
Auburn Civil & Environmental
(& Asphalt Pavement)
Engineering

Department of Civil & Environmental Engineering
Vision Statement

Aspire to be a Preeminent Civil & Environmental Engineering Program

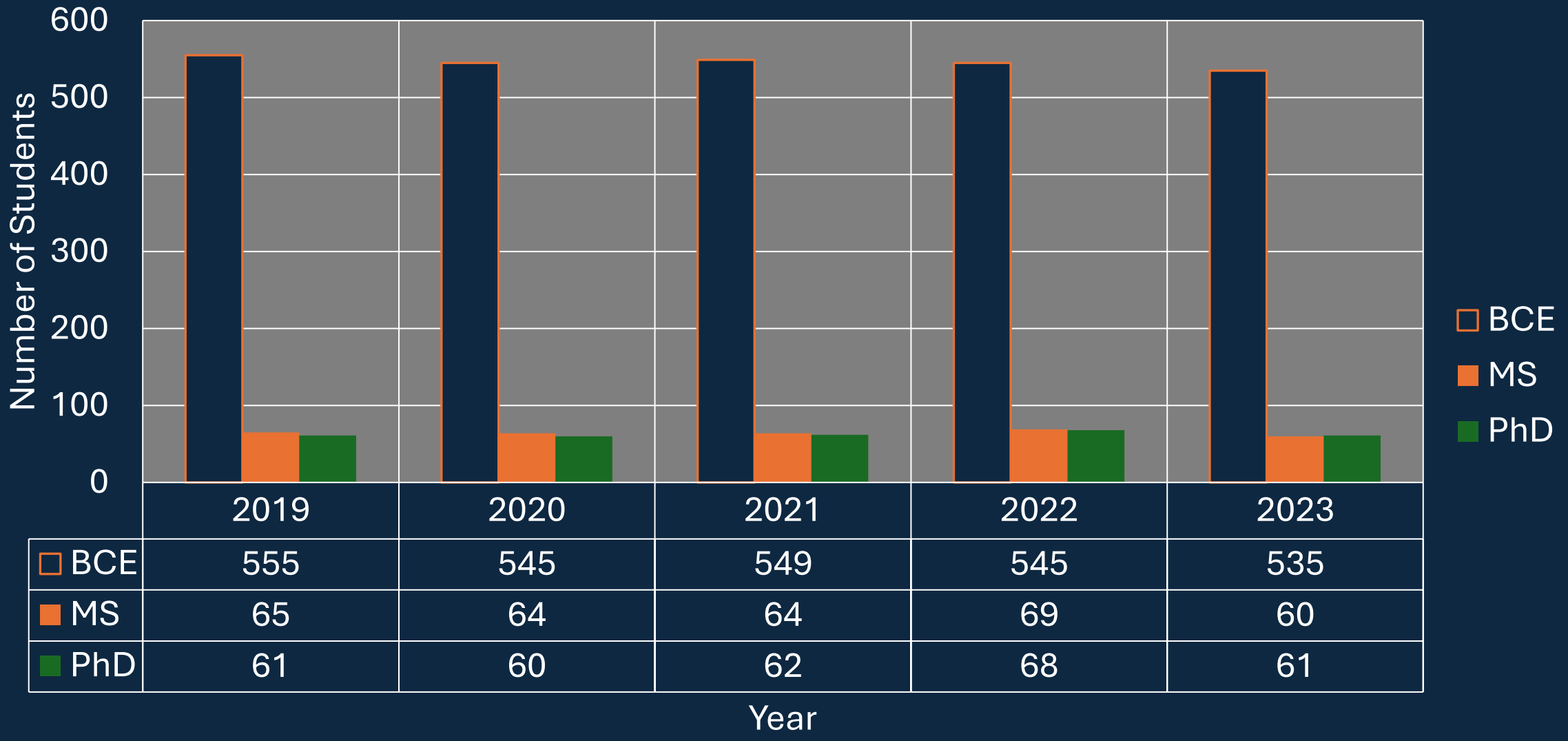
Department of Civil & Environmental Engineering
Mission Statement

- Prepare **students**, through high quality programs, to practice civil engineering professionally in a competitive global environment
- Develop and expand the capabilities of its **faculty**
- Expand scientific and engineering knowledge through **innovative research** and creative partnerships involving academia, industry and government
- Provide **outreach** programs to assist individuals and organizations to find solutions to engineering problems.

