

Project Title – Development of Graduate Level Course on Sustainable Asphalt Pavements
University – University of Florida
Principal Investigator – James Richard Willis, Ph.D., Auburn University
PI Contact information – 334-844-6288, willi59@auburn.edu
Funding Source(s) and Amounts Provided (by each agency or organization)
Total Project Cost – \$95,676
Agency ID or Contract Number – 2012-049S
Start and End Dates – 7/2/12 to 1/8/2015
Brief Description of Research Project – The purpose of this Education and Workforce Development project is to instill in architectural and civil engineering students at the graduate level the importance of sustainability aspects of pavement design and application that will enhance the prospect of developing livable communities. The proposed curriculum will provide a graduate-level, interactive, on-line course of instruction for methods of designing sustainable and energy efficient pavements that will provide livable communities and improved quality of life. Technology transfer workshops and webinars will also be held to provide this information at the state and local government level.
Describe Implementation of Research Outcomes (or why not implemented) - A graduate level course was developed for and taught at Auburn University in the Spring of 2013 which covered topics related to both asphalt and concrete sustainability in all five phases of a pavement's life-cycle. The course focused on providing the students with data which would allow them to make informative decisions for both situational questions on exams but in future practice as well. Additionally, one-day workshops were conducted throughout the Southeastern United States which gave practicing engineers the same opportunity to gain knowledge related to this subject. Overall, approximately 135 engineers were exposed to the idea of making pavements sustainable. For the technology transfer aspect, statewide training opportunities were to be offered to states associated with STRIDE: Florida, Alabama, Mississippi, Georgia, and North Carolina. The team attempted to work with both North Carolina and Georgia to complete a one-day workshop in the state; however, at the time of this report, the technology transfer team has not been able to find a mutually agreed upon time to meet with the states yet. These workshops will still be completed; however, they will be completed without the use of STRIDE funds. Instead, the STRIDE funds were used to complete additional trainings in Alabama and begin an online continuing education program through Auburn University's outreach program.

Place Any Photos Here –

Table 1. Course Topics

Topic #	Topic	Presenter
1	What is Sustainability	Richard Willis
2	Life-cycle Assessment	Richard Willis
3	Material Selection: Reclaimed Asphalt Pavement	Richard Willis
4	Material Selection: Recycled Asphalt Shingles	Richard Willis
5	Material Selection: Ground Tire Rubber	Carolina Rodezno
6	Material Selection: Recycled Concrete Aggregate	Richard Willis
7	Material Selection: Industrial Byproducts	Richard Willis
8	Production/Construction: Warm Mix Asphalt	Carolina Rodezno
9	Production/Construction: Intelligent Compaction	Caterpillar
10	Production/Construction: In-place Recycling	Donald Watson
11	Use Phase: Pavement Noise	Michael Heitzman
12	Use Phase: Urban Heat Island/Albedo	Carolina Rodezno
13	Use Phase: Porous Pavements	Donald Watson
14	Use Phase: Pavement Vehicle Interaction	Richard Willis
15	Maintenance/Rehab: Sustainable Practices	Carolina Rodezno
16	Long-Life Pavements	Richard Willis
17	Life-cycle assessment programs	Richard Willis
18	Pavement Rating Systems	Richard Willis
19	Development of GreenRoads	Steve Muench
20	New and Innovative Technologies	Richard Willis
21	Transportation Systems	Jeff LaMondia

Impact/Benefits of Implementation (actual, not anticipated) –
Between the graduate course and the workshops, approximately 135 future or practicing engineers received education on the topic of sustainable pavements.

Final Report on STRIDE Website:

http://www.stride.ce.ufl.edu/uploads/docs/STRIDE_Auburn_Final_Report.pdf

Final Report on TRB/TRID: <https://trid.trb.org/view/2015/M/1343107>