

**NC STATE** UNIVERSITY



# Strategic Plan 2022 - 2027

itre.ncsu.edu



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How We Move Forward



### Overview

# **Executive Summary**

In 2019, the Institute for Transportation Research and Education (ITRE) began a strategic planning effort to more clearly define who we are and develop a road map to guide our future direction. This effort was the most significant undertaking of its kind in the history of the institute. Each component of the strategic plan was created considering both ITRE's strong record of service and projected changes in the transportation market. The resulting plan is a living document that informs every level of daily operations and decision-making at ITRE.

To develop this comprehensive strategic plan, ITRE incorporated a six-step planning process adapted from the Washington Nonprofit Institute Program. We engaged more than 50 internal stakeholders (ITRE staff)

PREPARE

SUMMER 2019

LISTEN

FALL 2019

ENVISION

WINTER 2019-2020

PLAN

SPRING-FALL 2020

EXECUTE

WINTER-SPRING 2020-2021

EVALUATE

SUMMER-FALL 2021

and more than 70 external stakeholders (partners, sponsors, advisors, etc.) through workshops, surveys, and other types of listening activities.

At the heart of the resulting plan is a renewed commitment to a "people-centered" approach to transportation research and education. This plan was also developed to complement the strategic plans of North Carolina State University, recognizing that ITRE's activities should reinforce the university's goals. In addition to revising ITRE's mission statement and other elements that will guide our progression, these planning efforts resulted in ITRE's five new **Strategic Goals**:

- Be A Leading Technical Service and Applied Research Provider in the State and Nationally
- 2. Serve as A Preferred Provider for Continuing Education and Training in the State and Nationally
- Expand Our Reach Through Collaborations with Diverse Partners and Sponsors
- 4. Cultivate an Organizational Culture of Excellence and Innovation
- Maintain a Consistent Institutional Brand That is Nationally Recognized

ITRE has also developed implementation plans at every level of our organization to ensure that these goals are realized.

## Overview /

## Who We Are



### **Our History**

The Institute for Transportation Research and Education (ITRE) is an institutional center at North Carolina State University. Chartered by the North Carolina General Assembly in 1978, we conduct surface and air transportation research, training, and technical support activities. ITRE works across various modes of transportation to provide capacity and expertise for municipal, state, federal, and international clients to address critical transportation issues.

Prior to transitioning administratively to our current home at NC State University in 1992, ITRE existed as the University of North Carolina Institute for Transportation Research and Education. Much of the institution's work over the last four decades has focused on providing practical applications and educational opportunities that support informed decision-making in the public service sector. For many years, ITRE's research and education efforts focused on highway systems. However, over time ITRE has grown to include expertise in numerous transportation modes and services, detailed at https://itre.ncsu.edu/.

ITRE began reorganizing our activities in 2016, recognizing that meaningful growth can be impeded by operational silos that hinder coordination, efficiency, and innovation. To streamline collaboration within the organization and to increase operational efficiency, a three-tier model was adopted to conceptualize the core functional services ITRE offers: Research, Technical Service, and Education and Training.



### **Our Service**

These three complementary services areas are conceptualized in the following ways:



Transportation research is at the heart of ITRE's history and role as part of an academic institution. We excel at producing research deliverables that increase knowledge and provide new solutions that enhance the transportation-related practices of public agencies. Research in human-centered domains, such as transportation systems, lies on a continuum between traditional academic research and applied research, rather than fitting neatly into one category. While ITRE's activities tend to focus on the applied research end of the continuum, we conduct research across the spectrum, involving partners ranging from faculty to private industry. We capitalize on our strong partnerships to conduct studies that address complex transportation issues of today and tomorrow. Examples include developing guidance for alternative intersection designs after extensive field data collection and analysis, evaluating the impact of artificial intelligence and other advanced technology systems on railway safety, and modeling to help transit systems develop plans that optimize rider access to essential services like healthcare.



ITRE provides quality products and technical support to help agencies assess their needs and apply new technologies. We offer niche services for needs that are not easily addressed or economically viable for the larger transportation market to tackle. We aim to build the capacity of those we serve through ongoing technical support, targeted training on new technical concepts, and incrementally improving technical deliverables as new requirements are identified by a sponsor. These services may also convert research activities into innovative tools and techniques for use by public sector practitioners and/or the public. While some of these services are delivered as part of standalone projects, many of these efforts are

part of larger ITRE programs. Examples of ongoing technical service programs include the Geovisual Analytics and Design Management Group (GADA), which furthers law enforcement efforts to improve safety through performance management support and data visualization, and the Triangle Regional Model (TRM) partnership, through which ITRE supports the development and application of travel demand models for multiple stakeholders in the Triangle region of North Carolina.

