

Enterprise GIS Steering Committee Meeting

February 2, 2022

Agenda

- 1. Welcome and Introductions**
- 2. System Upgrade**
- 3. Utilities Implementation**
- 4. Draft Summary of GIS Roadmap by JMT**
- 5. Other Business**

System Upgrade



Facilities Division - Enterprise GIS



Utilities Viewer



Campus Map



Stormwater Viewer



Enterprise GIS Story Map

Welcome to NC State University Enterprise GIS

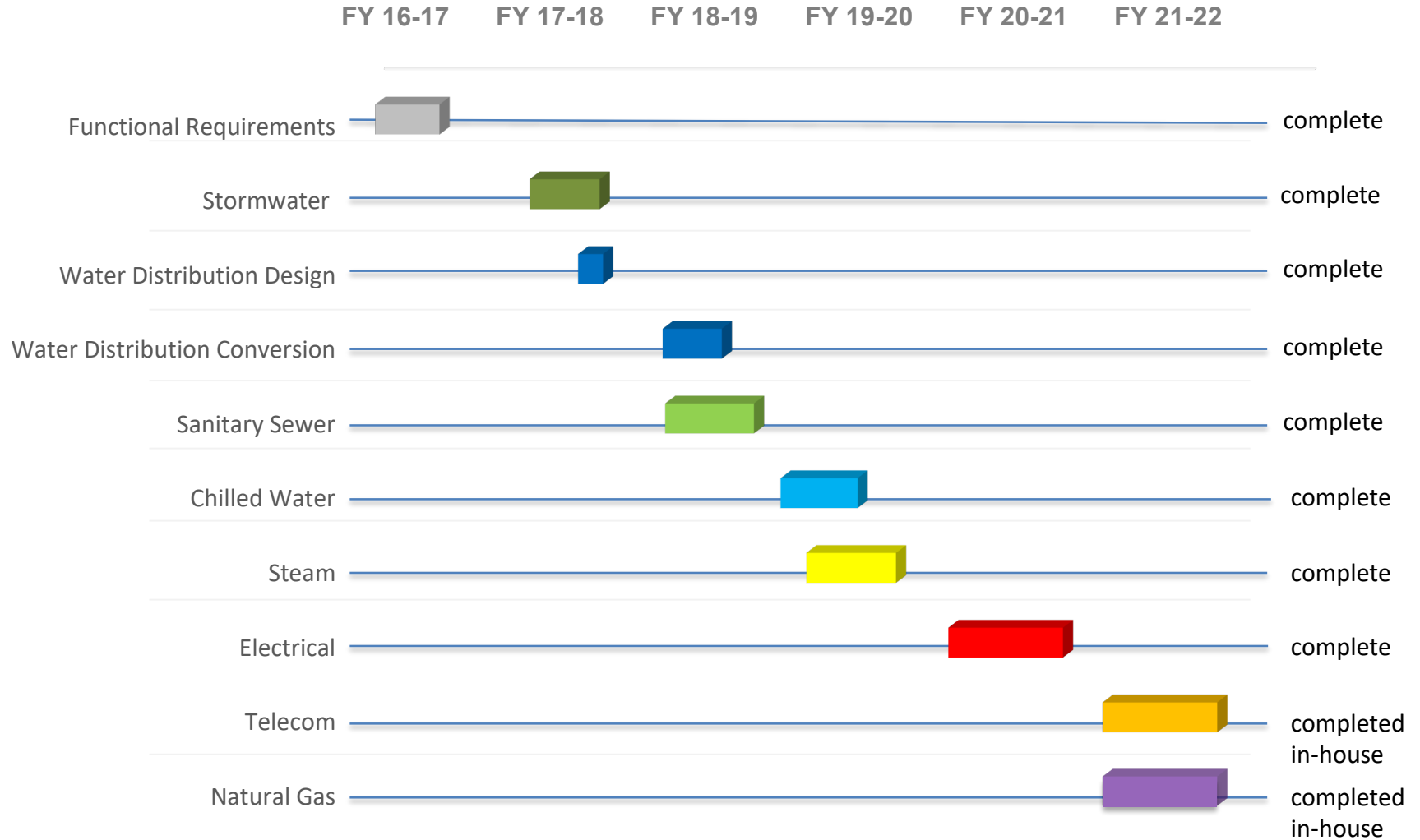
The NC State Enterprise GIS group, housed within the Office of the University Architect, maintains and updates a central repository of GIS data and maps for Facilities as well as other departments and groups at NC State.

