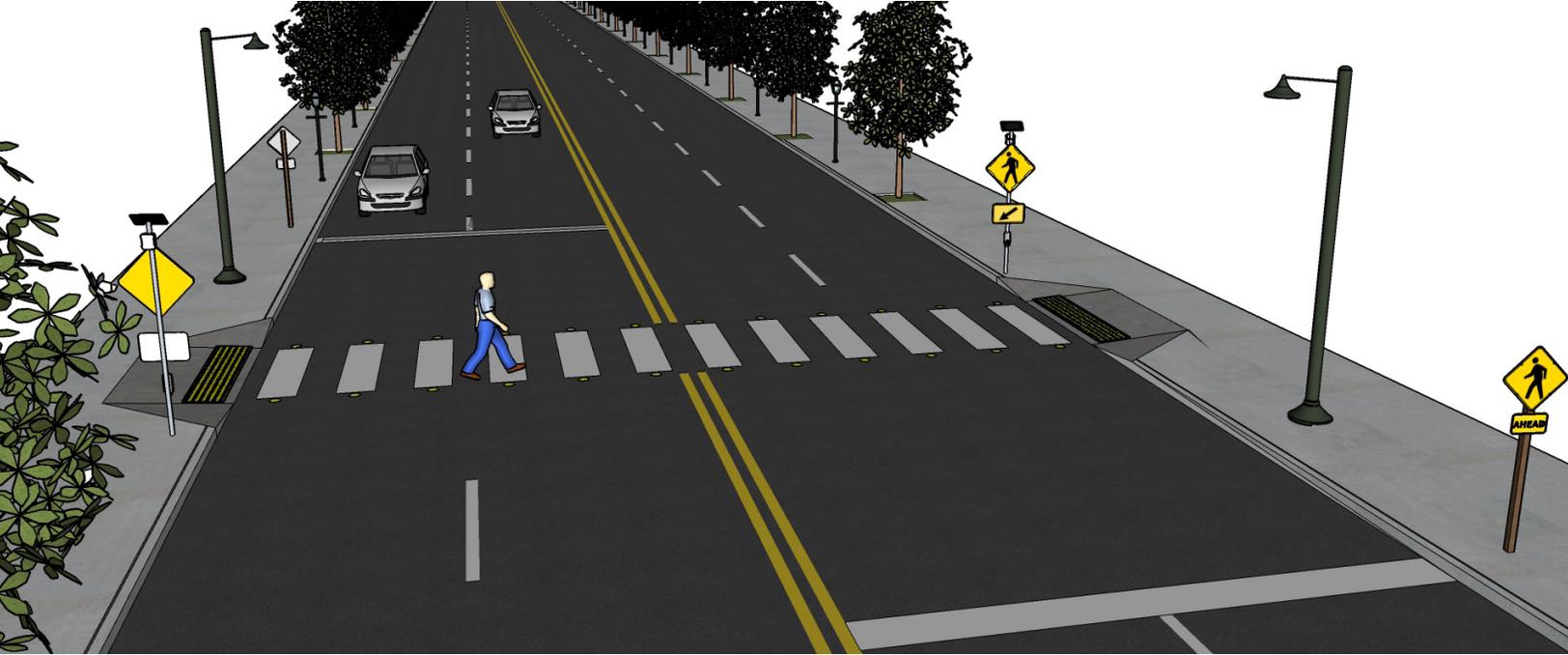




Smart Lighting



DESCRIPTION

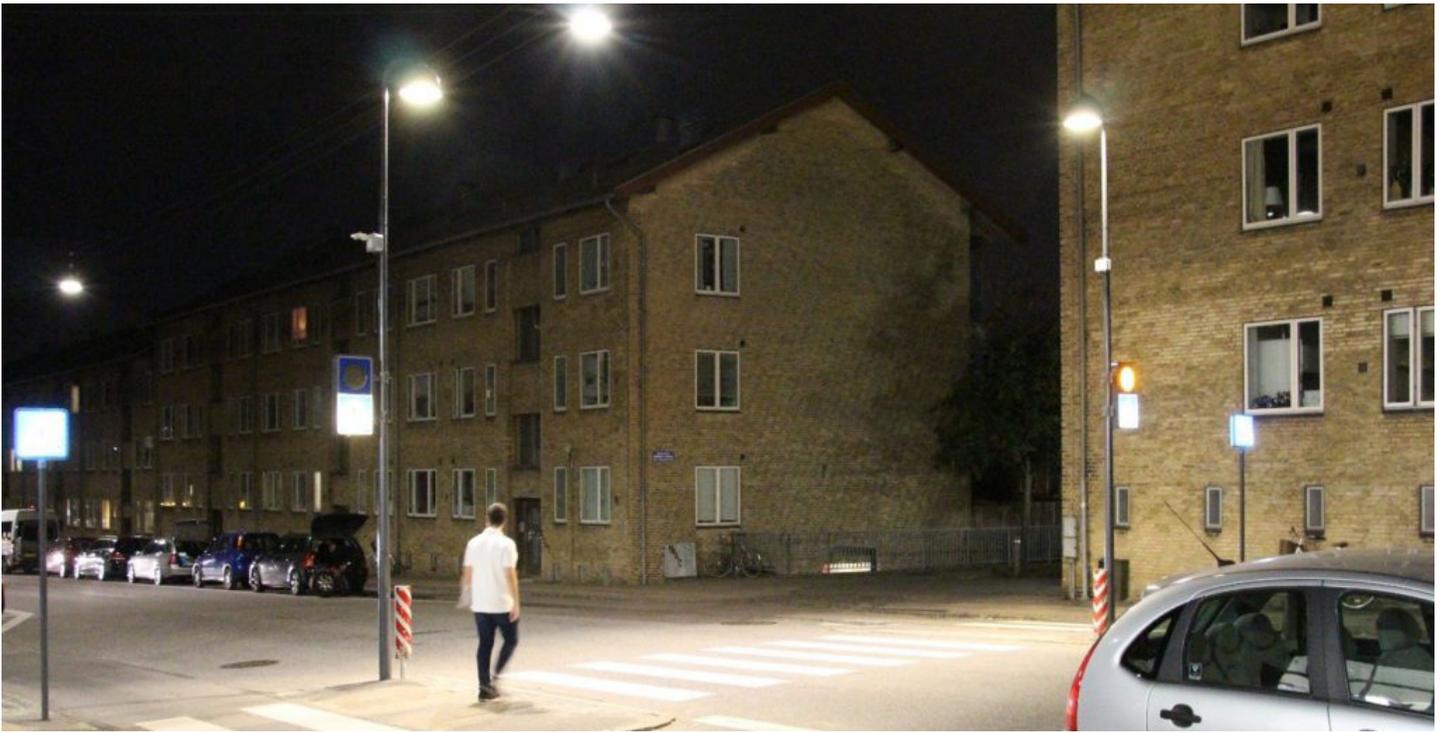
- Smart lighting, or adaptive lighting, is a type of pedestrian device that once activated, increases a pedestrian's or bicyclist's visibility to drivers through illumination.
- Smart lighting can be more cost-efficient than static lighting by having the lights be dimmed or off except when a pedestrian is detected.
- Smart lighting provides an alternative to static lighting in locations with light pollution concerns, especially in urban residential environments, by limiting illumination only to occasions when pedestrians are present.

CONTEXT

- Smart lighting is often considered for installation in combination with crosswalk visibility improvements and signing improvements.
- Smart lighting is suitable for installation at all crosswalks.

BENEFITS

- ✓ **Improved safety**
- ✓ **Improved comfort**
- ✓ **Traffic compliance**
- ✓ **Cost effective**



POLICY AND DESIGN GUIDANCE

- Design guidance varies depending on type, detection, and electrical service source.
- Smart lighting is typically hardwire-powered, but as solar technology continues to improve, solar-powered smart lighting may be feasible.
- Passive detection is recommended over pushbutton application, as drivers may grow conditioned to only expect pedestrians in the crosswalk at night when the lights are on, increasing risk for a pedestrian who does not push the button. This also ensures that the lights do not activate during daytime when they provide little benefit.
- The cost of smart lighting can vary considerably depending on type, scale, detection type, and electrical service, among other factors. Cost may range from \$15,000 to \$150,000.

For more information on **Smart Lighting** and other bicycle and pedestrian treatments, visit [virginiadot.org/programs/bikeped/bicycle_and_pedestrian_treatments.asp](https://www.virginiadot.org/programs/bikeped/bicycle_and_pedestrian_treatments.asp)

RESOURCES

Design guidance for Virginia:

[VDOT IIM-TE-390](#)

[FHWA Research and Technology](#)

Treatment applications and general design guidance:

[SFMTA](#)

[Transportation Research Record](#)

[FHWA Safety](#)

[FHWA Public Roads](#)

Guidelines are provided for informational purposes only. For detailed design guidance, please refer directly to design manuals and standards.