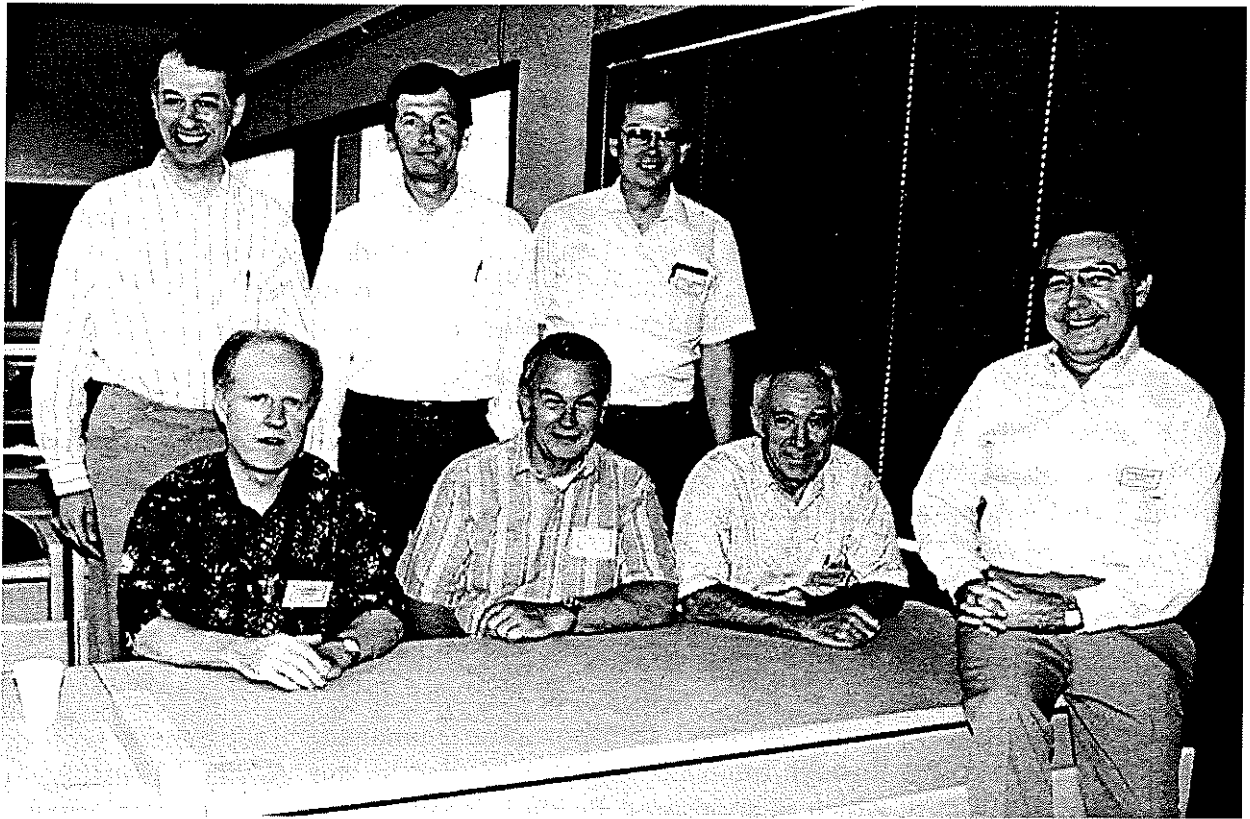


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16. Abstract This document is the culmination of the second offering of an innovative transportation engineering graduate course at Texas A&M University entitled, "Traffic Information and Control Systems Design." The course was presented during the summer 1992 term. As part of the course, a Practitioner-In-Residence program was initiated as a means of providing the students with unique learning experiences. Five top-level managers/practitioners from city and state transportation departments and from transportation consulting firms were invited to Texas A&M University to present a 2-day Symposium on Advanced Traffic Management Systems at the beginning of the summer term. Immediately following the Symposium, the students enrolled in the course participated in a Workshop with the transportation managers/practitioners and course instructors. Based on mutual interests, each student was assigned to one of the managers/practitioners who served as a mentor (along with the course instructors) to the student for the remainder of the summer term. Each student worked with his/her mentor and course instructors to identify a topic area and objectives for a term paper. In addition to discussions with the course instructors, the students (communicating via telephone, fax and mail) worked directly with the mentors throughout the term while preparing their term papers. Constructive comments were provided the students on their draft papers by the instructors and mentors. The mentors returned to the Texas A&M University campus near the end of the summer term to hear and critique the students' presentations.					
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**GRADUATE STUDENT PAPERS ON
ADVANCED TRAFFIC MANAGEMENT SYSTEMS
AUGUST 1992**



