Summary of Project Activity for the Institute for Transportation Research and Education At North Carolina State University

July 1, 1999 to June 30, 2000

Over $10 million in contracts

Processed approximately $5 million through ITRE

Major focus areas: (1) technical training; (2) technology transfer, and (3) developmental research.

Total Expenditures (excluding internal subcontracts) = $4.2 million

Chartered by the NC General Assembly in February 1978

Moved under NCSU administration in September 1992

Moved onto Centennial Campus in September 1996
Annual Program Review – FY 1999-2000
Transportation Planning, Policy and Finance Group

The Transportation Planning, Policy and Finance (TPPF) Group has had a successful year. The TPPF Group has completed the following studies:
(1) Analysis of Construction Practices;
(2) Continued to evaluate peoplemover proposals for NCSU;
(3) Ped/Bike Study;
(4) Aggressive Driving Study;
(5) Red Light Running Study;
(6) Traffic Signal Detection Data for Traffic Forecasting Study 60% complete;
(7) Blood Alcohol Content Workshop

TPPF Group has submitted eight proposals during the past year. The following proposals have been successful:
(1) Peoplemover Study Continued
(2) MPO Study for NCDOT
(3) Investment Analysis and Decision Making for highway Projects for NCDOT
(4) FHWA Bike Path Study
(5) Construction Cost Increase Study for NCDOT
(6) Ped/Bike Study Phase II for NC Dept. of Health & Human Services
(7) Work with FHWA to establish an LTAP in Krasnodar, Russia

The objectives of FY 99-00 have all been met except the completion of the Traffic Signal Detection Data for Traffic Forecasting Study which is 60% complete. This incomplete was due to staff vacancies.
Highway Systems and Safety Group
Business Plan for Fiscal Year 1999-2000

Mission: Provide transportation and traffic engineering professionals and technicians with the skills they need for the 21st century.

Goal 1. Enhance instructor knowledge and presentation skills.

Objective 1.1 - Enhance knowledge about current and pending changes to existing regulations, manuals or policies affecting workshops.

Strategy 1.1.1 - Attend professional meetings and training workshops to enhance knowledge and skills on highway engineering topics. (Criteria - Instructors attend professional meetings, workshops and/or participate on committees to enhance knowledge relative to current and potential workshop topics.)

[Meeting: Bob attended TRB where he serves on the User Liaison and Interpretations Subcommittee of the Highway Capacity and Quality of Service Committee. He also attended an Intersection Design Workshop in Boston. Tim also attended TRB and was named Secretary to the TRB Work Zone Committee. While there, he joined the TRB Roadside Maintenance Committee. Tim also attended the National Committee on Uniform Traffic Control Devices meeting.]

Objective 1.2 - Conduct evaluations of course presentations.

Strategy 1.2.1 - Provide at least one peer-reviewed evaluation of each instructor, and make adjustments accordingly. (All instructors are peer-reviewed during the year.)

[Behind: Tim, Tom, Bob and Joe to be evaluated by peer outside workshop area. Tim and Tom evaluated each other's presentation style and skill, plus have had Ronnie Williams provide peer review.]

Strategy 1.2.2 - Strive for average participant evaluations greater than 4.5 out of 5.0. Where evaluations are less than desired, determine why and make adjustments. (Criteria - Training quality is assessed from evaluations and adjustments made in presentation, if needed.

[Meeting: Evaluations coming in over 4.5.]

Goal 2. Provide quality training services at a reasonable price on highway engineering topics.

Objective 2.1 - Provide quality training for existing workshops on traffic engineering topics.

Strategy 2.1.1 - Working with professors at NCSU and outside consultants, update training programs for HCM, SIDRA, and CORSIM. (Criteria - Working with professors at NCSU and outside consultants, present updated training programs for HCM, SIDRA, and CORSIM.)
Objective 2.2 - Develop two new training courses on highway engineering topics.

Strategy 2.2.1 - From previous workshop participant feedback and attendance at professional meetings, develop and present two new training workshops on highway engineering topics. (Criteria - Two (2) new workshops are developed and presented.)

[Meeting: "Tort Liability and Risk Management" workshop being developed for NCDOT maintenance personnel; developed materials and conducted Spanish Flagger Training workshop; developed materials and conducted Work Zone Traffic Control Supervisor Training program; developing the materials for Outdoor Advertising Training for NCDOT (training will be conducted next fall); developing the materials for Highway Maintenance Manual Training for NCDOT (training will be conducted next fall); developing training materials on "Interpretation of NCDOT Right-of-Way Plan Sheets."

