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Strategic Plan - 2009 – 2012

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**NATIONAL CENTER FOR
TRANSIT RESEARCH
at CUTR**

**Strategic Plan
(2009-2012)**

January 10, 2008

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Section I

PROGRAM OVERVIEW

Section 5505 of SAFETEA-LU provides for the funding of university transportation research.

It authorizes the Secretary of the U.S. Department of Transportation (USDOT) to make grants to nonprofit institutions of higher learning to establish and operate University Transportation Centers to address transportation management, research, and development matters, with special attention to increasing the number of highly skilled individuals entering the field of transportation. Each university receiving a grant under this provision of SAFETEA-LU must conduct the following program activities:

1. basic and applied research, the products of which are judged by peers or other experts in the field to advance the body of knowledge in transportation;
2. an education program that includes multidisciplinary course work and participation in research; and
3. An ongoing program of technology transfer that makes research results available to potential users in a form that can be implemented, utilized, or otherwise applied.

The University of South Florida (USF) was selected by the Secretary of the USDOT, after a highly competitive process outlined in Section 5506(d and f) of SAFETEA-LU, as one of ten "Tier I" University Transportation Centers (UTCs) to receive \$1,000,000 a year for four years (FY 2006 through FY 2009). USF will conduct its transportation research through the **National Center for Transit Research (NCTR)** at the Center for Urban Transportation Research (CUTR).

I. A Glossary

AASHTO	American Association of State Highway Transportation Officials
ACT	Association for Commuter Transportation
AI	Artificial Intelligence
APTA	American Public Transportation Association
APTS	Advanced Public Transportation Systems
AVI	Automatic Vehicle Identification
AVL	Automatic Vehicle Location
CAA	Clean Air Act
CML	Consortium Member Leader
CTPP	Census Transportation Planning Package
CUTR	Center for Urban Transportation Research

DSS	Decision Support Systems
ETTM	Electronic Toll and Traffic Management
FDOT	Florida Department of Transportation
FPL	Florida Planning Laboratory
FPTA	Florida Public Transportation Association
FTA	Federal Transit Administration
GIS	Geographic Information System
GSA	General Services Administration
HOV	High Occupancy Vehicle
HOT	High Occupancy Toll
HSGT	High Speed Ground Transportation
HSR	High Speed Rail
Institute	National Urban Transit Institute
ISTEA	Intermodal Surface Transportation Efficiency Act
ITAC	International Telework Association and Council
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation Systems
JPL	Joint Project Leader
JTW	Journey-to-Work
LUMS	Land Use Management Survey
MIS	Management Information Systems
MPO	Metropolitan Planning Organization
NBRTI	National Bus Rapid Transit Institute
NPTS	Nationwide Personal Transportation Survey
NTIS	National Technical Information Service
NCTR	National Center for Transit Research
NUTI	National Urban Transit Institute
PI	Principal Investigator
PUMS	Public Use Micro Sample
RSPA	Research and Special Programs Administration
RITA	Research and Innovative Technologies Administration
TCRP	Transit Cooperative Research Program
TDM	Transportation Demand Management
TEA 21	Transportation Equity Act for the 21 st Century
SAFETELU	Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users
TMA	Transportation Management Association
TRB	Transportation Research Board
TCRP	Transit Cooperative Research Program
URIP	University Research Institutes Program
USDOT	United States Department of Transportation
USF	University of South Florida
UTC	University Transportation Center
VMT	Vehicle Miles Traveled

I. B Center Theme

The theme of NCTR is to make public transportation and alternative forms of transportation, including managed lanes, safe, effective, efficient, desirable, and secure. The goals of NCTR are: to minimize traffic congestion, maximize mobility options, promote safety and security, improve the environment, and enhance community sustainability. This will be accomplished by conducting applied and advanced research, energetically disseminating the results, and expanding the workforce of transportation professionals through education and training to address the challenges and opportunities of the future.

NCTR's theme is completely consistent with the strategic goals of the USDOT. Public Transportation must become a more prominent mode of transportation as our population increases and ages, funding of highway infrastructure becomes more expensive and difficult to secure, congestion reduces the efficiency of the economy, gas becomes scarcer and more expensive, concern for the environment continues to increase, and our reliance on oil puts our national security at severe risk. More attractive public transportation services and managed lanes can provide more choices to the traveling public and business community to complement and supplement the highway construction that will be undertaken.

NCTR will also focus on research that promotes travel choices for all trip purposes and improves transportation system reliability. Research will include enhancements in the use of alternative forms of travel and practices such as managed lanes, telework, flexible work hours, congestion pricing, traveler information, ridesharing, bicycling, and pedestrian modes. In addition, NCTR researchers will conduct research that helps advance the use of alternative fuels and technologies that help protect the environment while enabling traffic to move more safely and smoothly.

I. C NCTR Director's Summary

It is the vision of the director that NCTR will be the preeminent university-based transit and alternative-transportation research institute in the nation, and the world. NCTR at USF will lead the effort to make courses in public transit available on a national basis in collaboration with other university faculty throughout the United States. It is our goal to be recognized and appreciated as the first institution contacted by transit mobility managers when seeking ways to enhance their agency's performance on behalf of the traveling public.

The principal, though not exclusive, focus of NCTR will be on public transportation. Public transportation, broadly defined as alternatives to the single occupant vehicle, includes modes such as carpooling and vanpooling, paratransit, bus, and guideway transit

technologies. In addition, the research activities will focus on the interface of public transit with other modes such as auto, walk, bike, and intercity modes as well as the integration of public transit considerations in general transportation and land use planning tools and procedures. ISTEA, TEA-21, and SAFETEA-LU all reinforced the growing awareness of the importance of multimodal thinking and increasing investment in public transportation. Public transportation remains an area of critical national interest as evidenced by funding commitments and its obvious tie to national and local goals regarding the environment, mobility for the population, safety, economic competitiveness and opportunity, congestion relief, and quality of life. In choosing to focus on public transportation, NCTR will leverage the experience and staff expertise of the University of South Florida's Center for Urban Transportation Research, and focus on a topical area that is acknowledged as a critical component in our transportation system.

NCTR's theme melds the respective missions of CUTR with the goals of the UTC program and the USDOT, the mobility needs of the public, and the research and training needs of the public transportation industry. The near-term mechanisms to realize these goals are various studies of specific problems and issues of relevance to the industry coupled with providing knowledge to the professionals and policy makers in the form of reports, websites, netcasts, electronic discussion groups, conferences, and training opportunities. The longer-term contributions will be realized through developing new knowledge and talent to ensure that current and future professionals and decision-makers have adequate skills and knowledge via technology transfer and educational and training programs.

Being housed at CUTR, NCTR will have the enormous advantage of being a part of a relatively large and extremely active transportation research institute that has been conducting high level research in a university setting since 1988. The faculty and students at the Center will represent the largest concentration of public transportation researchers in a single university in the country. This concentration of talent and research will provide opportunities for education and professional capacity building within the Center. The Center will take extensive steps to ensure that all faculty and students will be aware, and share the results of, the research being conducted. Structuring this internal sharing of information will serve as a prelude to the more extensive technology transfer activities that will ensure that research results will be available to potential users in a form that can be implemented, utilized, or otherwise applied.

