INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 20-20

October 8, 2020

TO: **All Design, Operations, District Personnel, and Consultants**

FROM: ***/s/ Katherine Smutzer***
Katherine Smutzer
Acting Director, Standards & Policy
Engineering Department

SUBJECT: **Accessible Pedestrian Signal (APS) Studies, Pedestrian Push Buttons, and Curb Ramps**

REVISES: **Sections 51-1.06(01), 51-1.06(02), 51-1.06(03), 502-3.03(05), and 502-3.04 (05)**

EFFECTIVE: **Projects Letting on or after March 10, 2021**

Indiana Design Manual (IDM) Sections 51-1.06(01), 51-1.06(02), 51-1.06(03), 502-3.03(05), and 502-3.04(05) have been revised to reflect changes in design procedure for pedestrian push buttons, including updates to the approved material list and Operations Memo 14-01. The operation memo has been attached and revised sections included below for reference.

When pedestrian signals are included in a project an APS Study will no longer be required. APS will always be used, except in rare cases when there is a determination of technical infeasibility by INDOT's ADA Technical Advisory Committee for situations noted in IDM Section 502-3.04(05).

Questions regarding project specific applications for pedestrian signals should be discussed with the appropriate district Traffic Engineer and questions regarding ADA specific items should be sent to ADA@indot.in.gov.

51-1.06(01) Accessible Pedestrian Signal [R209 and R307] [Rev. Nov. 2016, Oct. 2020]

An accessible pedestrian signal (APS) is a device that communicate information about the WALK and DON'T WALK intervals at signalized intersections in visual and non-visual format. This device is essential for a pedestrian who is blind or has low vision to effectively navigate the crossing.

For a new signal installation, signal modernization, or intersection improvement project, the Department will determine whether pedestrian heads are appropriate for the location. If pedestrian heads are appropriate, APS must be used in accordance with Section 502-3.04(05).

51-1.06(02) Placement and Configuration [Rev. Nov. 2016, Oct. 2020]

The placement and configuration of the pedestrian pushbutton assembly is critical to proper function. Engineering judgment is required to determine the optimal installation at each crossing. Variations in curb radius, available right of way, presence of a buffer or curb ramp, and existing infrastructure make each crossing unique.

Details for pedestrian pushbutton assembly placement and configuration are shown in INDOT *Standard Drawing* series 805-PPBA. The details are in accordance with the IMUTCD 4E.08 – 4E.13 and the PROWAG.

1. Pushbutton Clear Space. [R404] A pushbutton clear space must be provided adjacent to a pedestrian pushbutton assembly. The running slope and cross slope should be 2.00% maximum. The minimum required clear dimensions are 4 ft by 4 ft. Where the clear space is constrained on two or more sides by a barrier over 2 inches in height, the minimum clear dimensions should be increased to 5 ft by 5 ft. The clear space must be free of grade breaks, may overlap a curb ramp turning space or sidewalk, and may overlap a ramp with a running slope of 2% or less. Providing a clear space that is concurrent with the curb ramp turning space is preferred. This approach increases the likelihood that the dimensional and slope requirements will be met and provides a reasonable distance to the crosswalk.

The running slope and cross slope of a pushbutton clear space are based on the orientation of the pushbutton assembly. See Figure 51-1P, Pushbutton Clear Space. The running slope may be consistent with the grade of the sidewalk. The cross slope must be 2.00% maximum.

2. Placement. Where the offset between the face of curb or edge of pavement and the back edge of sidewalk is 10 ft or less, placing the pedestrian pushbutton assembly outside the back edge of sidewalk, is preferred. Where the assembly can be accessed from two directions, consideration should be given to centering the assembly relative to the crosswalk. That is, do not require a pedestrian to travel down one ram, then up another to reach the assembly.