Disclaimer

NC State University makes every effort to produce and publish the most current and accurate content possible. However, the maps and data are produced for informational purposes, and are NOT surveys. The information is compiled from various sources and not intended for official use or legal reference. The user of this site should not solely rely on the data provided herein. The information provided may not be used for commercial purposes or sold.

Utilities Implementation

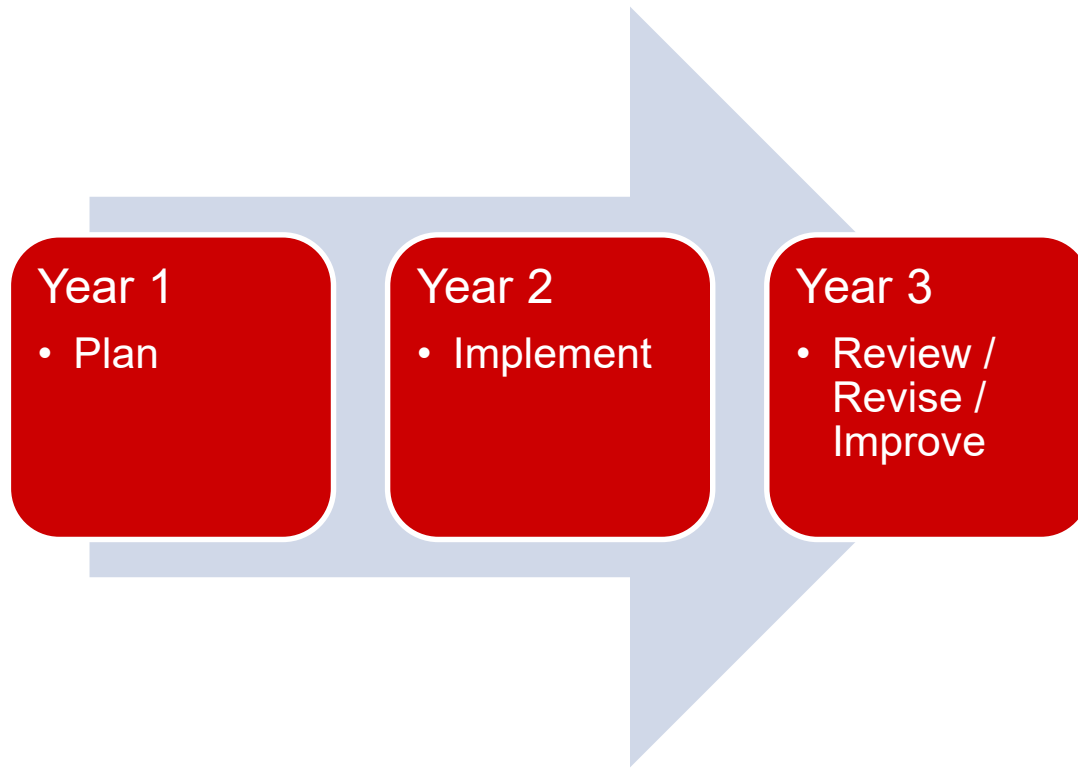
Schedule



GIS Roadmap Strategic Plan

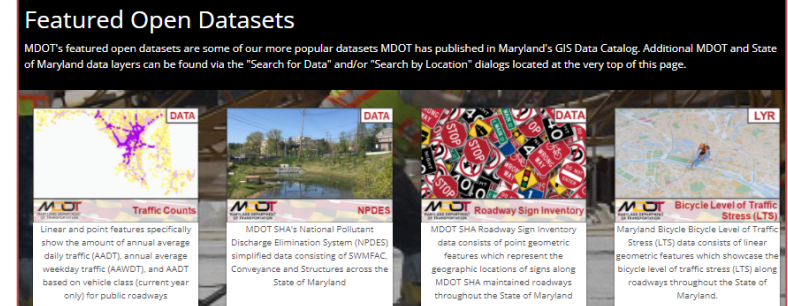
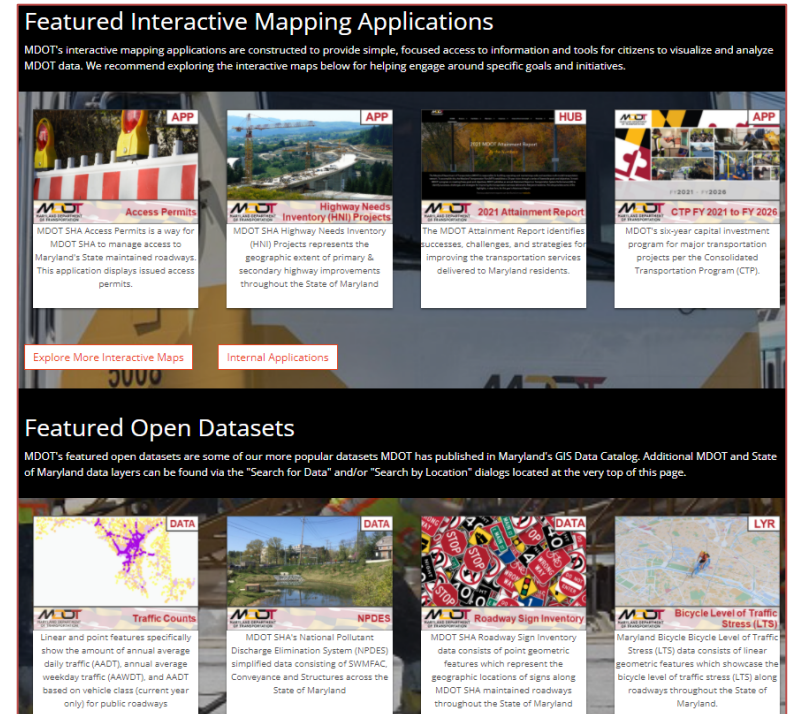