AU Civil & Environmental Engineering Areas

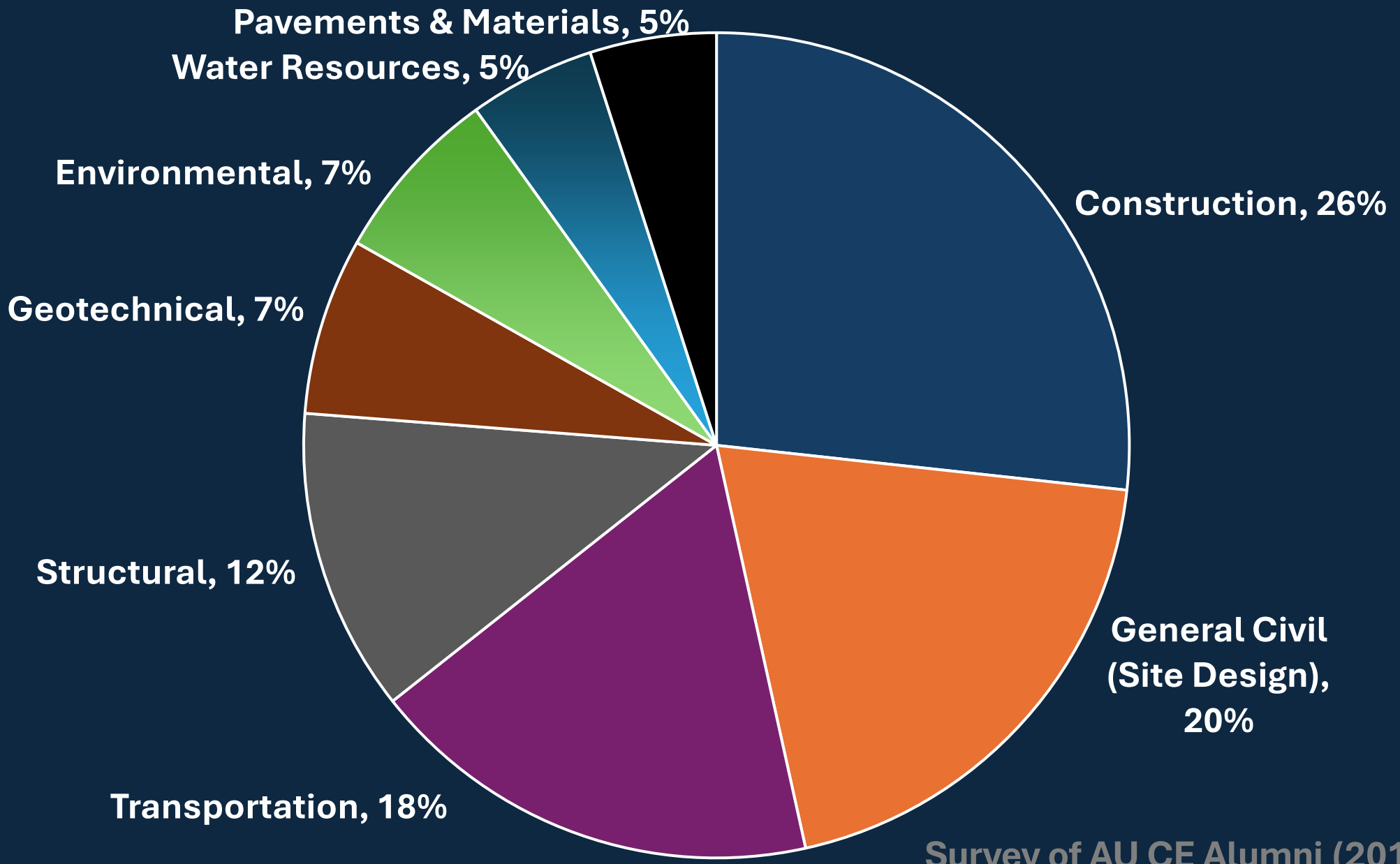
- Construction Engineering and Management
- Environmental Engineering
- Geotechnical Engineering
- Pavements & Materials Engineering
- Structural Engineering
- Transportation Engineering
- Water Resources Engineering

