weight of performance measure categories, and the weight of performance measures under each category.	Weight Value
Step 3. Index Calculation		
Purpose	Description	Outcome
Prepare for the calculation of Project Index Value in the following step.	Multiplying the Impact Values (Step 1) and Weight Value (Step 2). Index to Cost Ratio is calculated by dividing the index value by the estimated project cost.	Index Value
Step 4. Project Index		
Purpose	Description	Outcome
Understand the impact of a project to performance measure with consideration of community priority.	Calculate the index value of a project by summing up all index value of that project.	Project Index Value
Step 5. Index/Cost Ratio		
Purpose	Description	Outcome
Understand the cost efficiency of each project with reference to its performance measures impact.	Calculate the ratio by dividing the Project Index Value with the estimated project cost of a project. Value is expressed in thousand dollars.	Index/Cost Ratio
Step 6. System-wide Impact Index		
Purpose	Description	Outcome
Understand the agglomerate impact of all tier 1 projects to established performance measures.	Sum up the Index Value (Step 3) under performance measure category.	

The following is a list of evaluation results of projects in the TIP. The actual calculations are in the Appendix A.

Evaluation Outcome

Project Name*	FFY	Total Phase \$ Amount	Project Index	Index/Cost Ratio
EVERETTVILLE BR	2019	\$500,000.00	125	0.25
MORRIS BUILDERS BR +1	2019	\$1,125,000.00	119	0.11
BEECHURST AVE & CAMPUS DR	2019	\$620,000.00	154	0.25
UNIVERSITY AVE I/S IMPROVEMENTS	18-20	\$3,200,000.00	177	0.06
WV 7/CR 857	19	\$2,000,000.00	130	0.07
MONONGAHELA BLVD TWLTL	18	\$3,992,628.00	125	0.03
I/S WV 100 & DENTS RUN IMPROVEMENT	19	\$150,000.00	61	0.41
COOPERS ROCK PIPE (GARVEE 2)*	19	\$400,000.00	0	0.00
AIRPORT EXIT BR (GARVEE 2)	18	\$6,300,000.00	104	0.02
MILEGROUND - AIRPORT RD (GO BOND)	18	\$14,000,000.00	164	0.01
WANA - BLACKSVILLE	18	\$350,000.00	112	0.32
BOYERS AVE / US 19 IMPROVEMENTS	19	\$583,000.00	122	0.21
BEECHURST AVE @ 6TH (GO BOND 4)	18-20	\$11,500,000.00	104	0.01
MONONGALIA BLVD - STEWARTSTOWN RD	18	\$4,194,665.00	146	0.03
MYLAN PARK BRIDGE APPROACH	19	\$1,100,000.00	125	0.11
DECKERS CREEK TRAIL UNDERCUT REPAIR	19	\$98,269.00	30	0.31
DECKERS CREEK TRAIL RESURFACING	19	\$80,000.00	48	0.60
FOUNDRY ST LINKAGE TRAIL	19	\$30,320.00	52	1.72
COLLINS FERRY CONNECTOR TRAIL	19	\$56,000.00	52	0.93
DECKERS CRK TRAIL REPAIR	19	\$249,577.00	64	0.26
NORTH CENTRAL RAIL TRAIL MAP UPDATE*	19	\$26,000.00	12	0.46
DECKERS CREEK LANDSLIDE REPAIR	19	\$45,000.00	30	0.67
BOPARC TRAIL EQUIPMENT	19	\$18,000.00	0	0.00
VAN VOORHIS RD	19	\$2,400,000.00	132	0.06
VAN VOORHIS RD (GO BOND 4)	18-21	\$16,600,000.00	141	0.01
GOSHEN RD & SMITHTOWN RD I/S	18	\$1,631,977.00	52	0.03
WEST RUN ROAD (GO BOND 4)	18-21	\$18,750,000.00	127	0.01
COLLEGE AVE +3	18	\$155,000.00	123	0.79
MORGANTOWN MULTIUSE PATH	18-19	\$500,000.00	68	0.14
WALNUT ST STREETScape 2012	19	\$297,500.00	96	0.32
MORGANTOWN BICYCLE SIGNAGE	19	\$120,000.00	68	0.57
STAR CITY TRAIL CONNECTOR	19	\$92,000.00	52	0.57
MON RIVER RAIL TRL MNT EQ*	19	\$60,000.00	0	0.00
GREENBAG ROAD (GO BOND 4)	20-21	\$19,000,000.00	136	0.01
PLEASANT ST STREETScape	19	\$160,000.00	96	0.60
BROOKHAVEN ROAD IMPROVEMENTS	20	\$490,000.00	83	0.17
WV 7 OP INTERCHANGE (AUTH AC PROJECT)	21-23	\$75,000,000.00	203	0.00
I-79 Reconstruction	19	\$40,000,000.00	111	0.00
Mon Blvd Street Upgrade Lighting	20	\$750,000.00	68	0.09
WV 43 Morgan Run Bridge	20	\$600,000.00	125	0.21
WV 43 Rubles Run Bridge	20	\$600,000.00	125	0.21
Smithtown Road	19	\$1,510,000.00	94	0.06
KINGS RUN RD - BUCKEYE RD	19	\$910,000.00	97	0.11
PINEVIEW DRIVE	19	\$280,000.00	117	0.42

* The project's Federal ID number is provided in the Appendix of this document.

System-wide Impact Index

Performance Measures Category	1. Interstate/Non-Interstate NHS Pavement Condition				2. NHS Bridge Condition		3. System Performance		4 Freight Movement		5. CMAQ Measures	6. Safety Performance					
Performance Measures	1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	4.1	4.2	5.1	6.1	6.2	6.3	6.4	6.5	6.6
Individual Measurement Impact Index	15	6	189	162	96	192	42	606	66	486	1212	184	184	184	182	182	182
Category Impact Index	372				288		648		552		300	1098					
System-wide Impact Index	3258																



