

**RESOLUTION 21 - 19. 2021**  
**COLUMBIA TOWNSHIP, HAMILTON COUNTY, OHIO**

**AUTHORIZING THE ADMINISTRATOR TO ENTER INTO AN AGREEMENT WITH THE HAMILTON COUNTY ENGINEER TO IMPROVE THE PLAINVILLE RD. PEDESTRIAN CROSSWALK AT GRACE AVE. WITH FLASHING SAFETY LIGHTS AND ENHANCED STRIPING AND SIGNAGE, DISPENSING WITH THE SECOND READING, AND DECLARING AN EMERGENCY**

**WHEREAS**, the Board of Trustees of Columbia Township, Hamilton County, Ohio seeks to improve pedestrian safety in the growing Plainville Business District as new businesses are opening, existing businesses are expanding, and incidents between pedestrians and vehicles are increasing; and

**WHEREAS**, Columbia Township, in partnership with the Hamilton County Engineer as the owner of Plainville Rd., conducted a pedestrian safety study, which confirmed that the existing pedestrian crosswalk at Grace Ave. warrants being improved and specifically recommends installing high visibility flashing safety lights and enhancing crosswalk striping and signage, hereinafter known as the "Project"; and

**WHEREAS**, the Hamilton County Engineer requires Columbia Township to enter into an agreement to perform the Project on Plainville Rd. and to agree to fund and maintain the improvements; and

**WHEREAS**, the Board, upon majority vote, hereby dispenses with the requirement that this resolution be read on two separate days, and hereby authorizes the adoption of this resolution upon its first reading; and,

**WHEREAS**, this Resolution is hereby declared to be an emergency measure necessary for the preservation of the public peace, health and welfare of the Township; the reason for the emergency is the Township must enter into the Hamilton County Engineer's agreement immediately so that it may advertise for and build the pedestrian safety improvements in the busy Plainville Rd. corridor at the earliest possible time.

**FURTHERMORE**, be it resolved by the Board of Trustees of Columbia Township that the Columbia Township Administrator shall enter into an Agreement and any necessary amendments; and,

Motion to accept Resolution made by: Mr. Kubicki

Seconded by: Ms. Hughes

**VOTE:**

**TRUSTEE**

**Voting**

**Signature**

**Date**

David Kubicki, President

yes



04/13/2021

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**COLUMBIA TOWNSHIP, HAMILTON COUNTY, OHIO**

Brian Lamar, Vice-President	<u>yes</u>	<u>Brian Lamar</u>	04/13/2021
Susan Hughes, Trustee	<u>yes</u>	<u>Susan Hughes</u>	04/13/2021

**ATTEST:** \_\_\_\_\_ 04/13/2021  
Caroline Heekin, Fiscal Officer

Passed April 13<sup>th</sup>, 2021

**Attachment A – Hamilton County Engineer Agreement**

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COLUMBIA TOWNSHIP, HAMILTON COUNTY, OHIO

Brian Lamar, Vice-President yes Brian Lamar 04.13.2021

Susan Hughes, Trustee yes Susan Hughes 04.13.2021

ATTEST: Car B. Heekin 04.13.2021  
Caroline Heekin, Fiscal Officer

Passed April 13<sup>th</sup>, 2021

Attachment A – Hamilton County Engineer Agreement



**JOINT AGREEMENT BETWEEN HAMILTON COUNTY AND COLUMBIA TOWNSHIP  
FOR THE INSTALLATION OF A FLASHING PEDESTRIAN SIGNAL  
ON PLAINVILLE ROAD AT GRACE AVENUE**

This JOINT AGREEMENT is entered into on this \_\_\_\_\_ day of \_\_\_\_\_, 2021, by and between the Board of County Commissioners of Hamilton County, Ohio, hereinafter referred to as the "COUNTY", on behalf of the Hamilton County Engineer, hereinafter referred to as the "ENGINEER", and the Board of Township Trustees of Columbia Township, hereinafter referred to as the "TOWNSHIP", acting by and through its duly authorized TOWNSHIP agent(s).

The TOWNSHIP desires to install a flashing pedestrian signal, hereinafter referred to as "FPS", on Plainville Road at Grace Avenue, hereinafter referred to as the "PROJECT".