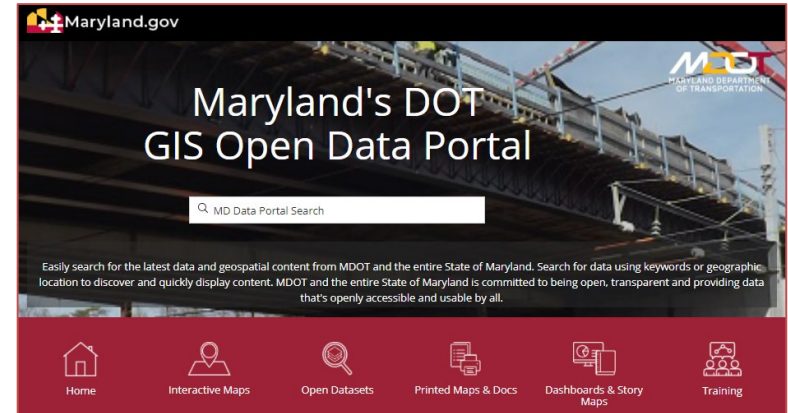
Enterprise GIS Recommendations (Years 1-3)

Roadmap Preview



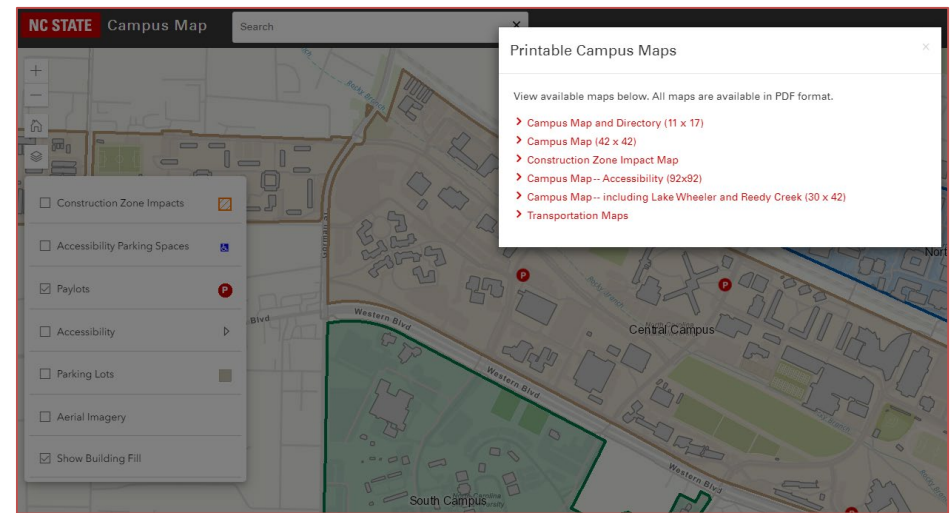
Year 1 Recommendations

- Develop a GIS user community within business divisions at the University
 - Actively recruit a “GIS champion” from other departments to be involved in quarterly meetings
 - Publish a monthly blog or a monthly e-newsletter to showcase data and/or applications that FIS provides that will assist other departments with their daily projects
 - Develop an internal open-data and application hub including a link to the City of Raleigh’s open data portal to create a “one-stop shop” for NC State GIS users



