

Texas A&M Transportation Institute Information Resources Strategic Plan 2016–2020



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Information Resources Strategic Plan — 2016–2020

Texas A&M Transportation Institute
The Texas A&M University System

The Texas A&M Transportation Institute (TTI) is an agency of the state of Texas and a member of The Texas A&M University System.

This document sets forth TTI's Information Resources Strategic Plan. It will guide information technology (IT) priorities and decisions, and establishes metrics that will be used to assess accomplishment of strategic objectives. This document provides guidance for the next five years and will be updated on a regular basis.

Agency Philosophy and Values

TTI's main functions are to:

- identify, analyze and solve current and future transportation problems;
- conduct basic and applied research into all modes of transportation;
- enhance education by providing research facilities and funded research opportunities for students and faculty within The Texas A&M University System and other universities in Texas;
- support the enhancement, development and diversification of the transportation workforce in Texas;
- assist and speed implementation of research results and intellectual property into practice by the transportation industry and the private sector; and
- disseminate research information to policy makers, transportation professionals and the general public.

Vision Statement

Network and Information Systems (NIS) will be recognized as a customer-service organization focused on embracing new technologies and delivering highly reliable and scalable applications as well as the infrastructure to power them. This infrastructure will allow the agency to achieve its strategic imperatives by having access to the latest information, tools and training, while protecting the agency's resources in accordance with all applicable laws and regulations.

Core Focus

To achieve internal goals and support the agency's strategic imperatives, NIS must:

1. Provide a highly responsive customer-service model and continually improve the quality of service to the agency.
2. Continue to leverage and expand upon its ability to embrace new technologies.
3. Empower agency personnel to improve their work efforts through access to the latest information, tools and training.
4. Deliver a highly reliable and scalable infrastructure to support the ever-growing needs of the agency.
5. Improve communication and relationships with internal and external customers.
6. Protect the agency's resources per system, local, state and federal mandates.

Our Strategic Plan

The Information Resources Strategic Plan acknowledges that TTI's NIS group has limited resources, and those resources must be applied to the areas that will generate the greatest benefit during the plan's time frame. It does not suggest that other imperatives are not important, but selects the imperatives most likely to have the greatest impact on the strategic direction of the Institute for the next three to five years. The imperatives will require a coordinated effort across the entire agency.

Imperative 1: Provide a highly responsive customer-service model and continually improve the quality of service to the agency.

Rationale: By achieving this imperative, we will continue to foster relationships with researchers and staff members who will come to see the NIS group as a business partner rather than an impediment to business. We will achieve this by meeting the following goals:

Goal 1.1. Maintain a superior customer satisfaction level by not only reviewing customer support surveys, but also by working with the governance council to help review existing services for efficiency and effectiveness and recommend new technologies that should be offered by NIS.

Rationale: NIS must continue to try and improve its customer-satisfaction level.

Performance measure: Maintain a customer-satisfaction level of at least 90 percent each month via our helpdesk ticket feedback survey.

Strategies:

- Strategy 1.1.1 — Implement changes outlined in the 2014 and subsequent internal support-services surveys. (TTI 1.3.4 1.3.5)
- Strategy 1.1.2 — Develop and implement new processes for improving the speed at which new computers can be delivered to customers. NIS will consult with the IT Governance Council to ensure that the standard specs are in line with researcher and staff needs. (TTI 1.3.4)
- Strategy 1.1.3 — Work with the IT Governance Council to identify and prioritize additional services required to meet the agency's need for cutting-edge technology and to review existing services for efficiency and effectiveness. (TTI 1.3.4,1.3.5)
- Strategy 1.1.4 — Review the capital investments and staffing levels within NIS to assure that agency needs are being met in a fiscally responsible manner. (TTI 1.3.5)

Goal 1.2. Continue to improve the quality of service to the agency.

Rationale: NIS must ensure that it is following the best practices of the IT industry and is taking advantage of training opportunities for existing and new technologies as they become available.

Performance measure: Staff must complete at least one training class per year.

Strategies:

- Strategy 1.2.1 — Encourage NIS staff to take advantage of training opportunities throughout the year to improve the quality of service provided to the agency. (TTI 1.3.6)
- Strategy 1.2.2 — Implement ServiceNow to standardize on one of the two approved helpdesk software packages identified by the A&M System. (Deloitte Finding)

Imperative 2: Continue to leverage and expand upon NIS's ability to embrace new technologies.