Class mentors and instructors (standing, from left) Edwin Rowe, Randall Keir, Carroll Messer, (sitting, from left) Joseph McDermott, Donald Capelle, David Roper, and Conrad Dudek.

PREFACE

This document is the culmination of the second offering of an innovative transportation engineering graduate course at Texas A&M University entitled, "Traffic Information and Control Systems Design." The course was presented for the second time during the summer 1992 term. As part of the course, a Practitioner-In-Residence program was initiated as a means of providing the students with unique learning experiences. Five top-level managers/practitioners from city and state transportation departments and from transportation consulting firms were invited to Texas A&M University to present a 2-day Symposium on Advanced Traffic Management Systems at the beginning of the summer term. Immediately following the Symposium, the students enrolled in the course participated in a Workshop with the transportation managers/practitioners and course instructors. Based on mutual interests, each student was assigned to one of the managers/practitioners who served as a mentor (along with the course instructors) to the student for the remainder of the summer term. Each student worked with his/her mentor and course instructors to identify a topic area and objectives for a term paper. In addition to discussions with the course instructors, the students (communicating via telephone, fax and mail) worked directly with the mentors throughout the term while preparing their term papers. Constructive comments were provided the students on their draft papers by the instructors and mentors. The mentors returned to the Texas A&M University campus near the end of the summer term to hear and critique the students' presentations.

One important objective of the program was to develop rapport between the students and the transportation managers/practitioners. The opportunity for the students to communicate and interact with top transportation officials, who are recognized transportation engineering experts, was a key element to the students gaining the type of learning experiences intended by the instructors. Therefore, extra care was taken to encourage interaction through the Symposium, Workshop and social events.

As last year, this program was again extremely successful. The students had an excellent opportunity to interact directly for an extended period of time with top-level transportation managers/practitioners who are recognized for their knowledge and significant contributions both nationally and internationally.

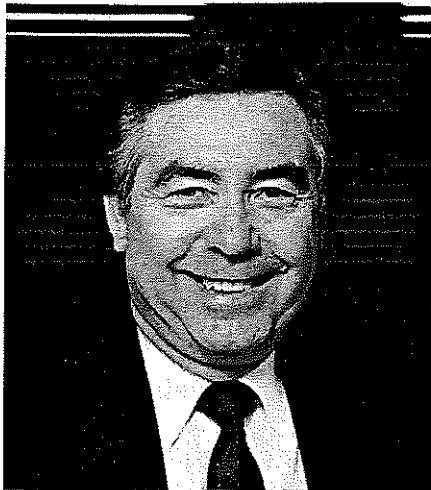
Don Capelle, Randy Keir, Joe McDermott, Dave Roper, and Ed Rowe devoted considerable time and energy into this program; we are extremely grateful for their valuable contributions to the educational program at Texas A&M University.

The opportunity to bring top-level transportation managers/practitioners to the campus was made possible through financial support provided by the "Advanced Institute" at Texas A&M University which is sponsored by the University Transportation Centers Program of the U.S. Department of Transportation.

We again appreciate the contributions of Tim Lomax, Program Manager, Texas Transportation Institute, for his opening presentation on "The Trends in Urban Mobility Indices" which laid the foundation for the remainder of the Symposium.

Sandra Mantey, Senior Secretary, Texas Transportation Institute once again coordinated the Symposium and Workshop in a very efficient and professional manner.

Congratulations are extended to the transportation engineering graduate students who participated in this course. Their papers are presented in this Compendium.



