Delaware Center For Transportation
Research Showcase 2015

Thank you to all who participated and attended
LISTING OF 2015 ACTIVE PROJECTS

ENVIRONMENTAL

Integrating Zero-Valent Iron and Biochar Amendments in Green Stormwater Management Systems for Enhanced Treatment of Roadway Runoff: Phase II Field Demonstration
Principal Investigators: Paul Imhoff, Dan Cha, and Julia Marescu, Civil and Environmental Engineering, UD
Mingxin Guo, Department of Agriculture and Natural Resources, DSU
Project Manager: LaTonya Gilliam, Division of Engineering

Sustainable Road Vegetation Management Studies
Principal Investigator: Susan Barton, Department of Plant and Soil Science
Project Manager: Randall Cole, Maintenance and Operations

Delaware Byways, Phase XII
Principal Investigator: Rebecca Sheppard, Center for Historic Architecture and Design
Project Manager: Ann Gravatt, Division of Planning

Snow Depth Monitoring
Principal Investigator: Kevin Brinson, Department of Geography
Project Manager: Gloria Acevedo, Maintenance and Operations

PAVEMENT AND MATERIALS

Determining an Acceptable Variation of Measurement in Pavement Evaluation
Principal Investigator: Sue McNeil, Department of Civil and Environmental Engineering
Project Manager: Sarah McDougal, Pavement Management Engineer

PLANNING

Evaluation of Smart Growth Development Patterns and Effects on Transportation
Principal Investigator: Rusty Lee, Department of Civil and Environmental Engineering
Project Manager: Michael DuRoss, Division of Planning

Development of a Multi-Modal Trip Generation Model, Based on Travel Accessibility Indexing at the Tax Parcel Level
Principal Investigator: David Racca, Center for Applied Demography and Survey Research
Project Manager: Michael DuRoss, Division of Planning

Next Generation Travel Surveys
Principal Investigator: Tibor Tóth, Center for Applied Demography and Survey Research
Project Manager: Michael DuRoss, Division of Planning

Planning for Complete Communities in Delaware: Phase IV
Principal Investigator: Marcia Scott, Institute for Public Administration
Project Manager: Ralph Reeb, Division of Planning

SOILS, STRUCTURES, and BRIDGE

AASHTO LRFD Bridge Design Specifications
Principal Investigator: Chris Meehan, Department of Civil and Environmental Engineering
Project Manager: Jason Hastings, Transportation Solutions – Bridge Design

Impact Factor for Buried Culverts
Principal Investigator: Tripp Shenton, Department of Civil and Environmental Engineering
Project Manager: Ping Jiang, Transportation Solutions – Bridge
SOILS, STRUCTURES, and BRIDGE

Rehabilitation of Fatigue-Cracks in Steel Bridges
Principal Investigator: Thomas Schumacher, Department of Civil and Environmental Engineering
Project Manager: Barry Benton, Transportation Solutions – Bridge

Verification of Design of a Novel Mechanically Stabilized Earth Wall at the Christiana Interchange
Principal Investigator: Dov Leshchinsky, Department of Civil and Environmental Engineering
Project Manager: Barry Benton, Transportation Solutions – Bridge

Monitoring of a Geosynthetic Reinforced Soil (GRS) Integrated Bridge System (IBS) in the State of Delaware
Principal Investigator: Chris Meehan, Department of Civil and Environmental Engineering
Project Manager: Jason Hastings, Transportation Solutions – Bridge

TRAFFIC and ITS

Determining Work Zone Lane Capacities along Multilane Signalized Corridors
Principal Investigator: Mingxin Li, Department of Civil and Environmental Engineering
Project Manager: Adam Weiser, Division of Transportation Solutions, Safety Programs Manager

Capacity Adjustments for Adaptive Control Systems
Principal Investigator: Rusty Lee, Department of Civil and Environmental Engineering
Project Manager: Gene Donaldson, Traffic Management Center

Delaware Signal Timing Enhancement Partnership (DSTEP) – Corridors 7 and 8
Principal Investigator: Rusty Lee, Department of Civil and Environmental Engineering
Project Manager: Gene Donaldson, Traffic Management Center

FY15 Regional Travel Demand Modeling Support
Principal Investigator: Rusty Lee, Department of Civil and Environmental Engineering
Project Manager: Mike DuRoss, Division of Planning

Pavement Markings and Signing to Support Senate Bill 120
Principal Investigator: Rusty Lee, Department of Civil and Environmental Engineering
Project Manager: Mark Luszcz, Transportation Solutions – Traffic

A Comprehensive Review and Update of the Traffic Monitoring Program at DelDOT
Principal Investigator: Ardeshir Faghri, Department of Civil and Environmental Engineering
Project Manager: Kevin Gustafson, Division of Planning

Determining Ideal Locations for Radar Speed Signs for Maximum Effectiveness
Principal Investigator: Mingxin Li, Department of Civil and Environmental Engineering
Project Manager: Michael Somers, Traffic Calming Supervisor

TRANSIT

Impact of Heavy Axle Load Railroad Freight Traffic
Principal Investigator: Allan Zarembski, Department of Civil and Environmental Engineering
Project Manager: David Campbell, Program Support Manager, DTC

Passenger and Freight Rail Service Support
Principal Investigator: Allan Zarembski, Department of Civil and Environmental Engineering
Project Manager: Albert Loyola, Rail & Deputy Chief Administrative Officer, DTC
UTC PROJECTS FUNDED BY USDOT

Alternative Fuels Usage in Maritime Transportation System
   Principal Investigator: James Corbett

Bridge Retrofit Replacement Decisions: Tools to Assess Sustainability
   Principal Investigators: Abigail Clarke-Sather and Thomas Schumacher

Carbon Fiber-Require Polymer Strips
   Principal Investigator: Nakul Ramanna

Connected Vehicle Technologies for Energy Efficient Urban Transportation
   Principal Investigators: Ajay Prasad and Suresh Advani

Land Use Master Planning for Environmental Sustainability
   Principal Investigator: Marcia Scott

Multimodal Transportation Facility Resilience Index
   Principal Investigator: Nii Attoh-Okine

Satellite Assessment and Monitoring for Pavement Management
   Principal Investigators: Ardeshir Faghri and Mingxin Li

Simultaneous Removal of Nitrogen and Phosphorus from Stormwater by Zero-Valent Iron and Biochar in Bioretention Cells
   Principal Investigator: Pei Chiu and Paul Imhoff

Using Information at Different Spatial Scales to Estimate Demand to Support Asset Management Decision Making
   Principal Investigator: Sue McNeil