While the primary focus of NCTR will be public transportation, the center will also dedicate resources to the subjects of managed lanes and congestion pricing. These subjects, though primarily dealing with highway facilities for private vehicles, have logical connections with public transportation alternatives due to the multimodal solutions that are enabled through these facilities. Managed lanes are still relatively new and not used in many locations, yet appear to offer excellent opportunities to improve mobility in urban areas. There is still considerable controversy about these facilities and a need to increase the knowledge base of how to most effectively and fairly implement such facilities and programs in more areas throughout the nation.

Section II

PROGRAM ACTIVITIES

II. D Research Selection

Research Selection Goal: an objective process for selecting and reviewing research that balances multiple objectives of the program.

1. Baseline Measures

Baseline measures are indicated in Appendix A as baselines 1 and 2.

2. Research Selection Program Outcome

The project solicitation/selection process planned for NCTR builds on eight years of successful experience gained since NCTR was designated as a Tier I UTC in 1998. It also will incorporate the newly emphasized desire of the USDOT modes to have UTC research be more closely aligned with federal transportation research needs and goals. The solicitation and selection process will also integrate the research needs of the Florida Department of Transportation, which is providing the match funding for the Center.

The Research Selection Program will involve an Advisory Board consisting of representatives from local operating transit agencies, FDOT, USDOT, APTA, TCRP, ACT, GSA, and NCTR. The Advisory Board will not only help identify the projects of greatest interest to the transit community, but will also help ensure objectivity and prevent duplication of other research efforts with which they are familiar. Members of the Advisory Board will also review all scopes that are developed and serve in the capacity of peer reviewers whenever possible. NCTR envisions that this selection program outcome will result in research that is completed relatively quickly to assist the transportation community that is in need of the information developed, while still ensuring objective selection and high-quality research results.

3. Planned Activities

Planned Activities - The Project Selection Process

In addition to supporting the attainment of the overall program goals outlined in the following, the project selection process is designed to provide an expedient and efficient means of identifying and selecting projects. The vast majority of NCTR's program dollars will be dedicated to research. It is anticipated that the Center will fund and commence between 8 and 10 research projects each year, with an average completion time of 15

months from the time of notice to proceed. This rate of productivity will result in relatively quick responses to issues that have been identified as high priority by those very familiar with the research needs of the transportation industry.

Each year in January, NCTR managers will first review the national research goals of FTA and FHWA, as they are updated and refined, and confer with representatives of those agencies to help ensure that NCTR researchers understand what projects are of highest significance to the federal agencies that are also consistent with the talents of the researchers at NCTR. Given the generous match provided by the FDOT, NCTR will simultaneously solicit the research priorities of that department as well. As it has done in the past, NCTR will solicit problem statements throughout February and March from a variety of sources that are highly respected and well known to NCTR faculty. This will include members of TRB, APTA, and ACT committees, as well as directors of transit agencies in Florida. In February, NCTR's Director, who serves on the TCRP Problem Statement Screening Committee, will confer with TCRP's manager to identify highly rated projects for which funding was not available. The NCTR Advisory Board will also be asked to submit research proposals at any time throughout the year, as will the NCTR research faculty after getting input from the various sources listed above.

With this input, NCTR's management team comprised of CUTR's Director Ed Mierzejewski, Joel Volinski, Director of NCTR, Steve Polzin, Director of Transit Research and Education, Dennis Hinebaugh, Director of the National Bus Rapid Transit Institute and NCTR Administrator, and Phil Winters, Director of Transportation Demand Management, will review all proposals in April/May. Each member of this team will review all proposals and rate them on a scale of 1 – 5 to develop an average score for each proposal. Each member of the management team brings different perspectives and awareness of topics of interest to the transportation industry. There will be robust discussion among members of the team who bring over 125 years of collective experience and who have multiple connections with different individuals, committees, and agencies involved with transportation. The criteria that will be utilized will include the topics identified as priorities in the USDOT Strategic Research Plan (e.g., safety, congestion relief, environmental stewardship, etc.). The management team will also consider the criteria utilized by the Transit Cooperative Research Program selection process, and research priorities as identified by APTA and ACT. Of the 100 proposals normally received, approximately 25 projects are shared with FDOT's Public Transit Office managers. The FDOT and NCTR management team will collaboratively select the 8 to 10 projects that will be funded each year. FDOT personnel will also respect the fundamental criteria noted above that will be utilized to select projects, and will agree that all projects that are undertaken to address a specific Florida concern must also be transferable to other states. The NCTR Advisory Board will review the scopes for each project, provide comments prior to the finalization of the scopes, and offer to serve as peer reviewers of projects of greatest interest to them.

Members of the NCTR Advisory Board include:

- Joel Volinski, Director of NCTR
- Wendell Joyce, Team Leader, Alternative Workplace Arrangements – Office of Government Wide Policy, GSA
- Roy Chen, Federal Transit Administration
- Louis Sanders, Director of Research and Technology, APTA
- Donna Vlasac, TCRP Synthesis Program Director, Transportation Research Board
- Joe Calabrese, General Manager, Greater Cleveland Regional Transportation Authority
- Perry Maull, General Manager, University of Indiana Transit System
- Eric Schreffler, Director of Research, TDM Institute, ACT
- Ed Coven, State Transit Office Manager, Florida DOT
- Richard C. Long, Director, Office of Research, Florida DOT
- Dr. Jose-Luis Mesa, Director, Miami-Dade Metropolitan Planning Organization
- Dr. Minnie Fels Johnson, Transportation Consultant
- Bill McCloud, Vice-President, Veolia Transportation

3a. Required Activities

As noted in the section above, the research selection process at NCTR will solicit the advice and input of hundreds of transportation professionals from around the country who represent operating transportation agencies, the Federal and State DOTs, experienced consultants, and faculty of other universities. The selection criteria used by NCTR to select research proposals will clearly reflect the goals of our UTC program and will be supportive of the national research, development, and technology priorities of the USDOT and its operating administrations. It is anticipated that the research goals of the USDOT could change with the start of a new administration and Congress following the 2008 elections. However, NCTR managers will stay in close communications with the managers of the Federal administrations to allow for selection criteria to be adjusted as necessary. For the near future, NCTR will select its research projects keeping in mind the USDOT's research priorities as noted in its Strategic Research Plan are in the areas of safety, mobility, global connectivity, environmental stewardship, and security. NCTR's faculty and affiliated research partners are capable of addressing virtually every one of those federal research priorities, and will keep abreast of any changes to those priorities.

3b.1 Recommended Activities in Advanced Research

In addition to our highly valued applied research, NCTR plans to continue to pursue advanced research where the promise is great but the payout is less certain. Current examples of NCTR advanced research include working with remote wireless sensor networks that have the capability of detecting a variety of stimuli such as temperature, odor, chemicals, and sounds that will help harden security of public transit facilities, trains, buses, and passengers at potentially very low costs. We also are investigating GPS-enabled cell

phones to assist people with cognitive disabilities to use and navigate a public transit system without the help of a personal attendant. Pre-recorded audio messages along with visual and tactile alerts can be triggered by GPS-enabled cell phone technology when the individual is approaching his stop, which will prompt him as to which bus to board and when to get off. This same sort of technology could be programmed to help other passengers without disabilities such as new passengers or visitors who are not sure how to navigate the transit services in a community.

