Agendum
Oakland University
Board of Trustees Formal Session
June 26, 2026

VEHICULAR WIRELESS COMMUNICATION TEST SYSTEM (ANTENNA CHAMBER)

A Recommendation

1. **Division and Department:** Academic Affairs, School of Engineering and Computer Science (SECS), Finance and Administration

2. **Introduction:** Oakland University was awarded at total of $3,489,890.65 for the proposals entitled, "Oakland University Vehicular Wireless Communications System (VWCTS) Testing and Standards Facility" and "Next-Gen Electric Mobility Testing and Standards Development Facility" by the National Institute of Standards and Technology (NIST) within the United States Department of Commerce (DoC) through funding opportunity numbers 2023-NIST-RFA-CIPP-01 and 2024-NIST-RFA-CIPP-01 which are the 2023 and 2024 Congressionally Identified Scientific and Technical Research Services (STRS) in the amounts of $3,000,000 and $489,890.65, respectively. The proposals were submitted by Dr. Daniel Aloi as the Principal Investigator and Co-Principal Investigator on behalf of the Applied EMAG and Wireless Lab at Oakland University with the intent to provide faculty, students, researchers, and industry personnel with state-of-the-art equipment to assess wireless communication performance on complex mobile platforms such as automobiles. The location of this equipment at Oakland University enables this new system to be utilized for research and training, which will create research opportunities for students and enable key partnerships to be made with industry, government entities, and other universities.

This new facility is a spherical near-field antenna measurement system capable of measuring both on-vehicle antenna and wireless system (antenna plus radio) in the frequency ranges from 400 MHz to 10 GHz for a variety of vehicle platforms. The principal components of this system include: 1) Vehicle Level Radio Frequency Chamber; 2) Position System to gather measurements over a hemi-spherical surface (Fixed arch with multiple probes, turntable, and vehicle lift); 3) Radio Frequency Equipment (vector network analyzers, signal generators, cellular call box, and channel emulators); and 4) Data collection and processing segment that includes a data acquisition system and an analysis workstation to operate the position controllers and radio frequency equipment.

This facility will be housed in the SECS Research and Innovation Center (RIC) located at 2871 Research Drive in Rochester Hills, Michigan.

The total cost for the VWCTS is estimated to be $6,989,890.65. $3,489,890.65 of which will be dedicated to the purchase of the turnkey system and is funded from the Federal NIST grants. $3,500,000 is required for the structural modifications required to the RIC building in order to accept this new facility, this will be funded from existing resources within SECS and an internal loan from the University. Initial estimates for the construction costs were $1,300,000. However, chamber manufacturers and architects created the final plan of specifications which were put out to bid and the actual construction cost is $3,500,000.

3. **Previous Board Action:** The Oakland University Board of Trustees approved the selection of the vendor for the VWCTS and the construction project necessary to fully implement the system on April 11, 2025.

4. **Budget Implications:** The construction costs of $3,500,000 will be funded from existing resources within SECS and an internal loan from the university to be repaid as outlined in the attached loan schedule with incremental revenue from the system.

5. **Educational Implications:** The system will be utilized for research and training, which will create research opportunities for students and enable key partnerships to be made with industry, government entities, and other universities.

6. **Personnel Implications:** The plan includes a Director, Technician and one Masters student to facilitate daily operations.

7. **University Reviews / Approvals:** This recommendation was formulated by the Director of Research, the Dean of SECS, and reviewed by the Purchasing Department, Office of Legal Affairs, Vice President for Finance and Administration and President.

8. **Recommendation:**

RESOLVED, that the Board of Trustees approves the construction project necessary to fully implement the VWCTS within the RIC; and, be it further

RESOLVED, that the Board of Trustees authorizes the President, the Vice President for Finance and Administration, and their respective designees, to perform all acts and deeds and to execute and deliver all contracts, instruments and documents required by this resolution that are necessary, expedient and proper in connection with the work; and, be it further

RESOLVED, that said contracts, instruments and documents shall be reviewed by and be in a form acceptable to the Vice President for Legal Affairs and General Counsel prior to execution, and be in compliance with the law and with University

policies and regulations and conform to the legal standards of the Vice President for Legal Affairs and General Counsel.

9. **Attachments:**

   A. School of Engineering and Computer Science RIC Vehicle Wireless Antenna System Loan

Submitted to the President
on Jun 22, 2026, 2026 by

Amy Thompson
Amy Thompson (Jun 22, 2026 15:55:28 EDT)

Amy Thompson, Ph.D., FESG, CHES
Executive Vice President for
Academic Affairs and Provost

Stephen W. Mackey
Senior Vice President for
Finance and Administration and
Treasurer to the Board of Trustees

Recommended on 6/23, 2026
to the Board for Approval by

Ora Hirsch Pescovitz, M.D.
President

Reviewed by

Joshua D. Merchant, Ph.D.
Chief of Staff and
Secretary to the Board of Trustees

Attachment A

School of Engineering and Computer Science
RIC Vehicle Wireless Antenna System Loan

Loan Information:

Loan Amount	$ 3,500,000
Interest Rate	4.00%
Term	10 Years
Payment	$ 431,518 / year

Period	Interest	Payment	Balance
			$ 3,500,000
1	$ 140,000.00	$ 431,518	$ 3,208,482
2	$ 128,339.27	$ 431,518	$ 2,905,303
3	$ 116,212.11	$ 431,518	$ 2,589,996
4	$ 103,599.86	$ 431,518	$ 2,262,078
5	$ 90,483.12	$ 431,518	$ 1,921,043
6	$ 76,841.71	$ 431,518	$ 1,566,366
7	$ 62,654.65	$ 431,518	$ 1,197,503
8	$ 47,900.10	$ 431,518	$ 813,884
9	$ 32,555.38	$ 431,518	$ 414,921
10	$ 16,596.86	$ 431,518	(0)

Loan Acknowledgement and Authorization:

Dan Aloi, Professor
School of Engineering and Computer Science

Louay Chamra, Dean
School of Engineering and Computer Science

Amy Thompson, Executive Vice President
for Academic Affairs and Provost

Stephen Mackey, Senior Vice President
for Finance and Administration

Notes:

1. Payments would be due annually from the time the loan is activated