

OFFICE MEMORANDUM

DATE: October 21, 2015
TO: Mr. Bill Watterson, Director of Service & Engineering
FROM: Daniel Bieberitz, P.E., PTOE & Steve Jewell, P.E., PTOE
SUBJECT: Old Worthington Mobility Study – Phase 1 Update

The following information was requested as follow up items to be brought back at the next meeting:

1. Where have Pedestrian Hybrid Beacons been installed at four way intersections and what has the impact been in those locations?
DLZ Response: Tucson, AZ is where the HAWK (now called Pedestrian Hybrid Beacon or PHB) was developed and tested. There are approximately 110 PHB's located at four legged/three legged intersections and about three located at mid-block crossings. They have had no problems with the PHBs at the intersections. The City provided the research results to Federal Highway Administration (FHWA) and the National Committee of Uniform Traffic Control Devices (NCUTCD), requesting the PHB be allowed in the MUTCD as an acceptable traffic control device based on its safety record.
2. How does the Pedestrian Hybrid Beacon work in relationship to traffic coming from Stafford onto High Street that may see the stopped High Street traffic as an opportunity to move quickly onto High Street?
DLZ Response: The side streets are stop sign controlled. Drivers on the side streets can enter/cross the main street at any time yielding to vehicles, bicycles and/or pedestrians. With experience, drivers will utilize the activated PHB to assist them in entering the main street if it is activated when they are at the stop sign.
3. What positive impact would be had by removing the north crosswalk at the intersection and only having one on the south side?
DLZ Response: Even though pedestrians would have one crossing point at this intersection, it would be a considerably easier and safer crossing of a busy major street. (The PHB can only be used for one crossing.) DLZ recommends the removal of the north crosswalk.

4. What information can be collected regarding the other phases of the Old Worthington Study because uniformity is something worth considering as a recommendation is made on Stafford and High Street?
DLZ Response: Phase 2 of the study evaluates the costs, advantages and disadvantages of utilizing PHB's vs. upgrading the existing sign devices. Uniformity is a major advantage to driver and pedestrian expectations, which enhances safety. Our field observations also captured the fact that drivers do not always stop/yield to pedestrians at the Village Green and Short Street crossings. This may be due to the fact that the signs have some maintenance issues, are hard to see, and that they do not use flashing yellow indications that are prevalent for most pedestrian crossing warning signs.
5. What exactly is included in the \$55,000 cost estimate for the Pedestrian Hybrid Beacon?
DLZ Response: We have developed a breakdown of costs which will be included in the report, [see attached]
6. Some clarification on some of the standards as they relate to the Ohio Manual.
DLZ Response: The Ohio MUTCD is patterned after the National MUTCD, which is where considerable professional input and research is considered in the development of the Manual. There are Standards (SHALL conditions) which are not to be modified or changed. The Guidance (SHOULD conditions) allow for some variation in the application of traffic control devices based on engineering judgment.

The National Committee on Uniform Traffic Control Devices (NCUTCD) has proposed a revision to the wording for the next MUTCD that removes the guidance of a PHB 100 feet away from an adjacent side street.¹ The NCUTCD assists in the development of standards, guidelines and warrants for traffic control devices and practices used to regulate, warn and guide traffic on streets and highways, and makes recommendations to the Federal Highway Administration (FHWA) and to other appropriate agencies regarding proposed revisions and interpretations to the Manual on Uniform Traffic Control Devices (MUTCD) and other accepted national standards.

¹ The signals Technical Committee proposed recommended changes to the MUTCD regarding the installation of a Pedestrian Hybrid Beacon, which were approved by the National Committee Council at a meeting on June 23, 2011 and forwarded to FHWA for approval.

PHB Installation		COST		Contingency	Total
				25%	
1)	Support Poles & Foundations	\$17,500		\$4,375	\$21,875
2)	Pedestrian Signal Heads	\$1,400		\$350	\$1,750
3)	Vehicular Signal Heads	\$2,900		\$725	\$3,625
4)	Signing	\$2,000		\$500	\$2,500
5)	Signal Cable & Conduit	\$7,200		\$1,800	\$9,000
6)	Controller & Cabinet	\$1,200		\$300	\$1,500
7)	Power Service and Cable	\$2,000		\$500	\$2,500
8)	Pedestrian Pushbuttons	\$450		\$113	\$563
9)	Crosswalk Striping	\$1,000		\$250	\$1,250
10)	Systems Timing (Coordination)	\$1,500		\$375	\$1,875
11)	Maintaining Traffic (5%)	\$1,858		\$464	\$2,322
12)	Construction Layout Stakes (3%)	\$1,115		\$279	\$1,394
13)	Mobilization	\$4,000		\$1,000	\$5,000
		TOTAL =	\$44,122	\$11,031	\$55,153