CEE Enrollments – Fall Semesters – Last 5 Years



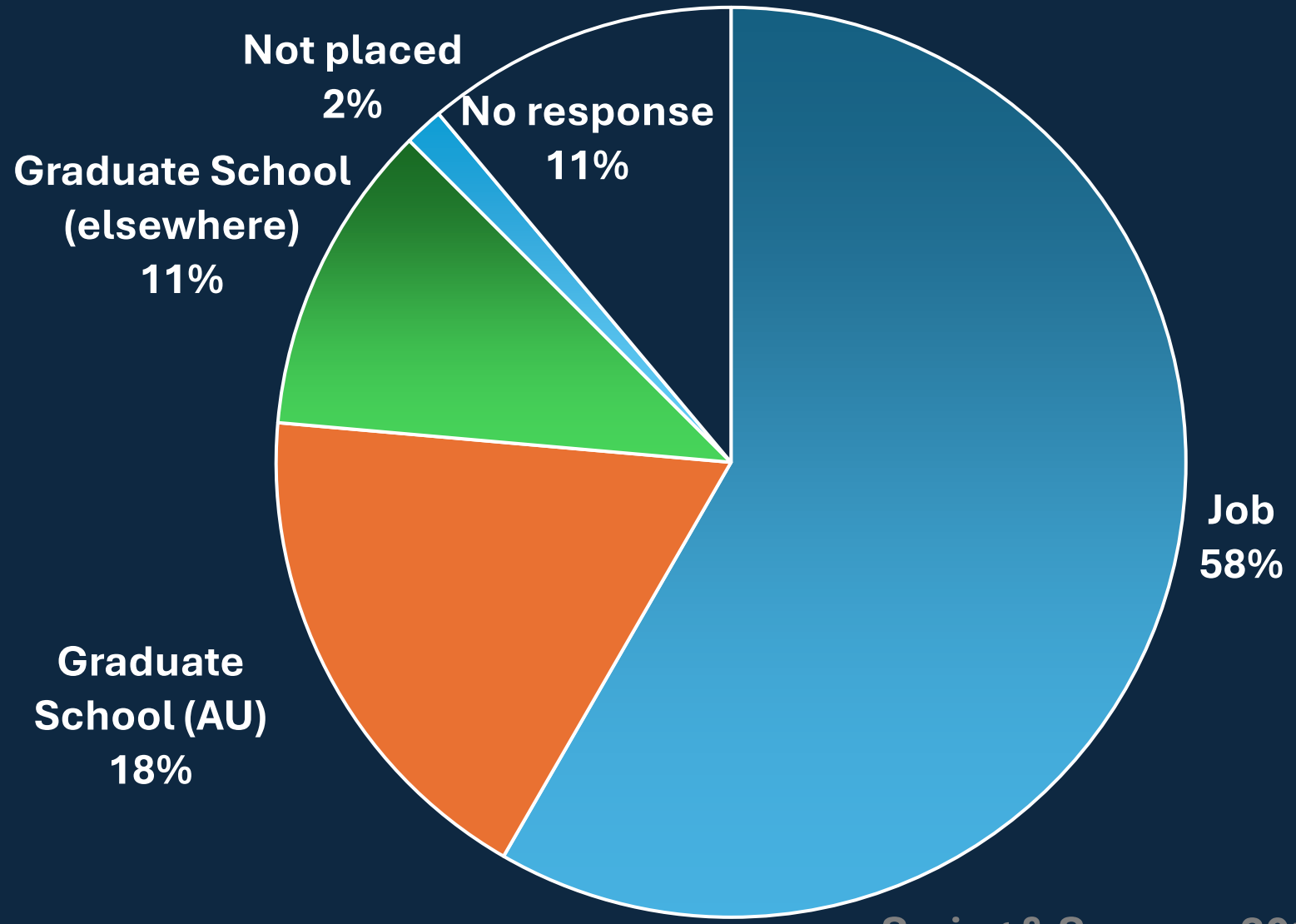
	2019	2020	2021	2022	2023
BCE	555	545	549	545	535
MS	65	64	64	69	60
PhD	61	60	62	68	61

Civil & Environmental Specializations



Survey of AU CE Alumni (2015)

Placement of BCE Graduates



Spring & Summer 2018 BCE Graduates

Construction Engineering and Management

Dr. Jorge Rueda

Dr. Mike Perez

Construction Workforce Development | Risk Management | Alternative Contracting Methods | Cost Engineering | Transportation Asset Management | Erosion & Sediment Control | Large-Scale Testing | Low Impact Development & Green Infrastructure | Construction Stormwater Mgm't

Environmental Engineering

Dr. Mark Barnett

Dr. Lauren Beckingham

Dr. Joel Hayworth

Dr. Jillian Maxcy-Brown

Dr. Nick Zou

Water & Wastewater Treatment | Environmental Policy | Resource Recovery | Electrochemistry | Membrane Separation | Environmental Bioprocess | Physical Chemical Processes | Nanotechnology | Soil and Ground Remediation | In-Situ Remediation | Contaminant Degradation | Estuarine Systems | Endocrine Disrupters | Biotechnology | Groundwater Contaminants | PFAS | Water-Rock Interactions | Permeability Interactions | CO2 Sequestration