Year 1 Recommendations

- Develop additional training opportunities for GIS users outside of FIS
 - Solicit ideas from the external user group to see what training they need
 - Require users to complete online training for access to GIS software (access-based training)
 - Author/develop advanced training program for power users to be implemented in Year 2
 - Prepare a training webinar twice a year that is more generic in nature, targeting non-GIS experts but shows the potential of how they can use GIS data (Dashboard, Emerging Technologies, etc.)



Year 1 Recommendations

- Dedicate time to business analysis and requirements gathering. Use Year 1 as the opportunity to determine the needs of the end-user for future programming or projects.
- “All-in-one” application similar to the City of Raleigh’s iMAPS platform (Wolf Maps?)
- Gather requirements for a commitment to transformative technologies such as:
 - Sensors for collection of real time data gathering and reporting
 - Indoor space management
 - Internet of Things (IoT)
 - Bot development
 - Machine Learning



Year 1 Recommendations

- Gather requirements to support data needs for advanced public safety initiatives on campus, begin implementing these initiatives in advance of Year 2 if the budget supports implementation. Specific needs include:
 - Addressing and sub-addressing data development and review
 - Public safety asset data development
 - Fire lanes
 - Fire extinguishers
 - Fire alarm pulls
 - Police parking
 - Emergency exits
 - Emergency staging location
 - AED data update
 - ADA curb ramp update
 - Others
 - Leverage existing public safety data
 - Develop public safety dashboard for Emergency Preparedness and Strategic Initiatives team
 - Incorporate crime mapping and other information into new public safety dashboard



Year 1 Recommendations

- Revisit and revise GIS standards document, as necessary.
- Revise data dictionary for all changes made to GIS layers to accurately reflect the current state of the data
- Revise the GIS Data Matrix, last updated in 2019

NC STATE UNIVERSITY

Enterprise GIS

**GIS Data Collection Standards
and
Geospatial Data Standards**

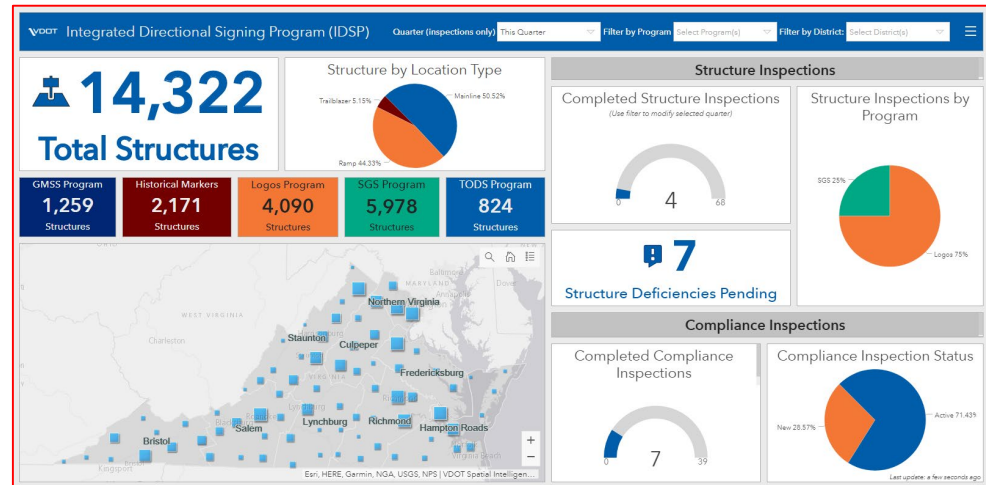
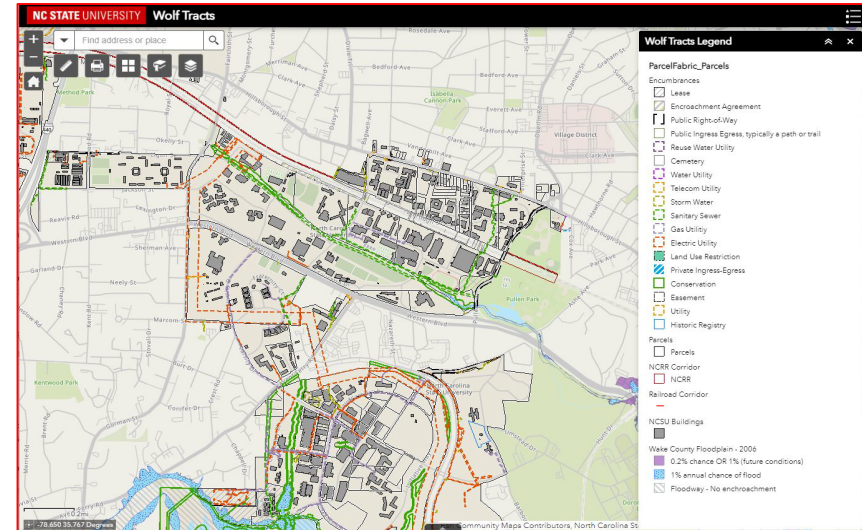
January, 2020