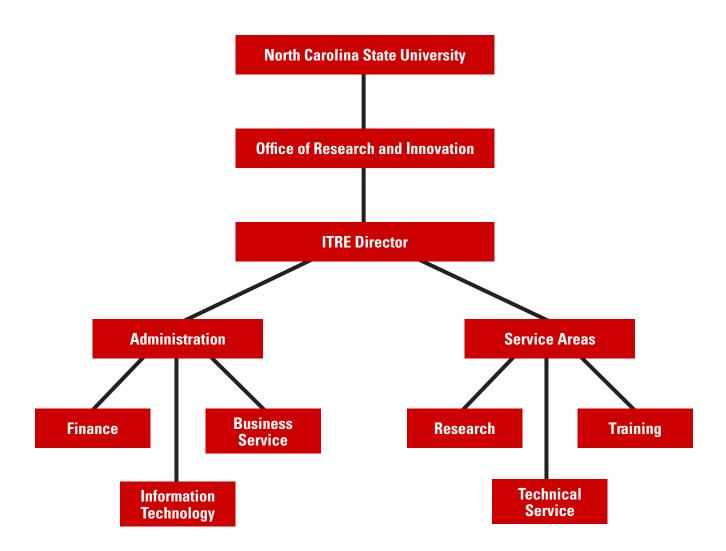


ITRE has long served the community as an education and training provider. We facilitate valuable educational opportunities for public and private partners that range from boots-on-the-ground courses for work zone flaggers and traffic control specialists to ongoing technology-based training for school bus routing staff across North Carolina. Since 1986, ITRE has served as the home of the Federal Highway Administrationfunded Local Technical Assistance Program (LTAP) for North Carolina. Through LTAP, ITRE provides invaluable training options that enable local agencies to learn about the latest technological innovations and best practices. We also provide continuing education courses to the NCDOT, municipalities, and consulting professionals. One example is the Fundamental Engineering Principles (FEP) Program, which offers transportation technicians who are not licensed Professional Engineers the opportunity to gain a deeper conceptual understanding of transportation design, inspection, and field practices. ITRE's diverse education and training programs are offered through a variety of platforms, ranging from hands-on field experiences to online learning, to meet the needs of different types of transportation professionals. Finally, our participation in research often involves the engagement of undergraduate and graduate students, providing them with academic training. In this way, ITRE actively and directly contributes to NC State's educational mission.



## Our Structure

Each service area includes ITRE programmatic groups which are clustered primarily by work associated with specific modes of transportation. Increasingly, staff in different units across the organization are working together to develop solutions that incorporate systems-thinking and other holistic approaches to addressing the transportation needs of the future. For each ITRE project or educational opportunity, we assess the needs of the stakeholders and assemble a team with the appropriate skills and expertise. These teams are often interdisciplinary and include faculty and/or private sector partners.









Our collaborative work environment is supported by a flat management structure, which enables staff from different functional areas to work on cross-functional teams to generate deliverables that are innovative and comprehensive. Each of the aforementioned functional service areas provides different types of deliverables, although any given ITRE project can incorporate a mix of these service types. For example, our current Bicycle and Pedestrian Program conducts research related to enhancing the measurement of non-motorized vehicle activity and also provides technical services to public agencies to support their ongoing measurement through the Non-Motorized Volume Data Program (NMVDP), which also includes a training component for public agencies.







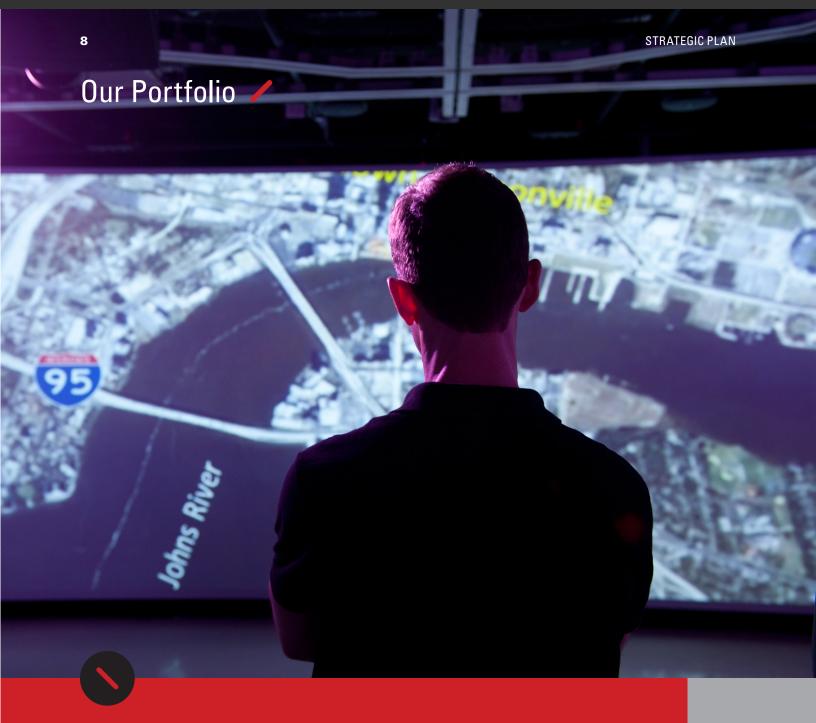
The ITRE team includes approximately 50 full-time equivalent (FTE) staff members and nearly 25 affiliate faculty members from the NC State's College of Engineering. In addition, ITRE maintains ongoing collaborations with faculty from numerous disciplines at NC State and other institutions across the country and world.

Critically, at ITRE, we prepare the next generation of transportation professionals for success. Our staff and faculty partners mentor approximately 100 undergraduate and graduate students annually, engaging them in projects to provide them with rewarding professional experiences. Undergraduate students work with ITRE to grow their skillset during internships that range from one semester to multiple years, while many graduate students work with ITRE throughout their educational experience.









# Our Portfolio

As a university institute, ITRE is in a unique position to work with diverse partners and sponsors who represent the breadth of the transportation field. This includes collaborating with faculty from not only engineering but also complementary fields such as public policy and psychology. Additionally, we partner with a variety of experts in the private sector to deliver valuable deliverables to our sponsors and the community.

