

List of Indiana Department of Transportation (INDOT) FY 2017 Research Needs (as of February 6, 2017)

Instructions: This listing is for use by Faculty from accredited Indiana Universities. For additional information or to express an interest in a Research Need listed, please contact the JTRP Program Director at snoureldin@indot.in.gov. If expressing an interest in a Research need, attach you CV/resume to you email response.

Status	SPR #	Working Title
Awarded	3710	Correlation between Resilience Modulus (MR) of Soil, Light Weight Deflectometer and Falling Weight Deflectometer (FWD)
Awarded	3715	Expansion of S-BRITE Project
Awarded	3821	Real Time Traffic Mobility Measures
Awarded	3857	Assessment of Pipe Fill Heights
Awarded	3912	Economic Development Impact of Corridor Improvements
Awarded	3947	Precast Slab Pilot Implementation
Awarded	4003	Improving the quality of Concrete for INDOT Projects (Concrete curing, patching, and trial batches practices).
Awarded	4004	Development of Subgrade Stabilization and Slab Undersealing Solutions for PCC Pavements Restoration and Repairs
Awarded	4040	Experimental Study of the Load Response of Large Diameter Closed-ended and Open-ended Pipe Piles Installed in Alluvial Soil
Awarded	4042	Quantifying Asphalt Pavement Performance Loss due to Binder Deficiency in the Design Mix
Awarded	4043	Investigation of Slag Aggregate in the Asphalt Pavement
Awarded	4044	Evaluating Opportunities to Enhance the Hoosier State Train Ridership through a Survey of Riders' Opinions and an Assessment of Access to the Line

Awarded	4100	Maximum Allowable Deflection by Light Weight Deflectometer (LWD) and its calibration and verification.
Awarded	4101	Pavement Materials Testing and Testing Intervals Confidence in Pavement
Awarded	4102	Building, Evaluating and Improving LiDAR-Based Traffic Scanner Prototypes for Implementation to INDOT Practice - Phase II
Awarded	4103	Developing the Collision Diagram Builder -- Phase II
Awarded	4104	Predicting Impact to Traffic Safety and Mobility of Change in Speed Limits for Indiana Interstates
Awarded	4105	Synthesis: Outsourcing Lab Testing/Construction Oversight, Minimal Cost, Maximum Value
Proposal Pending	4107	Subgrade Stabilization Alternative
Awarded	4108	Development of Comprehensive CPT-Based Geotechnical Design Manual
Awarded	4109	Improvement of Stiffness and Strength of Backfill Soils through Optimization of Compaction Procedures and Specifications
Awarded	4112	Patching of Composite Pavement and other Types
Awarded	4113	Friction Performance of HMA compacted mixtures
Awarded	4114	Performance Balanced Mix Design for Indiana's Asphalt Pavements
Awarded	4115	Delta Tc in Multiple Stress Creep and Recovery (MSCR) Test
Awarded	4116	Constructability of Underdrains/Triggers for use of Geotextiles/Performance of #8 and #53 Aggregates
Awarded	4119	NDT Bridge Deck Digital Image Correlation
Awarded	4120	Load Rating Bridge Structures Built With Previous Design Codes
Awarded	4121	Pack Rust Identification and Mitigation Strategies for Steel Bridges

Awarded	4122	Carbon Fiber Wrap Usage As A Pre-Stressed Concrete Beam Strengthening Treatment
Awarded	4123	Strategic and Tactical Guidance for the Connected and Autonomous Vehicle Future
Awarded	4126	LiDAR-Based Mobile Mapping System for Lane Width Evaluation and Reporting in Work Zones
Awarded	4150	Implementation Proposal for (SPR-3946) Improving Energy Efficiency of Facilities
Awarded	4151	Overview of Readily Available Culvert Inspection Technologies
Awarded	4152	Pavement Density Demonstration Project
Awarded	4153	Highway Lighting Evaluation (Purdue Northwest)
Awarded	4154	Continued Support of the Mobile Infrastructure Materials Testing Laboratory
Awarded	4155	Updating Asset Risk and Vulnerability Assessment for INDOT
Awarded	4156	Capital Program Cost Optimization through Contract Aggregation Process
Proposal Pending	4157	Quality Control Procedures for Chip Seal Operations Using Macrotecture Metrics
Proposal Pending	4158	Implementation of continuous improvement for INDOT Maintenance
Awarded	4159	Evaluation of alternative LiDAR platforms and sensors for Asset Management
Proposal Pending	4160	Programming of Road Projects during the Construction Season Considering Mobility, Network Connectivity and User Costs
Proposal pending	4161	Implementation of SPR-3300 Pavement Smoothness Specification

Not approved for funding		FEASIBILITY OF VMT FEES AS A PRICING MECHANISM IN INDIANA
Not approved for funding		SPR 3827 Expansion of Strategic Scheduling of Infrastructure Maintenance and Rehabilitation Funding
Not approved for funding		Evaluation of Epoxy Injection as a Bridge Deck Maintenance Treatment
Not approved for funding		Investigation of the Use of Buried Structures as a Life-Cycle Cost Reduction Strategy on INDOT Roadways
Not approved for funding		Bridge Approaches, Settlement and Smoothness. Design and Construction of Bridge Approaches
Not approved for funding		Heated Bridge Technology
Not approved for funding		Time-lapse construction video for the first Routine Rapid Bridge Renewal project (Des. No. 1006343 - I-70 over SR 121)
Not approved for funding		Incorporating wider economic impact and economic resilience metrics into INDOT's transportation decision-making
Not approved for funding		Revenue Forecasting Based on Economic Factors Other than Vehicle Miles Travel
Not approved for funding		Energy Harvesting on INDOT Right-of-Way

Not approved for funding		Pavement Marking Durability and Wet-Weather Performance
Not approved for funding		Simulating Road and Traffic Forgiveness
Not approved for funding		Safety Performance of Barrier End Treatments, Cushions and Impact Attenuators
Not approved for funding		Solar Energy as Power Source for Traffic Signals
Not approved for funding		Analysis Methods for Systemic Safety Treatments
Not approved for funding		Autonomous and Inexpensive Monitoring of Bridge Bearings
Not approved for funding		A Study on Pedestrian Compliance vs. Traffic Volumes
Not approved for funding		Development of Online Traffic Incident Management Training (TIM) Modules for Indiana
Not approved for funding		Profile Inventory of Bridges and Bridge Approaches
Not approved for funding		researching decision making from bridge inspection data
Not approved for funding		Development of Statewide Road User Maintenance Agreements for Local Government Agencies in Indiana

Not approved for funding		Advanced Optimization and Effective Decision-Making Procedure for INDOT Winter Operation Plan
Not approved for funding		Innovative Project Delivery Methods for INDOT Projects
Not approved for funding		Road Diets for safety of bike lane
Not approved for funding		Flood risk assessment for continued performance of state controlled road in fair or better condition under extreme events
Not approved for funding		Risk management of severe mobile work-zone crashes on state-controlled roads
Not approved for funding		Use of 3-D Models for INDOT's Large Construction Projects
Not approved for funding		Life cycle cost and performance assessment of Asphalt Concrete mixtures with high amounts of RAP and RAS
Not approved for funding		Do we have the right data schema for information exchange in infrastructure projects?
Not approved for funding		Incentives for Drivers not Distracted by Cell Phones