Whereas,

- 1.) the TOWNSHIP has submitted the required documentation/information to justify the installation of the FPS, a copy of which is marked Attachment A, is affixed hereto and is incorporated herein by reference; and
- 2.) the COUNTY has reviewed and approved the documentation/information submitted by the TOWNSHIP; and
- 3.) the PROJECT is required for, and conducive to, the orderly and safe flow of travel and pedestrians through the area and that the public will benefit by the construction of said PROJECT; and.
- 4.) the PROJECT is within the dedicated road right-of-way(s) under the jurisdiction of Hamilton County.

Therefore:

The COUNTY and/or the ENGINEER will:

- 1.) review and approve the plans for the installation of the FPS, such approval shall not be unreasonably withheld.
- 2.) permit the TOWNSHIP to install the FPS within the right-of-way of Plainville Road.
- 3.) inspect the installation/construction of the PROJECT.
- 4.) will be responsible for **NONE** of the costs involved in the design of the FPS; the installation of the FPS; and/or the operation, maintenance, repair, replacement or removal of the FPS.

The TOWNSHIP will:

- 1.) prepare or have a qualified firm prepare plans for the installation/construction of the FPS.
- 2.) submit or have the qualified firm submit the plans to the COUNTY for review and approval.
- 3.) agree that no installation/construction of the FPS is to commence until the COUNTY has reviewed and approved the plans.
- 4.) coordinate the reviewing of the plans by all necessary parties, i.e. utility companies.
- 5.) be responsible for ALL of the costs involved in the design of the FPS; the installation/construction of the FPS; and/or the operation, maintenance, repair, replacement or removal of the FPS.
- 6.) be responsible for any and all upgrades that may become necessary due to changes in the applicable standards as contained in the Ohio Manual of Uniform Traffic Control Devices.
- 7.) be responsible for ALL of the costs involved in any and all of the upgrades, including the design of the upgrade and the installation/construction of the upgrade.

The COUNTY and the TOWNSHIP mutually agree that:

- 1.) if the COUNTY determines that the FPS is no longer justified or that the FPS has fallen into disrepair and represents a danger to the public, the TOWNSHIP will totally remove the FPS and restore the disturbed areas to a state that is acceptable to the COUNTY.
- 2.) if the TOWNSHIP does not remove the FPS when so directed by the COUNTY, the COUNTY will remove the FPS and restore the disturbed area(s) and will invoice the TOWNSHIP for the work performed. The TOWNSHIP will pay said invoiced amount to the COUNTY within thirty (30) days.

This JOINT AGREEMENT shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the COUNTY and the TOWNSHIP have signed this JOINT AGREEMENT as indicated in their respective acknowledgements below.

**COLUMBIA TOWNSHIP:**

By: \_\_\_\_\_

\_\_\_\_\_  
Title

Approved as to Form:

By: \_\_\_\_\_

\_\_\_\_\_  
Title

**HAMILTON COUNTY:**

By: \_\_\_\_\_

Hamilton County Engineer

Board of County Commissioners, Hamilton County, Ohio:

By: \_\_\_\_\_

County Administrator

Approved as to Form:

By:  \_\_\_\_\_

Assistant County Prosecutor

# MEMORANDUM

**DATE:** 1/15/21  
**SUBJECT:** Plainville Road Crosswalk  
**PREPARED BY:** TEC Engineering, Inc.  
**PREPARED FOR:** Columbia Township

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TEC Engineering Inc. performed a Pedestrian crossing analysis in October of 2020 for the crosswalk located on Plainville Road at Grace Avenue.

TEC collected pedestrian and vehicular counts at the crossing location in September 2020. During the peak hour (5-6pm) there were 23 pedestrians crossing Plainville and 1004 vehicles traveling along Plainville. TEC also counted the number of pedestrians on a weekend morning as there is a coffee shop adjacent to the crossing. The peak hour for pedestrians was 9-10 am with 59 pedestrians crossing in the hour.

The September vehicular volume was increased by 10% at account for the downturn in traffic due to Covid 19 restrictions. This factor is based on the average decrease we have seen in traffic the Cincinnati area. TEC used the above factored volumes along with site conditions to complete the calculations for overall pedestrian delay. The overall pedestrian delay considers the vehicle volume, crossing distance and walking speed to determine the necessary gaps in traffic along with the average pedestrian delay. The average delay is 254 seconds and the overall delay is 1.6 hours according to the calculations on NHCRP report 562, which is used in Hamilton County. This value would exceed the minimum of 1.3 hours to warrant an enhanced crossing. Therefore, an enhanced pedestrian crossing is warranted.