Future NCTR projects have the advantage of building upon the cutting-edge work already completed by NCTR researchers. USF currently has five patents pending on GPS-enabled mobile phone technologies that have been produced as a direct result of several past NCTR projects. The further development of these technologies will contribute to innovative solutions for current and future transportation challenges and will cultivate new technological advances in the years to come.

The Information Systems Laboratory in the USF Department of Computer Science and Engineering and the USF Center for Wireless and Microwave Information Systems are investigating new methods and protocols for wireless communications, including micro electro-mechanical systems, ad-hoc mesh networks, and wireless sensor networks. These technologies will help create instant, robust communication networks for next-generation communication and remote sensor applications that can aid in transportation operations, safety, and security. Other sensor systems include the research of the USF Center for Biological Defense which focuses on new types of rapid detection technologies for different types of biological agents such as those developed by the same group responsible for the 1995 nerve gas attack on the Tokyo subway system.

NCTR faculty will develop models that will assist transit agencies in determining the cost benefit of purchasing alternatively-fueled vehicles. They will monitor the experience of agencies with hybrid electric, hydrogen fuel cell, compressed natural gas, and other alternatively-fueled vehicles, while also tracking fuel costs. A cost model will be developed that can be used by transit agencies throughout the U.S.

3b.2 Recommended Activities in Congestion Chokepoints

NCTR has a number of opportunities to deploy research results designed to help minimize congestion chokepoints. One example of advanced research with potential applicability to congestion chokepoints is the development and utilization of unmanned miniature helicopters by NCTR and USF Computer Science and Engineering faculty that can be controlled from a remote location and can collect real-time information through digital cameras. This information can help traffic managers determine the nature of incidents that have occurred and allow them to take steps to address the incident, and redirect traffic through all means possible. Incidents account for nearly 60% of all traffic congestion in the United States. This technology, which is relatively inexpensive and highly mobile, can

ultimately help minimize unnecessary traffic delay, air pollution, energy consumption, disruption of commerce, and the potential of more accidents that traffic incidents cause.

NCTR researchers who focus on Bus Rapid Transit will work with many parties to determine if technologies originally deployed for defense purposes can be applied to buses and corridors to enable them to travel through chokepoints more quickly. NCTR research with GPS-enabled cell phone technology can also be utilized to enhance the effectiveness of advanced traveler information systems such as 511. A system already developed by NCTR collects travel data from members of the household which can be combined with personalized, real-time transportation information. "Intelligent" travel advisory systems can be developed that push just-in-time notifications to users about traffic congestion or available alternate modes of transportation based on their current real-time location as well as their past travel behavior. These "travel assistants" could give users only timely, geographically-relevant information that they could use to reduce the time spent in traffic congestion and increase the use and awareness of alternate transportation modes such as biking or transit. These systems could quantify the personal savings for the individual in terms of whatever performance measure is most important to them, be it time, money, or personal health. This same system can also improve the quality and quantity of multimodal travel data collection. GPS-enabled cell phones can serve as an electronic "activity diary" providing comprehensive data for transportation planners. Rather than simply track a vehicle, this system will track the individual and household members using any mode, including using public transportation, riding a bike, and walking.

4. Performance Indicators

NCTR administrators maintain thorough and ongoing files on all projects and know the status of all reports that are in various stages of completion. This information is necessary in order to complete required annual reports, and to provide progress reports on NCTR activities in the twice-yearly newsletters that are also required by RITA. Being a part of the larger Center for Urban Transportation Research, which has been in existence since 1988 and has produced over 400 reports, NCTR is well prepared to continue to track all of its research activities.

II.B Research Performance

Research Performance Goal: an ongoing program of basic and applied research, the products of which are judged by peers or other experts in the field to advance the body of knowledge in transportation.

1. Baseline Measures

The measures for Research Performance are included in Appendix A as baselines 3 and 4.

2. Research Performance Program Outcome

NCTR's research program will be highly productive, resulting in between 8 and 10 completed projects/reports each year. NCTR faculty routinely work with a variety of sponsoring agencies that have high expectations and exercise considerable oversight during the course of a project. There will be consistent review of all NCTR reports as they are being produced, conducted by the NCTR director, other research faculty members within NCTR, and from project managers at the FDOT. Many projects have advisory panels who also review drafts of chapters or technical memorandums as the report is being produced. These panels are created when the project deals with the development of new management policies or tools, and the collective experience of many reviewers from operating agencies can help guide the project for maximum industry benefit and minimize the chance of any duplication of other research efforts.

In virtually every project, students will be involved with portions of the research, and they will be mentored throughout the process of the project so that they understand the significance and purpose of the research and how it helps provide solutions to transportation issues that will benefit operating agencies and the traveling public. This process has been in place for almost eight years at NCTR, and has served the FDOT and USDOT very well.

3. Planned Activities

Most of the activities that NCTR will put in place to ensure a high-quality research process have already been mentioned in previous sections. Research proposals will be sought from professional sources, guided by the research goals and priorities established by USDOT modal administrations. Project scopes will be reviewed by NCTR Advisory Board members, and will also be shared by email with other UTCs to help avoid duplication and to receive comment and advice. All work performed by researchers at NCTR will undergo two levels of review within NCTR, and external review by program managers at FDOT. In addition, FDOT will now send all draft final reports to faculty at the University of Florida (another UTC) for a review prior to the final review by the FDOT project manager. When projects call for advisory panels to be established, the members of the panel will also be asked to review and comment on draft reports prior to their completion to allow the opportunity to strengthen the final report.

4. Performance Indicators

The NCTR Director is dedicated to reviewing all reports as they are being produced by the research faculty members. This helps ensure the quality of each report prior to it receiving external review. CUTR has a long-standing quarterly reporting process in place that records the status of all completed reports, all presentations that have been made, and all papers that have been produced and accepted. The ability to track the results of NCTR research is well engrained in the quality control and reporting systems at CUTR.

II. C Education

Education Goal: a multidisciplinary program of course work and experiential learning that reinforces the transportation theme of the Center.

1. Baseline Measures

The measures for Education are provided in Appendix A as baselines 5 and 6.

2. Education Program Outcomes

NCTR faculty are considered non-tenure track research faculty. However, eight of the NCTR faculty members teach transportation and transportation-related courses, as well as many other tenure-tracked faculty from the College of Engineering and other colleges within the university including Public Administration, Economics, Geography, and Urban Planning. NCTR faculty will also recruit students with an interest in transportation, sponsor student seminars, provide them with opportunities to be research assistants, serve as mentors and thesis/dissertation advisors, fund student attendance at TRB's Annual Meeting and other appropriate professional meetings, and assist them with finding positions upon graduation. The College of Engineering will offer ten transportation-focused courses, while other colleges will offer courses with direct application to transportation such as urban planning, economics, and GIS. USF will offer a Graduate Interdisciplinary Transportation Program that includes six core courses in civil engineering, public administration, and economics. This program will broaden the focus of entry-level transportation professionals who must be prepared for a variety of public policy issues as they deal in an increasingly flexible and multimodal transportation environment. NCTR will work diligently to create web-based courses specifically for those with an interest in public transportation that will be offered through a national faculty of prominent professors.