Transportation Improvement Program FY 2019-FY 2023

Performance Measurement

Appendix A

Index Calculation Process of Performance Measurement Impact

Step 1. Impact Evaluation

Project Name	FFY	Federal Project Number	Total Phase \$ Amount	1. Interstate/Non-Interstate NHS Pavement Condition				2. NHS Bridge Condition		3. System Performance		4 Freight Movement		5. Congestion Mitigation and Air Quality Measures	6. Safety Performance					
				1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	4.1	4.2	5.1	6.1	6.2	6.3	6.4	6.5	6.6
EVERETTVILLE BR	2019	ACST0045069D	500000	0	0	1	2	4	4	1	1	2	2	1	2	2	2	2	1	1
MORRIS BUILDERS BR +1	2019	ACST1925001D	1125000	0	0	1	2	4	4	0	1	2	2	1	2	2	2	2	1	1
BEECHURST AVE & CAMPUS DR	2019	CMAQ0019408D CMAQ0019409D CMAQ0019410D	620,000	0	0	0	0	0	0	0	5	0	4	5	3	3	3	3	4	4
UNIVERSITY AVE I/S IMPROVEMENTS	18-20	CMAQ0055037D CMAQ0055038D	3200000	0	0	2	1	0	0	0	5	0	5	5	4	4	4	4	4	4
WV 7/CR 857	19	CMAQ0007248D	2000000	0	0	0	0	0	0	0	4	0	5	4	3	3	3	3	1	1
MONONGAHELA BLVD TWLTL	18	HSIP0019449D	3992628	0	0	2	1	0	0	0	3	0	3	4	3	3	3	3	2	2
I/S WV 100 & DENTS RUN IMPROVEMENT	19	HSIP0100152D	150000	0	0	1	0	0	0	0	1	0	2	1	3	3	3	3	1	1
COOPERS ROCK PIPE (GARVEE 2)*	19	NFA2517022D	400000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIRPORT EXIT BR (GARVEE 2)	18	NFA2217036D	6300000	0	0	2	0	0	5	0	2	0	2	2	2	2	2	2	1	1
MILEGROUND - AIRPORT RD (GO BOND)	18	NFA2317026D	14000000	0	0	4	2	0	0	0	5	0	4	5	3	3	3	3	2	2
WANA - BLACKSVILLE	18	NHPP0007295D	350000	0	0	4	4	0	2	0	2	0	2	2	3	3	3	3	1	1
BOYERS AVE / US 19 IMPROVEMENTS	19	NHPP0019437D NHPP0019438D NHPP0019439D	583000	0	0	0	0	0	0	0	4	0	3	4	3	3	3	3	2	2
BEECHURST AVE @ 6TH (GO BOND 4)	18-20	NHPP0019443D NHPP0019444D NFA2317024D	11500000	0	0	0	0	0	0	0	3	0	3	3	3	3	3	3	2	2
MONONGALIA BLVD - STEWARTSTOWN RD	18	NHPP0705018D	4194665	0	0	4	2	0	0	0	4	0	4	4	3	3	3	3	2	2
MYLAN PARK BRIDGE APPROACH	19	NHPP0793269D NHPP0793270D	1100000	0	0	3	2	0	5	0	3	0	3	2	2	2	2	2	1	1
DECKERS CREEK TRAIL UNDERCUT REPAIR	19	NRT2012686D	98269	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	3	3
DECKERS CREEK TRAIL RESURFACING	19	NRT2012693D	80000	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	3	3
FOUNDRY ST LINKAGE TRAIL	19	NRT2014219D	30320	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	4	4
COLLINS FERRY CONNECTOR TRAIL	19	NRT2014221	56000	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	4	4
DECKERS CRK TRAIL REPAIR	19	NRT2014223D	249577	0	0	0	0	0	0	0	2	0	0	3	0	0	0	0	4	4
NORTH CENTRAL RAIL TRAIL MAP UPDATE*	19	NRT2015244D	26000	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
DECKERS CREEK LANDSLIDE REPAIR	19	NRT2017161D	45000	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	3	3
BOPARC TRAIL EQUIPMENT	19	NRT2017162D	18000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAN VOORHIS RD	19	HSIP0671006D	2400000	0	0	3	3	0	0	0	4	0	2	4	3	3	3	2	2	2
VAN VOORHIS RD (GO BOND 4)	18-21	STP0059006D STP0059007D NFA2317023D	16600000	0	0	3	4	0	0	0	4	0	2	4	3	3	3	3	3	3
GOSHEN RD & SMITHTOWN RD I/S	18	STP0073086D	1631977	0	0	0	0	0	0	0	1	0	1	1	3	3	3	3	1	1

Project Name	FFY	Federal Project Number	Total Phase \$ Amount	1. Interstate/Non-Interstate NHS Pavement Condition				2. NHS Bridge Condition		3. System Performance		4 Freight Movement		5. Congestion Mitigation and Air Quality Measures	6. Safety Performance					
				1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	4.1	4.2	5.1	6.1	6.2	6.3	6.4	6.5	6.6
WEST RUN ROAD (GO BOND 4)	18-21	STP0671008D STP0671009D NFA2317025D	18750000	0	0	3	4	0	0	0	3	0	2	3	4	4	4	4	2	2
COLLEGE AVE +3	18	STP1922002D	155000	0	0	3	4	0	0	0	3	0	2	3	3	3	3	3	3	3
MORGANTOWN MULTIUSE PATH	18-19	TAP2016335DTC TAP2016336D	500000	0	0	0	0	0	0	0	2	0	0	3	0	0	0	0	5	5
WALNUT ST STREETScape 2012	19	TEA2012638D	297500	0	0	3	1	0	0	0	2	0	2	2	3	3	3	3	3	3
MORGANTOWN BICYCLE SIGNAGE	19	TEA2014195D	120000	0	0	0	0	0	0	0	2	0	0	2	2	2	2	2	4	4
STAR CITY TRAIL CONNECTOR	19	NRT2015041D	92000	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	4	4
MON RIVER RAIL TRL MNT EQ*	19	NRT2015294D	60000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GREENBAG ROAD (GO BOND 4)	20-21	STP0857020D NFA2317022D	19000000	0	0	4	2	0	0	0	4	0	5	3	3	3	3	3	1	1
PLEASANT ST STREETScape	19	TAP2016309DTC	160000	0	0	3	1	0	0	0	2	0	2	2	3	3	3	3	3	3
BROOKHAVEN ROAD IMPROVEMENTS	20	CMAQ0007263D CMAQ0007264D	490000	0	0	3	2	0	0	0	1	0	1	2	3	3	3	3	2	2
WV 7 OP INTERCHANGE (AUTH AC PROJECT) (SPLIT FUNDED)	21-23	NHPP0796271	75000000	0	0	4	3	0	4	0	5	0	4	5	4	4	4	4	3	3
I-79 Reconstruction	19	NFA2317029D	40000000	5	2	0	0	0	0	4	0	3	0	2	3	3	3	3	0	0
Mon Blvd Street Upgrade Lighting	20	NHPP0019467D	750000	0	0	0	0	0	0	0	2	0	2	1	3	3	3	3	2	2
WV 43 Morgan Run Bridge	20	HNPP0043137D	600000	0	0	1	2	4	4	1	1	2	2	1	2	2	2	2	1	1
WV 43 Rubles Run Bridge	20	HNPP0043136D	600000	0	0	1	2	4	4	1	1	2	2	1	2	2	2	2	1	1
Smithtown Road	19	STBG0073088D	1510000	0	0	3	3	0	0	0	3	0	3	1	3	3	3	3	1	1
KINGS RUN RD - BUCKEYE RD	19	NHPP0007296D	910000	0	0	3	4	0	0	0	3	0	3	1	3	3	3	3	1	1
PINEVIEW DRIVE	19	STBG0614001D	280000	0	0	2	3	0	0	0	3	0	2	3	3	3	3	3	3	3