Goal 3. Provide technical assistance to state and local governments and private industry.

Objective 3.1 - Provide technical assistance to ITRE's LTAP Program.

Strategy 3.1.1 - Offer more regional workshops on highway engineering and/or work zone safety topics through ITRE's LTAP Program. (Criteria - Five (5) additional workshops are presented for the LTAP Program.)

[Meeting: In coordination with training for NCDOT, provided 7 Drainage, 7 Basic WZS, 7 Intermediate WZS, and 3 Advanced WZS workshops for ITRE's LTAP program. Also, conducted 1 Spanish Flagger Training, 2 Flagger Training, and 2 Flagging Instructor Training workshops. Conducted 13 workshops on-site for local governments.

Objective 3.2 - Provide technical assistance to the NCDOT Roadway Maintenance Unit.

Strategy 3.2.1 - Develop a technical assistance plan for the NCDOT Roadway Maintenance Unit based on their needs to enhance their operations. (Criteria - NCDOT technical assistance project is awarded, with work completed within time frame and budget.)

[Meeting: Under this year's plan, have provided 79 one-day workshops throughout North Carolina for NCDOT personnel on Drainage, Guardrail, and Work Zone Safety. This work included updating and reprinting the Guardrail materials. There was a slight delay in completing the training due to Hurricane Floyd and the January blizzard. Because work has been completed within budget, major work on a new project has been started before the end of the fiscal year.]

Highway Systems and Safety Group
Goal 4. Expand Work Zone Safety training program.

Objective 4.1 - Establish ITRE as the Southeast regional source for work zone safety training.

Strategy 4.1.1 - Schedule and conduct training courses through South Carolina's technology center at Clemson University. (Criteria - Training workshops are scheduled and presented.)

[Meeting: Have conducted 3 work zone safety workshops in South Carolina for Clemson's T³ Center.]

Strategy 4.1.2 - Continue fostering the relationship with South Carolina Department of Transportation. Continue developing a relationship with the departments of transportation and the technology centers in the Southeast. (Criteria - Three (3) additional Work Zone Safety training requests are received from clients outside North Carolina.)

[Meeting: Have conducted 17 workshops for SCDOT. Have assisted Florida and Tennessee with implementing Flagger Handbook production. Have assisted Sprint Communications in implementing a national training program by providing Train-the-Trainer workshops. Made presentations at the following conferences: SCAPWA (Myrtle Beach), SASHTO (Charleston), Local Roads Conference (Mobile, AL) and the Carolina Utilities Conference (Wilmington). Although not in the southeast, work continues in New Jersey, with 40 workshops presented there.]

Strategy 4.1.3 - Conduct a strategy session with the NC League of Municipalities for support of a work zone signing program for small local agencies. Coordinate development of a GHSP proposal for funding the program. Upon award, implement the program. (Criteria - Work zone signing program for small local agencies is developed, funded and implemented in North Carolina.)

[Behind: Have decided to again delay work on this project due to personnel and time constraints.]

Goal 5. Develop new training workshops for transportation engineering professionals.

Objective 5.1 - Survey the transportation and traffic engineering community to determine their needs, develop a plan for providing training, and present the training.

Strategy 5.1.1 - Conduct a survey of the transportation and traffic engineering community in North Carolina to determine what their needs are and how they can best be served. (Criteria - Transportation and traffic engineering community survey is conducted and results tabulated.)

[Delayed: Decided this needed to be a joint activity with NCSITE. New organization within NCSITE is getting under way this Spring and will propose this idea to the appropriate committee.]

Strategy 5.1.2 - ITRE, NCSU and outside consultants develop a plan for providing critical skill training as determined from 5.1.1. (Criteria - Establish the critical skill
training topics desired by transportation and traffic engineers in North Carolina and
develop a plan on how to develop and present the training.)

Strategy 5.1.3 - From the plan in 5.1.2, determine topics for new courses, potential
funding sources, develop the participant workbooks, and present the training for two new
workshops. (Criteria - Two (2) new workshops are developed and presented.)

Goal 6. Conduct research on current transportation issues.

Objective 6.1 - Respond to two to three RFPs asking for research in the transportation
engineering area.