3. Planned Activities

Historically, CUTR's development has differed from that of many transportation research centers. Typically, research centers are outgrowths or initiatives of teaching faculty who are looking to collaborate on transportation research and find value in establishing a center. These centers have a strong focus on the teaching mission of the university, and the faculty are usually intimately involved in teaching. CUTR's evolution differed in that it was created by the State legislature to ensure that Florida had a research and policy advisory capacity to provide assistance as it faced transportation and land use issues. Thus, the original focus of CUTR was on policy guidance and multidisciplinary research.

Over the past 20 years, CUTR has become increasingly involved in the educational mission of the University of South Florida. While it has retained its client focus and “real world” problem solving mission, it has increasingly embraced the educational mission, both as a natural complement to its mission and as a result of the logical opportunity to contribute to professional capacity building in the transportation industry. Involvement has grown from adjunct teaching and collaborative research to being a substantial employer of undergraduate and graduate research assistants and providing advisory faculty for student chapters of the Institute of Transportation Engineers, ITS America, and the Society of Automotive Engineers. The sections below outline the initiatives that NCTR will continue and/or promote.

The Graduate Interdisciplinary Transportation Program

The Graduate Interdisciplinary Transportation Program (GITP) will be offered and administered by CUTR. Eighteen semester hours of core courses are offered in this certificate program to provide a firm grounding in transportation and to meet degree requirements within the respective departments. Participants are exposed to a multidisciplinary perspective on transportation and develop a rich perspective and appreciation for the nature of transportation policy. The program is evaluated on an ongoing basis, with initiatives targeted toward modifying content, increasing marketing, and involving additional departments. It is anticipated that core courses in Urban Planning, scheduled to be started in the fall of 2008, may also be eligible for credit in this program. NCTR projects will provide employment opportunities for interdisciplinary program students. This interdisciplinary program will provide an opportunity to involve and support non-engineering students pursuing transportation emphasis in their educational program. Public transportation is an integral part of the course material and an appropriate area to which students should be exposed. Public administrators for example, while perhaps not pursuing a career within the public transit industry, will inevitably have opportunities to be involved in public transportation policy issues in their career.

Exploration of the Feasibility of National Public Transportation Courses

Due to the retirement of Baby Boomers in the next decade, it is anticipated that by the year 2015, there will be 10 million more jobs than there will be applicants to fill them in the United States. The competition for human resources will be intense in all industries. If public transportation is to become a career of choice for young professionals, there will need to be a greater effort made to introduce them to the career possibilities in the industry. There will also be a need to help prepare them to fully participate in this field. It is unlikely that there are enough potential students in any one jurisdiction to justify the establishment of a complete Masters Degree program in this field, and in most cases there isn't enough student interest to establish courses in public transportation at a local university. A specific initiative of NCTR is expansion of curriculum material specifically targeted to students and professionals interested in public transportation. This will be a collaborative effort to involve a limited number of faculty from around the country with strong public transportation knowledge to assist in the production and delivery of up to four

courses with content specifically targeted to public transportation. This would enable a student to receive a Master of Science Degree with an emphasis in Public Transportation, a degree that is not offered anywhere in the United States. We envision these courses having foundational materials such that they could be supportive of degrees in disciplines such as civil engineering, urban planning, business and public administration, geography, architecture, and related programs.

Industry professionals have indicated a strong interest in this initiative and a willingness to participate in course development. The pending retirement of significant shares of the public transportation workforce will create an audience of individuals who would benefit from these educational offerings, and such a program will be necessary to help capture knowledge developed over career-long teaching and research experiences such that it can be available for dissemination to the next generation's workforce. The ability to modularize course content and capture lectures in digital format creates the opportunity to have a teaching resource that can be efficiently delivered to larger total audiences over time at very modest cost.

University-Funded Instruction by CUTR Faculty

USF provides direct financial support to CUTR to enable the research-based faculty to teach transportation courses. This source of funding enables CUTR to fund faculty involvement in teaching beyond the previous adjunct activity. Courses that will be taught include Public Transportation, Transportation and Society, Transportation and Land Use, and Access Management. It is anticipated that the frequency of these course offerings will be increased, and modularized instruction will be explored that will incorporate more of the specialized expertise of the substantial public transit-focused research faculty.

Instruction through distance learning is proving to be very popular with students who appreciate the flexibility web-based courses offer, and USF will make more such courses available. NCTR will develop synchronous and asynchronous modes of teaching to deliver transportation education to students and transportation professionals. Synchronous systems are web environments that provide an electronic means to communicate with distance students in real time using numerous two-way tools in a single web-based interface. NCTR will use tools including Voice Over Internet Protocol to carry on two-way conversations; electronic chat rooms and instant messaging for quieter text based communications; feedback tools for instructors and students; and presentation areas, group break out rooms, and application sharing for collaborative work.

New Degree Programs

USF recently created two new opportunities for individuals pursuing Master of Science degrees. The first program accepts students for study during their junior or senior year and allows them to mix undergraduate and graduate coursework and complete their MS degree after five years of college. The second is the one-year MS degree in which students focus intensively on coursework (with no research or teaching assistantships) and complete their degree requirements within one year. These new programs broaden the potential audience and enable access to graduate studies for more individuals, providing a better prepared workforce for the transportation industry.

As noted earlier, NCTR faculty are working with other USF departments to develop an urban planning program, scheduled to accept applicants for Fall 2008. This new program will increase the diversity and multidisciplinary interests of students taking transportation courses and also increase the number of USF departments offering transportation-related courses and degrees.

Professional Development Activities

Part of a successful education program involves providing students with exposure to a full range of experiences that will help them in their professional careers. The blending of separate teaching and research faculties provides an excellent environment to provide both formal degrees and professional development training opportunities, thereby attracting new young minds to the field of transportation, while helping to retain and sharpen the talent that is already in the field. One element of this is to foster participation in professional development via forums such as student chapters of professional organizations. CUTR faculty will continue to serve as faculty advisors for several such initiatives, including the student chapters of the Institute of Transportation Engineers (ITE), ITS America, and the Society of Automotive Engineers. These complementary forums provide important peer networks, opportunities for enhancing personal interaction skills, forums for learning more about real world transportation issues, and social opportunities that can increase professional satisfaction. NCTR and the resources it brings to CUTR can support the enhancement of these activities by attracting and supporting the faculty and staff required to make these programs work.

Student Participation in Research

NCTR will provide opportunities for students to be involved in the extensive transit research funded by NCTR or through other research being conducted by CUTR. These opportunities are more fully described in the Human Resources section of this Strategic Plan.