Category	Layer	Layer Purpose	Type	Native Format	Dept
Transportation	NCSU_Accessibility_Parking_Spaces_072617				
Transportation	Parking	Parking lots and decks	polygons	shapefile	Transportation
Transportation	Parking_DISSOLVED				
Transportation	Paylot_Entrances	Locations of each public parking pay kiosks	points	shapefile	Transportation

Year 2 Recommendations

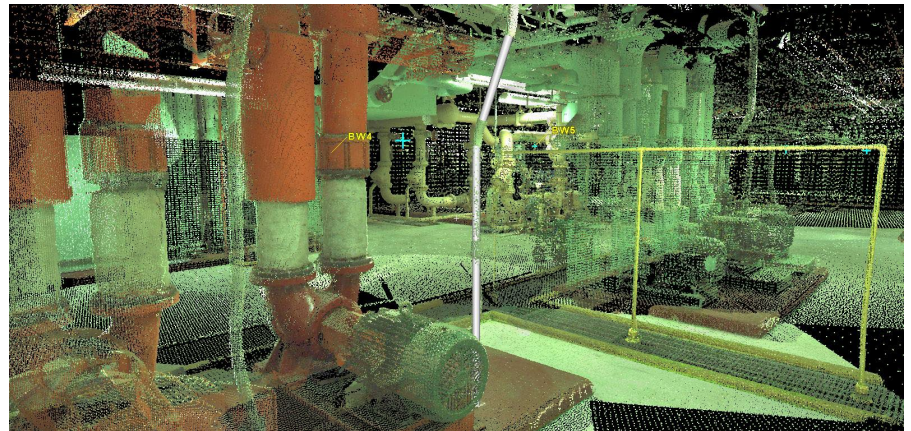
- Begin development of “All-in-one” GIS application
 - Phase functionality over multiple years if needed due to funding
 - Implement the architecture and core functions in the first year of development
 - Consider consolidation of multiple geospatial applications into this one
 - Develop browser-based dashboards to provide information and project metrics to both GIS and non-GIS users

- Build on momentum from user community to implement strategies to advance transformative technologies throughout the University



