Public Meeting
WV 45 Traffic Operations and Safety Study

Welcome

Welcome to today's Informational Public Meeting. The West Virginia Division of Highways (WVDOH) has recently prepared a traffic operations and safety study for the WV 45 corridor from Blue Ridge Community and Technical College to New York Avenue. The objectives for this workshop are:

- To present the future conditions if no improvements are made
- To present the alternatives under consideration

This workshop is from 6:00 pm to 8:00 pm and there will be no formal presentation. The workshop is intended to be informal to maximize the interaction between the citizens, WVDOH, and the consultant team. We invite you to browse the displays and encourage discussions with the project team. A comment sheet is included in this package or comments can be submitted online. This meeting complies with the public involvement requirements of the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act.

Background

The purpose of this traffic operations and safety study is to evaluate current and future traffic conditions, identify potential deficiencies, and develop alternatives to enhance traffic flow and improve safety within the study area. The study area includes approximately 1.46 miles of WV 45 and nine intersections.

On the eastern side of the corridor, WV 45 is a heavily-traveled arterial through a major commercial district. On the western side of the I-81 Interchange, WV 45 becomes a two-lane, rural roadway outside of the city where space is available for further development. Currently, two developments are underway within the study area that have the potential to further complicate traffic conditions. There is also potential for developments west of the interchange just outside of the study area.

To address the traffic and safety concerns, five (5) alternatives were developed and evaluated using traffic simulation models. The alternatives are Alternatives 1, 2, 3, 4, and No-Build. As recommended in the WV 45 Traffic Operations and Safety Study, prepared by HDR Engineering in February 2016, Alternative 4 is the recommended alternative for further design. Alternative 4 proposes the combination of Alternatives 2 and 3, specifically an additional thru capacity on WV 45 in each direction, relocation of the I-81 NB Off-ramp right-turn movement, and a new Connector Road parallel to WV 45 to the north.

Key Findings

WV 45 Corridor Crash Analyses

Crash data were provided for the study area for the period from January 1, 2011 to December 31, 2013. The statewide average crash rate for US and WV state routes is 543 crashes per hundred million vehicle miles (HMVM).

Crashes are categorized into nine (9) crash types

- Angle – Direction not specified
- Right Angle
- Head-On
- Angle (front to side), opposite direction
- Angle (front to side), same direction
- Rear-End
- Sideswipe, opposite direction
- Sideswipe, same direction
- Single vehicle crash

Along WV 45 within the study limits, there were a total of 224 crashes during the three-year period resulting in 114 injuries and 3 fatalities. West of I-81 interchange, where 25 of those crashes were reported, the crash rate calculated to be 1,076 crashes per HMVM. East of I-81 Interchange, where most of the commercialized development exists and therefore an increased number of accidents, the crash rate was calculated to be 893 crashes per HMVM.

The crash rate for an intersection is categorized into average, above average, or significantly above average and is described units of million entering vehicles (MEV).

As expected, the most common crash type at the signalized intersections was rear-end. Only one intersection would be categorized as having above average crash rates (WV 45 with Foxcroft Avenue). All of the rest of the signalized intersections were categorized as having average crash rates, with rates ranging from 0.44 to 1.31 crashes per MEV. The intersection of WV 45 with Winchester Avenue (US 11) experienced the highest crash rating of this group with 1.31 crashes per MEV.

Evaluation of Alternatives

2024 No-Build Conditions

To determine the future traffic conditions if no improvements were made, the 2024 No-Build conditions were analyzed quantitatively to measure the future conditions. In addition, this analysis was necessary to determine the baseline conditions for the corridor to use as a benchmark for comparing the future alternatives. The results of these analyses provided insight as to future potential deficiencies in the study area if no improvements were made and the developments west of the interchange are completed and functioning at full occupancy.

The 2024 No-Build analysis predicted the following conditions:

- Failing movements during Friday PM and Saturday peak hours in the westbound direction
- Significant delays at the WV 45 with Winchester Ave (US 11) intersection
- Increased travel times throughout the corridor when compared to 2014
- Delay for the left turning movement at Foxcroft is so significant it impacts other intersections

Overall Intersection Improvements

The primary focus of this study is to propose coordinated improvement options along WV 45; however, there were certain improvements that were assumed would happen under all alternatives to accommodate potential growth and provide increased safety west of the interchange. These improvements included, but were not limited to, signal coordination/timing optimization and the addition and/or extension of left and right turn lanes.