3.a Required Activities

3.a.1 As part of the largest urban university in the state of Florida, NCTR will offer students opportunities to participate in multidisciplinary course work provided not only through the College of Engineering, but through a number of other schools at USF including the colleges of business, geography, urban planning, and public administration. It has long been clear that transportation issues require more than physical design and modeling capabilities. NCTR will invite students from a variety of colleges at USF to participate in the multimodal research projects that will be undertaken through the UTC program and a multitude of other sponsors of research. As noted in other sections of this Strategic Plan, NCTR has a Graduate Interdisciplinary Program that already recognized the value of various course work in the development of skills to address transportation issues.

3.a.2 As noted in the Research portion of this Plan, NCTR will conduct research that is in support of the strategic issues identified by the FHWA and the FTA. NCTR managers will check RITA's website, as well as confer with staff of FHWA and FTA, during the life of the grant to ensure they are aware of the research priorities of the federal modal agencies.

3.a.3 As it has done consistently in the past, NCTR will choose one outstanding student of the year, award that student \$1,000, and pay all expenses for that student to fully participate in the TRB Annual Meeting. NCTR will also advise its students of the availability of other scholarships that are provided through other sponsors, encourage them to apply for such scholarships, and provide whatever guidance may be necessary.

4. Performance Indicators

Data on student activity in the various undergraduate and graduate courses in transportation are obtained from the College of Engineering, using information provided by the Advising Office of the Department of Civil & Environmental Engineering. Data on student activity in graduate courses offered through the Interdisciplinary Program are maintained by Dr. Steve Polzin, who oversees the Graduate Interdisciplinary Transportation Program at CUTR, using information provided by the Advising Offices of the USF departments of Public Administration and Economics. Other activities that enhance the development and continuous education of professionals already in the field will be recorded by the NCTR Director.

II. D Human Resources

Human Resources Goal: an increased number of students, faculty, and staff who are attracted to and substantively involved in the undergraduate, graduate, and professional programs of the Center.

1. Baseline Measures

The measures for Human Resources are provided in Appendix A as baselines 7, 8, and 9.

Human Resources Program Outcome

NCTR already has 45 research faculty members that it can utilize to work on projects funded through the UTC program. To date, 30 different faculty members have participated in NCTR projects. This extensive amount of talent is more than enough to ensure that UTC-funded projects are done professionally to the benefit of the transportation industry. However, CUTR and NCTR are always attempting to attract new grants and contracts and to bring new talent when good matches can be made between work that is available and the goals of the Center. These additional grants and contracts will provide more opportunities for students to participate in transportation research and ultimately become prepared for the transportation profession. It is the intent of the College of Engineering to attract at least two additional members to its current tenure-track faculty that teach transportation courses. CUTR anticipates hiring four additional faculty members over the course of the grant. These faculty members will be involved in new transit research and the mentoring of additional students. To this end, NCTR will increase the number of students participating in transit research at any one time from 12 to a minimum of 15.

3. Planned Activities

New Research Faculty

CUTR's most significant contributions to the advancement of the transportation industry are through leveraging its research skills and "real world" experience to develop innovative solutions and provide the knowledge, resources, and trained professionals to enable public transportation to better meet the evolving needs of our citizens. While CUTR's faculty is strongly inclined toward research over teaching, NCTR will contribute significantly to the development of the next generation of transportation professionals. Indeed, as the theme of the Center notes, it is expected that USF will become the educational institution of choice for those who wish to become public transportation mobility managers.

Multi-year funding from the UTC program will provide NCTR with the stability to retain existing faculty and hire new faculty members as the level of expertise of the program grows and attracts more research sponsors. These faculty members will have skills and experience that will complement existing CUTR faculty and be useful to transportation agencies. NCTR will determine the new skills necessary through internal discussion among current faculty and feedback from transportation agency managers. All faculty (new and current) will be encouraged to use and to mentor students on virtually every project they undertake. The close association and working relationship between faculty researchers and

student research assistants helps prepare the students for myriad circumstances they will face as mobility managers in the future. This working experience, coupled with course work in transportation, will provide students with the skills they need to enter the professional ranks of consulting companies, departments of transportation, and transit agencies and become future leaders as a number of prior NCTR students have already become.

NCTR Transit Research Assistants

CUTR and NCTR have an established history of student involvement and providing student educational support. Annually, as many as 25 undergraduate and graduate research assistants work on a variety of transportation-related projects. This workforce has consisted of predominately graduate students who work with research faculty on one or more of the approximately 100 research projects under way at any given time at CUTR. NCTR will continue the program of extensive student involvement by requiring virtually every project to include student research assistants. While it has never been difficult to find students at USF with interest in working at CUTR, NCTR faculty will engage in more extensive efforts to advise other undergraduate university students of the opportunities to participate as research assistants while pursuing their Masters or Doctorate Degrees at USF.

The intent is to have as many as 30 students serving as research assistants throughout the year. These students will be funded through specific project budgets rather than being itemized in the NCTR budget.

4. Performance Indicators

The College of Engineering, through the Department of Civil and Environmental Engineering, the Center for Urban Transportation Research, and the Graduate Interdisciplinary Transportation Program, maintains an extensive database on former and current undergraduate and graduate students enrolled in transportation courses at the University of South Florida. The database compiles statistics for courses offered by semester and instructor, programs of study, financial aid, ethnicity and gender, and graduation dates. In addition, the University of South Florida maintains a database which compiles demographic and employment information on any student who has graduated from USF at the graduate and undergraduate level. CUTR compiles statistics for transportation research it conducts, excluding transportation research conducted by Engineering and other departments.

II. E Diversity

Diversity Goal: students, faculty, and staff who reflect the growing diversity of the U.S. workforce and are substantively involved in the undergraduate, graduate, and professional programs of the Center.

1. Diversity Program Outcome

Within the Values section of the USF Strategic Plan for 2007-2012, the following value is articulated:

Cultural and ethnic diversity and inclusion along with an enhanced global experience, understanding, and appreciation

The University of South Florida is committed to being the university of first choice for those seeking a creative and innovative environment, characterized by openness and built on mutual respect and recognition of the strength that results from an inclusive student body, faculty, and staff. In addition, CUTR includes within its vision, mission, and values the following guiding principle:

We value a diverse staff and provide equal opportunities for employment, professional development, and advancement.

It is envisioned that NCTR will include students, faculty, and staff that will reflect the growing diversity of the U.S. workforce. Such a representation will add to the credibility and attractiveness of the Center among all potential participants and among the public who will utilize the research being conducted at NCTR. These outcomes are consistent with the visions, values, and guiding principles that have been adopted by USF and CUTR.