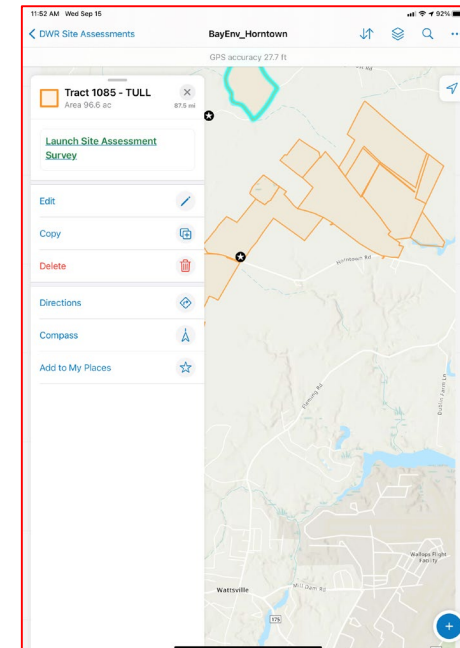
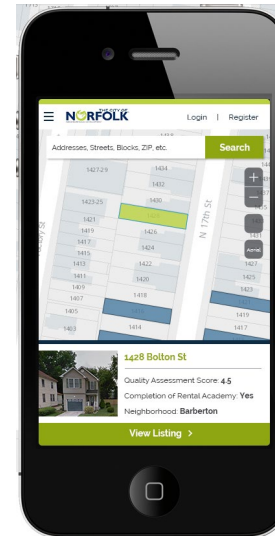
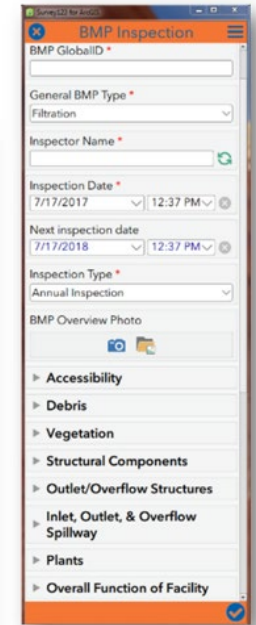
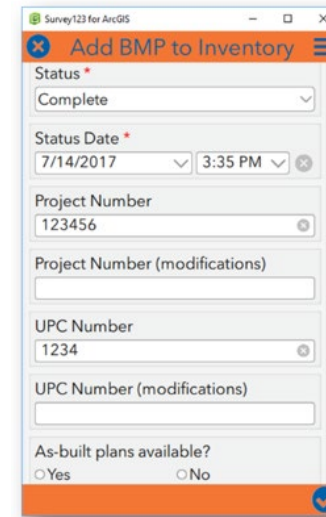
Year 2 Recommendations

- Share revised standards document with external departments
- Implement an advanced training program for GIS users outside of FIS
- Schedule a list of datasets to enhance/improve, and assign them to staff members
- Research opportunities for GIS and CAD integration, begin developing standards for requirements for construction projects moving forward
- Perform a study of internal applications to see if there are any that would benefit from integration with GIS



Year 2 Recommendations

- Provide field capabilities for all GIS users to provide efficiencies
- Develop a training program and user guide materials to support field initiatives
- Use commercial off-the-shelf (COTS) applications as available, supplement with custom development when necessary
- Schedule quarterly reviews/audits of data to determine what is still being used, who maintains the data, if it can be archived
- Consider a pilot project with Grounds Services or another interested department