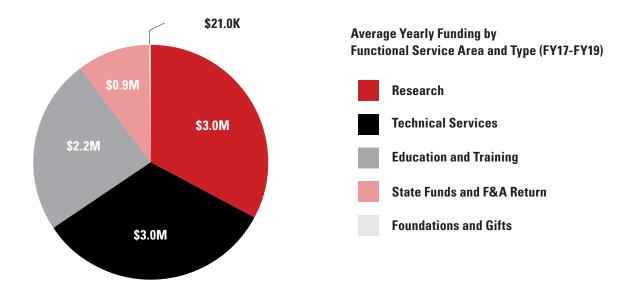
ITRE's work is supported almost entirely by contracts and grants, primarily sponsored by local, state, and national government agencies. The balance of the services we provide and the sponsors we serve are detailed in the following sections. Assessing the composition of our portfolio was key to our strategic planning process, as it provided insight into opportunities for growth and guidance for developing goals for the future.





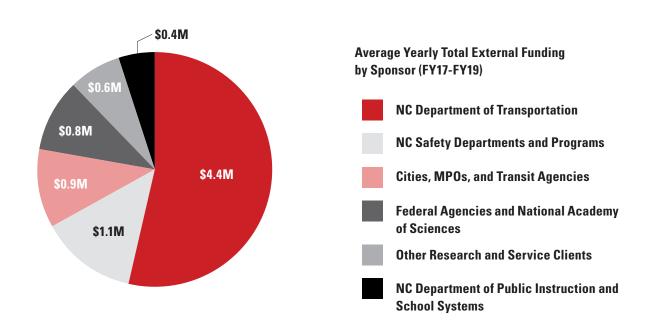
#### **OVERALL INSTITUTIONAL ACTIVITIES BY FUNCTIONAL SERVICE AREA**

Figure 1 presents ITRE's funding composition based on our three functional service areas. Additional funding received through state funds, facilities and administrative (F&A) returns, and foundations and gifts is also presented. On average, ITRE engages in nearly \$9 million of research, technical service, and training activities each fiscal year.



#### **OVERALL INSTITUTIONAL ACTIVITIES BY SPONSOR**

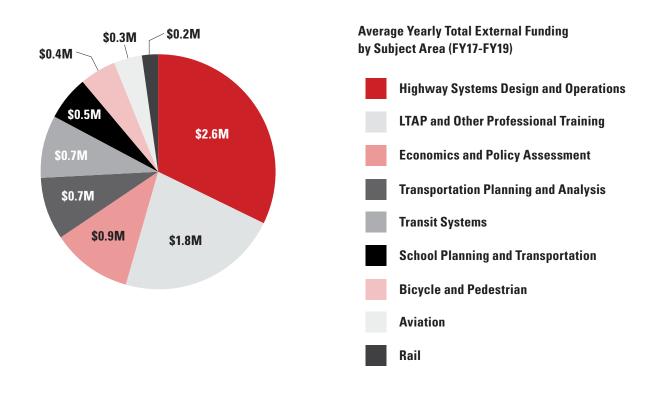
ITRE serves a diverse array of local, state, and federal sponsors. Figure 2 demonstrates the funding breakdown by sponsor. Note that the label "NC Safety Departments & Programs" references the North Carolina Department of Public Safety, the North Carolina State Highway Patrol, and the North Carolina Governor's Highway Safety Program. This does not include state funds or facilities and administrative (F&A) returns.





#### **OVERALL INSTITUTIONAL ACTIVITIES BY SUBJECT AREA**

ITRE research, technical service, and training activities span numerous subject areas. Figure 3 shows the breakdown of funding by subject area. Our work in many of these areas is increasingly cross-cutting, as the world of transportation continues to move in the direction of systems thinking and modal integration. This does not include state funds or facilities and administrative (F&A) returns. Overall Institutional Activities by Sponsor`





## Our Outlook 🖊

# **Market Shifts**

Transportation is rapidly changing, and ITRE has an opportunity to adapt to these changes to strengthen our position in the industry. During engagement activities, ITRE staff and external stakeholders envisioned several possible scenarios for the future of transportation, which were confirmed by market research. The following scenarios will likely shape the future of transportation and consequently informed the development of this strategic plan.













## 1. GEOGRAPHIC AND DEMOGRAPHIC POPULATION SHIFTS

Current trends show that shifts in the location of people and resources, particularly movement from rural areas to more urban areas, will continue to accelerate. This will likely continue to extend the demand for transportation beyond the current built infrastructure, which may lead to the expansion of non-highways transportation systems. Younger generations are increasingly seeking alternatives to vehicle-based transportation and may opt to live in denser, more walkable areas. Furthermore, the growth of aging populations will likely lead to an increased demand for transportation options that provide mobility for those with limited driving capacity. This trend may be more prevalent in non-urban areas, where many aging populations live but which are often not equipped to support multimodal transportation options. These trends may result in denser land use, may deepen urban/rural divisions, and may increase barriers to access essential services for certain demographic groups. Effectively addressing these changes will require innovative solutions that utilize data and emerging methods to help public agencies plan for a more sustainable transportation future.

## 2. INCREASED RELIANCE ON ADVANCED TECHNOLOGY

In the future, we will need to increase our focus on incorporating and relying on technology to support efficient and safe transportation systems. For example, the anticipation of Connected and Autonomous Vehicles (CAVs) has already started to change how transportation agencies and transportation-adjacent fields think about transportation and land use. The connected nature of CAVs and other emerging transportation technologies may impact planning and research related to congestion management, routing, and more. As technology accelerates, new modes of transportation may also disrupt the sector. Also, as industries like agriculture and healthcare increasingly integrate data related to transportation into their regular business operations, they may seek tools to support this integration. There is an opportunity to address these shifts by adapting models and research approaches to meet the needs of industries outside of the traditional transportation sector.