2. Planned Activities

While USF's and CUTR's commitment to diversity is broad and inclusive, there is primary emphasis on the recruitment, retention, and advancement of women, Blacks, Hispanics, Asians, and other minorities. The NCTR student of the year is Monique Ellis, an African American woman who recognized the value of working as a research assistant as she attained her Master of Science in Civil Engineering at USF. She was also the recipient of a \$5,000 scholarship from the American Public Transportation Foundation in 2007 while completing her studies at USF. Professional activity opportunities, such as funded attendance at seminars, conferences, and professional meetings, and professional development, such as funded continuing education, will be encouraged for all students and faculty, and proactive recruitment efforts, such as advertisement in minority professional publications and websites, will be conducted to seek minority applicants. NCTR will develop a proposal, in conjunction with the Florida Public Transportation Association, that will be forwarded to Congressional offices that would call for the funding of a Transit Management and Career Development Institute. This will be introduced to a member of the Congressional Black Caucus for potential federal funding. The intent is to establish a concerted program of outreach, with emphasis on minority communities in particular, to inform them of the careers that are available in public transportation. Contacts will be

made through high schools, trade schools, junior colleges, and colleges and universities, including Historically Black and Minority Colleges, to introduce students to transit as a career opportunity. This institute would guide young people to educational resources where they could take courses focused on public transportation. The courses at USF would be promoted to provide them with background on the subject. The Institute would also provide a link between public transit agencies and students to help make connections for internships. The purpose would be to help establish a pipeline for new talent to enter the transit industry. It is intended that this could serve as a state model that could be duplicated throughout other interested states.

II. F Technology Transfer

Technology Transfer Goal: availability of research results to potential users in a form that can be directly implemented, utilized, or otherwise applied.

1. Baseline Measures

The measures for Technology Transfer are indicated in Appendix A as baselines 10 and 11.

2. Technology Transfer Program Outcome

Transferring knowledge to action has been a core value at CUTR and NCTR since their inceptions. The completion of the research report is not the end of the project. NCTR is strongly committed to putting the results of research into the hands of those who can use it. NCTR faculty will disseminate information in many different and effective ways: (1) through classes, continuing education programs, and professional development conferences (2) through mechanisms such as the NCTR website, Listservs, netconferences, technology demonstrations, etc. and (3) by taking the initiative to advise targeted markets of the availability of NCTR reports that can be accessed through the website and other transportation newsletters/periodicals.

In some cases, the results of the research are implemented as tools by FDOT such as the work done in "TBEST" which stands for Transit Boardings Estimation and Simulation Tool. TBEST is a comprehensive transit analysis and forecasting model capable of simulating travel demand at the individual stop level while accounting for network connectivity, spatial and temporal accessibility, and time of day variations. This project involved the development of software, users manual, and an on-line forum for exchange of ideas. This tool is now utilized by transit systems throughout Florida as they prepare required Transit Development Plans, and can also be used if service needs to be reduced due to budget reductions to help minimize impacts to riders. Five other states are also interested in utilizing TBEST, and many more are expected to in the future. NCTR expects to continue to work on projects such as these that are identified as high priorities by FDOT. NCTR managers want to conduct research that has immediate utility for departments of

transportation and to operating transportation agencies.

NCTR's primary mission is to develop recommendations and potential solutions to transportation issues, and to take all possible steps to inform operating agencies of the availability of the research results. The NCTR website is already the most frequently visited site on the Internet for people seeking information on "Transit Research". NCTR will take additional steps to analyze the activity on its website, by better analyzing the number of agencies that have visited the site and downloaded reports. In addition, NCTR administrators will poll transit agencies in Florida and commuter assistance programs at the end of each year and ask them directly if they have utilized the results of reports or netcasts provided through NCTR. Getting specific feedback of this nature will be challenging, but worthwhile, and should help advance the state of the art in determining the value of completed research.

NCTR will not only share its research results with transportation professionals, students, and other UTCs, but with state and national media outlets as well, in order to get the summary of the results to the general public.

3. Planned Activities

Classes, continuing education, and professional development conferences

Many NCTR researchers either teach courses or guest lecture at transportation courses at USF. The results of their research are often used in instructing students in a variety of classes. This form of research dissemination adds great value to students as they receive very recently developed information, and they receive their instruction from the person who "wrote the book" (or at least the most recent research report) on the subject. This helps to attract not only degree-seeking students, but practicing professionals who want to develop their own professional credentials by completing courses that have value to their jobs and careers.

In addition to the formal degree-track courses that will be offered by USF, NCTR faculty will be responsible for managing multiple training programs for transportation professionals that provide more venues for sharing NCTR research results.

- NCTR faculty are program chairs for the Florida Public Transportation Association's Annual Meeting that attracts approximately 250 high level public transportation professionals each year. Approximately half of the sessions will feature the results of NCTR research.
- NCTR faculty also develop the program and manage the Professional Development Workshop for Florida transit personnel each summer that attracts nearly 250 additional transit employees from middle management ranks. This workshop will

also prominently feature the results of NCTR research.

- NCTR faculty created the Florida Commuter Choice Certificate Program designed to help develop in-depth knowledge and skills for mobility managers in a relatively short time. This program will be offered, allowing participants to earn CEUs and/or a Florida Commuter Choice Certificate. The results of significant NCTR research in the subject of demand management will be share in these programs.
- NCTR faculty have developed the Access Management Short Course/Workshop using the TRB Access Management Manual, written by NCTR faculty members, as the basic course reference. Other research results will be shared at these workshops intended to help professionals design streets that are safer and less congested.
- NCTR faculty will serve as program chairs and hosts for unique bi-annual GIS in Transit conferences that will attract approximately 100+ professionals from around the country who will share information on their state-of-the-art GIS applications in improving the management of public transportation. NCTR faculty will also share the results of research they have conducted while using GIS software.
- In addition to these opportunities for technology transfer that are controlled by NCTR, faculty members will aggressively seek opportunities to present research results at a variety of state and national professional transportation conferences such as TRB, APTA, ACT, and state transit associations throughout the country. Papers will also be submitted for publication in professional journals and as part of the proceedings of the aforementioned conferences. NCTR faculty will actively seek membership in over 15 professional committees in which information on research results are often shared.

Website, Listservs, and netconferences

NCTR will keep its website up to date, posting all of its final reports in PDF and HTML formats that will be downloadable to anyone with an Internet connection. Reports will be searchable by subject area, author, date, and title. In addition, those who visit the website will be able to view and listen to streamed video summaries of a number of NCTR reports as well as netcasts of workshops and seminars managed by NCTR. The website will include all editions of the Journal of Public Transportation, the only academic journal in the world dedicated solely to public transportation issues. This journal has over 2,200 subscribers from 50 nations. While this journal features authors from around the world, it also provides a venue for summarized NCTR research results. In addition, the NCTR Newsletter "*Flow*" will also be on the website, summarizing the results of NCTR research activities at least twice a year. NCTR's annual report, which also highlights the activities and research results of the prior year, will be posted to the website. NCTR's communications manager will proactively link the website to other significant transportation-related websites to maximize

the opportunities for people to find out about NCTR research.

One of the most powerful methods of sharing information, including research results, is through the Listservs maintained by NCTR faculty. Over 2,000 people subscribe to eight Listservs, allowing frequent and flexible communications among professionals and students from all over the world. NCTR will continue to seed, feed, and weed these Listservs to encourage the active flow of information among the international community of transportation professionals and students. Questions that are posted to the Listservs will be forwarded to NCTR researchers who will be able to guide the questioner to NCTR reports that have information that will be responsive to the questions asked.