Strategy 6.1.1 - Look for research opportunities at the state, regional and national level on
transportation engineering topics relevant to our skills, and propose on two to three of
these RFPs, not precluding teaming with professors and/or consultants. (Criteria - Two
to three proposals are submitted for selection and funding.)

[Meeting: Three proposals awarded—one with NCDOT SP&R funding and two with
GHSP. Also, the Spanish Flagger Training program was a response to a suggestion
from several individuals seeing a need for a Spanish version of the workshop.]

Resources:
1. Probably one (1) additional full-time employee will be needed to meet these goals
   (project funds to cover position).
2. Funds for proposal writing and marketing materials ($5,000).
3. Office space, furniture, and PC for new person ($3,000).
4. Travel funds for conferences and training opportunities ($5,000).
A. MISSION

To support public transportation decision-makers and operators in policy development, planning, training, operations analysis, and public outreach, with a focus on technology development and implementation, to enhance operations and public mobility options.

The Transit Operations Group focuses on the following transportation modes: urban fixed-route and paratransit, rural transit, passenger rail, bicycle and pedestrian, and taxicab and livery.

B. GOALS/OBJECTIVES

GOAL 1: To conduct applied research that results in educating professionals, improving mobility options within and across modes, and enhancing service delivery.

Objective 1: Conduct national research that results in practical products for public transportation operators.

Strategy A: Complete three TCRP studies initiated in the previous program year.  
[Begun, to complete by November, 2000]

Strategy B: Respond to two TCRP proposals as prime or subcontractor.  
[Accomplished]

Strategy C: Partner with another ITRE program area or university department on one TCRP proposal.  
[Accomplished, responded with Pupil Transportation Group]

Strategy D: Target recurring funding sources (i.e., Project Action, University Research Grants).  
[Not achieved]

Strategy E: Obtain funding from two non-traditional funding sources, i.e., foundations, Federal Transit Administration (FTA) task order, etc.  
[Completed one (ODOT task order)]

Objective 2: Generate self-initiated research proposals.

Strategy A: Develop, at minimum, two potential projects for funding.  
[Completed only one for NCDOT, use of taxicabs in the public transportation mix]

Strategy B: Submit proposal concepts for consideration for funding by the FTA, foundations, or private sector.  
[Not achieved, anticipate submitting concept paper for consideration for a TRB synthesis paper in fall/winter of 2000]

GOAL 2: To provide quality technical assistance to public transportation professionals within North Carolina and nationally.

Objective 1: Implement the technical assistance element of the North Carolina Technology Plan for Public Transit Operations.

Strategy A: Demonstrate and implement bar code technology in two to four North Carolina transit operations.  
[Accomplished, funding was set up for test, installation to occur in the fall of 2000]
Strategy B: Complete the Access based pen computer application. Expand the application to incorporate GIS; target route evaluation sites. [Behind, application is still under development by ITRE’s GIS Group]

Strategy C: Initiate a GIS users group. [Accomplished]

Strategy D: Provide helpdesk and on-site support as needed to the NC transit systems using MiniPASS, maintenance software and information systems templates, and other applications. [Accomplished]

Strategy E: Investigate and recommend scheduling and routing software alternatives for urban paratransit and rural systems. [Accomplished]

Strategy F: Assist one to three North Carolina urban transit systems with GPS data collection. [Accomplished]

Strategy G: Develop a Transit Management Guide (purpose/use) [Not achieved, activity carried over to next fiscal year]

Strategy H: Develop and support a GIS Service Bureau. [Accomplished]

Strategy I: Support one to five North Carolina urban transit systems in deployment of technologies beyond baseline technologies. [Accomplished]

Objective 2: Conduct planning activities for North Carolina urban and rural public transit systems.

Strategy A: Assist NCDOT/PTD in evaluating and streamlining planning processes. [Behind, study still underway]

Strategy B: Contribute to, at minimum, one regional public transportation plan. [Accomplished, technical support to PARTA]

Strategy C: Provide technical support for the NCDOT/PTD consultant in conducting statewide Transportation Demand Management (TDM) activities. [Accomplished, TDM activities underway]

Objective 3: Work collaboratively with NCDOT/PTD.

Strategy A: Develop a policies and procedures handbook for the Division. [Accomplished]

Strategy B: Extend training and education activities to include: elected officials, community/consensus building, business practices, and industry trends. [Behind, business practices session to be conducted in fall, 2000]

Objective 4: Conduct and expand support activities to the North Carolina Department of Transportation/Bicycle and Pedestrian Division.