#### 3. MARKET CHANGES AND DEMAND SHIFTS

The rapid transport of goods is projected to increase due to online shopping, food delivery, and other

business innovations. "Person" delivery as a service and other emerging models of transportation service will likely continue to grow in prevalence. Subscription-based and on-demand services continue to dominate the communication and education landscapes. Also, tech-centered innovations, such as offering ad-based express lanes for driverless transport or automated routing, could further change the transportation landscape. The uncertainty of these changes and the experimental nature of new technology will require new ways of thinking about transportation planning, implementation, and training.

#### 4. FUNDING MODEL SHIFTS

Current transportation infrastructure funding models may not be sufficient to adequately support future transportation needs. Consequently, transportation agencies will likely shift away from the current reliance on federal funding and gas-based revenue streams, potentially to more funding from private sources and innovative revenue sources. These shifts may create a need for more oversight of privateprivate partnerships, and therefore a growing need for research partnerships with private entities to create nimbler and more cost-effective solutions. In addition, the transportation field may continue to focus on prioritizing project funding based on an analysis of the costs compared to the long-term benefits. This may drive the need for solutions focused on cost-effectiveness, return on investment, and other performance measures that enable transportation agencies to compare project and policy options.

## 5. ADAPTING EXISTING MODELS AND INFRASTRUCTURE TO MEET FUTURE NEEDS

Despite these shifts, transportation infrastructure and technology may change slowly due to resource limitations and other factors. Transportation systems may change less drastically than some models forecast, continuing to operate much like today for the next several decades. Regardless of how quickly the transportation landscape changes, a large percentage of the current infrastructure may be used to support future transportation systems. For example, existing roadway infrastructure is needed to support surface-based trends such as ride-share, and the availability of curbsides will also be key as people and goods are delivered more frequently. As such, the public sector may benefit from innovative planning and policy practices that optimize limited resources.





# **Identity Statement**

At the core of our plan is a strong "people-centered" approach to transportation research and education. For ITRE, "people-centered" means that our staff and partners operate with a lens that recognizes the holistic nature of transportation and the many ways that people are impacted by transportation-related decisions. We strive to:



Enhance the lives of individuals who use transportation systems by improving safety and accessibility for users of all modes from all walks of life.



**Develop user-friendly tools and support technology** that help agencies make informed decisions and advance resilient systems that serve the public interest.



**Proactively engage communities** that are impacted by the deliverables we produce to ensure the agencies that serve them can most effectively meet their needs.



Facilitate interdisciplinary professional collaborations to produce outcomes that have a positive impact on the overall well-being of communities.



Assist public agencies by developing pragmatic solutions that equip their leadership and staff to operate more efficiently and effectively

Our strategic plan reflects a renewed commitment to this people-centered approach, with the recognition that transportation is an essential determining factor in everyone's lives.

## Our Outlook 🖊

# Mission, Vision and Values

### MISSION

To lead the way for efficient, sustainable, and people-centered mobility through collaborative research and education.



### VISION

Shaping a safer, smarter, and more accessible transportation future.





# Core Values



Building upon our history, mission, and vision, the Institute for Transportation Research and Education affirms the following core values, which we work to embody daily:

### **Dedication**

We are committed to excellence and producing quality deliverables that have a positive impact on communities.

### Collaboration

We believe that interdisciplinary teams deliver better outcomes and are committed to promoting an environment that supports cooperation.

### Growth

We affirm the value of continuing education and seek to continually improve ourselves.

### Integrity

We seek to be an impartial source of expertise that reinforces trust and serves the public good.

### Innovation

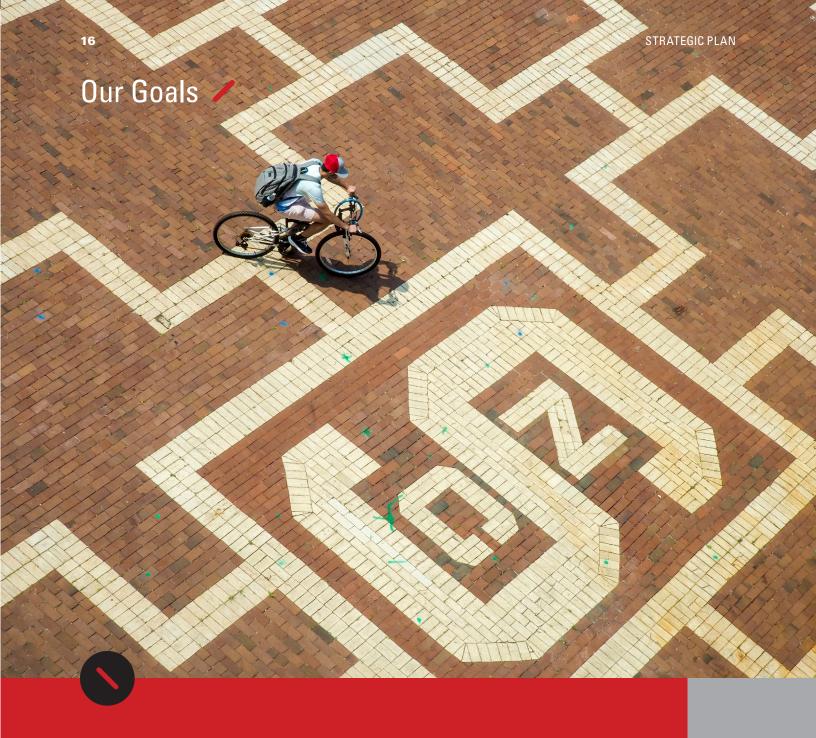
We aspire to be a leader in developing creative applied solutions that meet tomorrow's transportation needs.

### **Diversity**

We strive to employ a multicultural workforce and to incorporate the perspectives of individuals from all walks of life.

### **Adaptability**

We aim to be flexible to address the changing landscape of transportation with proactive responses.



