



**OFFICE OF THE COMMISSION AUDITOR
MIAMI-DADE BOARD OF COUNTY COMMISSIONERS**

**COMMISSION AUDITOR'S
INFORMATIONAL RESEARCH**

**TRANSPORTATION AND FINANCE COMMITTEE
MEETING**

June 10, 2020

2:00 P.M.

Virtual Meeting

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Commission Auditor

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**Item No. 3B
File No. 200990**

Researcher: VW Reviewer: PGE

RESOLUTION ACCEPTING A GRANT FROM THE KNIGHT FOUNDATION IN THE AMOUNT OF \$780,000.00 TO CONDUCT AUTONOMOUS VEHICLE DEMONSTRATIONS AND EXPLORE ALTERNATIVE MOBILITY SOLUTIONS; AUTHORIZING THE COUNTY MAYOR OR COUNTY MAYOR'S DESIGNEE TO EXECUTE THE GRANT-CONTINGENT AGREEMENTS WITH THE KNIGHT FOUNDATION AND THE MIAMI FOUNDATION FOR THE REQUIRED ADMINISTRATION OF SAID GRANT; AND WAIVING REQUIREMENTS OF RESOLUTION NO. R-130-06

ISSUE/REQUESTED ACTION

Whether the Board should approve a grant award agreement between the County, Knight Foundation and Miami Foundation in the amount of \$780,000 to conduct autonomous vehicle demonstrations, evaluate on-demand transit impact on mobility and explore alternative mobility solutions and authorize the waiver of Resolution No. R-130-06 which requires all legislation seeking approval of a contract to be executed by all non-County parties prior to placement on an agenda of the Board.

PROCEDURAL HISTORY

Prime Sponsor: None

Department/Requester: Transportation and Public Works

This item has no procedural history.

ANALYSIS

The purpose of the item is to accept a \$780,000 grant agreement from the Knight Foundation to conduct demonstrations of autonomous vehicles as a possible solution to improving first-and-last mile access to premium transit service and increasing travel possibilities for commuters and ambulatory paratransit riders. A driverless car or autonomous vehicles (AV) is an automobile that is capable of performing some or all of the actions of a human-piloted car without human input. AVs combine a variety of sensors to perceive their surroundings, such as radar, lidar, sonar, GPS, odometry and inertial measurement units. These sensors allow AVs to identify appropriate navigation routes and relevant traffic signals/road signs and to avoid obstacles.

On April 5, 2016, the Board passed Resolution No. R-296-16 which directed the County Mayor to consider the prospective use of autonomous vehicles in planning future transportation and transit routes and projects. In line with the directive, it was also requested that the Metropolitan Planning Organization coordinate with the County regarding future studies of autonomous vehicles. The grant agreement from the Knight Foundation under consideration is between the Knight Foundation, the Miami Foundation, and Miami-Dade County, with the work program to be managed by the Department of Transportation and Public Works (DTPW). Under the agreement, technical and logistical support shall be provided by specific partners including the Urban Health Partnerships (UHP), the Ford Automotive Company (Ford's City:One), the Society of Automotive Engineers (SAE) and other transportation companies.

The main goal of the interorganizational program which the grant will fund is to document the community response to AV demonstrations and gather data tied to individual experiences with the technology in order to inform the design and implementation process for AV shuttles serving first-and-last mile transit needs in Miami-Dade County. The use of AVs to address the first-and-last mile problem is part of DTPW's larger vision of deploying and testing innovative service delivery models to improve first-and-last mile access to premium transit service and increase travel possibilities for commuters and ambulatory paratransit riders. DTPW hopes that the new technology will enable a fully automated scheduling, dispatching, reservation, real-time ride matching and dynamic routing system for real-time demand

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responsive transportation service. The grant program would consist of two phases. Phase One of the program, led by the team of Ford's City:One, will complete baseline research that considers public sentiment on new mobility solutions, community insights, and identify communities to include in the co-design of AV shuttle services. Phase Two, led by UHP, will engage participants and adjacent communities involved in the pilots resulting from Phase One.