Geotechnical Engineering

Dr. Brian Anderson

Dr. Ali Khosravi

Dr. Jack Montgomery

Soil Mechanics | Soil-Structure-Interaction | Foundation Engineering | Earth Retaining Structures | Infrastructure Performance | Landslides | Dams | Bio-inspired Geotechnics | Unsaturated Soils | Site Characterization | Geotechnical Earthquake Engineering | Sinkholes | Energy Geotechnics

Pavements & Materials Engineering

Dr. David Timm

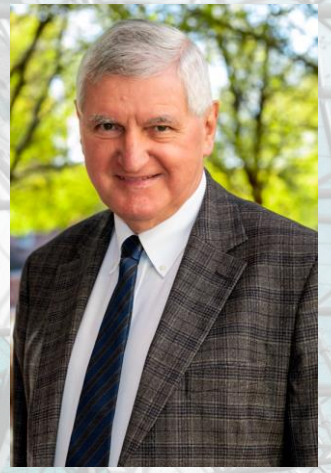
Dr. Ben Bowers

Asphalt Pavements | Full-Scale Pavement Testing | Pavement Structural Modeling | Pavement Design & Analysis | Sustainable Design | Infrastructure Resilience | Integration of Reclaimed Materials into Pavement | Cold Recycling

Structural Engineering

Dr. Robert Barnes

Dr. Jim Davidson



Dr. Andrzej Nowak

Dr. David Roueche

Dr. Anton Schindler

Dr. Kadir Sener

Dr. Matt Yarnold

Concrete Materials | Composite Construction | Bridge Engineering | Wind Engineering | Timber Design | Natural Hazard Resilience | Structural Repair | Non-Destructive Testing | Computational Modeling | Earthquake Engineering | Missile-Impact Resistance | Reliability of Structures

Transportation Engineering

Dr. Jeff LaMondia

Dr. Larry Rilett

Dr. Rod Turochy

Dr. Huaguo Zhou

Traffic Operations and Safety | Highway and Railway Design | Access Management
Traffic Incident Management | Computer Simulation | Operational Effects of Geometrics
Wrong-Way Driving | Intelligent Transportation Systems | Pedestrian and Bicycle Safety
Highway Safety | Roadway Design | Work Zone Safety | Traffic Data Analysis | Travel Behavior
Travel Demand Forecasting | Predictive Modeling | Long Distance Travel | Vulnerable Road Users

Water Resources Engineering

Dr. Xing Fang

Dr. Frances O'Donnell

Dr. Jose Vasconcelos

Water Quality Modeling | Hydrodynamics | Stormwater Management | Climate Change Impacts | Unsteady Hydraulics | Multi-phase flows | Urban Water Systems | Surface Hydrology | Sediment-water flows | Computational Hydraulics | Transient Flow | Ecosystem Restoration | Green Infrastructure | Vegetation & the Water Cycle | Soil Moisture & Evapotranspiration