Where the offset between the face of curb or edge of pavement and the back edge of sidewalk is greater than 10 ft, or other site constraints exist, e.g. a building at the back edge of sidewalk, placement within the sidewalk or buffer may be necessary.

a. Pedestrian Pushbutton Assembly Outside the Back Edge of Sidewalk. A pedestrian pushbutton assembly should not be placed more than 5 ft outside the associate crosswalk. A pushbutton assembly should be centered adjacent a pushbutton clear space. See Figure 51-1Q, Pedestrian Pushbutton Assembly Outside the Back Edge of Sidewalk, Preferred.

A pushbutton assembly must not be blocked by obstructions, e.g. behind guardrail.

b. Pedestrian Pushbutton Assembly Within a Sidewalk or Buffer. A pedestrian pushbutton assembly should not be placed more than 5 ft outside the associate crosswalk. A pushbutton assembly should be adjacent a pushbutton clear space. Centering on the pushbutton clear space is not required, however the grade break guidance in Item 3 would apply.

The distance from the nearest face of a pushbutton assembly to face of the curb or edge of pavement should be between 1.5 ft and 6 ft and should not be greater than 10 ft. A minimum offset of 1.5 ft from the face of curb or edge of pavement will allow a wheelchair user to remain out of traffic while actuating the pushbutton assembly. A minimum offset of 1.5 ft also provides an appurtenances-free zone along the roadway. See Section 55-5.02, Item 5.

A 4-ft minimum sidewalk clear width must be provided where a pushbutton assembly is placed within a sidewalk.

See Figure 51-1R, Pedestrian Pushbutton Assembly Within a Sidewalk or Buffer.

A pushbutton assembly must not be blocked by an obstruction, e.g. behind street furniture.

3. Grade Break. Where a grade break is adjacent a pushbutton clear space it is preferred to offset the nearest face of the pedestrian pushbutton assembly a minimum of 1.5 ft from the grade break. A wheelchair user positioned on a grade break may become unstable while actuating the pushbutton assembly and enter into traffic prematurely. Figure 51-1R, Pedestrian Pushbutton Assembly Within a Sidewalk or Buffer.

4. Spacing. Where two pedestrian pushbutton assemblies are provided on the same corner of a signalized intersection or within a median, the pushbutton assemblies should be separated by at least 10 ft. Where constraints prevent a 10-ft separation, pushbutton assemblies may be placed closer together or on the same pole. Where two APS pushbutton assemblies are closer than 10 ft., special features must be included in accordance with IMUTCD 4E.10-4E.13, Section 502-3.04(05), and INDOT *Standard Drawing* series 805-PBBA. RSP 805-T-202, Accessible Pedestrian Signals with Speech Walk Messages, should be completed by the designer and included in the contract for APS pushbutton.

5. Mounting Height and Side Reach. [R406] The actuator of the pedestrian pushbutton assembly must be located between 42 in. and 48 in. above the pushbutton clear space and within a 10-in. unobstructed side reach. See Figure 51-1S, Pedestrian Pushbutton Assembly Mounting Height and Side Reach. Where pole placement is limited, a 6 in. or 12 in. pushbutton assembly extension may be used to meet the side reach criteria. If a longer extension is required coordinate with the District Traffic Engineer.

6. Orientation. The face of a pedestrian pushbutton assembly must be aligned parallel to the direction of pedestrian travel on the associated crosswalk or as close as practical. See Figure 51-1T, Orientation of Pedestrian Pushbutton Assembly. The face of the pedestrian pushbutton assembly should be mounted to allow the pedestrian sign to be read.

51-1.06(03) Plan Requirements [Rev. Nov. 2016, Rev. Nov. 2018, Oct. 2020]

Each pedestrian pushbutton assembly should be detailed as follows:

1. Plan Views. A symbol and lines representing the pushbutton assembly and pushbutton clear space, respectfully, should be shown in plan view over existing survey.

2. Stations and Offsets. The station and offset for each pushbutton assembly should be tabulated or detailed. Where two pedestrian pushbutton assemblies are provided on the same corner of a signalized intersection or within a median, the distance between the two should also be detailed.

3. Dimensions. Length and width for each pushbutton clear space should be tabulated or detailed.

4. Slopes. Slopes of the pushbutton clear space, if not detailed with the curb ramp or sidewalk, should be tabulated or detailed.