Web-based conferencing technology has allowed NCTR to connect groups of any size and in any location, enabling transportation professionals to collaborate more effectively at less cost. Netconferencing “attendees” hear the audio portion of the live presentation via a toll-free telephone call and simultaneously view the material via the Internet. The end result is that many more people participate at a fraction of what it would cost for an in-person meeting or event. NCTR will continue to help organize and host such netconferences for topics within its theme, and also host smaller meetings for the sharing of more specific information generated through NCTR research. NCTR researchers will also seek opportunities to present the findings of their research through netconferences sponsored by other parties such as APTA and TRB.

Targeted Marketing

NCTR’s extensive use of discussion forum formatted Listservs operates as a many-to-many method of communicating, facilitating the exchange of ideas, information, and techniques. In addition, they represent a form of “push” technology for information sharing. NCTR will utilize the opportunities the Listservs provide, as well as e-newsletters and CUTRlines (the quarterly newsletter of CUTR with over 3000 subscribers) to proactively inform members of the availability of completed NCTR reports, and available netcasts. This more direct method of informing thousands of people of the availability of research results is a very powerful way of encouraging people to at least scan the summary of the reports. While the website has proven to be a powerful portal for people to discover when they perform website searches (“pull”), it is even more effective to push the status of completed research to thousands in the transportation community. These targeted approaches and other web-positioning techniques have resulted in NCTR becoming the first site returned when searching on “transit research” on Google, the second site returned on Ask.com, and the third on Yahoo Search.

The USF Library has digitized existing hardcopy documents from pre-NCTR and maintains CUTR’s Resource and Information Center with over 30,000 records. Links within the USF Library system will allow users easy search and access to all electronic documents contributed by NCTR. All reports completed by NCTR will be sent to a variety of research libraries throughout the country.

3a.1 Required Activities

As noted above, NCTR will maintain an up-to-date Internet home page (www.nctr.usf.edu) that will contain all elements required by UTC reporting requirements including:

- Reports and Publications
- Research Project Descriptions
- Directory of Key Personnel
- NCTR's Strategic Plan
- E-Newsletters
- Summaries of most recent research
- Links to Listservs
- Streamed Video Project Summaries
- Links to Netcasts
- Journal of Public Transportation
- Opportunities to submit research proposals
- Opportunities to subscribe for e-alerts of NCTR reports
- Links to other transit research publications

3a.2 Advice to USDOT

It is understood and anticipated that NCTR will be asked to participate in occasional meetings of UTC and/or DOT experts on high-priority topics, or to provide expert advice to DOT on technical or educational topics. At a minimum, it is expected that NCTR faculty will advise the FTA on the most appropriate and efficient methods for transit systems to sample passenger miles and ridership and on how to help Bus Rapid Transit services succeed in different settings. NCTR researchers also will provide advice to RITA on the influences of demographic changes on the transportation system. As the modal agencies determine their research priorities and NCTR responds to them, it is anticipated that there will be many more opportunities for similar exchanges.

4. Performance Indicators

NCTR will consistently track its progress in technology transfer activities on a quarterly basis, as part of CUTR's quality control and performance tracking system. This system has allowed NCTR's research faculty to quickly reference the program's accomplishments and allow program managers to determine progress that is being made against goals.

Section III

MANAGEMENT APPROACH

III. A Institutional Resources

NCTR at CUTR is in the fortunate position of having available a wealth of resources to facilitate carrying out the mission of the Center. With a faculty and staff of 80 employees, a dedicated building with 20,000 square feet of state-of-the-art space, and warm sunshine that makes it possible to attract staff, visitors, and conference venues, CUTR offers a breadth of resources.

The physical location is an important asset. The University of South Florida is located in a rapidly growing urban area in the fourth largest (soon to be third), and one of the fastest growing, states with more than 17 million residents. The state hosts 45 million tourists annually and has an age profile matching the projected profile of the U.S. in 2015. Florida has seven metropolitan areas with more than 1 million population each and is an international hub for air and sea transportation. In short, Florida is a good transportation research environment.

Critical issues in Florida include economic development, accommodating travel needs of an aging population, accommodating travel growth, environmental concerns over air and water quality, growth management and land use control, and mobility preservation and enhancement. Florida now has 29 fixed route transit systems, and is a national leader in coordination of transportation for the disadvantaged. The issues critical to transit in Florida are those issues that will govern the success of public transportation across the country in the years ahead. There has been very rapid growth in transportation demand and the required need to address this demand. Florida has a high degree of sensitivity to preserving the environment, particularly the coastal and wetland areas. Florida has a very large senior citizen population with corresponding transportation needs and challenges. As a major national and international tourist market, Florida has a variety of intermodal transportation challenges in integrating services among airlines, cruise ports, intercity rail, public transportation, and the auto modes. The elderly, tourists, and new immigrants all create challenges necessitating the effective planning and implementation of the right blend of transportation facilities and services.

The challenges of sprawl and meeting dispersed travel needs, including developing effective public transportation for development patterns designed primarily with the auto in mind, are shared by Florida and the majority of urban America. High speed rail, maglev,

peplemovers, intelligent transportation systems, transportation demand management, growth management, transportation disadvantaged services, and coordinated transportation/land use planning are among the critical topics in transportation in Florida that have a parallel national interest. The Miami-Ft. Lauderdale area is one of five areas selected in the country by the FTA to conduct an urban initiative program that will feature congestion pricing in the I-95 corridor as part of the solution for greater mobility. These conditions provide a great natural laboratory for many issues of interest in transportation research. The state is also positioned to be a large consumer of transportation professionals and producer of young people who will compose our future work force.

The University of South Florida (USF) is among the largest universities in the United States and a member of the State University System of Florida. Founded in 1956, USF opened its doors in 1960 to 2,000 students. Today, the University serves almost 45,000 students, with nearly 200 programs at the undergraduate, Master's, specialty, and doctoral levels (including M.D.). USF now includes nine colleges and a network of regional campuses in Tampa, St. Petersburg, Sarasota, and Lakeland, with more than 2,000 faculty. With a growing academic reputation and a dedicated faculty, including 62 Fulbright Scholars, 35 Endowed Chairs, and 14 Endowed Professorships, USF is fast becoming a model urban research university for the 21st century. USF has surpassed the \$300 million mark in sponsored research annually in each of the past two years and maintains the level of administrative staff to support that level of research. All of the technical and legal resources of the university are available to NCTR, and CUTR's 18 years of experience allow NCTR researchers to move with confidence through the contracting process on behalf of the USDOT and NCTR's funding partner, the Florida Department of Transportation. The Carnegie Foundation classifies USF as a university with "Very High Research Activities", placing it in the highest category of research universities. USF's libraries contain some 2.5 million volumes, as well as vast computer links to hundreds of library data bases and the World Wide Web.

NCTR will be housed within USF's Center for Urban Transportation Research, a legislatively-established research center that is part of the USF's College of Engineering. CUTR is unique in a number of respects that have enabled it to move rapidly to be recognized as a significant national resource in transportation research, education, and technology transfer. Established 20 years ago, CUTR has moved to the forefront of transportation research centers and has earned a reputation for conducting cutting-edge research on a wide variety of transportation policy issues. Unlike many centers, CUTR was not created as a forum for Civil Engineering faculty to collaborate on research initiatives but rather was created by the Florida legislature in recognition of the value that an in-state transportation-policy-focused capability could provide. CUTR has multi-disciplinary capabilities among its own research faculty in transportation engineering and planning, urban planning, economics, finance, public and business administration, anthropology, geography, public policy analysis, statistics, and survey research. While most of CUTR's work is based with sponsoring agencies in Florida, NCTR provides the opportunity to conduct research that is more national in scope, directly benefiting the USDOT interests.

