

FY-2004 RESEARCH IDEAS

SR #	PROJECT TITLE	FUNDED	PROJECT #
	<u>ENVIRONMENT</u>		
EN-01	Impacts to Aquatic Habitat from Bridge to Culvert Replacement	Yes	2004-08
EN-02	A Comparison of the Impacts of Culverts versus Bridges on Aquatic Habitat		
EN-03	Assessment of the Impact of Riprap (Armor Stone) Used for Bank Stabilization on Freshwater Fauna		
EN-04	Interaction Between Whitetail Deer, Highways, & Associated Structural Crossings	Yes	2004-07
EN-05	Development of Field and Laboratory Standard Operating Procedures for Genetic Identification of Freshwater Mussel Species	Yes	2004-09
EN-X1	Hydrologic, Biologic, and Geomorphic Character of Headwaters Streams in North Carolina		
EN-X2	Restoration of Heavy Metal Storage in a Created Wetland		
EN-X3	Bioassessment of Restored Wetlands in the Piedmont of North Carolina		
EN-X4	Measuring and Modeling BMP Effectiveness for Treating Stormwater from NCDOT's Highways		
	<u>PLANNING</u>		
PL-01	Use of Performance Standards and Measures for Public Transit Systems	Yes	2004-10
PL-02	Determining Vehicle Miles of Travel (VMT) within City/Urban Areas		
PL-03	A Statistical Model for Sampling and Validating Truck Counts and Axle Factors		
PL-04	North Carolina Forecasts for Truck Traffic	Yes	2004-11
PL-05	Rural Planning Organizations		
	<u>OPERATIONS</u>		
OP-01	I-40 Reversal Operational Traffic Analysis	Yes	2004-16
OP-02	Effectiveness of Highway Advisory Radios in NC		
OP-03	Reasonable Speeds on Improved Curb & Gutter Facilities	Yes	2004-17
OP-04	Crash Reduction on Wet CRC Pavement		
OP-05	Optimized – 20 Year Plus, Solar Sign Lighting		
OP-06	Traffic Barrier Deflection Under Vehicular Impact		
OP-07	Effectiveness of SmartZones in North Carolina		
OP-08	Delay		
OP-09	Analyzing Effectiveness of Temporary and Permanent Erosion and Sedimentation Control (E&SC) for Mountain Area Trout Waters		
OP-10	Automated Mileage for Motor Fleet Management Vehicles		
OP-11	The In-Use Evaluation of Fuel Cells as Power Sources for DOT Fixed Facilities and Potential for Future Mobile Equipment Use		
OP-X2	Operational Evaluation of Emissions and Fuel Use of B20 vs. Diesel Vehicles	Yes	2004-18
OP-X4	Operational Study of Roundabouts in North Carolina		
OP-X5	An Integrated Infrastructure Management Information System for Emergency System Response and Planning		

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SR #	PROJECT TITLE	FUNDED	PROJECT #
	<u>PAVEMENT & MATERIALS</u>		
PV-01	Railroad Crossing Surfaces		
PV-02	Swell Around Utility Manholes		
PV-03	Impact of Gyrotory Compactor on Properties and Performance of AC Mixes		
PV-04	Optimizing Gradations for Surface Treatments	Yes	2004-04
PV-05	Use of Modified Emulsions to Improve Performance of Chip Seals		
PV-06	Effect of Particle Size of Baghouse Fines on Water Sensitivity of Asphalt Mixes		
PV-07	Quantifying Anti-Strip Additive in Asphalt	Yes	2004-05
PV-08	Feasibility of Using Compressive Strength Test Results for Acceptance Testing of Concrete Pavements	Yes	2004-06
PV-09	Development of Optimal Acceptance Criteria for Concrete Pavement		
PV-X1	An In-Depth Evaluation of the Effect of TSRs on Service Life & Pay Factors of Asphaltic Pavements		
PV-X2	Characterization of NC Piedmont Soils Using Cone Penetration and Dilatometer Tests		
PV-X3	Standard Test Method to Determine Efficacy of Asphalt Removing Solvents		
PV-X4	Recyclability Potential of Waste Amended Asphalt Concrete Mixes: A Case of Coal Combustion Bottom Ash		
PV-X5	Application of Geosynthetics for Cost Effective Pavement Rehabilitation		
	<u>STRUCTURES</u>		
ST-01	Fuzzy & Neural Network Models for Geotechnical Problems		
ST-02	Concrete Diffusion Coefficients and Existing Chloride Exposure in North Carolina	Yes	2004-12
ST-03	Review of NCDOT Practices for Analyzing Overhang Falsework	Yes	2004-13
ST-04	Developing a Method for Predicting Deflection in Steel Plate Girders under Non-Composite Load for Stage-Constructed Bridges	Yes	2004-14
ST-05	Value Engineering and Cost Effectiveness of Various FRP Repair Systems	Yes	2004-15
ST-X1	Implications of New LRFD Seismic Design Provisions for NCDOT		
ST-X2	The Impact of Clay on Early Jet Grouting Strengths		
OP-X1	Adjacent Excavations: Allowable Movements and Monitoring		
OP-X3	Settlement Mitigation of Soft Coastal Deposits Using Wick Drains with Controlled Function		
OP-X6	Alternatives to Blasting: Design Guidelines & Construction Specifications		
PV-X6	Rock Slope Stability: State of the Art		
PV-X7	Degradation of Weak Triassic Basin Rock		