# Strategic Goals

As a university institute, ITRE is in a unique position to work with diverse partners and sponsors who represent the breadth of the transportation field. This includes collaborating with faculty from not only engineering but also complementary fields such as public policy and psychology. Additionally, we partner with a variety of experts in the private sector to deliver valuable deliverables to our sponsors and the community.

ITRE's work is supported almost entirely by contracts and grants, primarily sponsored by local, state, and national government agencies. The balance of the services we provide and the sponsors we serve are detailed in the following sections. Assessing the composition of our portfolio was key to our strategic planning process, as it provided insight into opportunities for growth and guidance for developing goals for the future.



## Our Goals /



### GOAL 1

# Be A Leading Technical Service and Applied Research Provider in the State and Nationally

As a university institute, ITRE aims to provide unbiased expertise. Our subject matter experts provide innovative and practical solutions that support better transportation decisions. ITRE is recognized for expertise in numerous fields ranging from bicycle and pedestrian data to transit routing optimization to intelligent transportation systems. To further grow our capabilities and reputation, we will build on the firm foundation of our history to strategically expand our role as leaders in the transportation space. We aim to go beyond our comfort zone to expand our reach through technical services and applied research projects that prepare the transportation field for the future. The following objectives and associated strategies outline how we will accomplish this goal.

#### **OBJECTIVE 1.1**

#### PROVIDE ADVANCED SUBJECT MATTER EXPERTISE TO ADDRESS AREAS OF INCREASING NEED.

The transportation landscape is changing rapidly due to the introduction of new technologies. Advances in technology have the potential to help improve transportation decisions and operations as well as the wellbeing of transportation users. With this shift, ITRE has the opportunity to leverage our expertise to serve as a valuable asset to transportation decision-makers across the state and country. To accomplish this objective, we must continue to grow and exercise our knowledge in subject areas that will be key to the success of the transportation systems of the future. We need to be agile to respond quickly to changes in transportation, as the nature of the industry and systems are rapidly changing. We also need to continuously reimagine what could be possible to remain innovative in our approaches and to offer solutions that prioritize the needs of those that use transportations systems. Expertise in emerging technologies is essential to meeting this objective, as well as leveraging skills that are key to planning and



assessing systems, such as geometric design and policy analysis. Specific strategies that will support the realization of this objective include the following:

- Strategy 1.1.1: Leverage the expertise of economic and policy experts to assess transportation impacts.
- Strategy 1.1.2: Grow expertise in emerging and advanced technology relevant to transportation.
- **Strategy 1.1.3:** Incorporate knowledge from planning, engineering, and other key technical fields to optimize project outcomes.
- **Strategy 1.1.4:** Help public leadership and officials develop goals and evidence-based solutions to meet the needs of communities.

#### **OBJECTIVE 1.2:**

DEVELOP TOOLS, PROCESSES, AND GUIDELINES TO LEAD THE IMPLEMENTATION AND ADOPTION OF EMERGING TECHNOLOGIES.

One of the primary ways ITRE will continue to improve future transportation systems is by developing resources that enhance and streamline decision-making. Focusing on the use of and expertise in areas such as data visualization, travel optimization tools, and guidebook development can help take ITRE to the next level as a go-to source for transportation technology expertise. We will seek to deepen our understanding of the needs of entities that can benefit from innovative decision-making support. This may include government agencies, public systems like schools, and industry partners among numerous others. Considering prioritization, a balance of near-term wins can help ITRE ensure the achievement of this objective. Specific strategies that will support the realization of this objective include the following:

- **Strategy 1.2.1:** Create tools to quantify risks associated with the adoption of emerging mobility-related technologies like AI and machine learning.
- Strategy 1.2.2: Develop user-friendly software packages and tools for external and internal applications.
- Strategy 1.2.3: Create more visualizations and accessible information to aid sponsor and consumer understanding.

#### **OBJECTIVE 1.3:**

#### PROVIDE HIGH-QUALITY MOBILITY DATA COLLECTION AND MANAGEMENT EXPERTISE TO STAKEHOLDERS.

ITRE is well known as a trusted and neutral partner for collaboration, particularly in the data collection and management space. We strive to incorporate robust data collection and analysis approaches to provide evidence-based solutions and support. As the need for data expertise, data analytics, AI/ML, and other data-focused support continues to grow, we will expand our knowledge of data collection and curation. This expansion will increase our capacity to help diverse public, private, and government entities prepare for the future. It will enable ITRE to serve its stakeholders as a knowledge and data repository, providing analysis of historical trends to support public decision-making in the state and beyond. Achieving this objective will require us to further develop best practices for optimizing our data analysis and management approaches, such as establishing new methods for data curation and/or integration. ITRE will also recruit and retain employees with strong data-related skills and the ability to adapt to emerging data technology trends. Specific strategies that will support the realization of this objective include the following:

- **Strategy 1.3.1:** Employ skilled data scientists and data architects.
- Strategy 1.3.2: Understand data needs focused on mobility.
- **Strategy 1.3.3:** Develop and strengthen data partnerships.
- **Strategy 1.3.4:** Maximize data utility by providing implementable solutions.



## Our Goals /



### GOAL 2

# Serve as the Continuing Education and Training Provider of Choice for the Transportation Industry

ITRE has offered training and education services to the transportation industry for more than 40 years. We have provided knowledge-building and professional development opportunities that enable the transportation and planning workforce to keep pace with the ever-changing landscape of the sectors. In addition to managing the North Carolina Local Technical Assistance Program (LTAP), we offer a variety of continuing education opportunities ranging from standalone workshops to certificate programs. This history of excellence positions ITRE to grow our reputation and capabilities within the training and education space. We can expand our capabilities, style of delivery, and types of content we offer to better meet the future needs of those we currently serve as well as the needs of new partners. The following objectives and associated strategies outline how we will accomplish this goal.

