

Slide 1

Accessible Pedestrian Signals Pilot Project – Citywide and Central Loop

Public Meeting Open House

July 18, 2019

Welcome to the public meeting open house for the Accessible Pedestrian Signals pilot project.

TODAY'S GOALS

- Provide a project overview
- Present the design process and evaluation criteria
- Discuss schedule and next steps
- Present prioritized locations
- Receive your input!

Today, we will introduce the Accessible Pedestrian Signals pilot project. This project is being led by the Chicago Department of Transportation (CDot) in collaboration with the Mayor's Office for People with Disabilities (MOPD).

During this presentation, we will provide an overview of Accessible Pedestrian Signals and present the design process and evaluation criteria used to develop prioritized locations. We will also review the project schedule and the next steps.

Following this presentation, we invite you to visit the other stations in the room. At these stations, you can review the list of prioritized intersection locations identified for installation and how the Accessible Pedestrian Signal equipment operates. Finally, we are looking for your input on the proposed project.

Project team members are available to answer any questions and receive your input. Exhibits from today's meeting will be available online at TinyURL.com/ChicagoAPS. Additional feedback can be submitted via email to CDotAPS@CityOfChicago.org.

PROJECT GOALS

Support people with visual and hearing disabilities

Support CDot's initiative for citywide APS implementation

Develop best practices

The goals of the project are to:

Support people with hearing and visual disabilities accessing transit within the City of Chicago;

Support CDot's initiative to integrate Accessible Pedestrian Signals citywide in future projects; and

Develop best practices for the design and installation of Accessible Pedestrian Signals.

PROJECT OVERVIEW

What are Accessible Pedestrian Signals?

- Audible tones
- Speech messages
- Vibrating surfaces

APS Benefits

- Enhance pedestrian safety
- Enhance pedestrian mobility
- Enhance pedestrian accessibility

What are Accessible Pedestrian Signals?

Accessible Pedestrian Signals (commonly referred to as APS) communicate information about the WALK phase in non-visual formats such as audible tones, speech messages, and vibrating surfaces to enhance accessibility and enable pedestrians with visual or hearing disabilities to safely cross the street at signalized intersections. Enhanced pedestrian accessibility is particularly important at intersections that have some of the following characteristics:

- complex layout or signal phasing,
- right turns on red, or
- are in areas with excessive background noise.

These characteristics are particularly challenging for visually impaired pedestrians who may rely on audible cues in traffic noise for when to safely cross the roadway.

More specifically, APS systems enhance pedestrian safety, mobility, and accessibility by providing information about:

- The existence and locations of the pushbutton
- The status of the pedestrian phase
- The beginning of the WALK interval
- The alignment of the crosswalk; and
- The location of the destination sidewalk

APS additionally provides enhancements that are in line with Chicago's Vision Zero commitment to eliminate death and serious injuries from traffic crashes.

PROJECT OVERVIEW

APS Investigation

Design Guidelines

Equipment

Project Design Requirements

M U T C D Compliant

Active Detection

Audible Indications

Vibro-tactile Push Button

The groundwork for moving the project forward is based on the project team's investigation of current APS standards, guidelines, and equipment. The project's design is grounded in the Manual on Uniform Traffic Control Devices (or M U T C D), which defines federal standards for traffic control devices in the United States. The project also relies on guidelines published by the National Cooperative Highway Research Program (or NCHRP) and the US Access Board. Current APS technologies have been surveyed to identify products that conform to the project's design requirements and goals.

Requirements for use of APS technologies on this project include, but are not limited to:

- 1 M U T C D Compliance,
- 2 Active Detection, which requires a pedestrian to push a button to initiate a WALK phase,
- 3 Audible indications, which includes either a percussive tone or speech walk message, and
- 4 Vibro-tactile push buttons, which includes a tactile arrow that vibrates during the WALK phase.

DESIGN PROCESS

Stakeholder coordination

Draft locations

Near public transportation

Six location environments

Evaluation criteria developed

Starting in 2011, CDot and MOPD engaged community stakeholders to develop a draft list of pilot APS locations. With two funding grants from the Federal Transit Administration coming online in 2015 and 2017 for design and construction, proximity and connectivity to public transit were key factors in determining the locations. Additionally, to better gauge challenges and effectiveness of APS at various types of intersections found citywide, the draft locations were further categorized based on their respective environment. The location environments include: Central Business District, Institutional, Six-Legged intersections, University Campus, and Stakeholder suggestions. Ultimately, 113 draft locations were developed for further evaluation.

The project team evaluated and prioritized the draft locations utilizing APS prioritization tools adapted from NCHRP Project 3-62, which was a national project to develop guidelines for implementing APS. The results from the APS prioritization were shared with the stakeholder group. Based on feedback from the group, evaluation criteria and scoring values were refined to better reflect needs and concerns within the local community.

Based on available funding and preliminary cost estimates, no more than 65 locations will proceed into the engineering design phase, and no fewer than 25 locations are expected to proceed to construction.