CUTR also hosts the National Bus Rapid Transit Institute. This Institute was designated by Congress in the SAFETEA-LU legislation to help enhance the performance of BRT services, and promote their potential application in a variety of urban settings throughout the country. This program, while related to the work performed through NCTR, is a separate grant administered by the FTA. The information gathered through both programs is mutually beneficial.

III. B Center Director

Joel Volinski is the Director of NCTR. He is responsible for the development and, if necessary, modifications to the Center's Strategic Plan. He is also responsible for ensuring compliance with all other UTC Program requirements. The vast majority of the work being done through NCTR will be performed by the research faculty at CUTR, which will facilitate the monitoring of all projects. The Director will be assisted by Dennis Hinebaugh, who will assist in the monitoring of all project budgets and schedules and help produce required annual reports and newsletters. Mr. Volinski will represent NCTR at external meetings, including meetings held with DOT representatives and annual meetings with the directors of all the University Transportation Centers. Mr. Volinski is a former transit agency executive director, an author of nationally published reports on transit performance, a member of Leadership APTA, a TRIP Ambassador, a member of numerous APTA and TRB committees, a member of the Board of Directors of the Florida Public Transportation Association, and a frequent panelist at state and national transit conferences.

III. C Center Faculty and Staff

NCTR will be staffed by several full-time research and administrative faculty. Mr. Volinski will dedicate 80% of his time to the management of the NCTR program. Mr. Hinebaugh, who also serves as the Director of the National Bus Rapid Transit Institute, will dedicate 25% of his time to NCTR administration. Pam Clark, Program Assistant, will dedicate 25% of her time to project administration activities. In addition, NCTR will provide employment for approximately 14 graduate and undergraduate research assistants per semester.

III. D Multiparty Arrangements and Resource Concentration at the Grantee University

Virtually all of the work to be performed through the UTC grant will be conducted by research faculty at NCTR. There will be no consortium of universities associated with this grant. The USDOT might request that universities work together on larger research projects, and if that happens, agreements will be reached at that time to determine who the

lead university will be. In light of this relationship, supporting documents for partners have not been included here, and the activities of other universities have not been included in any baseline measures.

III. E, 1, and 2 Matching Funds

In accordance with program guidelines, NCTR will have matching funds at or in excess of the full amount of federal funding. A commitment has been received from the Florida DOT to provide matching funds in an amount equal to federal funding subject to the availability of State funds. A multiyear master agreement under which project-specific work orders are approved is in place with FDOT. It is anticipated that FDOT will overmatch the federal grant, providing \$1 million dollars annually even if the federal grant is less than \$1 million. The commitment of match resources by the State acknowledges the importance of the UTC program to Florida and speaks to its appreciation of the value of having the NCTR program at USF. FDOT is fully aware of NCTR's program goals, as laid out in the guidelines and contractual documents from USDOT, and acknowledges the program requirements that will apply to projects funded with FDOT funds. Similarly, FDOT has identified specific requirements that are conditions of FDOT funding. As noted in the Research Selection section of this Strategic Plan, the overall program of activities has been designed to accomplish the goals of all the partners by programming resources in a way that focuses on their respective goals. One major additional advantage to having FDOT as NCTR's funding partner is that the university is only charged a 10% indirect rate on the million dollars the state provides, leaving substantially more funds available for research.

NCTR at CUTR is also the recipient of approximately \$560,000 annually through the general budget of the College of Engineering. These funds support the ongoing administrative functions of CUTR/NCTR. A significant portion of the CUTR building, valued at over \$2 million, could also be considered an in-kind match to the grant, though it is not necessary to claim that as part of the match for this grant. Finally, it is recognized that the non-Federal share of Center costs may include funds provided to a recipient under section 503, 504(b) or 505 of title 23, United States Code, though it is not anticipated that such sources will be utilized for match for this grant.

Beyond the State commitment, it is anticipated that from time to time there might be other sponsors who would like to partner with NCTR for research projects, and those agencies will provide matching funds toward the total expense of the project.

**Section IV
BUDGET**

**University of South Florida
National Center for Transit Research (NCTR)
Year 9 (July 1, 2008 - June 30, 2009)**

Categories	Budget Amount	Explanatory Notes
Center Director Salary	\$107,150	1 Year Director Costs
Faculty Salaries	\$678,545	
Administrative Staff Salaries	\$15,167	
Other Staff Salaries	\$3,000	
Student Salaries	\$177,484	Students @ average \$16/hour for 20 hours/week
Staff Benefits	\$297,234	31.0% for Faculty and Staff, 8.0% for Students
Total Salaries and Benefits	\$1,278,580	
Scholarships	\$12,655	
Permanent Equipment	\$6,500	
Expendable Property/Supplies	\$122,734	Phone, fax, mail, copying, binding, computers, peripherals, contracted subconsultant work
Domestic Travel	\$51,793	Technology transfer, data gathering, diversity recruitment
Foreign Travel	\$0	
Other Direct Costs	\$0	
Total Direct Costs	\$1,472,262	
Indirect Costs	\$344,338	46.5%OH for Federal, 10.0% OH for State DOT Match
Total Costs	\$1,816,600	
Federal Share	\$816,600	USDOT-RITA
Matching Share	\$1,000,000	Florida Department of Transportation

APPENDIX A

Baseline Measures for NCTR

Research Selection

1. Number of transportation research projects selected for funding:

Nine (9)

1a. Number of projects considered to be basic research: One (1)

Number of projects considered to be advanced research: Two (2)

Number of projects considered to be applied research: Six (6)

2. Total budgeted costs for the projects reported in 1 above: \$1,000,000

Research Performance

3. Number of transportation research reports published:

Nine (9)

4. Number of transportation research papers presented at academic/professional meetings:

Eight (8)

Education

5. Number of Education Courses offered that are part of a transportation curriculum:

Undergraduate – Four (4)

Graduate – Eighteen (18)

6. Number of students participating in transportation research projects:

Undergraduate Students: Two (2)

Graduate Students: Eleven (11)

Human Resources

7. Number of advanced degree programs offered that are transportation related:

Master's Level: Two (2)

Doctoral Level: One (1)

8. Number of students enrolled in transportation-related advanced degree programs:

Master's Level: Thirty Seven (37)

Doctoral Level: Seventeen (17)

9. Number of students receiving degrees through transportation-related advanced degree programs:

Master's Level: Seven (7)

Doctoral Level: Two (2)

Technology Transfer

10. Number of transportation seminars, symposia, distance learning classes, etc. conducted for transportation professionals:

Sixty Seven (67)

Number of transportation professionals participating in those events:

One Thousand One Hundred Thirty Eight (1,138)