#### **OBJECTIVE 2.1**:

## PROVIDE TRAINING AND EDUCATION THAT EFFECTIVELY EQUIPS THE TRANSPORTATION WORKFORCE OF THE FUTURE.

The needs of the transportation workforce are shifting as transportation career paths change, younger generations with different learning styles enter the workforce, and information delivery practices incorporate more technology. As the needs of our stakeholders shift, ITRE must continue to assess and adapt our training and education offerings to remain an asset to the transportation community. Therefore, this objective is specifically focused on capitalizing on opportunities to enhance our current training and education offering to help ensure they are of optimal value to



the transportation workforce. ITRE has a strength in providing training and education through existing programs like the Local Technical Assistance Program (LTAP), AirTAP, and professional programs like Fundamental Engineering Principles (FEP). We will build on this solid foundation of excellence to continue to meet the shifting needs of transportation professionals and those who employ them. Specific strategies that will support the realization of this objective include the following:

- Strategy 2.1.1: Deliver training using flexible approaches that are locally and nationally appealing.
- **Strategy 2.1.2:** Provide opportunities that incorporate modern learning platforms and effective instructional design approaches.
- **Strategy 2.1.3:** Extend current educational offerings to provide certificates, certifications, and other tangible achievements that can help students advance their careers.

#### **OBJECTIVE 2.2:**

## EXPAND LEARNING OPPORTUNITIES TO GROW THE KNOWLEDGE OF PUBLIC AGENCIES AND THOSE THAT WORK WITH THEM.

While ITRE has a long history of offering training and education, many leaders in transportation are still not aware of our strengths in this space. As such, ITRE has an opportunity to expand our impact in this area to further help support public and private sector efforts to develop and sustain effective practices. Additionally, the field of transportation is changing due to advances in technology, modal integration, and other emerging trends. With these shifts comes an opportunity to provide the training and education that public agencies need to effectively maintain the transportation systems of the future. To address these needs, we will strategically develop new offerings that utilize the skills of our staff and partners. This objective may also include providing education through non-programmatic offerings such as webinars, brown-bag seminars, and workshops. Specific strategies that will support the realization of this objective include the following:

- **Strategy 2.2.1:** Develop new education and training programs based on market research and stakeholder need assessments.
- **Strategy 2.2.2:** Leverage staff skills to educate the public and transportation-adjacent professionals about transportation issues.
- **Strategy 2.2.3:** Support knowledge growth in emerging technology and other increasingly important areas of practice.



## Our Goals /



### GOAL 3

# **Expand Our Reach Through Collaborations with More Diverse Partners and Sponsors**

Since our inception, ITRE has strived to be a valuable and reliable partner. Transportation is a complex field that crosses infrastructure, policy, funding, workforce, and many other public issues. Collaborating with other professionals and experts enhances our ability to develop helpful and innovative solutions for an array of project sponsors. Looking to the future, ITRE has an opportunity to expand our pool of project partners. We will extend our expertise to sectors impacted by transportation, such as healthcare and agriculture, which also aligns with the recent "systems" approach to transportation. We seek to capitalize on our current strengths by further cultivating effective relationships with key collaborators and sponsors, and will extend those partnerships to other opportunities when viable. Diversifying our partnerships will help us strategically broaden our reach while maintaining a more resilient institutional funding model. The following objectives and associated strategies outline how we will accomplish this goal.

#### **OBJECTIVE 3.1:**

## FORM RESEARCH PARTNERSHIPS WITH MORE DIVERSE TRANSPORTATION-ADJACENT ENTITIES TO BROADEN OUR REACH.

Transportation impacts a wide variety of fields, ranging from public education to security. At the same time, the future of transportation is being shaped by a completely new set of stakeholders such as information and other technology companies whose primary focus is not mobility. At ITRE, we have a robust set of skills and dedicated staff. We will leverage these resources to supply unique expertise to partners in these types of non-transportation fields that are



impacted by transportation. To meet this objective, we must strategically prioritize and target diverse collaboration opportunities, both through direct relationship building and growing our reputation within sectors outside of transportation. We also need to enhance our ability to communicate and work at a point of intersectionality with professionals outside of the traditional transportation sector. Specific strategies that will support the realization of this objective include the following:

- **Strategy 3.1.1:** Invest in strategically identifying and developing partnerships.
- **Strategy 3.1.2:** Initiate research collaborations with non-traditional partners in fields impacted by, but outside of, the transportation sector.
- Strategy 3.1.3: Leverage collaboration with students from other fields to expand our interdisciplinary network.

#### **OBJECTIVE 3.2:**

#### DIVERSIFY SPONSORS TO ENHANCE THE TRANSPORTATION FIELD.

Currently, the majority of ITRE's projects are with local and state transportation agencies. Expanding collaborations to work with additional sponsors can help us create a more sustainable portfolio. Diversifying our activities will also broaden the types of solutions ITRE offers, will enable us to grow our skillsets, and can extend our positive impact. In many cases, such expansion will require new types of partnerships with other academic units, schools, private industry, and other external partners. We will utilize the knowledge and experience we have gained working with local and state transportation agencies to achieve success with new sponsors. This expansion and diversification will help grow ITRE's reputation as a valuable source of decision-making support, innovation, and knowledge. Specific strategies that will support the realization of this objective include the following:

- **Strategy 3.2.1:** Pursue national opportunities with high visibility.
- Strategy 3.2.2: Expand collaborations with private sector partners to broaden our impact.
- Strategy 3.2.3: Identify and act on education and training opportunities outside of the typical scope.