5. Pushbutton Mounting Height. Where an existing pushbutton mounting height requires adjustment to meet ADA criteria, the required adjustment should be noted as a callout on the plans. Otherwise, "No mounting height adjustment required" should be noted as a callout for the existing pushbutton. For new pushbutton installation, *Standard Drawing* series E 805-PBBA will govern and a mounting height note is not required on the plans.

6. Pushbutton Side Reach. Where a new or existing pushbutton side reach requires an extension to meet ADA criteria, the extension length should be noted as a callout on the plans. Otherwise, "No side reach adjustment required" should be noted as a callout.

7. Pushbutton Direction. The predominant direction of pedestrian traffic crossing serviced by the pushbutton should be noted as a callout on the plans (e.g. N-S or E-W).

An approved Determination of Technical Infeasibility or Technical Inquiry must accompany each pushbutton assembly or pushbutton clear space that does not meet the ADA requirements. Examples of non-compliance include a pushbutton assembly placement or pushbutton clear space slope or dimensions falling outside of the minimum or maximum criteria. See Section 40-8.04(01) Item 3 for requesting a Determination of Technical Infeasibility or Technical Inquiry.

502-3.03(05) Detector [Rev. Jan. 2016, Nov. 2016, Oct. 2020]

4. Pedestrian Detector. The most common pedestrian detector is the pedestrian pushbutton assembly. Where pedestrian signals are provided at pedestrian street crossings, they must include pedestrian pushbutton assemblies complying with INDOT *Standard Drawing* series 805-PBBA, Section 51-1.06 and Section 502-3.04(05).

   An accessible pedestrian signal (APS) is an integrated device that communicates information about the "Walk" and "Don't Walk" intervals at signalized intersections in visual and non-visual formats, i.e., audible tones and vibrotactile surfaces, to pedestrians who are blind or have low vision. These features are in addition to the traditional pedestrian signal head and pedestrian pushbutton.

The Department refers to traditional pedestrian pushbuttons as non-APS and these must have an actuator with a minimum diameter of 2 in., although they do not have the audible and vibrotactile features of APS.

See Section 502-3.04(05) for information on the use of a pedestrian signals, APS, and Non-APS.

502-3.04(05) Pedestrian Signal [Rev. Jan. 2016, Oct. 2020]

Pedestrian signal indications should be provided on a new or modernized traffic-signal installation in accordance with *IMUTCD* Section 4E.03.

Unless technically infeasible on a project, accessible pedestrian signals (APS) must be used for all pedestrian signal installations on the state highway system, on all federal-aid projects, and on 100% LPA funded projects. APS may be technically infeasible at a location if right-of-way constraints, such as historic districts, wetlands, or cemeteries, prevent the installation of an M (NEMA Size 5) or larger controller cabinet or if the ambient noise levels are above 100 dB. The determination of technical infeasibility for locations on the state highway system or for a LPA project must be made by the Department's ADA Technical Advisory Committee or LPA, in accordance with Section 40-8.04(01).

The percussive tone should be specified for APS when the pushbuttons at a curb ramp are separated by 10 ft or more. The speech walk message should be specified for APS when the pushbuttons at a curb ramp are separated by less than 10 ft. The speech walk message should normally be patterned after the model, "Broadway. Walk sign is on to cross Broadway." The speech walk message must not include commands or tell pedestrians that it is safe to cross. The speech walk message should also avoid superfluous street name terms such as "street" or "avenue" unless necessary to avoid confusion. When a speech walk message is required the RSP 805-T-202, Accessible Pedestrian Signals with Speech Walk Messages should be completed and inserted into the contract. The tactile arrows on APS should be aligned parallel, or as close as practical, to the direction of travel on the associated crosswalk. *IMUTCD* Section 4E.11 through 4E.13, Section 51-1.06, and the INDOT *Standard Drawing* series 805-PBBA provide additional information regarding the placement, programming, and assembly of APS.

Where a median cut through is less than 6 ft in the direction of pedestrian travel, the signal should be timed for a complete crossing of the street.