Conrad L. Dudek
Professor of Civil Engineering



Carroll J. Messer
Professor of Civil Engineering

DONALD CAPELLE



Dr. Capelle is an international expert in transportation planning, traffic operations, and highway planning and design with over thirty-three years of experience. He received his undergraduate degree in Civil Engineering from Clemson University in 1953 and his Ph.D. in Transportation Engineering from Texas A&M University in 1966. He is a registered Professional Engineer in California, Texas, Maryland, and Delaware.

Currently, he is a Vice President and Principal Associate with the firm of Parsons Brinckerhoff Quade & Douglas and is located in their Pacific Southwest Regional office in Orange, California. Prior to joining Parsons Brinckerhoff in 1984, he was with PRC Engineering for eight years with various transportation consulting assignments in California, Colorado, Arizona, Texas, Florida, Maryland, and Virginia. Subsequent to his affiliation with Voorhees & Associates, Dr. Capelle served as a professor at Texas A&M University and a research engineer with the Texas Transportation Institute.

Dr. Capelle is actively involved with the Transportation Research Board (TRB), the Institute of Transportation Engineers, and works frequently with the staffs of many City and State Highway Departments. He is currently chairman of TRB's Committee on High-Occupancy Vehicle Facilities, and in recent years has been actively involved in the development of HOV programs in Southern California, New York, Seattle, New Jersey, and Florida.

RANDALL A. KEIR

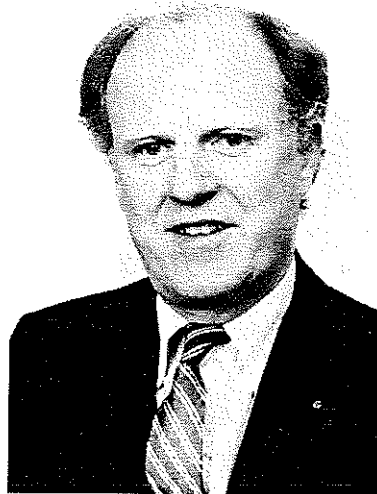


Mr. Keir received his Bachelor of Science degree in Civil Engineering from the University of Texas. He is a registered Professional Engineer.

Currently, he is Engineer of Traffic Management within the Maintenance and Operations Division at the Texas Department of Transportation. These duties include supervising the new Traffic Management Section which is presently charged with the development of automated systems for traffic surveillance and response and the coordination of system installation statewide for TxDOT.

Mr. Keir began his career with the Department in 1971 in the Maintenance Division of the Traffic Section. His duties included PS&E review, traffic design and field engineer. In 1979 he became the Assistant to the Traffic Section supervisor. His duties included policy and procedure development, updating Department specifications, developing traffic standards, research project coordinator, section administration, new products analysis and testing and legislative coordination. In 1985 he was promoted to field review group supervisor. His duties included supervising field engineers, plan review, traffic design, District liaison and personnel management. In 1989 he was promoted to Engineer of Contracts and his responsibilities included supervising the maintenance contract program, developing program policy/procedures, restructure maintenance contracting to conform with legislative mandates, overseeing development of automated management systems and personnel management.

JOSEPH M. McDERMOTT

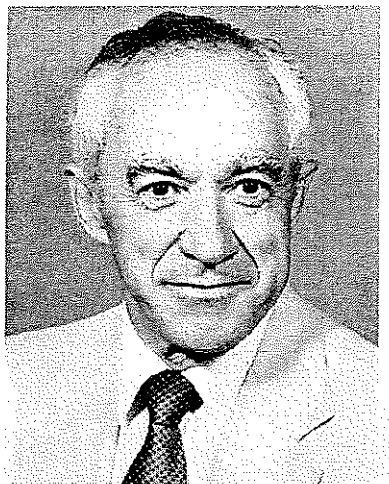


Mr. McDermott, an international expert in freeway corridor transportation management, is Engineer of Traffic in District 1 (Chicago Area) for the Illinois Department of Transportation. He has the responsibility for the traffic engineering functions of the District including the Traffic Systems Center. Prior to this recent appointment, Mr. McDermott was Manager of the Traffic Systems Center since 1963. Mr. McDermott received his B.S. from the University of Detroit and M.S. from Northwestern University, both in Civil Engineering.