Step 2. Weight Evaluation

Performance Measures	Weight
1. Interstate/Non-Interstate NHS Pavement Condition	12
1.1 Percent of pavement on the Interstate system in GOOD condition	3
1.2 percent of pavement on the Interstate system in POOR condition	3
1.3 Percent of pavement on the non-Interstates NHS in GOOD condition	3
1.4 Percent of pavement on the non-Interstate NHS in POOR condition	3
2. NHS Bridge Condition (Total 12 Points)	12
2.1 Percent of NHS bridge deck area classified as in GOOD condition	6
2.2 Percent of NHS bridge deck area classified as in POOR condition	6
3. System Performance (Total 12 Points)	12
3.1 percent of person miles traveled on the Interstate system that are reliable (Level of Travel Time Reliability)	6
3.2 Percent of person miles traveled on the non-interstate NHS that are reliable (Level of Travel Time Reliability)	6
4 Freight Movement (Total 12 Points)	12
4.1 Travel time reliability of trucks on the Interstate System	6
4.2 Safety Performance Measures	6
5. Congestion Mitigation and Air Quality (CMAQ) Measures (Total 12 Points)	
5.1 On-road mobile source emissions – CMAQ Emissions Reduction	
6. Safety Performance (Total 12 Points)	12
6.1 Number of Fatalities + 6.3 Fatality rate per hundred million vehicles miles traveled (HMVMT)	4
6.2 Number of serious injuries + 6.4 Injury rate per hundred million vehicle miles traveled (HMVMT)	4
6.5 Number of non-motorized fatalities + 6.6 Number of non-motorized serious injuries	4

Step 3. Index Calculation

Project Name	FFY	Federal Project Number	Total Phase \$ Amount	1. Interstate/Non-Interstate NHS Pavement Condition				2. NHS Bridge Condition		3. System Performance		4 Freight Movement		5. Congestion Mitigation and Air Quality Measures	6. Safety Performance					
				1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	4.1	4.2	5.1	6.1	6.2	6.3	6.4	6.5	6.6
EVERETTVILLE BR	2019	ACST0045069D	500000	0	0	3	6	24	24	6	6	12	12	12	4	4	4	4	2	2
MORRIS BUILDERS BR +1	2019	ACST1925001D	1125000	0	0	3	6	24	24	0	6	12	12	12	4	4	4	4	2	2
BEECHURST AVE & CAMPUS DR	2019	CMAQ0019408D CMAQ0019409D CMAQ0019410D	620,000	0	0	0	0	0	0	0	30	0	24	60	6	6	6	6	8	8
UNIVERSITY AVE I/S IMPROVEMENTS	18-20	CMAQ0055037D CMAQ0055038D	3200000	0	0	6	3	0	0	0	30	0	30	60	8	8	8	8	8	8
WV 7/CR 857	19	CMAQ0007248D	2000000	0	0	0	0	0	0	0	24	0	30	48	6	6	6	6	2	2
MONONGAHELA BLVD TWLTL	18	HSIP0019449D	3992628	0	0	6	3	0	0	0	18	0	18	48	6	6	6	6	4	4
I/S WV 100 & DENTS RUN IMPROVEMENT	19	HSIP0100152D	150000	0	0	3	0	0	0	0	6	0	12	12	6	6	6	6	2	2
COOPERS ROCK PIPE (GARVEE 2)*	19	NFA2517022D	400000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIRPORT EXIT BR (GARVEE 2)	18	NFA2217036D	6300000	0	0	6	0	0	30	0	12	0	12	24	4	4	4	4	2	2
MILEGROUND - AIRPORT RD (GO BOND)	18	NFA2317026D	14000000	0	0	12	6	0	0	0	30	0	24	60	6	6	6	6	4	4
WANA - BLACKSVILLE	18	NHPP0007295D	350000	0	0	12	12	0	12	0	12	0	12	24	6	6	6	6	2	2
BOYERS AVE / US 19 IMPROVEMENTS	19	NHPP0019437D NHPP0019438D NHPP0019439D	583000	0	0	0	0	0	0	0	24	0	18	48	6	6	6	6	4	4
BEECHURST AVE @ 6TH (GO BOND 4)	18-20	NHPP0019443D NHPP0019444D NFA2317024D	11500000	0	0	0	0	0	0	0	18	0	18	36	6	6	6	6	4	4
MONONGALIA BLVD - STEWARTSTOWN RD	18	NHPP0705018D	4194665	0	0	12	6	0	0	0	24	0	24	48	6	6	6	6	4	4
MYLAN PARK BRIDGE APPROACH	19	NHPP0793269D NHPP0793270D	1100000	0	0	9	6	0	30	0	18	0	18	24	4	4	4	4	2	2
DECKERS CREEK TRAIL UNDERCUT REPAIR	19	NRT2012686D	98269	0	0	0	0	0	0	0	6	0	0	12	0	0	0	0	6	6
DECKERS CREEK TRAIL RESURFACING	19	NRT2012693D	80000	0	0	0	0	0	0	0	12	0	0	24	0	0	0	0	6	6
FOUNDRY ST LINKAGE TRAIL	19	NRT2014219D	30320	0	0	0	0	0	0	0	12	0	0	24	0	0	0	0	8	8
COLLINS FERRY CONNECTOR TRAIL	19	NRT2014221	56000	0	0	0	0	0	0	0	12	0	0	24	0	0	0	0	8	8
DECKERS CRK TRAIL REPAIR	19	NRT2014223D	249577	0	0	0	0	0	0	0	12	0	0	36	0	0	0	0	8	8
NORTH CENTRAL RAIL TRAIL MAP UPDATE*	19	NRT2015244D	26000	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0
DECKERS CREEK LANDSLIDE REPAIR	19	NRT2017161D	45000	0	0	0	0	0	0	0	6	0	0	12	0	0	0	0	6	6
BOPARC TRAIL EQUIPMENT	19	NRT2017162D	18000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAN VOORHIS RD	19	HSIP0671006D	2400000	0	0	9	9	0	0	0	24	0	12	48	6	6	6	4	4	4
VAN VOORHIS RD (GO BOND 4)	18-21	STP0059006D STP0059007D NFA2317023D	16600000	0	0	9	12	0	0	0	24	0	12	48	6	6	6	6	6	6
GOSHEN RD & SMITHTOWN RD I/S	18	STP0073086D	1631977	0	0	0	0	0	0	0	6	0	6	12	6	6	6	6	2	2