Where crosswalks are longer or the ambient noise level is greater, it may be necessary to specify speakers or baffling for the APS.

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

100 North Senate Avenue
Room N955
Indianapolis, Indiana 46204

PHONE: (317) 234-7949
FAX: (317) 232-5551

Eric Holcomb, Governor
Joe McGuinness, Commissioner

Second Revision: August 31, 2020
Issued: January 9, 2014
First Revision: March 1, 2018

TO: District Deputy Commissioners
District Technical Services Directors
District Traffic Engineers

OPERATIONS MEMORANDUM 14-01
SIGNALS

FROM: Daniel P. McCoy, Director
Traffic Engineering Division

SUBJECT: **Accessible Pedestrian Signals (APS) Studies**

I) Background

The INDOT Accessible Pedestrian Signals (APS) Policy states that the agency:

> "is committed to implementing the installation of accessible pedestrian signals to ensure that where our pedestrian facilities communicate information, we also include features that provide information in a format that is accessible to individuals who are blind, have low vision, are deaf or have impaired hearing."

Consistent with the APS Policy, a study will be conducted to determine whether APS is suitable for an existing location in response to an external request. In order for a particular location to be considered for APS it must either currently have or need pedestrian signal heads. While typically these locations will be roadway intersections, APS studies may also be needed at midblock crossings. (Additional background may be found in the NCHRP resource titled *Accessible Pedestrian Signals: A Guide to Best Practices*, available online at: http://www.apsguide.org/chapter1_aps.cfm.)

For projects that include reconstruction/modernization of an existing traffic signal, or that install a new traffic signal, APS must be included if pedestrian signals are part of the project. See Chapter 502 of the Indiana Design Manual for additional information.

II) Purpose

This operations memo supplements the guidance found in the *Indiana Manual on Uniform Traffic Control Devices* (IMUTCD) on the factors that should be evaluated in the study while recognizing the requirements and INDOT's responsibilities under the Americans with Disabilities Act and our Section 504 Nondiscrimination Policy:
(see http://www.in.gov/indot/files/DBE_NondiscriminationNotice.pdf).

III) APS Studies

An APS study should be performed by the district traffic engineering office for each external request received from the public or local government entity. See Appendix A for the standard APS request form.

A three-tiered approach should be used when conducting APS studies. All tiers rely on exercise of professional engineering judgment while keeping our APS Policy and accessibility goals in mind.

Tier One: The first set of criteria is used to determine if the location, by sheer inspection, has characteristics rendering APS infeasible or impracticable.

Tier Two: If the location is not disqualified for APS based upon initial review, then the second tier criteria provide factors that if present tend to support the installation of APS.

Tier Three: Even if the second tier criteria are absent, the existence of these factors would tend to support the installation of APS.

If the determination is made to install APS at an intersection APS should be provided for all pedestrian crossings at that intersection.

For all APS studies, the ADA Program Director in the Legal Division will be given a chance to comment on the APS study prior to a final decision being made. The district traffic engineer or the designer should forward the findings from the APS study to the ADA Program Director and provide a two-week comment period. Questions or concerns should be submitted to ADA@indot.in.gov prior to the completion of the APS study as review or input from the ADA Technical Advisory Committee may be sought when the ADA Program Director determines such input is appropriate.

A. First Tier Criteria:

APS should not be provided if any of the following criteria exist:

1. No Existing Pedestrian Signals: Pedestrian signal heads are not present and are not justified. In general, pedestrian signal heads are considered to be needed if sidewalk is present or will be installed at the intersection.

2. Excessive Ambient Noise: Pedestrian crossings are in an environment with enough ambient noise so as to require the APS volume to be more than 100 dB in order for the signal to be discernable. The IMUTCD prohibits signal auditory volumes above this level. The ambient volume may be measured either by a device for that specific use (sound level meter) or another tool verified to be sufficiently accurate for this purpose. Measurement of ambient sound level need only be taken for the First Tier criteria analysis when there is reason to believe that the noise level is close to the limit.

