



# ITRE

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## EDUCATION

**M.C.E., Transportation Engineering**, North Carolina State University, 1981.  
**B.S., Civil Engineering (with Honors)**, NC State University, 1979.

## REGISTRATION

Registered Professional Engineer in North Carolina, #11633.

## PROFESSIONAL AND HONORARY ASSOCIATIONS

Institute of Transportation Engineers  
American Public Works Association  
American Society of Civil Engineers  
Order of the Engineer  
Transportation Research Board  
American Society of Engineering Education

## ACADEMIC HONORS AND AWARDS

Tau Beta Pi  
Chi Epsilon

## PROFESSIONAL EXPERIENCE

### 1992 to Date

**Associate Director, Center for Transportation and the Environment**  
Manages all activities of the Center for Transportation and the Environment. Oversees activities of research, education, and technology transfer programs and manages annual budget in excess of \$2 million.

Team member on NCHRP 25-24 to assess Environmental Streamlining on ten state DOT projects. Project still in progress.

Co-Principal Investigator to develop and present Context Sensitive Solutions Training course to more than 500 NCDOT employees.

Member of TRB A1F02 Committee on Environmental Analysis

### 1990 to Date

**Director, NC Local Technical Assistance Program (LTAP)**  
Directed technology transfer program funded by FHWA. Program conducts approximately 45 technical workshops per year, publishes a quarterly newsletter, and provides other technical assistance to local governments.

### 1992 to 2001

**Director, Local Government Group**  
Principal Investigator on approximately 160 projects to update and implement pavement management systems for local governments. Also assisted in the development of GIS applications for pavement, sidewalk and sign inventories.

1983 to 1992

**Assistant Director, ITRE.**

Developed and taught short courses for the N.C. Department of Transportation (NCDOT) and N. C. municipalities. Course subjects include pavement materials, pavement design, construction, maintenance and pavement management.

Worked with NCDOT Task Force in reviewing and revising more than 100 maintenance function codes. Developed levels of service, productivity rates, and general operating procedures.

Principal Investigator on Maintenance Organization Study for NCDOT. Project involved conducting field interviews with maintenance employees, recommending organization changes, developing career ladders and training courses for maintenance employees.

Principal Investigator on project to develop roadway management system for North Carolina State Parks. Includes developing software and database for each state park.

Principal Investigator on Rural Technical Assistance Project 46A, "Pavement Structure Repair Techniques." Project consists of developing a series of videotapes on six repair activities. Work also includes developing and implementing an interactive videodisc system for the same subject area. Interactive videodisc is a leading-edge technology for training purposes.

Authored more than 35 Maintenance Bulletins for NCDOT describing detailed procedures to be followed in performing various maintenance activities.

Responsible for development of Pavement Management Systems for more than 100 municipalities and two large university campuses. Developed microcomputer program to analyze data. Provided training and support to program users, including managing projects and preparing final reports.

Responsible for scheduling and coordinating Pavement Condition Survey conducted by NCDOT on approximately 60,000 miles of paved roads. Duties include conducting training for 70 survey teams.

1980-1983

**Research Engineer; ITRE, NC State University.**

Worked on development of Technical Training Program, Technical Research Program, and Technical Information Service for the NCDOT. Assisted in teaching supervisory management courses to more than 150 Maintenance Supervisors for NCDOT. Compiled 500-page Technical Training Manual on roadway maintenance policies for NCDOT. Assisted in week long courses on this manual to approximately 200 NCDOT Managers and Engineers.

Developed Pavement Management System for NCDOT to be used on 60,000 mile road system. Implemented system and provided training to field personnel. Analyzed results of pavement condition survey.

Developed Pavement Management Systems specifically for municipalities and implemented a dozen within North Carolina.

1979-1980                      **Graduate Teaching Assistant; Department of Civil Engineering, NC State University.**

Taught laboratory sections of Civil Engineering Surveying course.  
Responsibilities included lectures, field instruction, and grading homework.

## PUBLICATIONS

*Research and Technical Training Needs - NCDOT Volume IV; Personnel Profiles, Job Requirements, and Organizational Concepts, July 1980.*

*Pavement Management System Vol 1: Pavement Condition Survey, February 1982.*

*An Explanation and Analysis of the 1982 Pavement Condition Survey, September 1982.*

*Maintenance Technical Training II, November 1983.*

*Pavement Management System Concepts for Municipalities, December 1984.*

"Function Code Operating Procedures, Crew Sizes, Equipment and Productivity Rates," February 1985.