Project Name	FFY	Federal Project Number	Total Phase \$ Amount	1. Interstate/Non-Interstate NHS Pavement Condition				2. NHS Bridge Condition		3. System Performance		4 Freight Movement		5. Congestion Mitigation and Air Quality Measures	6. Safety Performance					
				1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	4.1	4.2	5.1	6.1	6.2	6.3	6.4	6.5	6.6
WEST RUN ROAD (GO BOND 4)	18-21	STP0671008D STP0671009D NFA2317025D	18750000	0	0	9	12	0	0	0	18	0	12	36	8	8	8	8	4	4
COLLEGE AVE +3	18	STP1922002D	155000	0	0	9	12	0	0	0	18	0	12	36	6	6	6	6	6	6
MORGANTOWN MULTIUSE PATH	18-19	TAP2016335DTC TAP2016336D	500000	0	0	0	0	0	0	0	12	0	0	36	0	0	0	0	10	10
WALNUT ST STREETScape 2012	19	TEA2012638D	297500	0	0	9	3	0	0	0	12	0	12	24	6	6	6	6	6	6
MORGANTOWN BICYCLE SIGNAGE	19	TEA2014195D	120000	0	0	0	0	0	0	0	12	0	0	24	4	4	4	4	8	8
STAR CITY TRAIL CONNECTOR	19	NRT2015041D	92000	0	0	0	0	0	0	0	12	0	0	24	0	0	0	0	8	8
MON RIVER RAIL TRL MNT EQ*	19	NRT2015294D	60000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GREENBAG ROAD (GO BOND 4)	20-21	STP0857020D NFA2317022D	19000000	0	0	12	6	0	0	0	24	0	30	36	6	6	6	6	2	2
PLEASANT ST STREETScape	19	TAP2016309DTC	160000	0	0	9	3	0	0	0	12	0	12	24	6	6	6	6	6	6
BROOKHAVEN ROAD IMPROVEMENTS	20	CMAQ0007263D CMAQ0007264D	490000	0	0	9	6	0	0	0	6	0	6	24	6	6	6	6	4	4
WV 7 OP INTERCHANGE (AUTH AC PROJECT) (SPLIT FUNDED)	21-23	NHPP0796271	75000000	0	0	12	9	0	24	0	30	0	24	60	8	8	8	8	6	6
I-79 Reconstruction	19	NFA2317029D	40000000	15	6	0	0	0	0	24	0	18	0	24	6	6	6	6	0	0
Mon Blvd Street Upgrade Lighting	20	NHPP0019467D	750000	0	0	0	0	0	0	0	12	0	12	12	6	6	6	6	4	4
WV 43 Morgan Run Bridge	20	HNPP0043137D	600000	0	0	3	6	24	24	6	6	12	12	12	4	4	4	4	2	2
WV 43 Rubles Run Bridge	20	HNPP0043136D	600000	0	0	3	6	24	24	6	6	12	12	12	4	4	4	4	2	2
Smithtown Road	19	STBG0073088D	1510000	0	0	9	9	0	0	0	18	0	18	12	6	6	6	6	2	2
KINGS RUN RD - BUCKEYE RD	19	NHPP0007296D	910000	0	0	9	12	0	0	0	18	0	18	12	6	6	6	6	2	2
PINEVIEW DRIVE	19	STBG0614001D	280000	0	0	6	9	0	0	0	18	0	12	36	6	6	6	6	6	6

Step 4. Project Index and Step 5. Index/Cost Ratio

Project Name	FFY	Federal Project Number	Total Phase \$ Amount	Project Index	Index/Cost Ratio
EVERETTville BR	2019	ACST0045069D	\$ 500,000.00	125	0.25
MORRIS BUILDERS BR +1	2019	ACST1925001D	\$ 1,125,000.00	119	0.11
BEECHURST AVE & CAMPUS DR	2019	CMAQ0019408D CMAQ0019409D CMAQ0019410D	\$ 620,000.00	154	0.25
UNIVERSITY AVE I/S IMPROVEMENTS	18-20	CMAQ0055037D CMAQ0055038D	\$ 3,200,000.00	177	0.06
WV 7/CR 857	19	CMAQ0007248D	\$ 2,000,000.00	130	0.07
MONONGAHELA BLVD TWLTL	18	HSIP0019449D	\$ 3,992,628.00	125	0.03
I/S WV 100 & DENTS RUN IMPROVEMENT	19	HSIP0100152D	\$ 150,000.00	61	0.41
COOPERS ROCK PIPE (GARVEE 2)*	19	NFA2517022D	\$ 400,000.00	0	0.00
AIRPORT EXIT BR (GARVEE 2)	18	NFA2217036D	\$ 6,300,000.00	104	0.02
MILEGROUND - AIRPORT RD (GO BOND)	18	NFA2317026D	\$ 14,000,000.00	164	0.01
WANA - BLACKSVILLE	18	NHPP0007295D	\$ 350,000.00	112	0.32
BOYERS AVE / US 19 IMPROVEMENTS	19	NHPP0019437D NHPP0019438D NHPP0019439D	\$ 583,000.00	122	0.21
BEECHURST AVE @ 6TH (GO BOND 4)	18-20	NHPP0019443D NHPP0019444D NFA2317024D	\$ 11,500,000.00	104	0.01
MONONGALIA BLVD - STEWARTSTOWN RD	18	NHPP0705018D	\$ 4,194,665.00	146	0.03
MYLAN PARK BRIDGE APPROACH	19	NHPP0793269D NHPP0793270D	\$ 1,100,000.00	125	0.11
DECKERS CREEK TRAIL UNDERCUT REPAIR	19	NRT2012686D	\$ 98,269.00	30	0.31
DECKERS CREEK TRAIL RESURFACING	19	NRT2012693D	\$ 80,000.00	48	0.60
FOUNDRY ST LINKAGE TRAIL	19	NRT2014219D	\$ 30,320.00	52	1.72
COLLINS FERRY CONNECTOR TRAIL	19	NRT2014221	\$ 56,000.00	52	0.93
DECKERS CRK TRAIL REPAIR	19	NRT2014223D	\$ 249,577.00	64	0.26
NORTH CENTRAL RAIL TRAIL MAP UPDATE*	19	NRT2015244D	\$ 26,000.00	12	0.46
DECKERS CREEK LANDSLIDE REPAIR	19	NRT2017161D	\$ 45,000.00	30	0.67
BOPARC TRAIL EQUIPMENT	19	NRT2017162D	\$ 18,000.00	0	0.00
VAN VOORHIS RD	19	HSIP0671006D	\$ 2,400,000.00	132	0.06
VAN VOORHIS RD (GO BOND 4)	18-21	STP0059006D STP0059007D NFA2317023D	\$ 16,600,000.00	141	0.01
GOSHEN RD & SMITHTOWN RD I/S	18	STP0073086D	\$ 1,631,977.00	52	0.03
WEST RUN ROAD (GO BOND 4)	18-21	STP0671008D STP0671009D NFA2317025D	\$ 18,750,000.00	127	0.01
COLLEGE AVE +3	18	STP1922002D	\$ 155,000.00	123	0.79