Rationale: By embracing new technologies (and replacing older, legacy technologies), NIS will ensure our researchers and staff have the best possible current tools, as well as weed out applications/technologies no longer supported by their respective vendors. We will pursue the following steps to achieve this imperative:

Goal 2.1. Continuing to evaluate (and adopt as appropriate) cloud computing and shared-service solutions such as 1) pursuing a collaborative data-backup solution with the College of Engineering and Texas A&M Engineering Experiment Station and 2) migrating most of our websites to a cloud webhosting provider. (State Priority: Cloud)

Rationale: Before adopting a technology like cloud computing and shared services, NIS needs to first evaluate it for the agency so that mission-critical services are not affected due to unforeseen circumstances.

Strategies:

- Strategy 2.1.1 — Assess the potential opportunities through a limited pilot of a non-mission-critical application, such as a customer relationship-management application. (TTI Strategy 1.2.1)
- Strategy 2.1.2 — Begin utilizing cloud computing resources when it makes sense for things such as research computing needs (State 1.2.2, 3.1.2)
- Strategy 2.1.3 — Migrate WordPress websites from onsite hosting to cloud hosting (State 1.2.2, 3.1.2)
- Strategy 2.1.4 — In partnership with the College of Engineering and TEES, implement a shared service around data backup to allow both A&M System members

as well as others, if they wish to join, to utilize one infrastructure for backup services. (State 3.1.1, 3.3.1, 3.3.2, 3.3.3)

- Strategy 2.1.5 — Evaluate the possibility of moving our existing server infrastructure into the new Dollar Data Center when it comes online in FY 17. (System IT 1.1.1)

Goal 2.2. Update or discontinue the use of legacy applications. (State Priority: Legacy Applications)

Rationale: NIS must ensure that legacy applications are still viable and that the processes they automate do not require modification to make them more efficient.

Strategies:

- Strategy 2.2.1 — Prioritize the budget toward application modernization, leveraging opportunities for immediate efficiency gains, which lead to reduced risk and costs and create enhanced services for customers.
- Strategy 2.2.2 — Replace the outdated PPTP VPN server with a more secure Cisco VPN and/or Windows Direct Access to allow users to remotely access TTI resources and assist with teleworking for employees. (TTI Strategy 1.4.1, State 1.2.3, 3.1.3)
- Strategy 2.2.3 — Work with the TTI Facilities group to migrate away from the current Polycom video conferencing units to a more integrated Cisco solution. (TTI Strategy 1.4.1)
- Strategy 2.2.4 — Redevelop several TTI-IS modules into .NET applications which will be eventually integrated into the MyStuff application replacement for the Business Support Services group. (TTI 1.1.1, State 3.1.3, 4.1.1, 4.1.2, 4.3.2, 4.3.3)

Goal 2.3. Develop and implement a document management system utilizing the A&M System shared document imaging service. (State Priority: Data Management)

Rationale: TTI as an agency spends a significant amount of money on paper for printing and should focus that money toward moving to a document management system that would allow for more efficient use of document routing and electronic records retention.

Strategies:

- Strategy 2.3.1 — Utilize the A&M System document management system of Laserfiche for applications that require document routing or record retention. (State 5.2.2)
- Strategy 2.3.2 — Assist in the deployment of some of the System-wide, shared offerings around Workday (human capital management) and Concur (travel management system). (State 5.2.2, System 1.2, 1.3)

Imperative 3: Empower agency personnel to improve their work efforts through access to the latest information, tools and training.

Rationale: For TTI to improve as an agency, we must give employees the proper tools they need to do their jobs in the most efficient manner. In addition, when an employee has an idea for how to make his or her job more efficient, we need to listen. NIS will accomplish this by:

Goal 3.1. Improve communication between internal and external customers with the use of collaboration tools. (TTI Strategy 1.3.3)

Rationale: To improve the speed, amount and quality of communication between employees and sponsors, the agency must invest in better collaboration tools.

Performance measure: Implement collaboration, meeting and project management tools that are used by at least 75 percent of the researchers within the agency.

