

## LIST OF FY-2006 RESEARCH IDEAS

<u>IDEA NO.</u>	<u>IDEA TITLE</u>	<u>SUBMITTED BY</u>	<u>AFFILIATION</u>
<b>Planning and Environment</b>			
EN-01	Evaluation of Manufactured Stormwater Best Management Practices	M. Lauffer	Hydraulics Unit
EN-02	Determination of the Causes of Increased NOx Emissions from the Use of Biodiesel in Heavy Equipment	B. Thompson, D. Harbinson	Equipment Unit
EN-03	Guidance for Defining the Appropriate Indirect and Cumulative Impacts Study Area for Road Widening Projects on Existing Location	R. Deaton, T. Gardiner	PDEA-Human Env.
EN-04	The Impact of Road Projects on Residential Property and Viability	T. Gardiner, S. Gurganus	PDEA-Human Env.
EN-05	Hydrographs & Stream Alterations from Road Projects & Secondary Development	P. Todd	PDEA-Natural Env.
EN-06	Benefits of Causeway Removal	P. Todd	PDEA-Natural Env.
EN-07	Review Effectiveness of Bear Crossings on TIP No. A-10	P. Todd	PDEA-Natural Env.
EN-08	Aquatic Organism Passage Simulator	R. Little	Roadside Env. Unit
EN-09	Functional Assessment for Culvert & Pipe Retrofits for Mitigation Credit	R. Little	Roadside Env. Unit
PL-01	Integrating IDAS into Transportation Planning	R. Fussell	Trans. Planning Branch
PL-02	Data Quality Assessment Framework for NCDOT Spatial Information System	A. R. Pradhan	GIS Unit
PL-03	Determining Vehicle Miles (VMT) within City/Urban Areas	L. Smith	GIS Unit
PL-04	The Effects of Hurricanes, Tornadoes and Snow on Air Quality	R. Crummey	Trans. Planning Branch
PL-05	Transportation and Cost Impacts of School Locations and School Travel	T. Norman	Bicycle & Ped. Div.
PL-06	Real World Duty Cycles and Utilization for Construction Equipment in NC	J. Alavi	Trans. Planning Branch
PL-07	Economic Development Benefit Based Trip Model	P. Black	UCP RPO
PL-08	Future Activities & Programs for North Carolina's RPOs	D. Eggert	Cape Fear RPO
PL-09	Economic Impact of Bypass Projects for Small Towns in NC	J. Alavi	Trans. Planning Branch
PL-10	North Carolina Truck Network Models	L. Cove	Trans. Planning Branch
PL-11	Economic Impacts of Access Management	D. Wasserman, J. Alavi	Trans. Planning Branch