3. Technical Infeasibility for Controller Cabinet Upgrade. Installation of APS would require an unreasonably extensive upgrade to the controller cabinet and a larger controller cabinet is not feasible due to right-of-way constraints such as historic

structures or districts, wetlands, or cemeteries. (Controller cabinet compatibility may be confirmed with the Signal Systems Section.). A determination of technical infeasibility must be made by INDOT's ADA Technical Advisory Committee (TAC), see the instructions for submitting inquiries on page 7.

If any one or more of the above criteria exist, then APS signals should not be installed at this intersection. The APS study is complete and the district traffic engineer should document the basis of his or her findings in the APS study.

B. Second Tier Criteria:

APS should be provided if any of these criteria are satisfied:

1. Relevant Traffic Generators Present: Traffic generators are present within two blocks of the intersection under study that by their nature would highly likely be expected to have recurring visually impaired users. Judgment should be exercised in establishing the proximity from the generator to the traffic signal that triggers APS installation; it may extend beyond two blocks in select cases. This type of generator is limited to hospitals, clinics, ophthalmologists/optometrists offices, employment centers or schools for the visually impaired; senior centers, and any other facilities associated specifically with the visually impaired.

2. Unusual Pedestrian Signal Phasing: Certain pedestrian phasing conditions. In certain cases, the need for APS is indicated by an exclusive pedestrian phase, a leading pedestrian interval, or where the WALK interval is not concurrent with the green phase for the adjacent parallel traffic. (Special pedestrian phasing should be confirmed with the Signal Systems Section.)

3. Demand: Explicit knowledge by the analyst of current visually impaired pedestrian users at the site, or of visually impaired persons who would likely walk if enhanced accommodations were in place as determined by the submission of an APS Request Form, the filing of an ADA Complaint, or other public comment or request.

4. Local Policy: The location is within a city or town that has or is planning to upgrade all of its signals to APS.

If any of these factors do not exist or are not conclusive, then third tier criteria must be considered to determine whether or not APS signals should be installed. A site visit may be required.

C. Third Tier Criteria:

The full APS study should consider all of the criteria given in the IMUTCD:

1. Prior APS Requests: Previous requests for APS have been received at the location. Who made the request and when it was made should be taken into account.

2. Traffic Volumes: Motor vehicle traffic volumes during periods when pedestrians are likely to be present. Pedestrian counts need not be considered as part of the APS study. However, the APS study should note:

    a. Periods of low motor vehicle traffic volumes on the minor street during pedestrian activity. Irregular traffic on the minor street results in less audio cues for the impaired therefore a greater need for APS. A daytime hourly volume less than 120 (approximately two vehicles for a 60-second cycle) may indicate a need for APS. If hourly counts are not readily available they may be estimated from the AADT by applying a standard traffic distribution percentage. For urban locations this value is 8%. Additional information may be obtained from the ITE *Traffic Engineering Handbook*.

    b. Periods of high motor vehicle right-turn-on-red (RTOR) volumes. RTOR traffic greater than 60 during any hour (one vehicle per 60-second cycle) indicates a possible need for APS. If peak hour turning movement counts are not available or have not been estimated through signal warrant analysis, a minimum 15 minute sample count should be taken.

3. Signal Phasing: Split phasing, protected only phasing, or protected/permissive phasing increases the need for APS.

4. Intersection Geometry/Characteristics: In general the more complex the crossing is the more there is a need for APS. These geometric characteristics are among those that should be reviewed when considering the need for APS:

    a. Crosswalk length, approach width. The wider the crossing the greater the need for APS. Crosswalk widths less than 40 ft may not present special challenges.

    b. Crossing alignment. A pedestrian path across the intersection (not necessarily within the crosswalk lines) that is skewed from the direction of the approaching sidewalk can be particularly challenging to the visually impaired.

    c. Curb radius. Radii greater than 25 ft may hinder the visually impaired and decrease the likelihood that they can properly orient themselves at the start of the crossing movement.

    d. Curb ramp alignment. A curb ramp that is not aligned with the direction of the crossing can be misleading to the visually impaired.

    e. Islands/Medians. The presence of islands or medians can be misleading to the visually impaired.

    f. Transverse Crosswalk Slope. Severe slopes (>5%) can lead the visually impaired to veer towards the downhill side and off course.

    g. Speed. Higher speeds (> 40 mph) indicate a greater need for APS.