Specifically, the program will consist of four concurrent tracks:

- Track 1: Gather data from the community to get a better understanding of the operations, demand, supply, and service limitations of using AV vehicles to shuttle transit users to Metrorail and Metrobus stations
- Track 2: Demonstrations of AV on 'Demo Days' and pre-and post-ride surveys to learn about public sentiment on AVs
- Track 3: Understand micro-mobility service (shared bicycles, electric scooters, etc.) demand, user population trends, service area and coverage, and its benefits to transit
- Track 4: Enable deeper participation of local residents in the planning, design, and delivery of new mobility solutions through the utilization of online tools, surveys, and in-person interactions to gather resident input.

ADDITIONAL INFORMATION

A driverless car or autonomous vehicles (AV) is an automobile that is capable of performing some or all of the actions of a human-piloted car without human input. AVs combine a variety of sensors to perceive their surroundings, such as radar, lidar, sonar, GPS, odometry and inertial measurement units. These sensors allow AVs to identify appropriate navigation routes and relevant traffic signals/road signs and to avoid obstacles.

Below is an example of AV shuttles being used in Columbus, Ohio.



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On September 18, 2018 the John S. and James L. Knight Foundation announced a five-year, \$5,250,000 initiative that brings residents to the center of self-driving vehicle pilot projects in five major U.S. cities: Detroit, Long Beach, California, Miami, San Jose, and Pittsburgh.

<https://knightfoundation.org/press/releases/major-5-25-million-knight-foundation-initiative-puts-people-at-the-center-of-local-self-driving-vehicle-programs/>

As of 2020 the industry leaders in autonomous vehicle production are Waymo, Cruise, Argo, Aurora, and Aptiv. Waymo remains ahead of the competition by a year or more. As of present day, Waymo is the only autonomous vehicle company to operate fully self-driving vehicles with no safety drivers for fare paying passengers carrying over 100,000 rides in the first year of its Waymo One pilot program in suburban Phoenix, Arizona on a handful of Chrysler Pacifica minivans.

<https://www.bloomberg.com/features/2020-self-driving-car-race/>



APPLICABLE LEGISLATION

Resolution No. R-1127-19, adopted on October 29, 2019, sets forth the terms of a joint participation agreement with the State of Florida Department of Transportation for \$800,000.00 in state commuter assistance program funds for the first/last mile on-demand transit service.

<http://intra/gia/matter.asp?matter=192367&file=true&yearFolder=Y2019>

Resolution No. R-296-16, adopted on April 5, 2016, directs the County mayor to consider the prospective use of autonomous vehicles in planning future transportation and transit routes and projects and requests the metropolitan planning organization coordinate with the County regarding future studies of autonomous vehicles.

<http://intra/gia/matter.asp?matter=160464&file=true&yearFolder=Y2016>

Resolution No. R-130-06, adopted January 24, 2006, amends Resolution No. R-1198-05 to clarify that proposed agenda items seeking approval of a contract or conveyance and authority to execute same shall not be placed on any committee or commission agenda unless the underlying contract or conveyance is completely negotiated, in final form, and executed by all non-county parties; providing that Board approval of a contract or conveyance in substantially the form presented means the county manager may make only those changes necessary to correct non-substantive, scrivener's errors; and providing exceptions.

<http://www.miamidade.gov/govaction/matter.asp?matter=060239&file=false&fileAnalysis=false&yearFolder=Y2006>

CONTRIBUTORS

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The Office of the Commission Auditor, Miami-Dade Board of County Commissioners

The Office of the Commission Auditor (OCA) was established in September 2002 by Ordinance 03-2 to provide support and professional analysis of the policy, service, budgetary and operational issues before the Miami-Dade Board of County Commissioners. The Commission Auditor's duties include reporting to the Board of County Commissioners on the fiscal operations of County departments, as well as whether the fiscal and legislative policy directions of the Commission are being efficiently and effectively implemented

These research notes, prepared in collaboration with the Miami Dade County departments as subject matter experts, is substantially less detailed in scope than an audit in accordance with the Generally Accepted Auditing Standards (GAAS). The OCA plans and performs the review to obtain sufficient, appropriate evidence to provide a reasonable basis for its findings and conclusions based on its objectives; accordingly, the OCA does not express an opinion on the data gathered by the subject matter expert(s).