#### **OBJECTIVE 3.3:**

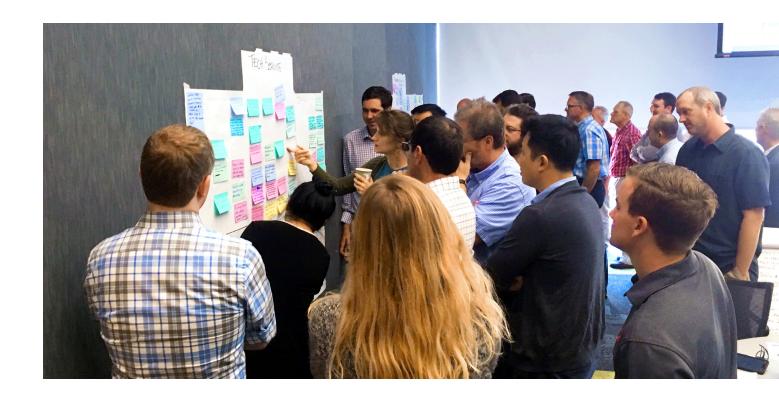
### EXPAND RESEARCH INCORPORATING INNOVATIVE DATA PRACTICES AND TECHNOLOGY TRANSFER ACTIVITIES.

Converting data into usable and actionable information is key to the future of transportation, as transportation systems are increasingly relying on data-based technology. Recognizing this, we have grown our expertise in emerging areas such as intelligent transportation systems. ITRE is also increasingly applying data through dashboards, simulations, and other tools that end-users can utilize to make better-informed decisions. We can continue to grow our capabilities in these and other data-related areas by further engaging in technology transfer activities. This growth may include collaborations with new partners or expanding existing partnerships. In alignment with other objectives in the plan, data skills have crosscutting value in numerous fields such as healthcare and emergency operations, which may also present new opportunities for ITRE. Specific strategies that will support the realization of this objective include the following:

- Strategy 3.3.1: Enhance data practices to include more innovative approaches and sharing activities.
- **Strategy 3.3.2:** Identify and act on opportunities to translate data knowledge into practice through technology transfer activities.
- **Strategy 3.3.3:** Explore how existing transportation data can be used in other fields.



## Our Goals /



### GOAL 4

# Cultivate an Organizational Culture of Excellence and Innovation

Our supportive and collaborative work environment is the reason many employees cite that they enjoy working at ITRE. We will continue to cultivate this positive work environment with a culture of excellence grounded in teamwork and productivity. To accomplish this, we will nurture a culture that supports collaboration, transparency, and workforce development. We will also work to reduce staff turnover and impediments to success. Conducting an inventory of ITRE's cultural strengths and challenges, supporting dynamic interdisciplinary teams, and maintaining an openness to modern workplace structures can help ITRE foster a culture of excellence. The following objectives and associated strategies outline how we will accomplish this goal.

#### **OBJECTIVE 4.1:**

#### OPTIMIZE OUR ORGANIZATIONAL STRUCTURE AND STRENGTHEN OUR CULTURE.

In recent years, ITRE has adapted to better meet the shifting needs of the transportation industry. This includes more diverse staff, adjusting our organizational structure, and other changes. With these changes come opportunities and challenges that we will effectively manage to become a more resilient institution. We will continue to adapt and build on the foundation of our strong culture to become an even stronger asset by improving practices such as information sharing and collaboration. Achieving this objective will require us to take a proactive approach to address identified



problems and breaking down potential "silos" to create a consistent culture and structures across ITRE. Specific strategies that will support the realization of this objective include the following:

- **Strategy 4.1.1:** Expand information and resource sharing across ITRE.
- Strategy 4.1.2: Streamline ITRE's organizational structure to optimize internal collaboration.
- **Strategy 4.1.3:** Encourage interdisciplinary collaboration and innovation.
- Strategy 4.1.4: Support a healthy work-life balance for ITRE staff.

#### **OBJECTIVE 4.2:**

#### ACTIVELY SUPPORT THE GROWTH OF STAFF TO RECRUIT AND RETAIN THE BEST PROFESSIONALS.

Ensuring new and existing staff are equipped with the skills needed to excel into the future is key to meeting all of our other goals. Recruiting and retaining staff with these skills is also essential to maintaining business continuity and building ITRE's reputation. Providing excellent services to our stakeholders in today's transportation world requires employing both technical skills, like planning and engineering, and soft skills, like the ability to effectively engage people towards specific outcomes. While ITRE can recruit for specific skills, it is also important that we invest in developing the skills of existing employees as well, and that we celebrate their successes in meaningful ways. Specific strategies that will support the realization of this objective include the following:

- **Strategy 4.2.1:** Enhance the overall skills and knowledge of ITRE staff through professional development, training, and targeted hiring.
- Strategy 4.2.2: Diversify staff capabilities in technical and non-technical areas critical to ITRE's success.
- **Strategy 4.2.3:** Celebrate success and progress at all levels of ITRE.
- **Strategy 4.2.4:** Communicate clear career paths and requirements to ITRE staff.