AUBURN
ENGINEERING

TRANSPORTATION RESEARCH INSTITUTE

ALABAMA TRANSPORTATION ASSISTANCE PROGRAM

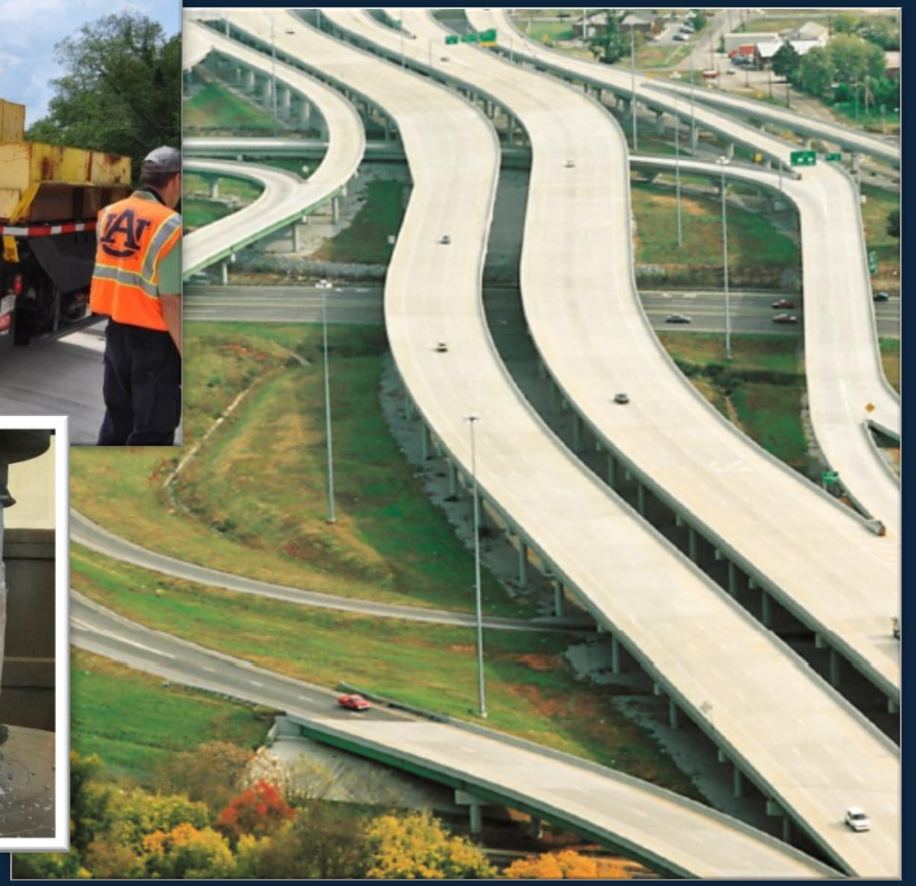
HIGHWAY RESEARCH CENTER

GPS and VEHICLE DYNAMICS LABORATORY

NATIONAL CENTER for ASPHALT TECHNOLOGY

TRANSPORTATION TESTING CENTER (NCAT Test Track)