Strategies:

- Strategy 3.1.1 — Implement and support an online meeting/collaboration tool—at this time Cisco WebEx—useable by agency personnel to connect to meetings from a desktop, laptop or tablet device that is easy to use and well adopted throughout the agency, reducing travel expenses and time. (State 3.2, System 1.4)
- Strategy 3.1.2 — Continue to expand the use of current collaboration tools such as (TTI 1.5.2):
 - Microsoft SharePoint.
 - VoIP.
 - Instant messaging.
 - Digital signage.
 - Web/video conferencing.
 - Workplace.
- Strategy 3.1.3 — Implement the A&M System TAC 216 Companion Guide within NIS. (State 2.1.2, 2.2.2)

Goal 3.2. Improve access to information for an increasingly mobile workforce by developing applications with a mobile user in mind. (State Priority: Mobility)

Rationale: TTI employees want to have access to information no matter where they are. As an agency, we should embrace this by providing them with information they can access on the go from smartphones, tablets and laptops.

Strategies:

- Strategy 3.2.1 — Begin developing all new applications to take into account the use of smartphones and mobile tablets (State 5.1.2, Imperatives 1, 2).
- Strategy 3.2.2 — Continue supporting and improving access to technologies to aide mobile employees, such as (TTI 1.5.2, State 1.2.3):
 - VPN connectivity.
 - Remote desktop.
 - Smartphones.
 - Tablets/netbooks.

Goal 3.3. Develop training for technologies that we deploy to not only train agency personnel on how to use technologies, but to also remind employees of what technologies they have at their disposal. (TTI Strategy 2.1.2)

Rationale: As NIS develops and deploys new technologies that can be used to improve the quality of employees’ work environments, we must train employees on how to most effectively use those technologies in the most secure and efficient ways. In addition, NIS staff should attend training to keep pace with the ever-changing aspects of technology.

Performance measures:

- Develop at least four training videos a year on various topics.
- Hold at least four training sessions on various topics.
- Each member of NIS should attend a minimum of one training class per year.

Strategies:

- Strategy 3.3.1 — Implement a set of training videos on various topics within NIS to be provided to TTI staff.
- Strategy 3.3.2 — Hold a set of training sessions with TTI staff on various topics throughout the year.
- Strategy 3.3.3 — Continue to send NIS staff through the TTI Core and Connect Leadership Development Program. (TTI 1.3.6)
- Strategy 3.3.4 — Continue to push for all TTI staff to utilize Lynda.com, A&M Campus EOD and Microsoft Academy courses to learn how to best utilize new technology. (TTI 2.1.4, 2.1.5, State 2.3.2)

Goal 3.4. Develop and implement web-based applications to be used by agency staff to more effectively perform their jobs.

Rationale: NIS has a very large number of projects, and these projects need to be prioritized to gain the largest bang for our buck.

Performance measure: Develop at least two major web-based applications per year per outsource vendor.

Strategies:

- Strategy 3.4.1 — Develop a win/loss tool for selecting the best possible team for a proposal based on a number of factors from past successful proposals. (TTI 1.1, State 4.1.1, 4.3.2, 4.3.3)
- Strategy 3.4.2 — Redevelop the resume application into a more user friendly tool that can be utilized by researchers to identify needed talent from across the agency. (TTI 1.1.1, State 3.1.3)
- Strategy 3.4.3 — Develop a Research Information Management System (RIMS) to assist program managers and division heads with forecasting salary coverage and assist project investigators (PIs) with managing the budgetary aspects of research projects. (TTI 1.3.1, State 4.1.1, 4.1.2, 4.3.2, 4.3.3)
- Strategy 3.4.4 — Continue the migration of MyStuff into a .NET application, the majority of which will be integrated into the RIMS application. (TTI 1.3.1, State 4.1.1, 4.1.2, 4.3.2, 4.3.3)

Imperative 4: Deliver a highly reliable and scalable infrastructure to support the ever-growing needs of the agency. (State Priority: Network)

Rationale: As the agency continues to increase its reliance on technology—especially in the realm of research, storage capacity—IT security and network availability become ever-increasingly important aspects of IT operations. NIS can continue to improve these areas by:

Goal 4.1. Enhance network services throughout the organization by delivering the most efficient and cost-effective technology.

Rationale: The agency must make good decisions when it comes to investments in technology.

Performance measures:

- Monitor the 95th percentile of bandwidth usage to determine if additional network capacity is required.
- Monitor network path uptime (99.99 percent or about 1 hour/year of downtime) to determine if redundant connections are required.

