

RESEARCH PROBLEM STATEMENT

DATE: 09/02/2019	PROJECT AREA: Planning	
TITLE: ADA Ramp Inventory and Assessment using Mobile Lidar		
PROBLEM STATEMENT:		
<p>ARDOT is required to comply with the Americans with Disabilities Act (ADA) and is working on a Transition Plan. Part of the plan requires ARDOT to conduct a spatial inventory of all pedestrian facilities (ramps, sidewalks, ped. signals, etc.). Along with the spatial location, attributes like condition, type, and degree of compliance (ramp width, side flares slope, cross slope, landing widths, etc.) must be included in the inventory. The purpose of this project is to develop a methodology for the statewide collection and maintenance of an ADA facilities database that will best satisfy the federal requirements and leverage ARDOT's capabilities. Several states have successfully produced ped. and ADA facility inventories using digital devices and screening tools including mobile Lidar and video logs. The use of advanced technology reduces personnel needs (300+ staff were needed in OK for a single, manual survey!) while increasing our ability to update more frequently and collect robust condition and compliance information. Mobile Lidar has been widely used for transportation applications like sidewalk inventories and shows immense promise for supporting the ADA Transition Plan.</p>		
OBJECTIVES:		
<p>The objectives of this study are to: (1) demonstrate the feasibility of mobile Lidar to inventory and characterize pedestrian facilities on ARDOT roadways using an existing point-cloud and video log dataset, (2) develop a sustainable inventory database and data collection program. The specific tasks are to: (a) develop an approach to extract ped. facility chara. from video and Lidar data, (b) validate the proposed approach on select AR roadways where Lidar/video data is available, (c) create a prototype spatial database of ped. facility chara., and (d) propose a method for system-wide data collection and database maintenance (data acquisition, algorithm application, and update frequency).</p>		
FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:		
<p>As a result of this research project, we expect to produce a ped. facility characterization tool that uses mobile Lidar sensor data as input and produces a geodatabase of facility location and chara. including measures dictated by ADA compliance regulations. In this way, mobile Lidar collection performed by a consulting firm can be processed internally at ARDOT, alleviating data processing and personnel costs. The use of technology driven solutions like Lidar in place of manual approaches (in person surveys/measurements/pictures) allows us to scale the approach to system-wide data collection under limited budget and personnel constraints.</p>		
Estimated Project Duration: 18 Months		
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Standing Subcommittee
Ranking

2/7

Advisory Council
Ranking

N/A

Statement Combined with
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