

## **Abstract**

Cycling as a form of urban transportation has been growing in popularity across the United States over the past several years. While many cities have added protected bike lanes in recent years, the City of Philadelphia does not have a single protected bike lane, despite the fact that among American cities with one million or more people, Philadelphia has the highest share of commuters who bike to work. Due to the unprotected nature of cycling infrastructure in Philadelphia, bike lanes are routinely blocked by motor vehicles, presenting a significant safety hazard to cyclists. Previous efforts to raise awareness of blocked bike lanes – including a campaign by the Philadelphia Parking Authority encouraging cyclists to tweet the location and photographic evidence of blocked lanes to the #UnblockBikeLanes Twitter hashtag – have been ineffective. Therefore, this project aims to create a more robust method for documentation of blocked bike lanes in Philadelphia, through use of an Android app that provides a spatial representation of blocked bike lane occurrences. The app, named Philly Bike Report (PBR), utilizes a cloud database to allow users to view and report recently blocked bike lanes. In addition to the core focus on collection and display of volunteered geographic information on cycling conditions, PBR also allows users to contribute to the #UnblockBikeLanes Twitter campaign by providing the option to tweet the incident upon submission. By creating a mobile app and accompanying cloud database of blocked bike lanes, PBR aims to provide a more effective method for viewing and reporting blocked bike lanes in Philadelphia. The key findings of this thesis are represented by the creation of PBR, as a demonstration of how a mobile app with a cloud database can be used to view and report blocked bike lanes.