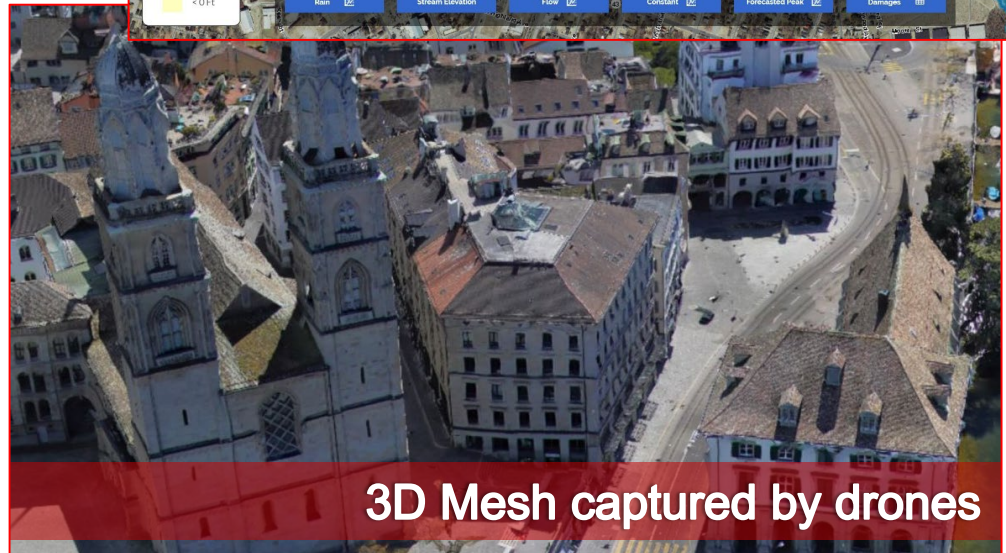
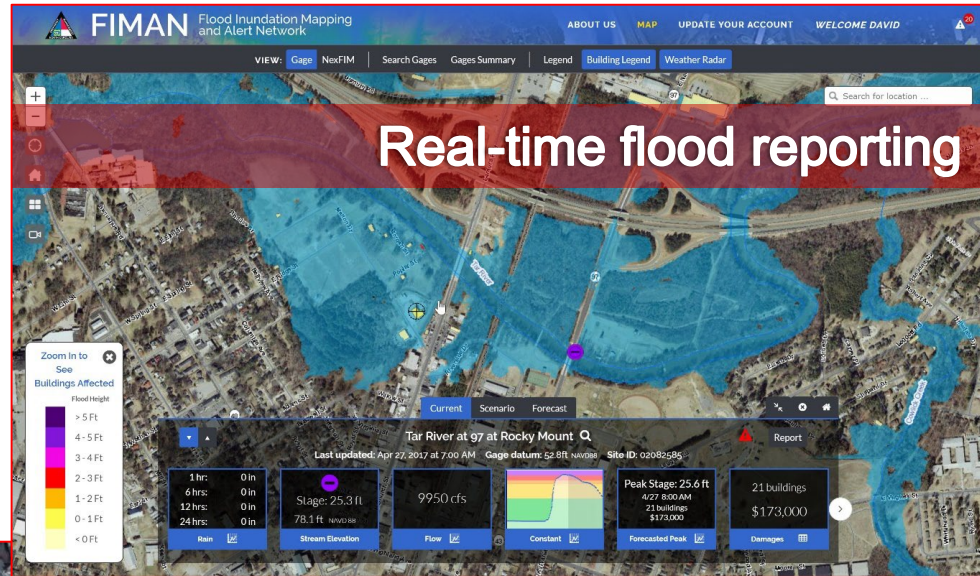
Year 3 Recommendations



- **Evaluate the current state of the GIS Program**
 - Review current staffing, funding, or software needs
 - Fund and implement any initiatives that were unable to be completed in years 1 & 2

Year 3 Recommendations

- Review progress on initiatives implemented in years 1 & 2
 - Review progress on development of GIS datasets
 - Review application of transformative technologies
 - Identify and publicize collaborative successes
 - Evaluate collaborative initiatives that have not seen broad support