Strategies:

- Strategy 4.1.1 — Continue the use of the TTVN/TexAN network to take advantage of cost-effective pricing for highly reliable connections to the Internet. (State 1.3.3, 3.3.2)

- Strategy 4.1.2 — Monitor the usage of network bandwidth and availability to determine if higher-speed connections or redundant connections to all offices are required. (TTI 1.4.1, State 1.3.1, 1.3.2, 1.3.3, 3.1.3)
- Strategy 4.1.3 — Expand the amount of network data storage available to the agency.
- Strategy 4.1.4 — Enhance the level of bandwidth available to the State Headquarters Building, Mesquite and RELLIS campus. (TTI 1.4.1, State 1.3.1, 1.3.3, 3.1.3)
- Strategy 4.1.5 — Work with facilities and other groups to develop the infrastructure and technology to support the new CIR and State Headquarters Buildings at RELLIS campus, as well as any updates to the urban offices. (TTI 1.4.2, 3.2.2)

Goal 4.2. Expand the current backup and restoration capabilities to improve the speed at which the agency can recover from a disaster.

Rationale: The quicker the agency can recover from a disaster, the quicker the agency can resume business.

Performance measure: Reduce the amount of time to recover all mission-critical systems to within 8 hours.

Strategies:

- Strategy 4.2.1 — Continue to enhance the virtualization environment to include a “live” disaster site for mission-critical applications. (State 1.2.1)
- Strategy 4.2.2 — Routinely test and improve the business continuity and disaster recovery plans to optimize effectiveness (State 1.2.1)

Goal 4.3. Develop and implement archiving solutions for file services.

Rationale: Researchers within the agency need access to their research data no matter how old it might be; however, paying for fast access to that information is not feasible. By automating the migration of old data from expensive and fast-access storage to slower and cheaper drives, the agency will maintain access to that information but will save in storage costs.

Performance measure: Reduce the amount of storage on expensive hard drives by 50 percent while not reducing the availability of the data.

Strategy:

- Strategy 4.3.1 — Implement an archiving solution that will reduce the amount of data required to reside on highly reliable, available and expensive hard drives. (TTI 1.3.4)

Goal 4.4. Increase the availability, accessibility and ease of use of network resources within TTI.

Rationale: NIS has to be able to provide access to the latest technologies but at the same time make those resources easy to access.

Strategies:

- Strategy 4.4.1 — Replace wireless access points and network switches with the latest technology starting with conference rooms (and then around buildings) based on usage. (TTI 1.4.1, State 3.1.3)
- Strategy 4.4.2 — Continue to expand the use of TTI’s single sign-on system to help employees to have to remember only one username and password. (TTI 1.3.4)
- Strategy 4.4.3 — Adopt the campus new identity management solution to allow for easier collaboration with employees outside of TTI. (TTI 1.3.4, 3.2.1, System 2.2.5, 2.2.7, 2.2.10)
- Strategy 4.4.4 — Continue to implement a five-year age limit on workstation computers to ensure the security and reliability of workstations. (State 3.1.3)

Imperative 5: Improve communication and relationships with internal and external customers.

Rationale: To continue to improve upon the level of customer satisfaction within the agency, NIS needs to communicate more with our customers. Building relationships now will help us find quicker solutions to problems in the future via open, honest communication with customers. We will reach out to our customers by:

Goal 5.1. Develop and maintain key relationships with individuals within TTI. (TTI Goal 1.3)

Rationale: By maintaining and building key relationships with individuals within the organization, those relationships will serve NIS in helping to come to a resolution in times of stress.

Performance measures:

- Conduct at least 15 personal interviews with customers each year.
- Conduct at least two in-person training classes each year.
- Hold at least two Q&A sessions with the director of NIS each year.