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<b>Operations</b>			
OP-01	Impact of Road Construction on Water Quality in Coastal Plain Watersheds	B. Holman	Roadside Env. Unit
OP-02	Signal Replacement	R. E. Moore	Div. 14-Operations
OP-03	Minimum Traffic Signal Spacing	R. Hawkins	Div.3-Traffic
OP-04	Defining the Decision Zone at Traffic Signals in NC	R. Mullinax	Signals & Geom. Section
OP-05	Effectiveness of Interagency Communication to Shorten Traffic Incidents and Secondary Crashes on Interstate Facilities	R. Stone	ITS Operations Unit
OP-06	Economic Impact of Traffic Incidents on NC Interstate Facilities	R. Stone	ITS Operations Unit
OP-07	Effectiveness of Traveler Information Tools	J. Oerter	ITS Operations Unit
OP-08	Crash Data Quality	K. Lacy	Traffic Eng. Branch
OP-09	Evaluating the Safety Benefits of Closed-Loop Traffic Signal Systems in NC	S Lowry	Traffic Safety Section
OP-10	Determining the Public Perception and Understanding of Diagrammatic and Exit Only Signing	R. King	Signing Unit
OP-11	Safety and Cost to Perform Mowing Outside Guardrails with Little Shoulder Room	M. Patton	Div. 9-Maintenance
OP-12	Effects of Signal Preemption on Signalized Closed Loop Systems	J. Couch	Div. 9-Traffic Operations
OP-13	Using 'Wet-Blade' Technology for Brush Control Along NC Roadsides	D. Smith	Roadside Env. Unit
OP-14	Capacity and Safety Impacts of Triple Left Turn Lanes	N. Phillips	Congestion Mgmt. Unit
OP-15	Standard Lane Drops	N. Phillips	Congestion Mgmt. Unit
OP-16	Determining Geographic Pedestrian/Bicycle Crash Emphasis Areas for TIP Projects	J. Jaeger	Traffic Safety Pl. Section
OP-17	Incorporating a Comprehensive Traffic Safety Review in Transportation Plans	J. Jaeger	Traffic Safety Pl. Section
OP-18	Ecologically Friendly and Safer Medians	W. Garner	Div. 8-Traffic
OP-19	Internal Capture within a Multi- Use Development	T. Becher	Congestion Mgmt. Unit
OP-20	Internal Capture within a Super Store Development	T. Becher	Congestion Mgmt. Unit
OP-21	Impact of School Buses Traveling on Interstate Facilities	N. Phillips	Congestion Mgmt. Unit
OP-22	Capacity & Safety Impacts of Single & Dual Lane Interchange Loop Ramps	N. Phillips	Congestion Mgmt. Unit
OP-23	Effectiveness of Truck Lane Use Restrictions	J. Button	Traffic Eng.-TRIAD
OP-24	Crash Reduction on Wet CRC Pavement	W. B. Staley	Traffic-Field Operations

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<b>Pavement and Materials</b>			
PV-01	Reflective Cracking from Concrete Pavement	R. Blakley	Div 8-CMY Randolph Co.
PV-02	Quantifying the Benefits of Improved Rolling of Chip Seals	J. Corley-Lay	Pavement Mgmt. Unit
PV-03	Method of Determining Cost of Overweight Loads	J. Corley-Lay	Pavement Mgmt. Unit
PV-04	Determination of an Appropriate Specification for Dowel Bar Alignment in PCC Pavement	J. Corley-Lay	Pavement Mgmt. Unit
PV-05	Use of Recycled Glass Aggregates in Concrete	B. Ketchem, A. Azimi	Project Services Unit
PV-06	Performance Assessment of PADL & HB or B25.0B under Jointed Concrete Pavement	C. Morrison	Pavement Mgmt. Unit
PV-07	Performance Based Analysis of Polymer Modified Emulsions in Bituminous Surface Treatments	E. McGraw	Road Maintenance Unit
PV-08	Using the Maturity Method to Predict Concrete Strength	O. Cordle	Materials & Tests Unit
PV-09	Validation of Gyratory Compactor Angles in NC	T. Whittington	Materials & Tests Unit
PV-10	Warm-Mixed Asphalt	T. Whittington	Materials & Tests Unit
PV-11	Compatibility Issues with Emulsions	T. Whittington	Materials & Tests Unit
PV-12	Implementation of Modulus Based Control of Field Compaction	C. K. Su	Materials & Tests Unit
PV-13	Maintenance Condition Assessment Data Collection	J. Brandenburg	Road Maintenance Unit
PV-14	Updating and Automating Construction Aggregate Testing Process	M. Haeri, C. K. Su	Materials & Tests Unit
<b>Structures</b>			
ST-01	Design Criteria for Post and Beam Bents with Drilled Shafts	G. Perfetti	Structures Design Unit
ST-02	Lateral Flange Bending in Heavily Skewed Bridges	G. Perfetti	Structures Design Unit
ST-03	Material Property and Quality Control Specifications for Elastomeric Concrete Used at Bridge Deck Joints	R. Hancock	Construction Unit
ST-04	Value Engineering and Cost Effectiveness of Various FRP Repair Systems - Part II	J. Emerson	Bridge Maintenance Unit
ST-05	Long Term Slope Stabilization Measures Along on Large Fill Sections	J. Nance	Highway Division 5