Project Name	FFY	Federal Project Number	Total Phase \$ Amount	Project Index	Index/Cost Ratio
MORGANTOWN MULTIUSE PATH	18-19	TAP2016335DTC TAP2016336D	\$ 500,000.00	68	0.14
WALNUT ST STREETScape 2012	19	TEA2012638D	\$ 297,500.00	96	0.32
MORGANTOWN BICYCLE SIGNAGE	19	TEA2014195D	\$ 120,000.00	68	0.57
STAR CITY TRAIL CONNECTOR	19	NRT2015041D	\$ 92,000.00	52	0.57
MON RIVER RAIL TRL MNT EQ*	19	NRT2015294D	\$ 60,000.00	0	0.00
GREENBAG ROAD (GO BOND 4)	20-21	STP0857020D NFA2317022D	\$ 19,000,000.00	136	0.01
PLEASANT ST STREETScape	19	TAP2016309DTC	\$ 160,000.00	96	0.60
BROOKHAVEN ROAD IMPROVEMENTS	20	CMAQ0007263D CMAQ0007264D	\$ 490,000.00	83	0.17
WV 7 OP INTERCHANGE (AUTH AC PROJECT) (SPLIT FUNDED)	21-23	NHPP0796271	\$ 75,000,000.00	203	0.00
I-79 Reconstruction	19	NFA2317029D	\$ 40,000,000.00	111	0.00
Mon Blvd Street Upgrade Lighting	20	NHPP0019467D	\$ 750,000.00	68	0.09
WV 43 Morgan Run Bridge	20	HNPP0043137D	\$ 600,000.00	125	0.21
WV 43 Rubles Run Bridge	20	HNPP0043136D	\$ 600,000.00	125	0.21
Smithtown Road	19	STBG0073088D	\$ 1,510,000.00	94	0.06
KINGS RUN RD - BUCKEYE RD	19	NHPP0007296D	\$ 910,000.00	97	0.11
PINEVIEW DRIVE	19	STBG0614001D	\$ 280,000.00	117	0.42

Step 6. System-wide Impact Index

1. Interstate/Non-Interstate NHS Pavement Condition				2. NHS Bridge Condition		3. System Performance		4 Freight Movement		5. CMAQ Measures	6. Safety Performance					
1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	4.1	4.2	5.1	6.1	6.2	6.3	6.4	6.5	6.6
15	6	189	162	96	192	42	606	66	486	1212	184	184	184	182	182	182
372				288		648		552		300	1098					
3258																



Willey St-Richwood Ave Intersection Improvement Study

Final Report (*Draft*)

June, 2019

Prepared for

City of Morgantown

Table of Contents

Executive Summary	3
Study Description.....	5
Existing Conditions Analysis.....	6
Data Collection Process	6
Data Collection Summary	6
Identified Issues	7
Community Involvement	8
Public Comments Summary	8
Recommendations.....	9
Alternative Description.....	9
Alternative Comparison	11
Next Steps	12

Appendix A: Data Collection Documentation

Appendix B: Pedestrian Signal Warrant Analysis

Appendix C: MPO Travel Demand Model-Land Use Information Documentation

Appendix D: Community Involvement Documentation

Appendix E: High Intensity Activated Crosswalk (HAWK) Information

Executive Summary

The purpose of the Study is to determine the impact of correcting the subject intersection’s unsafe skew. This skew affects traffic operation in the area and to determine the impact of any correction on the larger transportation network including transit, pedestrians, and bicycles. Specifically, the study intends to identify alternatives that

- Improve traffic operation efficiency and safety.
- Improve pedestrian safety and transit operations.
- Support future development in the study area.

MPO staff held a community meeting for the Study on June 3, 2019 at Crosley’s Banquet Center, 616 Richwood Ave, Morgantown, WV. The meeting was as a part of the June Woodburn Neighborhood Association Meeting, which approximately 10 residents attended.

The following opportunities were identified during the study data collection and evaluation process:

- **Increasing traffic operation capacity**

Currently, the southbound left-turn from Willey St to Richwood Ave and southbound right-turn from Richwood Ave to Willey St movements are prohibited at the intersection of Willey St and Richwood Ave due to safety concerns. Improving the intersection geometry and allowing the prohibited turns will increase the operational capacity of the intersection.

- **Optimizing land use**

The triangle area at the intersection of Willey St-Richwood is used as an unpaved surface parking lot. Many empty parking spaces were observed throughout the day. The triangle area could be used for more productive purposes. (District: Third Ward, Map: 26, Parcel: 412)

- **E Prospect Street (Paper Street)**

A paper street exists between E Prospect St and Willey St. Currently the paper street is marked as a pedestrian walking path across the parking lot in the project area.

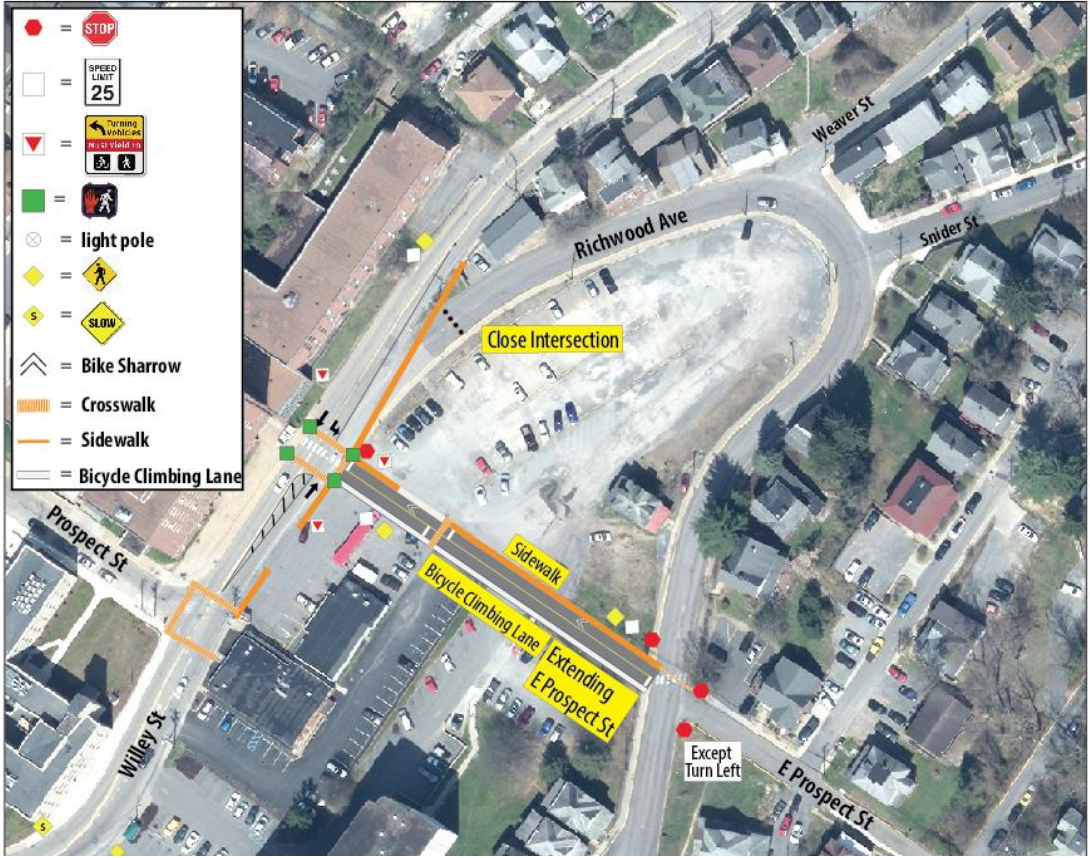
The study identified two alternatives to improve the intersection. The following table shows proposed alternatives address issues identified in the study.