AU Highway Research Center



Advancing
ALABAMA

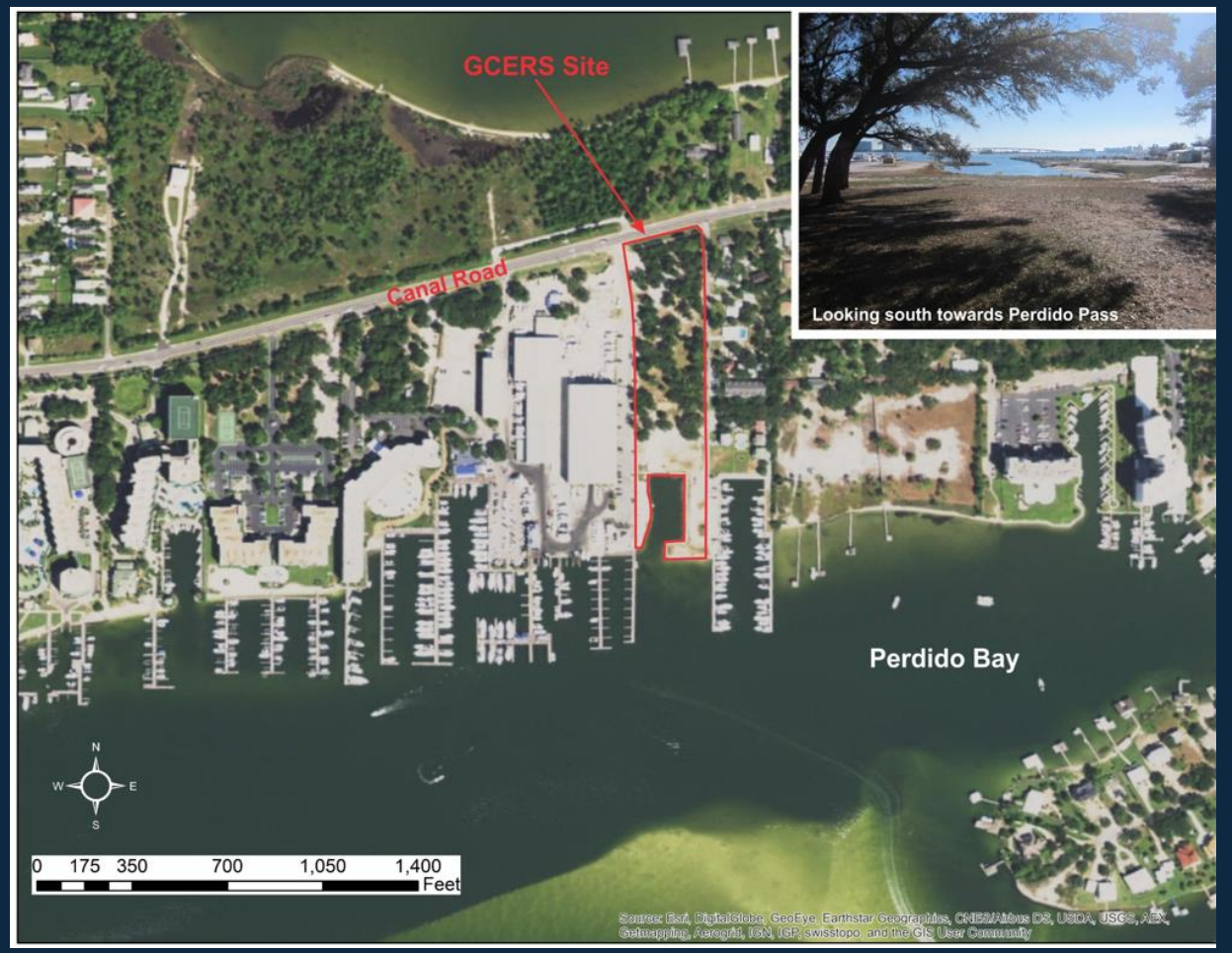
Since 1985, the HRC has improved the safety, user friendliness, sustainability, longevity, and return on investment of Alabama's highway infrastructure