*Bituminous Pavement Design, Construction and Maintenance, April 1985.*

*Pavement Management for Local Governments, November 1986.*

*Asphalt Pavement Technology and Inspection, April 1987.*

*Municipal Pavement Condition Survey Manual for Flexible Pavements, January 1985.*

*Pavement Condition Survey Manual for Asphalt Parking Lots, December 1985.*

*PMS-ITRE User Manual, with Dr. J. Leroy Hulseay, December 1985.*

*PLS (Parking Lot Survey) User Manual, March 1986.*

*Pavement Condition Survey - Analysis of Results, 1983 to present. (Approximately 120 reports for 90 municipalities and universities.)*

"Pavement Management for North Carolina Municipalities," January 1988. Presented at Annual Transportation Research Board Meeting (subsequently published). TRR# 1200

"Pavement Maintenance Principles," NCDOH, May 1988.

"Asphalt Pavement Maintenance," Various Municipalities, November 1988.

"Effective Pavement Maintenance Training Utilizing an Interactive Videodisc." Presented and published, 11th Conference on Interactive Videodisc in Education and Training, August 1989, Washington, D.C.

*Pavement Management System Software for Municipal Public Works Departments (Co-authored with Dr. Edd Hauser, P. E.). Presented at the National Conference on Effective Planning Techniques for Small and Medium Sized Urban Areas, Phoenix, Arizona, December 1988.*

*Context Sensitive Solutions – Training Experience Transportation Research Record: Journal of the Transportation Research Board No. 1904 of the National Academics, Washington D.C. 2005, pp. 67-74*

## SHORT COURSES AND PRESENTATIONS

"PMS Vol. 1: Pavement Condition Survey," NCDOT, 1982, 1983, 1984, 1986, and 1988.

"Maintenance Technical Training II," NCDOT, 1983-1984.

"Advanced Supervisory Course I," NCDOT, 1983-1984.

"Pavement Management and Maintenance", NCDOT, February 1987.

"Pavement Management Concepts for Municipalities", Various Municipalities, December 1984.

"Bituminous Pavement Design, Construction and Maintenance," City of Charlotte, April 1985.

"Pavement Management for Local Governments", Various Municipalities, November 1986.

"Asphalt Paving Technology and Inspection", Various Municipalities, April 1987.

"Asphalt Parking Lot Design, Construction and Maintenance," Various Municipalities, May 1987.

"Municipal Pavement Condition Survey Procedures," Five Municipalities, May 1985 to date.

"PMS-ITRE User Training," 12 Municipalities, June 1985 to date.

"Asphalt Parking Lot Survey," City of Charlotte, December 1985.

"PMS User Training," City of Charlotte, March 1986.

"Pavement Condition Survey Analysis of Results," Various City and Town Councils, 1985 to date.

"Pavement Management for Municipalities," N.C. APWA, 1985-1986.

"A Pavement Management System for North Carolina," "A Conference on Highway Applications of Microcomputers", Austin, Texas, November 1987.

"Pavement Maintenance Principles," Street Division, N.C., APWA, October 1987.

"Pavement Management for North Carolina Municipalities," Annual Transportation Research Board Meeting, Washington, D. C., January 1988.

"Basic Asphalt Pavement Maintenance," NCDOT, Jan.- Feb. 1989.

"Municipal Streets," Municipal Administrator's Course, UNC Institute of Government, Chapel Hill, NC, February 1989.

"Effective Pavement Maintenance Training Utilizing an Interactive Videodisc," Annual Meeting American Society of Engineering Education, Lincoln, NB, July 1989.

"Interactive Videodisc for Roadway Maintenance," TRB Sixth Maintenance Management Workshop, July 1990, Jackson, Miss

#### **SPECIALIZED TRAINING**

*Techniques for Pavement Rehabilitation*, ERES, National Highway Institute, FHWA, December 1980.

*Pavement Management Principles and Practices*, ARE, FHWA, June 1981.

*Road Surface Management for Local Governments*, BTML, National Highway Institute, FHWA, May 1987.

*Using the New 1987 ITE Trip Generation and Parking Generation Reports*, ITE, January 1988.

*Advanced Pavement Management Systems*, National Highway Institute, FHWA, November 1990.

"GIS for Transportation," TRB Workshop, January 1991.

*Pavement Design Principles and Practices*, National Highway Institute, FHWA, February 1991.

Leadership Development Institute, LDI, Inc., July 1991.