Identified Issues	Countermeasures	
	Alternative 1	Alternative 2
Safety at the Willey St/Richwood Ave intersection	- Converting the Richwood Ave between Willey St and E Prospect St into a one-way street.	- Close the intersection of Willey St and Richwood Ave - Extend sidewalk on Willey St. Provide additional crosswalk on Willey St
Pedestrian crossing Safety on Willey St near the Little General store	- Create a three-way intersection at the E Prospect St and Willey St, including installing pedestrian signal and high-visibility crosswalk. (Information about the pedestrian signal warrant is included in the Appendix B)	
Insufficient lighting on Willey St near the Little General store	- Install light pole at multiple locations in the intersection area. - Enhance existing lighting infrastructure.	
Road safety at the Willey St/Price St intersection	- Install a “slow” sign on Willey St (Southbound) passing Prospect St.	
Pedestrian-vehicle conflict on the parking lot of the Little General store	- further analysis on the impact of potential assessment management at the Little General Store	

Alternative 1-One Way Circle (Short Term)



Alternative 2-Two Way E Prospect St (Long Term)



Study Description

The purpose of the Study is to determine the impact of correcting the subject intersection's unsafe skew on traffic operation in the area and to determine the impact of any correction on the larger transportation network including transit, pedestrians, and bicycles.

Specifically, the study intends to identify alternatives that

- Improve traffic operation, efficiency, and safety.
- Improve pedestrian safety and transit operations.
- Support future development in the study area.

The study area is shown below:



Alternatives considered

- **Signal Warrant.** Evaluate if the existing and proposed traffic pattern meets any warrants for a traffic signal at the study intersection
- **Street Realignment, Street Closure, One-way-street.** Identify and evaluate potential roadway changes on E Prospect, Richwood Ave, and Willey Street.
- **Pedestrian Infrastructure Improvement.** Identify opportunities to improve pedestrian travel in the study area, including enhanced crosswalks, pedestrian signage, lighting, and ADA compliance
- **Access Management.** Evaluate the need for access management in the study area.

Existing Conditions Analysis

Data Collection Process

MPO staff conducted data collection during the fall of 2018, as described in the following table.

Data Types	Description
Turning movement counts	September 4 (Tuesday) and 5 (Wednesday), 2018. 7:30-10:30 AM, 3:30 -6:30 PM
Pedestrian count	September 11 (Tuesday) and 12 (Wednesday), 2018. 7:30-10:30 AM, 3:30 -6:30 PM
Daily traffic volume	August 29 (Wednesday) and 30 (Thursday), 2018. 48-hour period Station 34 on Willey Street, Station 72 on Richwood Ave
Forecasted traffic volume	MPO Travel Demand Model (West Ridge scenario) future year volume in the intersection area
Crash Data	WV DOH crash data, 2013-2017
Observation	Multiple site visits

Data Collection Summary

Traffic Split

		Willey St, NB			Willey St, SB	
		LT	TH	RT	LT	TH
Willey St & Richwood Ave	AM Peak	--	76%	24%	--	--
	PM Peak	--	58%	42%	--	--
Willey St & Prospect St	AM Peak	4%	96%	--	15%	85%
	PM Peak	5%	95%	--	23%	77%

Pedestrian Counts

- Pedestrian volume average 167/per hour during AM three hours count and 257/per hour during PM three hours count.

Traffic Signal Warrant

- Project site does not meet traffic signal warrant.
- Project site meets the 2009 MUTCD Pedestrian signal warrant, for both four-hour-volume warrant and peak-hour warrant. Detailed traffic signal warrant information is included in the Appendix B: Pedestrian Signal Warrant Analysis.

Crashes

Many crashes occurred at night when it is dark and visibility is low. During the evaluation period (2013-2017), top three crash locations are

- 15 crashes at the intersection of Willey St and Price Street
- 6 crashes at the intersection of Willey St and Richwood Ave
- 4 crashes at the intersection of Willey St and Fife St

Identified Issues

The following issues were identified during the data collection and evaluation process:

- **Safety at the Willey St/Richwood Ave intersection**
The intersection is skewed and on a steep slope. Due to the skew of the intersection and the curvature of Willey Street, motorists entering Willey St from Richwood Ave have limited vision, which increases safety concerns for both motorists and pedestrians.
- **Pedestrian crossing Safety on Willey St near the Little General store**
High pedestrian volumes were observed during AM and PM hours. There is a crosswalk, but in most cases, pedestrians do not use it to cross the street. The location meets the 2009 MUTCD Pedestrian signal warrant, for both four-hour-volumes and peak-hour volumes.
- **Insufficient lighting on Willey St near the Little General store**
Many crashes occurred at night when it is dark and visibility is low. MPO staff observed that in evenings, NB motorists on Willey are often blinded by the lights from the SB vehicles on Richwood Ave, making it difficult for motorists to identify pedestrians crossing the street. While there are street lights attached to utility poles in the intersection area, lighting is not sufficient to provide a safe travel environment for pedestrians.
- **Road safety at the Willey St/Price St intersection**
There is a sight line concern at the intersection of Willey St and Price St. This intersection has exceptionally high crash frequency (rear end and opposite direction angle), compared to other intersections within the project area.
- **Pedestrian-vehicle conflict on the parking lot of the Little General store**
The parking lot of the Little General Store was frequently used by the store customers. Several pedestrian-vehicle near misses were observed due to pedestrians passing through the area.

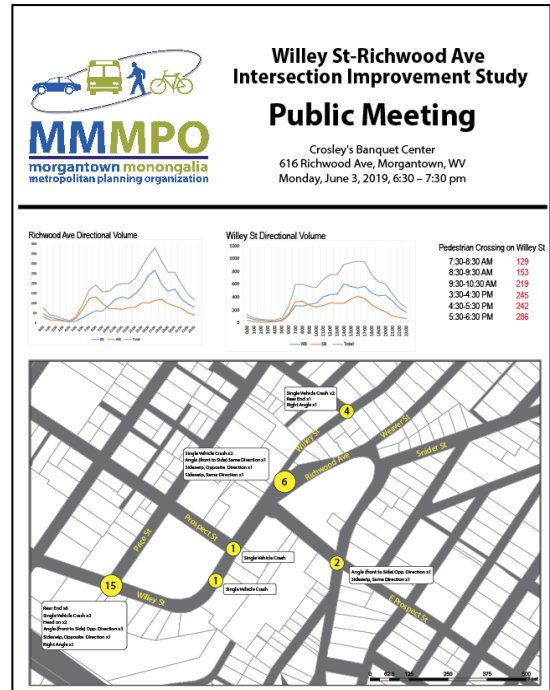
The following opportunities were identified during the data collection and evaluation process:

- **Increasing traffic operation capacity**
Currently, the southbound left-turn from Willey St to Richwood Ave and southbound right-turn from Richwood Ave to Willey St movements are prohibited at the intersection of Willey St and Richwood Ave due to safety concerns. Improving the intersection geometry and allowing the prohibited turns will increase the operational capacity of the intersection.
- **Optimizing land use**
The triangle area at the intersection of Willey St-Richwood is used as an unpaved surface parking lot. Many empty parking spaces were observed throughout the day. The triangle area could be used for more productive purposes. (District: Third Ward, Map: 26, Parcel: 412)
- **E Prospect Street (Paper Street)**
A paper street exists between E Prospect St and Willey St. Currently the paper street is marked as a pedestrian walking path across the parking lot in the project area.