AU Stormwater

Advanced Structural Engineering Laboratory (ASEL)

Gulf Coast Engineering Research Station (GCERS)

- Research focus:
  - Coastal engineering and science research of critical importance to coastal Alabama and other Gulf of Mexico communities and ecosystems
- Research activities:
  - Water quality and quantity protection and restoration
  - Engineering approaches for protection and restoration of coastal estuaries and upland freshwater wetlands
  - Coastal community infrastructure and economic resilience and sustainability
  - Coastal emergency management and transportation systems
  - Engineering-related STEM education opportunities for coastal Alabama K-12 students



Gulf Coast Engineering Research Station (GCERS)

National Center for Asphalt Technology – Lab & Test Track

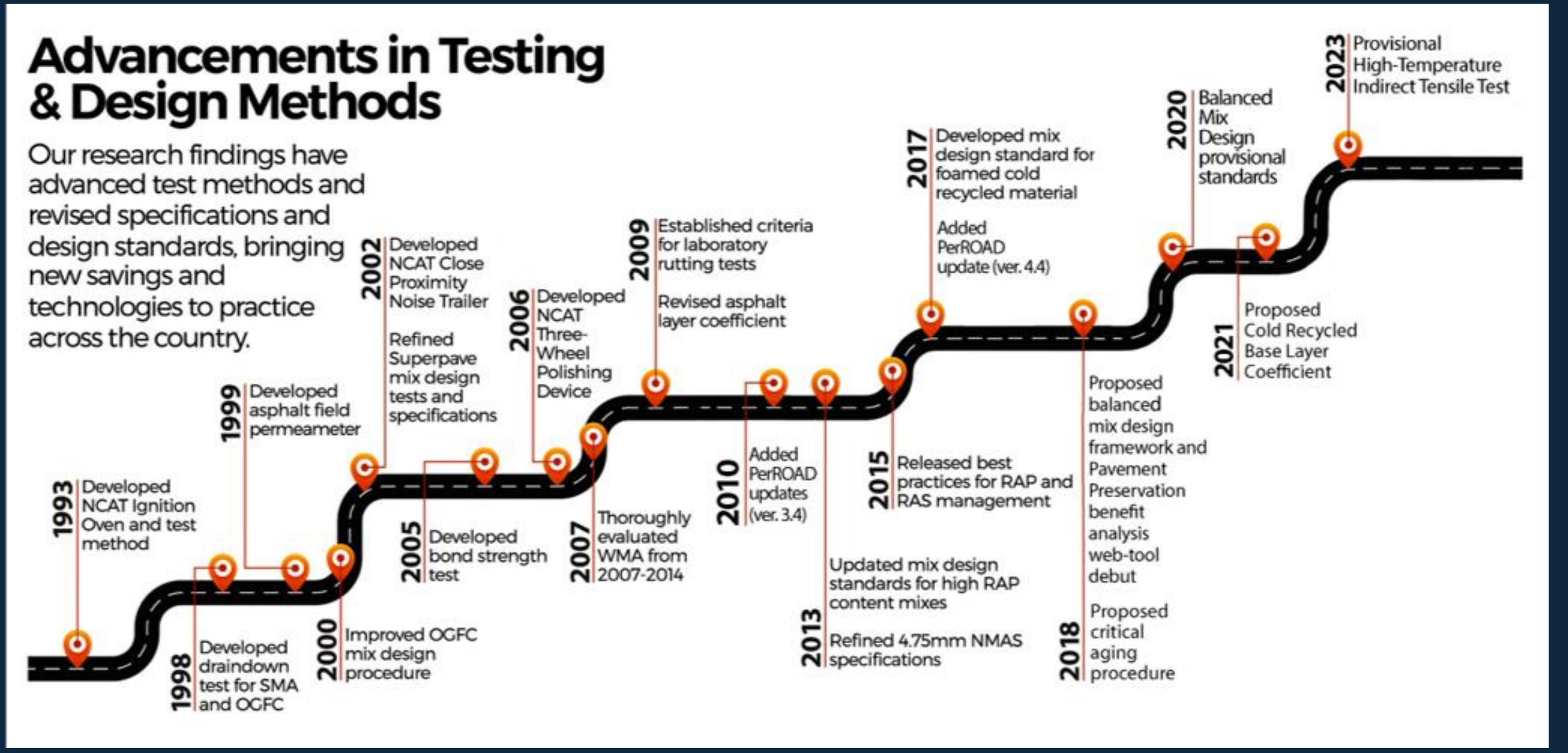
NCAT History

- Established in 1986
- Partnership between Auburn University and the National Asphalt Pavement Association Research & Education Foundation (NAPAREF)
- Majority of funding for research comes from state DOTs.

NCAT Mission, Vision, & Core Values

- Mission
  - Provide innovative, relevant and implementable research, technology development and education that advances safe, durable and sustainable asphalt pavements
- Vision
  - Maintain prominence as a world leader in asphalt pavement technology
- Core Values
  - Safety
  - Family
  - Integrity
  - Valuable Research

NCAT Research Accomplishments



NCAT Training & Education

- Training Courses
  - Technician certification courses in AL, GA, PR
  - General asphalt technology
  - Mix design: Superpave and BMD
  - Asphalt Engineers workshops
- 7 graduate courses in Pavement Engineering – traditional and on-line
- Professor Training Course