5. Pedestrian Network: The presence of other pedestrian or bicycle facilities such as sidewalk, curb ramps, bike lanes, pedestrian hybrid signals, etc. is indicative of locations where there is a potential need for APS.

6. APS Network: If an adjacent intersection is also equipped with APS then the likelihood that a visually impaired pedestrian may use the location is increased.

7. Additional Traffic Generators: Potential demand for APS from traffic generators that are within two blocks of the location that by their nature may have visually impaired users on a recurring basis. Judgment should be exercised in establishing the proximity of the generator to the signal that triggers the need for APS. This type of generator may include government office buildings, convention centers, major retail or commercial areas, stadiums or arenas, and transit terminals or stops. Additionally schools, churches, and other prominent institutions may have members visually impaired who use the crossing now, or would given enhanced accommodations. If this type of generator is identified, advocacy groups for the visually impaired may be contacted to supply information on presence and extent of visually impaired persons associated with those sites. See Appendix B for a list of some of the local and state advocacy groups. INDOT's ADA Program Manager has a network of working groups, advocates, and agencies that may assist with collecting this information.

8. Other Factors: Other relevant objective factors (e.g. pedestrian crash history, channelized right-turn lanes, etc.) may be considered and added to the study as deemed appropriate. If in doubt, seek input from the ADA Program Director or the TAC at ADA@indot.in.gov

If the study is being performed a determination in favor of APS *should* be made unless there is clear reason to elect otherwise.

In recognition of special site conditions, a determination for APS installation *may* be made even if none of the third tier criteria are satisfied. In this exceptional event, the analyst is compelled to detail the rationale.

D. APS Deferral

If the determination is made for APS but additional features are needed (e.g. curb ramps) that are beyond the scope of the the installation of APS can be deferred to a later time when the additional work can be more reasonably executed.

E. Submission and Documentation:

The APS study should be submitted for approval to the district traffic engineer (if performed by others). The district traffic engineer, upon receiving or conducting the study, should submit a copy to the ADA Program Director in the Legal Division for a chance to comment on the APS study prior to a final decision being made. The decision for APS installation will be included in the INDOT ADA Transition Plan by the ADA Program Director.

The APS study report should include the following:

- Title heading, with "APS study" as part of the title
- Name(s) of the person conducting the study
- Date
- Site or location description
- Summary of the vicinity, the types of facilities and buildings in the area
- Copies of any request for APS (full study only);
- Motor vehicle volumes (full study only)
- Motor vehicle turning movement counts (full study only)
- Length of pedestrian crossings
- Complete intersection geometry (full study only)
- Summary of any existing pedestrian/bicycle facilities
- Signal phasing
- Challenges to APS at the location, if applicable (e.g., ambient noise, need for associated infrastructure features that are well outside the request scope). A recommendation to postpone installation of APS until such a time that additional associated work can be done should be noted along with an indication of when the future installation is expected to occur.
- If APS is not recommended following a full tier three study, a summary of the facts supporting this decision must be attached to the study. Any other practical measures INDOT will take to enhance accessibility at the site for the visually impaired should also be noted in the summary. (For instance, this may involve the replacement of any existing fingertip push buttons at the location with 2 in. diameter push buttons that have a tactile arrow included as an added feature.)

See Appendix C for the standard APS study report form which should be used. Appendix D contains a flow chart that summarizes the study process..

F. Response Timeframe:

According to the INDOT APS Policy, the response to an external requestor should be made within 90 days with a determination. To facilitate timely responses the complete APS study with the draft decision for or against APS should be provided to the ADA Program Director within 75 days of receipt of a notice that a request for APS has been made.

IV) Installation Considerations

The following items should be considered when installing APS at a traffic signal:

A. **Location.** Push buttons with APS should be located according to Section 4E.08 of the IMUTCD. Where possible, push buttons for separate crossing movements should be located on separate poles at least 10 ft apart. Each should be no more than 10 ft from the curb/shoulder but within 5 ft from the crosswalk.