Strategy A: Continue to support planning and handle logistics for Walkable Communities Conferences. [Accomplished]

Strategy B: Discuss and prioritize research and technical assistance needs. [Accomplished]

Strategy C: Provide technical support on one new project. [Accomplished, Bike Division committed to ITRE’s support on a planning meeting]
Objective 5: Expand project work with the North Carolina Department of Transportation/Rail Division.  

Strategy A: Develop the state-level commuter rail safety plan.  
[Not achieved, delays on part of sponsor]

Strategy B: Initiate and complete a study on assessing ridership potential and feeder connectors to support extension of rail service to Asheville and Wilmington.  
[Accomplished]

Strategy C: Initiate one other new technical assistance activity.  
[Accomplished, rail encroachment study. Referred project work for Communications Group and GIS Group]

Objective 6: Initiate direct technical assistance projects with public transportation operators on the local level and establish a solid working relationship with Ohio Department of Transportation to ensure long-term partnerships.  

Strategy A: Contact at least one local operator to discuss technical support needs.  
[Accomplished, project with City of Raleigh]

Strategy B: Review Passenger Transport and respond to, at minimum, one RFP.  
[Not achieved]

Strategy C: Meet with Ohio DOT staff to establish the groundwork  
[Accomplished]

Strategy D: Complete task orders for Ohio DOT on schedule.  
[Accomplished]

GOAL 3: To design and conduct professional and technical training programs to benefit public transportation professionals.

Objective 1: Enhance technology related courses to better respond to the needs of public transit professionals.  

Strategy A: Develop two transit-specific technical courses and supporting training materials. Conduct these courses on-site and in remote sites: Greenville and Asheville.  
[Accomplished]

Strategy B: Develop transit examples for all Microsoft courses taught in the transportation lab.  
[Accomplished]

Objective 2: Enhance professional development training course for mid-level and senior managers.  

Strategy A: Conduct two Transportation Leadership Development Program (TLDP) courses. Expand participation from other states.  
[Accomplished]

Strategy B: Conduct one high level forum in partnership with one or more national public transportation associations, the Federal Transit Administration, National Transit Institute, and/or other organizations. Potential topic: regional and state efforts in procuring and implementing technologies.  
[Not achieved]

Strategy C: Contribute to the training curriculum development for North Carolina transit professionals in conjunction with NCDOT/PTD.  
[Accomplished, technical training plan developed]

Strategy D: Explore the feasibility of establishing a speaker's bureau of rural trainers.  
[Not achieved, no longer a priority since CTA has developed a training curriculum]
Objective 3: Enhance the professional quality of the Transportation Management Institute (TMI) courses.
Strategy A: Develop professional training materials for two courses. [Accomplished, maintenance and sales/marketing courses]
Strategy B: Develop one new TMI course. [Accomplished, sales/marketing courses]

GOAL 4: To increase TOG visibility nationally.

Objective 1: Participate in national conferences.
Strategy A: Submit one paper to TRB (August 1 deadline). [Accomplished, 2 submitted: rural ITS, taxi cab/transit]
Strategy B: Conduct a workshop at CTAA. [Accomplished, presented at the CTAA conference in June, 2000]
Strategy C: Present at the national rural transit conference in Lake Tahoe. [Accomplished, set for November agenda]
Strategy D: Present at the ITLA or IATR conferences (taxicab and livery related). [Accomplished, presentation at IATR]
Strategy E: Present at the APTA bus operations conference. [Accomplished, TCRP B-16 topic]

Objective 2: Develop marketing/promotional materials.
Strategy A: Complete logo design and color scheme. [Accomplished, uniform look and color, logo not pursued]
Strategy B: Print TOG stationary. [Stationary not needed]
Strategy C: Complete Website design and maintain Website. [Not achieved, to be accomplished by December 30, 2000]
Strategy D: Publicize accomplishments in national publications. [Accomplished, article published in ITLA publication, paper to be submitted to TRB Record and/or CUTR publication in winter, 2000]
Strategy E: Create a publications list. [Accomplished]
Strategy F: Expand distribution of publications, i.e., technical briefs, course brochures, to federal, state, and local transit agencies. [Accomplished, some publications were distributed to FTA but list still needs to be expanded further]
Strategy G: Market products (pen computer application) nationally. [Not achieved, programs still being refined]

GOAL 5: To transfer technology.