TEC determined there is adequate stopping sight distance at this location based on a speed of 35 mph. The crossing is at the crest of a small vertical curve, but this does not impede the sight line. While the crossing is less than 300' from a signalized intersection, the existing location of the crossing is the preferred location. Moving the crossing to the south side of the Grace Avenue intersection would make the crossing more difficult to see for southbound vehicles.

TEC also reviewed pedestrian volumes at the two adjacent intersections to look at overall pedestrian crossing demand along the corridor. At Plainville and Bramble, which is a signalized intersection there were 50 pedestrians crossing during the peak. There are pedestrian signals for crossing Plainville on the north and south sides. However, there are no crosswalk markings on the south crossing. A crosswalk should be added to this crossing. This intersection is maintained by the City of Cincinnati.

At Plainville and Cambridge there were 25 pedestrians crossing Plainville during the PM Peak. There are no marked crossings though there are curb ramps on the corners. While these curb ramps are not designed for crossing Plainville, the lack of crosswalks makes this ambiguous. Given the number of



pedestrians crossing there throughout the PM Peak, signage and markings should be added for the crossings across Cambridge. The intersection of Plainville and Murray is just to the south of the study area. This is an unconventional intersection. Field observation show some driver confusion at this intersection which makes visibility and clear striping and signing even more important as drivers are coming out of a confusing area. Prioritizing this intersection as the primary crossing location may be problematic due to the unconventional nature of the intersection immediately to the south.

TEC recommends providing an RRFB at the Grace Avenue location (North leg Crossing). In addition, the high visibility crosswalk should be restriped (even though it is at the crest of a hill). The crest on the roadway at this location actually creates a prioritized crossing for pedestrians and makes them more visible for northbound and southbound drivers.

At Bramble, TEC recommends striping a crosswalk for the south crossing to match the existing crosswalks at the intersection.

At Cambridge, TEC recommends striping high visibility crosswalks for the east and west legs of the intersection. Signage may also be added to prohibit crossing Plainville and directing pedestrians to the Grace Ave crossing. All of these improvements will prepare drivers for pedestrians within this area.

**FIGURE 1: RECOMMENDATIONS**



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## PROCEDURE TO DETERMINE NEED FOR FLASHING PEDESTRIAN CROSSING SIGNS

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### Information

Pedestrian activated flashing pedestrian signs warn traffic of a pedestrian waiting to cross the roadway in crosswalks that are installed at locations that have insufficient gaps in the roadway vehicular traffic or have poor sight distance. Possible locations for flashing pedestrian signs are at crossings that do not require the roadway traffic to stop and where a large volume consistent pedestrian traffic is expected.

The sight distance to be determined is the stopping sight distance (SSD) for the vehicle measured from the location of the crosswalk.

While flashing signs may help increase awareness of pedestrians crossing the roadway, the signs do not relieve pedestrians of their responsibility to enter the roadway safely. Also, as the number of flashing pedestrian signs increases, their effectiveness decreases. Therefore, these signs should be used sparingly and only when absolutely necessary.

Therefore, prior to approving flashing pedestrian signal(s), when sight distance is poor, the possibility of relocating the crosswalk or the removal of the sight obstruction must be explored. This can often be accomplished by trimming back trees, bushes, etc. Increasing the sight distance will always have a greater positive impact on safety than installing a sign.

### Purpose and Objective:

The purpose of this procedure is to establish the process to be followed when considering the need for a flashing pedestrian sign. The objective is to clarify and streamline the process so that it can be completed with improved efficiency and consistency. For convenience, this procedure is designed to be used as a form.

### References:

Ohio Manual of Uniform Traffic Control Devices §2C.50  
Location and Design Manual, Volume 1, Figures 201-1E  
NCHRP Report 562, Flowchart for Guidelines for Pedestrian Crossing Treatments

### Process:

The applicant **MUST** prepare and submit a request for the Flashing Pedestrian Sign (FPS) to the Engineer.

This request **MUST** include the following information:

1) A request for the FPS indicating:

- a) Type of sign (i.e. LED, Beacon, solar, electric etc): Overhead Beacon
- b) Location: 4200 Plainville Road

2) Pertinent Information

- a) Pedestrian volume (Pedestrians per day): 59/ hour on saturday, 23/ hour PM Peak
- b) Roadway ADT (Average Daily Traffic): 7.900 (ODOT TMMS)
- c) Does pedestrian traffic vary by season or day of week? Yes  No   
If yes, please explain: Weekend counts are high, though pedestrians are crossing during traditional peak hours as well
- d) Would signs need to be covered up for part of the year? Yes  No   
If yes, for what time period? \_\_\_\_\_
- e) Check files for any previous studies or other pertinent information.  
Summary of findings: \_\_\_\_\_
- f) Evaluate crash history.  
Years Ran (min. 3 years): 2017-2019 Number of Crashes 2  
Draw Collision Diagram (Optional – may depend on number of crashes found).