B. **Pedestrian Crossing Length**. For longer crosswalks where it is necessary to increase the volume of the audible tone consideration, a speaker or baffling should be provided with the APS. These features can aid the crossing activity for visually impaired and help to minimize noise pollution to the surrounding area.

C. **Controller Compatibility**. Older TS-1 type cabinets may not be compatible with APS. Should the determination be made for APS at an intersection with one of those cabinet types, the cabinet must be modified or replaced, unless R/W constraints exist as indicated in Section III.A3.

D. **Wiring**. Each APS push button should be wired independently to the controller cabinet. A 7C/14 cable is needed between the controller and each corner with APS.

E. **Volume Adjustment**. After initial installation, the volume level should be checked to ensure it is adequate and does not exceed the IMUTCD limits.

F. **Speech Walk Messages**. At locations where it is necessary to place two push buttons within 10 ft of each other or on the same pole, a speech message for the walking movement must be used and patterned after the model: "Broadway. Walk sign is on to cross Broadway". The speech walk message should not contain supplemental designations such as "street" or "avenue" except where necessary to avoid an ambiguity, for example at an intersection of 1st St and 1st Ave.

If installation will not fully comply with any of the above installation considerations or any other ADA requirements, a technical inquiry should be submitted to the TAC committee, which is the procedure required by INDOT's ADA Transition Plan to review & document INDOT's efforts to comply with Accessibility and civil rights laws to the maximum extent feasible. These may be submitted via ADA@indot.in.gov

DPM/dhb/jeb

cc: Ken Woodruff, FHWA	Ed King	Greg Richards
J.D. Brooks	Prakash Patel	Katherine Smutzer
Erin Hall	Elizabeth Mouser	Barbara Malone

Appendix A

Request Form for the Installation of Accessible Pedestrian Signals (APS)

Name: _____

Please indicate if you are one of the following:

☐ Visually Impaired Pedestrian

☐ Local Public Agency: _____

☐ Group or Association: _____

Address: _____

State: _____ Zip Code: _____

Telephone: _____ Email Address: _____

I/We request the installation of APS at the following intersection(s):

Major Road	Minor Road	City, Town, or County

Please describe the difficulty experienced in crossing this/these intersections:

_____

_____

Signature: _____ Date: _____

Mail Completed Request Forms to:
Indiana Department of Transportation
Attn: Title VI / ADA Program Manager
100 N Senate Ave. Rm. N750
Indianapolis, IN 46204

or Fax to: (317) 233-1481

For Office Use Only

Date Received: _____ Received By: _____

Date Forwarded for APS Study: _____

Note: Form will be made available in alternative format upon request

Appendix B: Advocacy Groups for the Visually Impaired

Statewide:
American Council of the Blind of Indiana (ACBI)
Indiana Statewide Independent Living Council (INSILC)

Local Groups:

accessABILITY Center for Independent Living
9105 E 56th St, Suite 308
Indianapolis, IN 46216
(317) 926-1660
http://www.abilityindiana.org

Assistive Technology & Training Information Center
2735 Washington Ave
Vincennes, IN 47591
(812) 886-0575
http://www.atticindiana.org

Everybody Counts
438 Fayette St
Hammond, IN 46321
(219) 769-5055
http://www.everybodycounts.org

Future Choices
309 N High St
Muncie, IN 47305
(765) 741-8332
http://www.futurechoices.org

Independent Living Center of Eastern Indiana
1818 W Main St
Richmond, IN 47374
(765) 939-9226
http://www.ilcein.org

The League for the Blind & Disabled
5821 S Anthony Blvd
Fort Wayne, IN 46816
(260) 441-0551
http://www.the-league.org/

Southern Indiana Center for Independent Living
1490 W Main St
Mitchell, IN 47446
(812) 277-9626
http://www.sicilindiana.org