#### **OBJECTIVE 4.3:**

#### CULTIVATE A WORK ENVIRONMENT THAT REFLECTS A COMMITMENT TO DIVERSITY AND INCLUSION.

As a people-centered institution, ITRE seeks to promote a workplace that embodies a commitment to valuing staff and students from diverse backgrounds. However, we recognize that employing individuals with diverse cultural, racial, and other types of identifies alone is not sufficient. We must continue to work to ensure that people from all walks of life feel included and appreciated at ITRE and that they feel that their perspectives are heard. To accomplish this goal, we need to review and refine our approaches to hiring, retaining, and training employees. We can also be creative as we pursue new ways to grow our cultural awareness and incorporate diverse viewpoints into our institutional activities. Specific strategies that will support the realization of this objective include the following:

- **Strategy 4.3.1:** Develop effective strategies to recruit and retain more diverse qualified applicants for positions.
- **Strategy 4.3.2:** Engage employees in training activities and experiences that promote cultural competence and celebrates human diversity.



## Our Goals /



### GOAL 5

# Maintain a Consistent Institutional Brand That is Recognized Nationally

ITRE has a growing need to tell our story of excellence at the local, state, and national levels. This goal is key to accomplishing all others, as communicating who we are and why we are valuable is essential to expanding our reputation and supporting a work environment that attracts excellence. Solidifying and acting on our brand will support stronger internal communications as well as external communication with partners and sponsors. More consistent messaging can also help us engage decision-makers and increase opportunities for collaboration and partnerships. The following objectives and associated strategies outline how we will accomplish this goal.

#### **OBJECTIVE 5.1:**

#### BROADCAST OUR ROLE AS A TRANSPORTATION LEADER.

ITRE has been a player in the transportation field for more than three decades. We will build on our experience and reputation to further establish ourselves as a leader in transportation at the national level. Refreshing our branding identity is a prerequisite for achieving this objective. We must define who we are and why we deserve to serve as a leader. This must go beyond successfully executing projects and providing services that showcase our leadership to sharing these successes via meaningful platforms. Developing strategic messages and systematic processes for disseminating this information will help us efficiently grow our brand. Specific strategies that will support the



realization of this objective include the following:

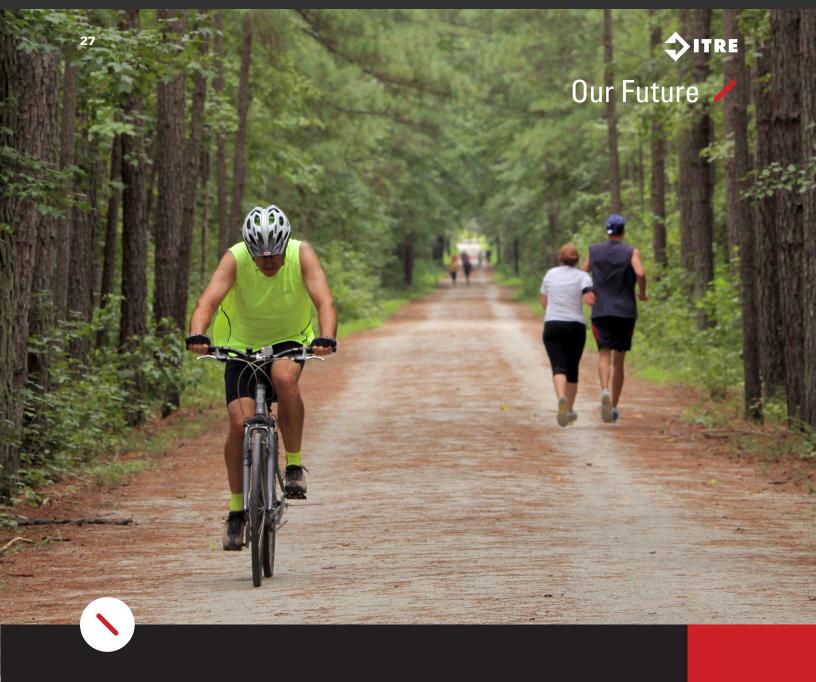
- Strategy 5.1.1: Expand the external profile of ITRE through clear branding.
- **Strategy 5.1.2:** Streamline and simplify communication with partners and sponsors.
- Strategy 5.1.3: Publicize how ITRE's work can advance agency goals for stakeholders.

#### **OBJECTIVE 5.2:**

#### DEVELOP ROBUST AND INNOVATIVE MARKETING AND COMMUNICATIONS STRATEGIES.

To be recognized as a leader in transportation research and education to a larger audience, ITRE must strategically communicate our value. Expanding our internal marketing and communications skillsets, such as graphic design and technical writing, will provide us with the expertise needed to accomplish this objective. We must develop sustainable plans and processes that optimize our ability to share targeted messaging about who we are and what we do. In parallel, ITRE will also develop tracking systems to monitor progress and ensure that we are acting on this plan. Specific strategies that will support the realization of this objective include the following:

- Strategy 5.2.1: Expand internal marketing and communications skillsets.
- Strategy 5.2.2: Create a marketing and communications plan that outlines internal and external processes.
- Strategy 5.2.3: Expand the marketing of training and educational offerings within the transportation industry.
- Strategy 5.2.4: Establish branding priorities and integrate systems for tracking successes.



# How We Move Forward

Because this strategic plan is designed to be a living document, ITRE is committed to ensuring that the outlined aims are successfully implemented. As such, ITRE launched the Execute phase of the planning process, which focused on how we will pragmatically implement the plan across the organization, during the summer of 2020.

A core implementation team was established to examine how ITRE can tie performance measures to the plan goals, objectives, and strategies. ITRE will use these measures to track progress at the unit and institutional levels. The implementation also team helped

drive conversations with staff about their perspectives on implementation approaches, performance measures, and culture, among other items key to the success of the plan.

Tactical next steps, including outlining opportunities for early "wins" and longer-term plans, were developed. In addition, ITRE developed a dashboard to organize data related to performance measures and other outcomes. Going forward, these measures as well as the plan itself will serve as a compass that helps ITRE make more informed decisions about future endeavors.

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