Each year, NCAT typically trains over 1000 industry personnel

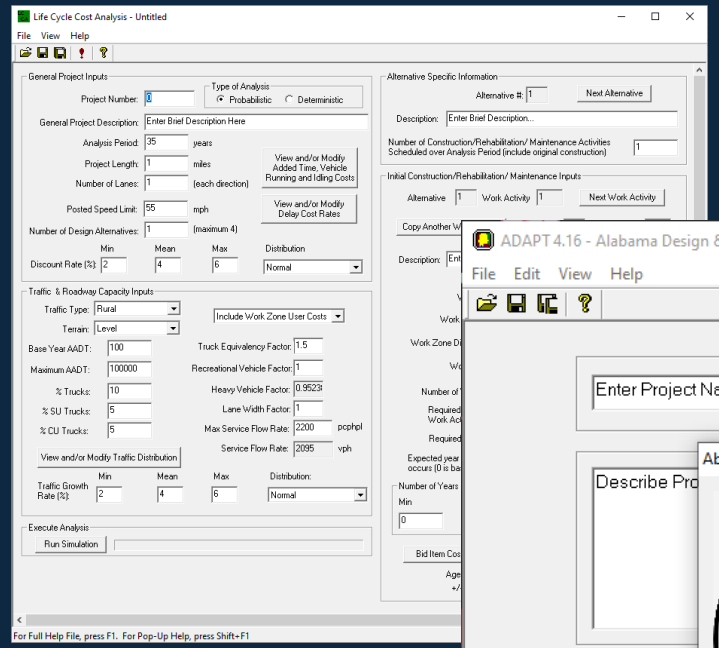
NCAT Test Track

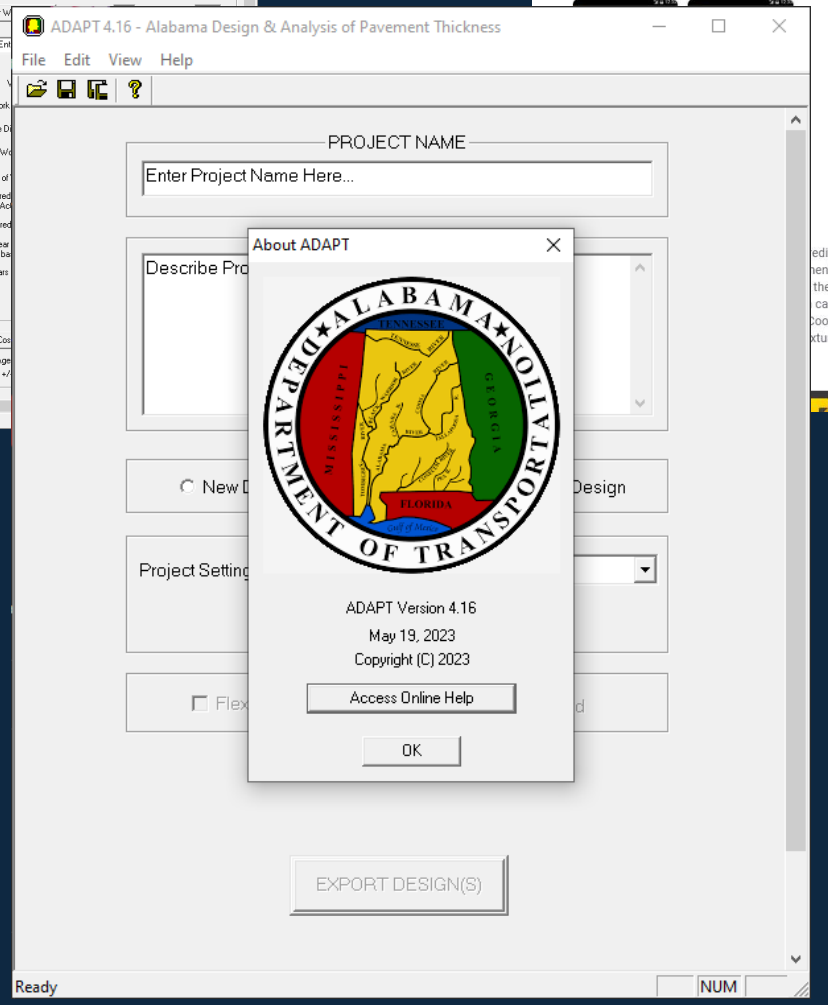

0.5
0
-0.5
-1
22.8
23
23.2
23.4
23.6
23.8
24
24.2
24.4
24.6
24.8

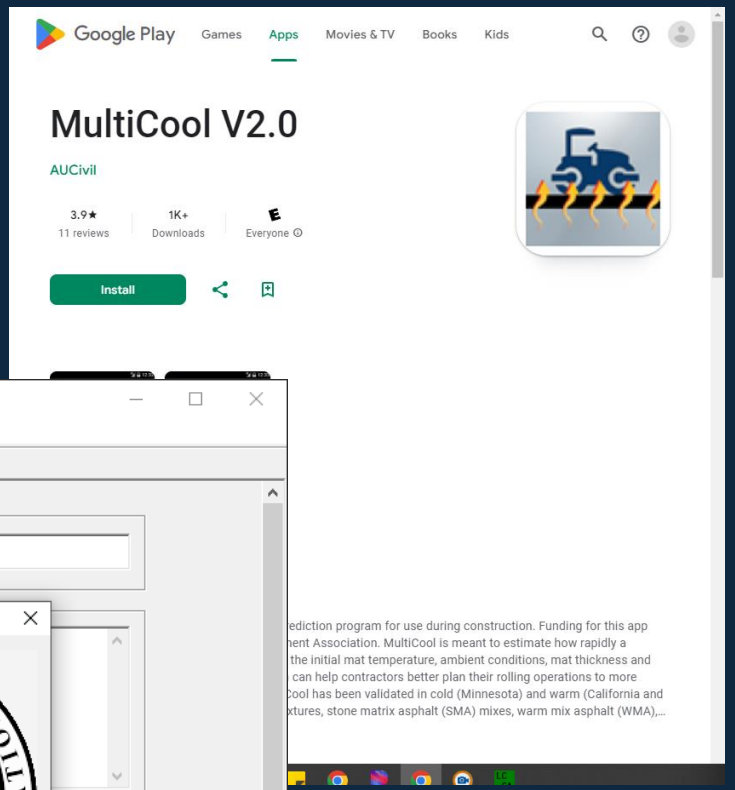

CANADA
MEXICO
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
THE BAHAMAS
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
ARIZONA
COLORADO
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
RHODE ISLAND
CONNECTICUT
NEW JERSEY
DELAWARE
MARYLAND
HAWAII
ALASKA
Albers equal area projection
0 100 200 300 mi
0 100 200 300 km
0 100 mi
0 100 km
0 200 mi


Apheresis

Pavement Programming







Thank you!