As manager of the Chicago Area Traffic Systems Center, he was directly responsible for the largest freeway surveillance and control center in the U.S. A registered professional engineer in Illinois and Ohio, Mr. McDermott's affiliations include: member and former chairman of the Transportation Research Board Committee on Freeway Operations, where he served on the TRB Group 3 Council; member and former chairman of the Committee on Traffic Operations for the American Society of Civil Engineers, from which he received the 1980 Frank M. Masters Transportation Engineering Award and the 1981 Arthur M. Wellington Prize; former chairman of the ASCE Urban Transportation Division Executive Committee; former lecturer at the Northwestern University Traffic Institute; and vice chairman of the American Association of State Highway and Transportation Officials Special Committee on Transportation Systems Operations.

The freeway surveillance and control system developed by IDOT was recognized by the National Society of Professional Engineers as one of the ten outstanding engineering achievements in the U.S. in 1971. In 1976, the Traffic Systems Center was one of twenty transportation sites selected for HORIZONS ON DISPLAY, an U.S. Bicentennial tribute to community achievement recognizing 200 examples across the nation that illustrate the "continuing capacity of Americans to find creative approaches to contemporary needs." In 1987, the Institute of Transportation Engineers named the IDOT "Chicago Area Freeway Traffic Management Team" as the recipient of its annual Transportation Achievement Award.

DAVID ROPER



Mr. Roper is an international expert in freeway corridor transportation management and control systems and traffic management during special events. He received his B.S. from the University of Arizona, Tucson, in 1951, and his M.S. from the University of Southern California, Los Angeles, in 1960, both in Civil Engineering.

A leader in the development and implementation of the Los Angeles Freeway Surveillance and Control Project, Mr. Roper had over 40 years' experience with the California Department of Transportation (Caltrans) in transit planning, system operation, transportation and environmental planning, construction, design and route selection activities. He spent two years on special assignment as Executive Director of the Commuter Computer Ridesharing Program and was Director of the Caltrans Olympics Transportation Program. Immediately prior to his retirement in February 1992, Mr. Roper served as Deputy District Director, Operations, California Department of Transportation. He is now a private consultant. Over the past 27 years, he has taught a variety of transportation engineering and highway design courses at the University of California, Los Angeles, California State University, Fullerton, and California State University, Los Angeles.

Mr. Roper is a member of the Transportation Research Board, Freeway Operations Committee; Professional Engineers in California Government (Past Director); Planning Commission, City of Santa Monica (Chairman, 1973); General Advisory Board, Santa Monica College; the American Public Works Association; and the Institute of Transportation Engineers.

EDWIN ROWE



Mr. Rowe is an international authority on traffic signal control systems and the integration of traffic signals to freeway control systems. He received his Bachelors of Engineering from the University of Southern California and Masters of Engineering, Engineering Executive Program, from the University of California, Los Angeles.

Mr. Rowe is currently the General Manager of the City of Los Angeles Department of Transportation where he has served for 34 years. The Department has over 2,000 employees and an annual operating budget of \$80 million. Mr. Rowe's major achievements include direction of planning and implementation of the Department's Olympic Games Transportation Program, developer and director of the Automated Traffic Surveillance and Control (ATSAC) system in Los Angeles, and director of city participation in the Smart Corridor Project. The ATSAC Program has been selected as a winner for the Innovations in State and Local Government Award, a program sponsored by the Ford Foundation and the Harvard University JFK School of Government.

Mr. Rowe was named City Employee of the Year for 1989, and received the Institute of Transportation Engineer's 1990 Theodore M. Matson Memorial Award for outstanding contributions to the advancement of the science and profession of Traffic Engineering. He was also a finalist in the American Public Works Association's 1991 Top Ten Public Leaders of the Year, and has been elected to the Institute for the Advancement of Engineering College of Fellows.

Mr. Rowe's affiliations include: the Institute of Transportation Engineers; Vice Chairperson of the ITE Council on Intelligent Vehicle-Highway Systems; Transportation Research Board Committees and Task Forces; Board of Directors and Secretary of the Intelligent Vehicle Highway Society of America; Chairman of FHWA Expert Panel on Operations and Maintenance of Traffic Control Systems; Co-Chairman of Engineering Foundation Conferences on Traffic Management; and the Advisory Board of Commuter Transportation Services, Inc.

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