Southeastern Indiana Independent Living Center
114 W Main St
Vevay, IN 47043
(812) 427-3333
http://www.siilc.org

Wabash Independent Living and Learning Center
One Dreiser Square
Terre Haute, IN 47807
(812) 298-9455
http://www.thewillcenter.org/

Additional Resources:
Division of Disability and Rehabilitative Services within the Indiana Family and Social Services Administration: https://www.in.gov/fssa/ddrs/3341.htm
Independent Living Centers: http://www.in.gov/fssa/ddrs/2762.htm

Appendix C
Accessible Pedestrian Signals (APS) Study Report Form

Intersection:		
Date:	*Time:	County:
*Weather Conditions		
Investigator(s):		
Aerial Photo of Intersection Attached: ☐		
Specific Needs of Requesting Party:		

A. First Tier Criteria (check all that apply)

☐ 1. Sidewalks not present or would not be installed concurrently with APS
☐ 2. Pedestrian crosswalks are in an area with ambient noise above 100 dB
☐ 3. Installation of APS requires upgrade to controller cabinet and a larger controller cabinet would be infeasible due to right of way constraints

If any one or more of the boxes in Section A above are selected, the APS Study is complete and APS **should not** be used at the subject intersection.

B. Second Tier Criteria (check all that apply)

☐ 1. Relevant traffic generators within 2 blocks of the intersection that serve the visually impaired (e.g. hospitals, senior centers, optometrists, schools for the visually impaired, etc.)
Traffic generator(s): _____
☐ 2. Exclusive pedestrian phase, leading pedestrian interval, or pedestrian phase not concurrent with parallel through movement
☐ 3. Visually impaired pedestrian users either present or anticipated if APS is provided
☐ 4. Intersection is in a city or town that uses or will use APS at all pedestrian signals

If any one or more of the boxes in Section B above are selected, the APS Study is complete and APS **should** be used at the subject intersection.

C. Third Tier Criteria (check all that apply)

☐ 1. Previous requests for APS?
Previous requestor(s):_____ Date(s):_____
☐ 2(a). Daytime hourly volume on minor street less than 120 vehicles per hour for any hour during the day
☐ 2(b). Right turn on red volumes exceed 90 motor vehicles for any approach for any hour
☐ 3. Split phasing or protected left turn phasing
☐ 4(a). Crosswalk lengths (check if any length is more than 40 ft)
North Leg _____ East Leg _____
South Leg _____ West Leg _____
☐ 4(b). Skewed crossing?
☐ 4(c). Curb ramp radius > 25 ft for any ramp at the location
☐ 4(d). Curb ramp not aligned with crosswalk direction
☐ 4(e). Median greater than 4 ft wide?
Median width: _____

* Applicable only when field work is performed.

Accessible Pedestrian Signals (APS) Study Report Form

C. Third Tier Criteria (continued):

☐ 4(f). Crosswalk slope greater than 5%?
Crosswalk transverse slope: _____

☐ 4(g). Speed greater than 40 mph on any approach
North Leg _____ East Leg _____
South Leg _____ West Leg _____

☐ 5. Bike lanes, shared use path, etc., present

☐ 6. APS present at adjacent intersections?

☐ 7. Presence of at least one additional traffic generator within 2 blocks (e.g. shopping centers, government offices, transit stops or terminals, etc.):
Traffic generator: _____
Traffic generator: _____
Traffic generator: _____
Traffic generator: _____
[Use additional sheets if necessary]

☐ 8. Other relevant factors (pedestrian crashes, channelized right-turn lane with yield control, etc):

Describe: _____

_____

For Section C, APS **is likely recommended** if any one or more box in section C is selected unless the weight of the data supports a decision not to install (must document this).

D. Additional Comments:

E. Decisions: (*if APS is not recommended, summarize the facts supporting the decision not to install and attach additional sheets or pictures if necessary)

_____

_____

☐ APS Recommended ☐ APS Not Recommended

F. Signatures:

_____ _____
Analyst Signature District Traffic Engineer Signature

_____ _____
Analyst Name (printed) District Traffic Engineer Name (printed)

Analyst Title: _____