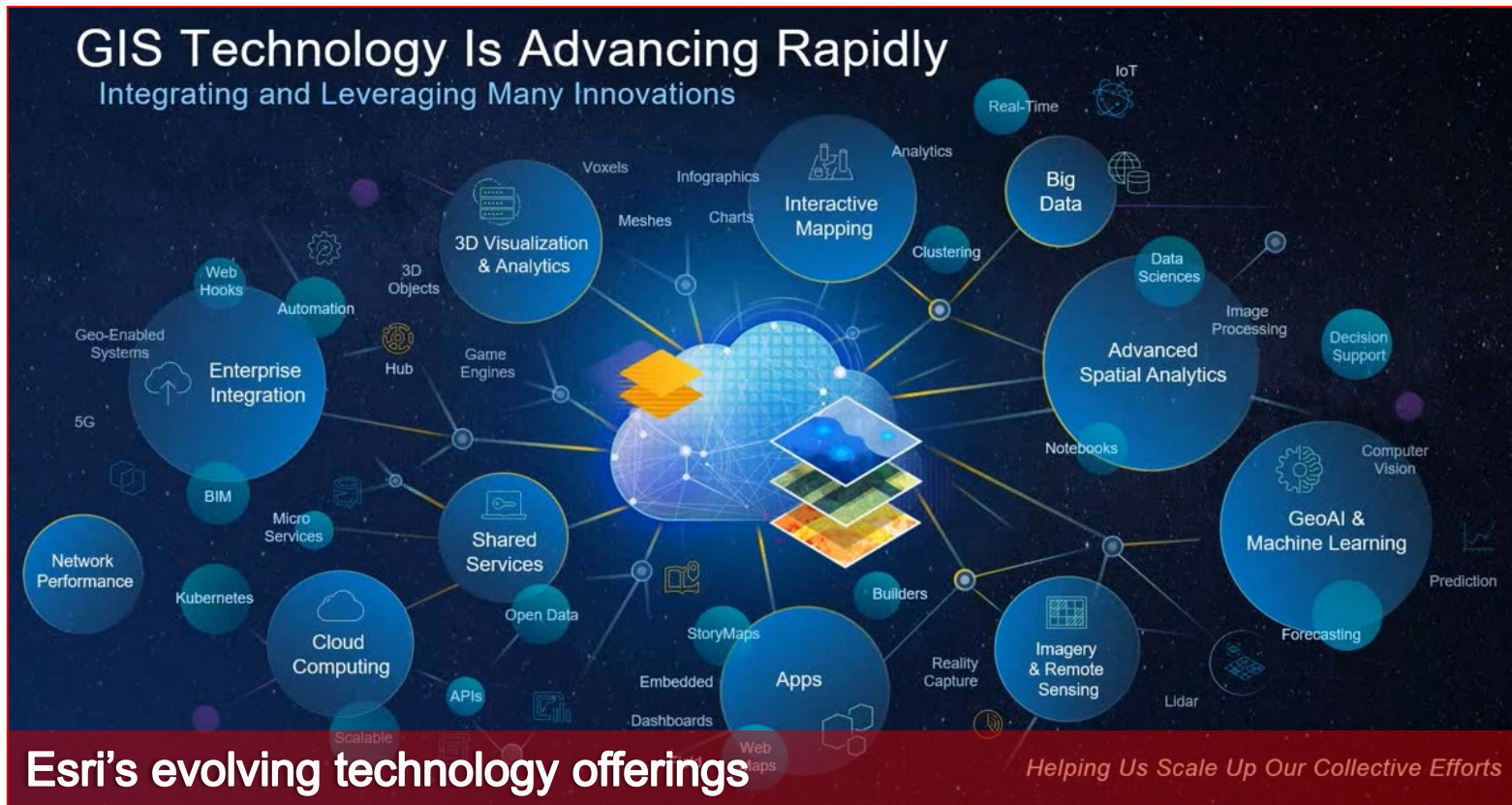


3D Mesh captured by drones

Year 3 Recommendations

Prepare for the next strategic plan

- Reevaluate the technology space
- Review Esri's latest software offerings
- Brainstorm the roadmap for GIS for the next 3 years
- Continue instituting transformative technology



What if GIS was one of the core technologies at NC State?

- Use of location data is at an all-time high and is rapidly increasing
- The Esri software platform used by NC State is continuing to increase capabilities for integration with other technologies to work with financial, planning, engineering, and other business applications
- Consistent funding, staffing, and buy-in throughout the University is needed to achieve this goal



CAREER PROSPECTS

GIS careers exist in every imaginable discipline, from environmental science to mining to urban planning to commercial businesses to defense. Practitioners use GIS to visualize, analyze, and model systems to help in the planning and decision-making processes of their organizations. GIS is a burgeoning field, used across government, commercial, and educational organizations. Jobs and salaries vary widely by region, nation, discipline, and experience.

Roadmap Recommendations

Year 1	<ol style="list-style-type: none">1. Develop an inter-departmental GIS user community across the University2. Develop additional training opportunities for GIS users outside of FIS3. Business analysis and requirements gathering for an all-in-one map platform, advanced public safety initiatives, and transformative tech (IoT, drones, indoor space management, real-time data feeds, machine learning)4. Review and revise GIS documentation (standards document, data dictionary, GIS metadata matrix)
Year 2	<ol style="list-style-type: none">1. Begin development of “All-in-one” GIS map application2. Implement strategies to advance transformative technologies throughout the University3. Share revised standards document with external departments4. Implement advanced GIS training program for users outside of FIS5. Schedule a list of datasets to enhance or improve and assign them to staff members6. Research opportunities for GIS and CAD integration7. Review internal applications to find opportunities to integrate with GIS8. Identify opportunities to implement a field data collection program; develop a training program and user guide for available solutions like Field Maps and Survey1239. Schedule quarterly reviews/audits of data to determine what is still being used, who maintains the data, if it can be archived
Year 3	<ol style="list-style-type: none">1. Evaluate status of FIS GIS Program and implement any outstanding goals from years 1 and 22. Review progress and success of both internal and inter-departmental initiatives implemented in years 1 and 23. Prepare for the next 3-year road-map

Other Business