Community Involvement

MPO staff held a community meeting for the Study on June 3, 2019 at Crosley's Banquet Center, 616 Richwood Ave, Morgantown, WV. The meeting was as a part of the June Woodburn Neighborhood Association Meeting, which approximately 10 residents attended.

Materials presented during the meeting included: 1) major findings from data analysis and site observation, 2) information about traffic volume, pedestrians, and crash data, and 3) alternatives for the intersection improvement. Materials were available on the MPO's website for review. Interested participants were encouraged to submit their comments online at www.planttogether.org/comments before June 17, 2019.



Public Comments Summary

Alternative Preference

Both proposed alternatives will bring positive changes to the intersection. When funding is sufficient for both alternatives, Alternative 2 is preferred over Alternative 1. By completely closing the Willey St/Richwood Ave intersection, Alternative 2 presents a safer condition for both vehicle drivers and pedestrians, and is seen as a more intuitive option which will be easier for users to adapt to.

Pedestrian Safety

The study adequately addressed pedestrian issues in the intersection areas at the planning level. The safety of pedestrians crossing Willey St should continue to be a major consideration during engineering design process. Channelizing pedestrian crossing on Willey Street through engineering design may improve the travel environment for both pedestrians and vehicles.

The type of pedestrian crossing signal should be more specifically identified.

Land Use

Transportation improvements should coordinate with future land use development. It appears that Alternative 2 provides more opportunity for land development, as it allows more direct access to parcel 412 on E Prospect St from both directions. Land use strategies in the study area should be clarified before making a final decision on the street improvements.

The Little General Store located in the intersection area attracts considerable pedestrian and vehicle traffic. Potential impact to the store caused by roadway improvements should be considered.

Turning signals

Install a sign requiring right-turn vehicles use right turn signal at the intersection for traffic approaching from downtown and turning into Richwood Ave.

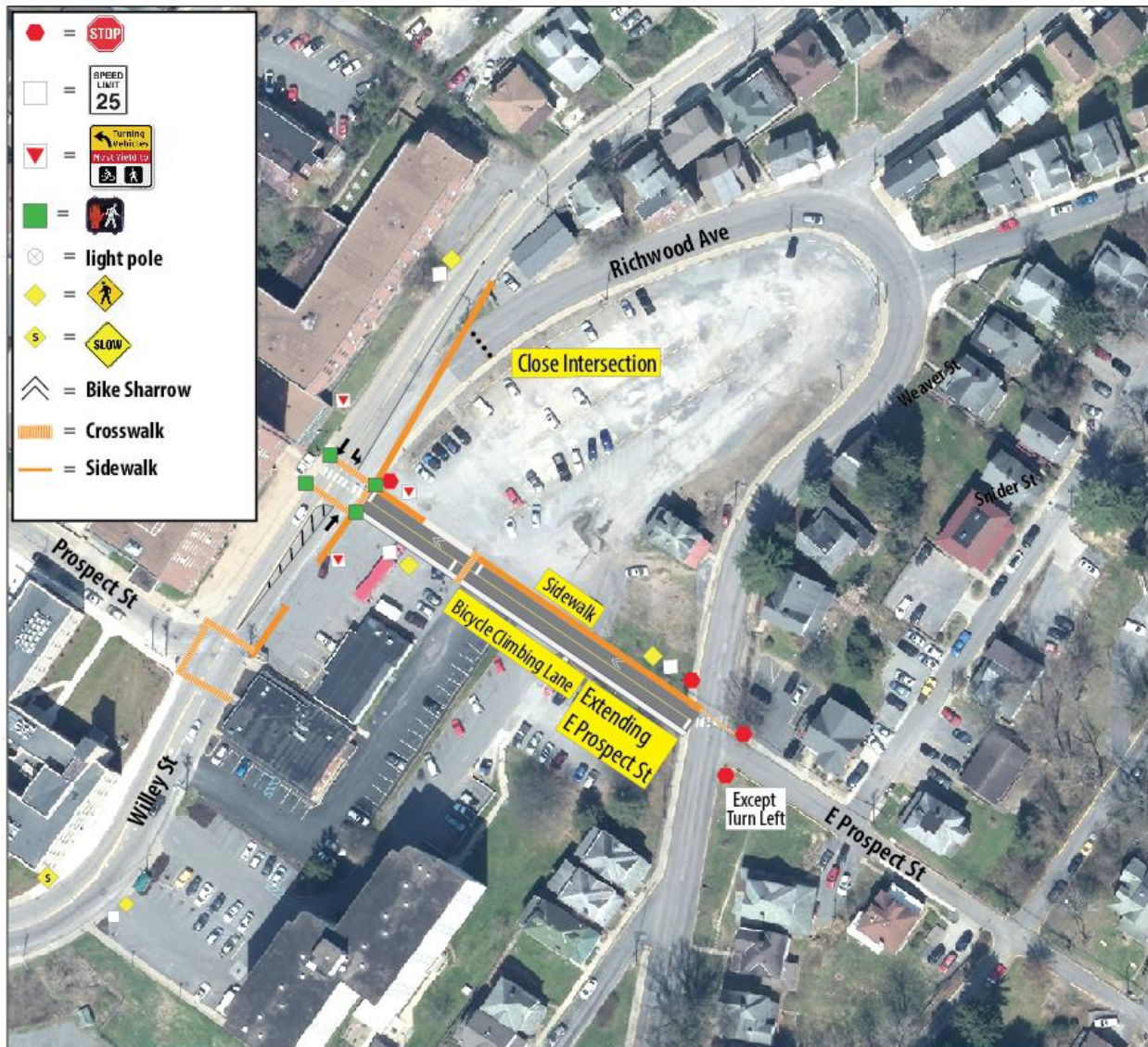
Public comments are documented in the Appendix D.