Objective 1: Produce informative publications.
Strategy A: Write and distribute 6 technical briefs (proposed every other month cycle). Post briefs on Website. [Not achieved, two to three were produced and none were posted to Website as site has not been completed]
Strategy B: Produce special bulletins as needed. [Accomplished, NC Transit Lines]
Strategy C: Write and distribute a newsletter directed to North Carolina operations. [Accomplished, NC Transit Lines]
Objective 2: Produce and distribute quality products through research efforts.
Strategy A: Present information in a concise and user-friendly format.
[Ongoing, working on elevating the production quality in two publications: rural ITS transit technologies guidance document, ODOT technology guidance document]
Strategy B: Conduct presentations/training, as appropriate, to disseminate research findings.
[Accomplished: TRB, CTAA, ITS America, APTA, IATR]

GOAL 6: To promote and expand TOG full-time staff and student expertise to enhance service to the customer.

Objective 1: TOG staff/students to attend national and state conferences.
Strategy A: Increase opportunities to expand professional contacts.
[Accomplished: TRB, CTAA, ITS America, APTA, IATR]

Objective 2: TOG staff to participate in professional training.
Strategy A: One staff to participate in TLDP.
[Not achieved due to scheduling conflicts. Tom to participate next fiscal year]
Strategy B: One staff to attend a technical training course.
[Accomplished, one staff attended webdesign course, another administrative skills course]
Strategy C: One staff to participate in a meeting facilitation course.
[Not achieved]

Objective 3: TOG staff to participate on panels/technical committees.
Strategy A: Two staff to participate on TCRP committees. One staff to join as a friend of a committee.
[Accomplished, one is on a committee and one is a friend but is requesting to be on the committee].
Strategy B: One staff to join ITS America’s training advisory committee.
[Not achieved, attempt made but committee already formed]
Strategy C: One staff to participate on a TCRP advisory panel.
[Not achieved]

Objective 4: Develop and maintain competence in research areas that will be applied through technical assistance projects.
Strategy A: Keep current through reading the literature and Web searches.
[Accomplished, conduct literature searches, participated in newsgroups]
Strategy B: Share information in monthly TOG staff meetings.
[Accomplished, regular TOG meetings held]
Strategy C: Participate in one or two conferences annually (all research associates and management)
[Accomplished: TRB, CTAA, ITS America, APTA, IATR, Ohio and NC public transportation conferences.]
Accomplishments for FY 1999-2000

CTE

1) Conducted 2000 CTE Summer Scholar Program
3) Produced 5 Nationally Broadcast Teleconferences.

Local Government

1) Produced approximately 25 Road Scholars and 5 Advanced Road Scholars
2) Completed project for the City of Charlotte linking the pavement management system to their Citywide GIS
3) Conducted Pavement Management Studies for approximately 30 different NC municipalities.
Pupil Transportation Group
Accomplishments for FY 1999-2000

1. Operation Researches/Education Laboratory

The lab was donated by Dr. Ray Taylor in January 2000. The OR/Ed Lab specializes in the use of mathematical models (operations research) for improving decision-making in educational institutions and in state and local governmental agencies.

The mission of the OR/Ed Laboratory is to help educators and public administrators use the modern tools of management science and thereby enable them to make decisions wisely, to evaluate policy alternatives thoroughly, and to allocate resources efficiently.

2000-2001 clients: Johnston County Schools, Chapel/Carrboro City Schools, Union County Schools, Iredell-Statesville Schools, Mooresville City Schools, Gaston County Schools, Craven County Schools, Pitt County Schools, Harnett County Schools.

2. School Transportation Group

The Institute for Transportation Research and Education at North Carolina State University and the Highway Safety Research Center at University of North Carolina are joining forces to create a School Transportation Group. A joint Group operated by ITRE and HSRC is very logical. ITRE has the expertise in the technical and operational areas of school transportation and transit through the already established Pupil Transportation Group and the Transit Operation Group. HSRC is nationally known for its works in the safety and policy areas especially in passenger, pedestrian, and bicycling safety. HSRC also maintains the Highway Safety Information System (HSIS), which is a roadway-based system that provides quality data on a large number of crash, roadway, and traffic variables.

The School Transportation Group (STG) will be the first of its kind in the nation addressing multi-modal school transportation issues. The STG will strive to collect and fill in the information gaps regarding comprehensive school transportation issues that are currently unavailable anywhere else.