Feature Presentation

Nighttime Visibility for Safety

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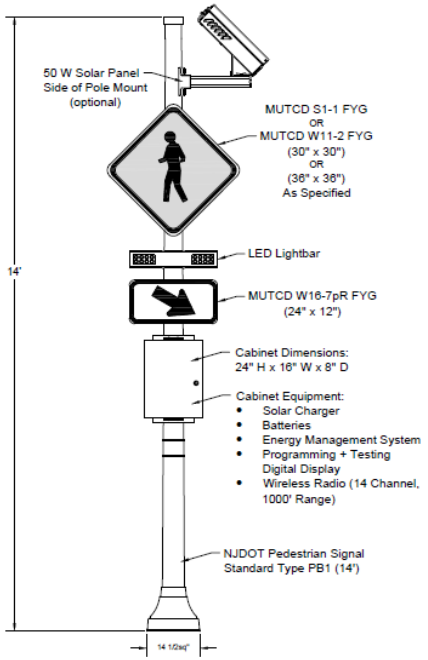
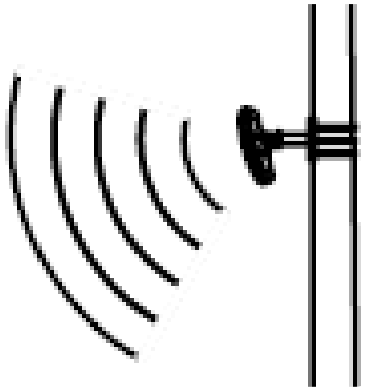
Traffic Safety advancements and nighttime visibility improvements

- LED lighting
- ADA accessibility
- Traffic Signal backplates
- RRFB
- Lighting evaluation for vertical illumination





Pedestrian Safety

- ADA compliant traffic signals, push buttons and handicap ramps.
- All signalized intersections are illuminated
- Retro-reflective regulatory and warning signs
- Automatic pedestrian detection using radar and camera systems.
  - No need to touch any buttons
  - Detects all approaches
  - Extends time necessary for pedestrians to cross (LPI)
- Solar powered Rectangular Rapid Flashing Beacons.
  - At non-signalized intersections for safe passage of pedestrians
  - Lighting provided at crosswalks
  - Study to evaluate vertical illumination for crosswalks
  - Benefit-Cost ratio is high

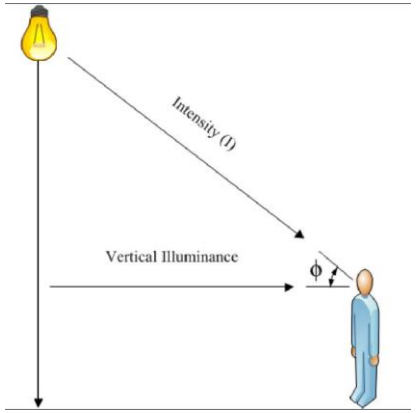
LED Lighting

- Improved visibility for vehicles and pedestrians
- Cost and energy savings.
- Vertical lighting at unsignalized roadway crossings to further improve pedestrian visibility and safety.

Vertical Illuminance

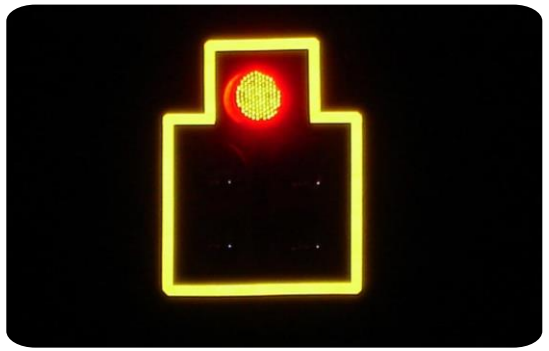
IT IS THE LIGHT THAT FALLS ONTO A VERTICAL SURFACE SUCH AS A PEDESTRIAN AND A BICYCLIST.

THIS ALLOWS THEM TO BE SEEN BY MOTORISTS.



Other improvements

- Each road lane has its own traffic signal head for better visibility
- LED module size in traffic signal heads increased to 12”
- Traffic Signal Head Backplates
  - Improve traffic signal head visibility by introducing a controlled-contrast background
- Touchless, motion activated audible pedestrian push buttons



Always Looking to Improve

- Backplate implementation challenges include minimizing installation time, accessing existing signal heads, and structural limitations due to added wind load instances where an entire backplate is added.
- LED’s difficulty to illuminate ultra-wide roadways and act as a one-to-one replacement of many existing HPS luminaires.
- Vertical lighting requiring lighting sources for each approach, causing bright light and extra poles.
- Lack of lighting at unsignalized intersections. Must rely on utilities. High installation cost.