2024 Build Alternative 1:
Intersection Improvements

The concept behind Alternative 1 is to provide intersection improvements at key intersections along the corridor. These improvements come in the form of extending or lengthening turning lanes. The Conceptual Cost Estimate for this Alternative is $1,549,000.

2024 Build Alternative 2:
Additional Thru Capacity

Alternative 2 provides additional WV 45 EB and WB thru capacity in the heart of the corridor to reduce congestion. The existing right-turn lanes are transformed and lengthened into an additional thru-right lane. The exclusive right-turn lanes are removed except at the end of each new lane run, which terminate as right-only lane drops. The Conceptual Cost Estimate for this Alternative is $2,106,000.

2024 Build Alternative 3:
Trip Diversion

This Alternative takes a different approach by adding capacity adjacent to the WV 45 corridor through a backage road on the north side of WV 45. This improvement was coupled with relocating the I-81 NB off-ramp right-turn movement eastward to line up with the intersection with Foxcroft Avenue. These improvements are modeled together in order to modify turning volumes and divert traffic away from the corridor. The Conceptual Cost Estimate for this Alternative is $2,820,000.

2024 Build Alternative 4:
Ultimate Build

This alternative combines Alternatives 2 and 3 to provide an ultimate build alternative incorporating all proposed improvements. Major recommendations include additional thru capacity on WV 45 in each direction, relocation of the I-81 NB Off-ramp right-turn movement, and a new Connector Road parallel to WV 45 to the north. The Conceptual Cost Estimate for this Alternative is $3,300,000.

A comparison matrix was developed as a basis for evaluating the alternatives. It provides a concise summary of significant differentiating factors regarding performance, impacts, and characteristics of each alternative. The evaluation matrix is categorized in four areas: Safety, Design and Operations, Community, and Financial.

ALTERNATIVES EVALUATION MATRIX

EVALUATION CONSIDERATIONS		ALTERNATIVE			
		1	2	3	4
Safety	Reduction of Conflict Points	4	4	2	2
	Crash Severity	4	3	2	2
Design and Operations	Improved Traffic Flow	5	3	1	1
	Driver Expectancy	3	2	2	2
Community	Property Impacts	1	3	4	5
	Constructability	3	3	4	4
	Community Cohesion	4	4	1	1
Financial	Construction Costs	1	2	5	5
	Future Maintenance Costs	2	3	4	4
	SCORE	27	27	25	26

1-2	Lowest likely impacts, addresses elements with good conformance to projects goals, low construction/ maintenance costs
3	Mid-range of impacts, addresses elements to somewhat conformance to project goals, medium construction/maintenance costs
4-5	High likely impacts, does not address elements or conform with project goals, high construction/ maintenance costs

LEVEL OF SERVICE ILLUSTRATION

Recommendations

Recommendations were made to address safety and capacity concerns throughout the corridor and were included with each of the four alternatives. In addition, corridor-wide improvements were recommended to address access management and pedestrian/bicycle accessibility. The four alternatives to address the safety and operations are listed below:

- **Alternative 1** – Intersection Improvements
- **Alternative 2** – Additional Thru Capacity
- **Alternative 3** – Trip Diversion
- **Alternative 4** – Ultimate Build (combination of Alternatives 2 and 3)

At the request of WVDOH, Alternative 4A – Ultimate Build + Weis Development was evaluated to determine the impacts of the proposed Weis Development on the WV 45 corridor, assuming that all improvements from Alternative 4 (Ultimate Build) were implemented. This alternative operated similarly to Alternative 4; however operations do decline, especially at signalized intersections in the eastern portion of the corridor.

Based on the alternative evaluation matrix, the alternatives scored very similarly; however, Alternative 4 provides the best option for the area in terms of congestion management, safety and community cohesion, despite the higher costs and property impacts. In addition, improvements could be staged to address immediate deficiencies within the corridor.

Why should you be involved in the project?

Comments on this project and its potential impacts are requested from the public to assist in the study and development of alternatives resulting in the selection of a preferred alternative. The comments and suggestions you provide are important so the agencies involved can hear the concerns of the people who live and work in the area. Your input will be used to guide the study team as the project moves forward.

You may comment online or in writing. Those wishing to file written comments may send them to the following on or before Friday, September 23, 2016:

Mrs. Cindy L. Cramer, P.E.
Director, Traffic Engineering Division
West Virginia Division of Highways
1900 Kanawha Boulevard East, Building 5, Room A-550
Charleston, West Virginia 25305

Visit the WVDOH Website at
http://go.wv.gov/dotcomment for project information and the opportunity to comment on the project.