Strategies:

- Strategy 5.1.1 — Conduct personal interviews with division heads and program managers to assess their level of satisfaction with our services. (TTI 1.1.3, 1.1.4)

- Strategy 5.1.2 — Develop and conduct several training events each year in the form of RDS seminars, webinars and prerecorded training. Topics could include things like Syncplicity, Webex and O365, to name a few. (TTI 1.1.2, 1.5.3, 2.2.1, 3.1.3, State 2.3.1)
- Strategy 5.1.3 — Hold at least two Q&A sessions each year to hear directly from the customers within the agency. (TTI 1.1.3, 1.1.4)
- Strategy 5.1.4 — Seek out opportunities for events to promote an open-door policy.
- Strategy 5.1.5 — Rework the current IT governance framework to more closely align with the A&M System IT governance framework and involve more staff in their areas of interest. (TTI 1.3.3, 1.3.5, State 2.2.2, System goal 2.1, Deloitte finding)
- Strategy 5.1.6 — Continue to work with TTI Communications to assist in outreach and technical writing to get the message out about IT (TTI 1.5.1, 1.5.2)
- Strategy 5.1.7 — Expand the use of internal communication tools as well as incident reporting tools to improve communication within the group about current issues so that users are informed quicker and with the latest information (TTI 1.5.2)

Goal 5.2. Develop and maintain key relationships with individuals outside TTI. (TTI Imperative 3)

Rationale: We must also foster relationships outside the agency with individuals that may not be our first-tier customers but may ultimately help us provide improved services to our internal customers by helping NIS work more efficiently or by providing the agency help in a strategic initiative. This includes:

Strategies:

- Strategy 5.2.1 — Continue taking an active role in representing TTI in implementation of A&M System initiatives and service on A&M System committees and working groups, such as the Information Security Officer (ISO) and Chief Information Officer (CIO) working groups. (TTI 2.2.1, 3.1.3)
- Strategy 5.2.2 — Continue taking an active role in representing TTI in implementation of state initiatives. (TTI 2.2.1, 3.1.3)
- Strategy 5.2.3 — Continue to have direct communications with the System CIO to help foster a positive relationship and ensure that TTI is supporting the A&M System’s Strategic Plan. (TTI 3.1.1)
- Strategy 5.2.4 — Participate in meetings with civil engineering and other engineering departments to help identify IT needs (TTI 1.3.4, 1.3.5)

- Strategy 5.2.5 — Work with other A&M System members to gain purchasing power and eliminate duplicative efforts. (State 3.1.1, 3.3.2)

Imperative 6: Protect the agency's resources according to system, local, state and federal mandates. (State Priority: Security and Privacy)

Rationale: We must protect the agency's resources not only because we are required to do so by law, policy or contract mandate, but also to protect the agency's reputation that our information and research are reliable and valid. NIS will protect our information by:

Goal 6.1. Ensure that the vital information technology resources of the agency are stable, reliable and secure.

Rationale: NIS must adapt to new laws, best practices and security threats so that the agency's technology assets are available to the users of those resources.

Strategies:

- Strategy 6.1.1 — Continue to identify information maintained by data owners that may be deemed sensitive and provide solutions for how the data should be protected. (System 2.2.3, State 1.1.1)
- Strategy 6.1.2 — Deploy a security information and event management system (SIEM) for log and event management. (System 2.2.6, State 1.1.1)
- Strategy 6.1.3 — Replace existing network security devices/applications (like firewalls, routers, antivirus and data loss prevention systems) with the latest technology. (TTI 1.4.1, State 3.1.3)
- Strategy 6.1.4 — Continue to expand the use of the A&M System Security Operations Center (SOC) at the system to leverage their capabilities for monitoring our systems for possible intrusions. (System 1.4.3, 1.4.7)
- Strategy 6.1.5 — Implement policies and standards aligned with the A&M System policies and regulations along with the Texas Cybersecurity Framework, which provides cybersecurity policies, training and standards to assist agencies in mitigating risks and improving the resiliency of state information systems against cyberattacks. (TTI 1.3.3, 3.1.2, State 1.1.1)
- Strategy 6.1.6 — Develop and adhere to a software currency policy that reduces the use of unsupported software and decreases security vulnerabilities in IT systems. (TTI 3.1.2, State 1.1.2)
- Strategy 6.1.7 — Increase employee cybersecurity training and awareness to expand the pool of qualified security professionals and reduce human error that creates security vulnerabilities. (TTI 1.3.6, 2.1.5, State 1.1.3)

- Strategy 6.1.8 — Conduct regular security audits to assist with identifying vulnerabilities and unsupported software/hardware for existing systems. For new systems a security assessment should be completed prior to being allowed on the network. (State 3.1.3, 5.3.2)
- Strategy 6.1.9 — Implement Archer as our reporting mechanism for reporting security incidents to the state as well as the A&M System. (System 2.2.1)
- Strategy 6.1.10 — Review the ability for researchers to install applications as they see fit without compromising security.