3) Field Information based upon field visit.

- a) Drawing showing conditions (Road width, alignment, sight distances. location of FPS)
- b) Date the information on the drawing was obtained from a site visit 9/10/20
- c) Photos (optional)
- d) Determination if sufficient stopping sight distance is available? Yes  No   
(i) If d is no, can the crosswalk be relocated? Yes  No   
If (i) is no, explain: \_\_\_\_\_
- (ii) If d is no, is there a reasonable option to increase the sight distance? Yes  No   
If (ii) is yes, explain: \_\_\_\_\_
- (iii) Do other sight conditions impact the need for flashing pedestrian sign?  
Yes  No   
If yes, explain: \_\_\_\_\_



Tracking the application:

Date application received: 15 JAN 2021

Date of Final Decision: 12 FEB 2021

Reason(s) for decision: The crosswalk meets the requirement for a enhanced crosswalk.

Any Recommendations: Would recommend ground mounted enhanced crosswalk signs.

Follow up with decision.

- a) If application is denied, respond to applicant.

Date Responded: \_\_\_\_\_

- b) If application is approved, send agreement to applicant for signatures prior to installation.

Date agreement sent to applicant: \_\_\_\_\_

Date installation permit approved: \_\_\_\_\_

Date FPS installed: \_\_\_\_\_

Changes/Revisions: \_\_\_\_\_

Reviewer: Jeffrey T. New

<b>WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS</b>		
Analyst and Site Information		
Analyst: TEC Engineering, Inc. Analysis Date: 9/30/2020 Data Collection Date: 9/17/2020	Major Street: Plainville rd Minor Street or Location: Grace Ave Peak Hour: 5:00 PM - 6:00 PM	
Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85 <sup>th</sup> percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), $V_p$	2a	23
If $2a \geq 20$ ped/h, then go to Step 3.		
If $2a < 20$ ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj-s}$	3a	1104
Minimum signal warrant volume for peak hour (use 3a for $V_{maj-s}$ ), SC SC = $(0.00021 V_{maj-s}^2 - 0.74072 V_{maj-s} + 734.125)/0.75$ OR $[(0.00021 3a^2 - 0.74072 3a + 734.125)/0.75]$	3b	229.8
If $3b < 133$ , then enter 133. If $3b \geq 133$ , then enter 3b.	3c	229.8
If 15 <sup>th</sup> percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	229.8
If $2a \geq 3d$ , then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	40
Pedestrian walking speed (ft/s), $S_p$	4b	3.5
Pedestrian start-up time and end clearance time (s), $t_s$	4c	3.0
Critical gap required for crossing pedestrian (s), $t_c = (L/S_p) + t_s$ OR $[(4a/4b) + 4c]$	4d	14.4
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj-d}$	4e	1104
Major road flow rate (veh/s), $v = V_{maj-d}/3600$ OR $[4e/3600]$	4f	0.3
Average pedestrian delay (s/person), $d_p = (e^{v t_c} - v t_c - 1) / v$ OR $[(e^{4f \times 4d} - 4f \times 4d - 1) / 4f]$	4g	232.9
Total pedestrian delay (h), $D_p = (d_p \times V_p) / 3,600$ OR $[(4g \times 2a) / 3600]$ (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	1.49
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	High
<b>Total Pedestrian Delay, <math>D_p</math> (from 4h) and Motorist Compliance, Comp (from 5a)</b>	<b>Treatment Category</b> (see Descriptions of Sample Treatments for examples)	
$D_p \geq 21.3$ h (Comp = high or low) OR $5.3 \text{ h} \leq D_p < 21.3$ h and Comp = low	RED	
$1.3 \text{ h} \leq D_p < 5.3$ h (Comp = high or low) OR $5.3 \text{ h} \leq D_p < 21.3$ h and Comp = high	ACTIVE OR ENHANCED	
$D_p < 1.3$ h (Comp = high or low)	CROSSWALK	

Figure A-2. Worksheet 1.



BRAMBLE AVE.

PLAINVILLE RD.

GRACE AVE.

CAMBRIDGE AVE.

Existing Conditions

BY



Plainville Road  
Columbia Township