Recommendations

Alternative Description

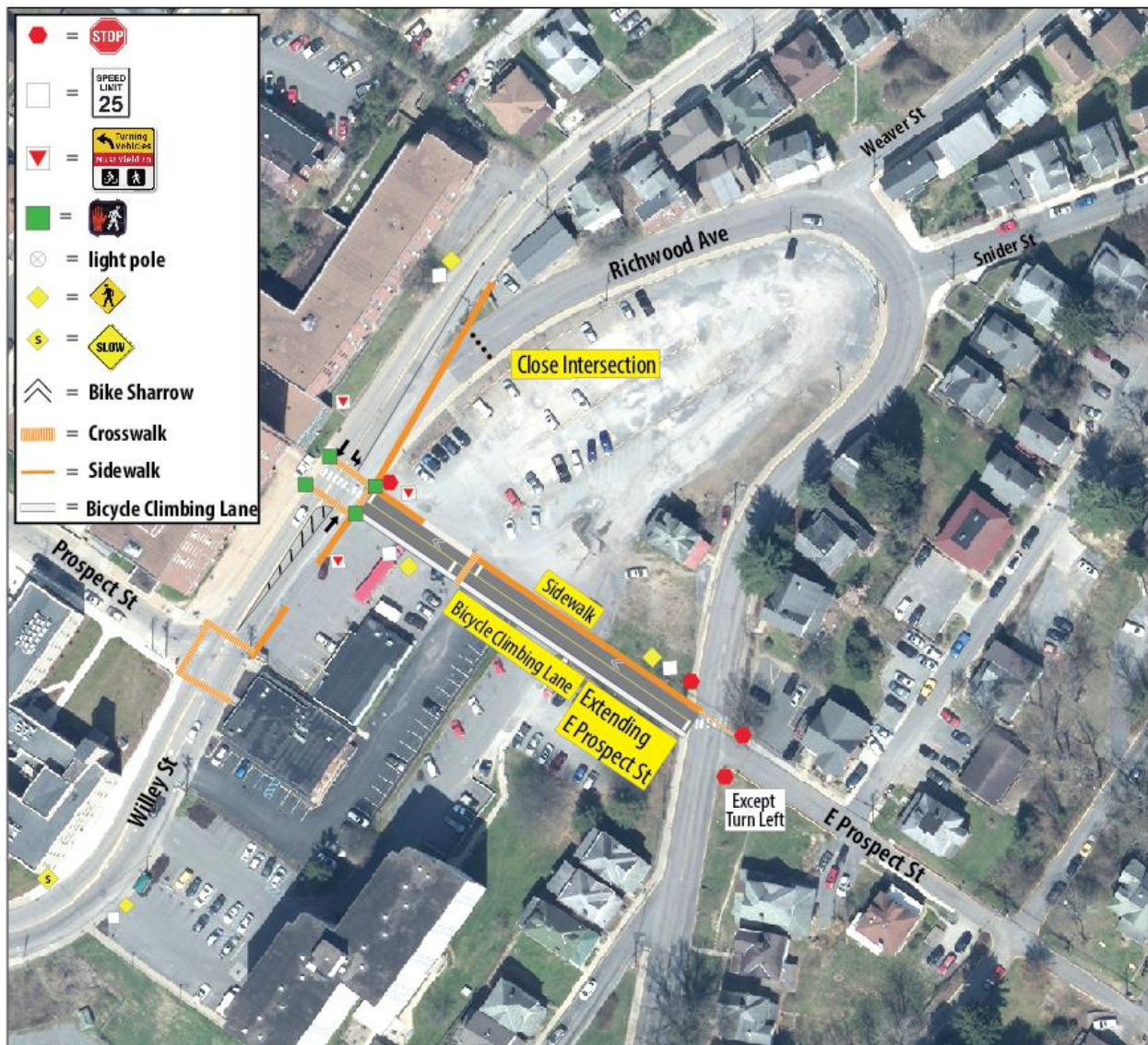
Alternative 1-One Way Circle (Short Term)

- Converting the Richwood Ave between Willey St and E Prospect St into a one-way street. (two way access only for traffic to Weaver St and Snider St)
- Extending E Prospect St to Willey St as a one-way street.
- Create a standard stop-controlled T intersection at the E Prospect St and Willey St.
 - Free-flow on Willey St and stop-control on E Prospect St
 - Improving lighting for pedestrian safety
 - Install pedestrian signal (HAWK) and high-visibility crosswalk
- Provide additional crosswalks on Willey St near the intersection Willey St and Prospect St.
- Add pedestrian warning signs in the intersection area.
- Reduce the speed limit on Willey St and Richwood Ave to 25 MPH in the intersection area.
- Add an additional driveway to access the parcel 412 (District 3, Map: 26)
- Install a “slow” sign on Willey St (Southbound) passing Prospect St.



Alternative 2-Two Way E Prospect St (Long Term)

- Close the intersection of Willey St and Richwood Ave
- Extend E Prospect St to Willey St as a two-way street.
- Create a four-way intersection at Richwood Ave and E Prospect St
 - Free flow for right-turn traffic from E Prospect St to Richwood Ave and left-turn traffic from Richwood Ave to E Prospect St.
- On the extended E Prospect St
 - Install right turn/left turn vehicles-yield-to-pedestrian signs
- Create a three-way intersection at the E Prospect St and Willey St.
 - Free-flow on Willey St and stop-control on E Prospect St
 - Add dedicated left-turn bay on Willey St.
 - Install pedestrian signal (HAWK) and high-visibility crosswalk
- Extend sidewalk on Willey St. Provide additional crosswalk on Willey St near the intersection Willey St and Prospect St.
- Reduce the speed limit on Willey St to 25 MPH in the intersection area.
- Add an additional driveway to access the parcel 412 (District 3, Map: 26)
- Install a “slow” sign on Willey St (Southbound) passing Prospect St.



Alternative Comparison

The first table shows how proposed alternatives address identified issues in the study. The second table compares the advantages and disadvantages of the proposed alternatives:

Identified Issues	Countermeasures	
	Alternative 1	Alternative 2
Safety at the Willey St/Richwood Ave intersection	- Converting the Richwood Ave between Willey St and E Prospect St into a one-way street.	- Close the intersection of Willey St and Richwood Ave - Extend sidewalk on Willey St. Provide additional crosswalk on Willey St
Pedestrian crossing Safety on Willey St near the Little General store	- Create a three-way intersection at the E Prospect St and Willey St, including installing pedestrian signal and high-visibility crosswalk.	
Insufficient lighting on Willey St near the Little General store	- Install light poles at multiple locations in the intersection area. - Enhance existing lighting infrastructure.	
Road safety at the Willey St/Price St intersection	- Install a “slow” sign on Willey St (Southbound) passing Prospect St.	
Pedestrian-vehicle conflict on the parking lot of the Little General store	- Further analysis of the impact of potential change. Work with the management at the Little General Store	

	Advantage		Disadvantage	
	Alt 1	Alt 2	Alt 1	Alt 2
Safety	Better sight-distance for the turning vehicles from E Prospect St (currently Richwood Ave)		Pedestrians need to cross at the extended E Prospect St to get to the Little General Store.	
	More intuitive right-turn from Willey St to Richwood Ave			
	Safer pedestrian crossing on Willey St and Richwood Ave			
	More defined walking path in the parking lot			
		Safer pedestrian travel on Willey St through new sidewalk connection		
Traffic Operation	Allowing right-turn from E Prospect St to Willey, which is currently prohibited (right-turn from Richwood Ave to Willey St)		Increasing travel time for residents living close to the intersection.	
		Allowing left-turn from Willey to E Prospect St, which is currently prohibited (left-turn from Willey St to Richwood Ave)		Less room for freight movement in the parking lot

Next Steps

The following steps have been identified after the completion of this study:

Identify land use strategies at parcel 412 (District 3, Map: 26) and its surrounding area, including desirable access point to potential development on that parcel from Richwood Ave and E Prospect St.

Conduct engineering level design based on the information presented in this report, including an impact analysis. Work with the management at the Little General Store located near the intersection. Consider the utilization of the existing use such as ingress/egress, parking, on-site maneuvering, and delivery accommodation.