EVALUATION CRITERIA

Prioritization Worksheet Tool

Intersection Factors

Geometric Factors

Signal Control Factors

To select the top 65 locations for consideration of APS installation, the project team scored the candidate locations with the refined Prioritization Worksheet Tool adapted from the NCHRP. The Prioritization Worksheet Tool calculates a prioritization score for each intersection and is based on various observable criteria and their assigned values.

The various intersection criteria and basis of the evaluation are grouped into three design parameters: intersection factors, geometric factors, and signal control factors.

EVALUATION CRITERIA

Intersection Factors

Intersection Configuration

Type of Traffic Signalization

Distance to Transit Facilities

Distance to Visually Impaired Facilities

Distance to High Pedestrian Generators

The intersection factors evaluated at each location are: intersection configuration, type of traffic signalization, distance to transit facilities, distance to facilities for people with visual disabilities, and distance to high pedestrian generators.

The intersection configuration evaluation was based on the number of legs at an intersection or whether the location is a midblock crossing.

The type of traffic signalization evaluation was based on how the existing traffic signal operates at the intersection. Consideration was given at each location based on whether: the intersection has a pre-timed traffic signal; the signal has vehicle or pedestrian actuation that triggers changes in the signal patterns; split phasing of the signal causing alternate traffic movements; the presence of an exclusive pedestrian phase; or the presence of a leading pedestrian interval (or LPI) which can affect the crossing time.

Distance to transit facilities considered the type and number of facilities within 4 blocks of the intersection.

Distance to programs for people with visual disabilities and high pedestrian generators, such as civic buildings or hospitals, were also considered within 4 blocks of the intersection.

EVALUATION CRITERIA

Geometric Factors

Curb radius greater than 25'

Pedestrian islands or medians

Apex curb ramps

Crosswalk skews

Crossing distance

Greater than 75 ft

Greater than 100 ft

Greater than 120 ft

The geometric factors evaluated at each intersection location are: curb radii greater than 25 ft, the presence of pedestrian islands or medians, the presence of apex curb ramps (which are curb ramps that lead toward the middle of the intersection), skewed crosswalks, and crossing distance.

With the exception of crossing distance, each of the crosswalk factors can create orientation problems and cause confusion for pedestrians with visual disabilities.

Actual crossing distances were evaluated at each crosswalk. Prioritization was weighted based on the measured lengths and if the crossing distance exceeded 75 ft, 100 ft or 120 ft.

EVALUATION CRITERIA

Signal Control Factors

Right turns permitted on red

Leading protected left turn phase

Non-concurrent WALK intervals

Protected right turn or right turn overlap phases

Channelized right turn lane under signal control

The signal control factors evaluated at each intersection include: right turn permitted on red, the Presence of leading protected left turn phases, the Presence of non-concurrent walk intervals, the presence of a protected right turn or right turn overlap phase, and whether there is a channelized right turn under signal control.

Complex signal phases or vehicles turning right on red are particularly challenging for pedestrians with visual disabilities, who may rely on audible cues from traffic noise.

PRIORTIZED LOCATIONS

Prioritized list of 65 locations

APS Locations to be installed

APS Locations likely to be installed

APS Locations funding dependent

CDot committed to install 25 to 50 locations

Utilizing the evaluation criteria developed for the project, the top 65 APS locations to proceed into design were selected proportionally across all 6 location environment types. The locations were further grouped into three separate categories based on funding availability: APS Locations to be installed; APS locations likely to be installed; and APS Locations to be installed if funding allows.

For this project, CDot is committed to installing APS at 25 to 50 intersections dependent on final construction cost estimates, with additional locations to be installed if funding allows.

The complete list of APS locations considered for installation are presented at the next station.

Slide 12

SCHEDULE AND NEXT STEPS

Finalize APS locations – August 2019

Complete Design – 2020 Quarter 1

Complete Construction – 2021

Over the next month, the project team will incorporate your input from this meeting as they finalize APS locations and continue into engineering design. Design is anticipated to be completed in the 1st quarter of 2020 with construction anticipated to be completed in 2021.

WE WANT YOUR FEEDBACK!

View other presentations

Talk with project team members

Provide a formal written comment

Written comments will be accepted through Aug. 1

We encourage you to view the other presentations and talk with the project team members in the room.

If you would like to provide feedback on this project, please speak with a project team member or visit the city website – [TinyURL.com/ChicagoAPS](https://www.tinyurl.com/ChicagoAPS). Comments will be accepted through August 1st, 2019 for consideration in final designs.

Slide 14

THANK YOU!

Email

CDotAPS@CityOfChicago.org

Website

www.Chicago.gov/city.en/depts/CDot/supp_info/aps.html

or

TinyURL.com/ChicagoAPS

Twitter

[@CDotNews](https://twitter.com/CDotNews)

Facebook

facebook.com/CDotNews

We appreciate your interest in the Accessible Pedestrian Signals pilot project and thank you for attending today's meeting.