

# A Methodology Proposal of an Accessible Design for an Urban Intersection to Improve Mobility of People with Physical Disabilities

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**Abstract** – Today people with disabilities account for 15% of the world's population, making them a very high group of vulnerable people. They are exposed to a high risk of becoming potential victims of traffic accidents, and for being discriminated against when they move from place to place by physical barriers, exclusive architectural constructions, and inaccessible modes of transport. This study develops a methodology based on the User-Center Design (UCD) theoretical framework to obtain an "Inclusive Design" for an urban road intersection. The methodology prioritizes the needs of users, pedestrians, and especially those with a physical disability, into the design of the transportation infrastructure. This approach would reduce mobility barriers, allowing people to move efficiently, safely, and autonomously. In addition, this proposal incorporates universal accessibility standards and resources from the Wayfinding spatial orientation system to complement the design, making the urban environment adapt to the needs of all people without any type of distinction. The methodology is applied and validated to an existing intersection near a hospital, located in Lima. The study involves conducting surveys to people with some type of disability, before and after the proposed enhancements; thus, the effectiveness of the proposal is measured. Results indicate that applying the proposed methodology, mobility barriers are significantly eliminated by up to 95%; therefore, it improves mobility, especially for people with disabilities.

**Keywords:** Accessible design, mobility, universal design, physical disability, motor disability, inclusive design