KITS

KDOT INNOVATIVE TECHNOLOGY SUMMIT 2023

KANSAS STATE UNIVERSITY SALINA
AEROSPACE AND TECHNOLOGY CAMPUS
AUGUST 1, 2023 – 1:00 PM TO 7:00 PM
AUGUST 2, 2023 – 8:00 AM TO 12:00 PM

KDOT INNOVATIVE TECHNOLOGY SUMMIT 2023

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VIEW ALL CONFERENCE DETAILS ON THE WEBSITE

Kansas Department of Transportation

INNOVATIVE TECHNOLOGY PROGRAM

2023

BACKGROUND	The Eisenhower Legacy Transportation Program (IKE) established the Innovative Technology Program to be funded at $2 M per year. Following local consult conversations in 2019, it was clear that Kansas should leverage innovative technology investment opportunities to position the state for the future.
OBJECTIVE	The Innovative Technology Program provides financial assistance to partners for innovative technology projects that improve safety, leverage state funds to increase total technology investment and help both rural and urban areas of the state improve the transportation system.
AVAILABLE FUNDING	$2 M per fiscal year. No project will be awarded more than $1M per cycle. Funds are for reimbursement only.
ELIGIBLE PROJECTS	Projects that address an important transportation need such as promoting safety, improving access or mobility, and implementing new transportation technology. "Innovative technology" is defined as any technology that does not currently exist in the local community of the project. All transportation system projects are eligible, including roadway (on and off the state system), rail, aviation, unmanned aerial systems (UAS), bicycle/pedestrian, public transit, software, and technology infrastructure.
ELIGIBLE APPLICANTS	Projects typically will be administered by a local unit of government. Non-governmental applications with a local government partner will also be considered. Educational institutions may apply without any partners necessary.
LOCAL MATCH	A minimum of 25% non-state cash match is required. Additional consideration will be given to project applications that commit more than the minimum required match amount. Non-cash local matches will not be considered.
REQUIREMENTS	Candidate projects should include investments that provide transportation benefits and are not eligible for other KDOT programs. Candidate projects may receive additional consideration if they support economic growth, aid in the retention or recruitment of business or add value to a KDOT project. These funds are intended to be spent on technology investments and not on road construction or commonly used technology with other available programs such as fiber optic lines. If this funding is part of a larger project, KDOT funding should be allocated to the innovative technology aspect of the broader project.
SELECTION PROCESS	The annual application window will begin on August 1, 2023. Selection criteria will include consideration of projects that meet program objectives, eligibility categories and requirements. Geographic distribution will also be considered during project selection. Applications will be due November 30, 2023. The selection committee will score applications and the awarded projects will be announced by December 31, 2023.
HOW TO APPLY	A Project Concept Form must be submitted prior to an application. Once we have reviewed the concept, an application will be sent to you. All KDOT Innovative Technology Program applications and attachments must be submitted as a single PDF document. Please submit your signed and completed application packet by **November 30, 2023**, via email to InnovTechProgram@ks.gov. If you do not receive a confirmation email within two business days, please email or call.
KDOT CONTACT	Matt Stormer Innovative Technologies Manager, Bureau of Innovative Technologies 785-296-0937 Matt.Stormer@ks.gov

KDOT INNOVATIVE TECHNOLOGY SUMMIT 2023

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AGENDA

AUGUST 1, 2023 – K-STATE SALINA

TIME	SESSION	LOCATION
1:00 PM	**Welcome** Cory Davis, KDOT | Lisa Koch, University of Kansas	**College Center Conference Room**
1:10 PM	**The Role of Innovative Technology in Kansas' Transportation Future** KDOT Secretary Calvin Reed, Representative Pam Curtis, Senator J.R. Claeys, Kurt Carraway & Amanda Graor	**College Center Conference Room**
2:00 PM	**Great Plains Rural Freight Technology Corridor Project (U.S.83)** Raja Govindaswamy, KDOT | Chuck Miller, HNTB | Shari Hilliard, KDOT	**STC118**
2:00 PM	**Connected Vehicle (CV) Data: What is it? And How can it be applied in Transportation Planning?** Chris Wichman, AirSage	**STC120**
2:00 PM	**Roadmap To Success: Unlocking Funding for Technology Projects** Taylor McHeny, HDR	**STC152**
3:00 PM	**NETWORKING BREAK**	
3:15 PM	**Statewide Mobile Light Detecting and Ranging (LiDAR) Acquisition and Data Extract** James Stewart, KDOT	**STC118**
3:15 PM	**Transportation Analytics and Artificial Intelligence (AI) with Google Cloud** Willis Zhang, Google	**STC120**
3:15 PM	**Navigating The Future: Technology At The Heart Of The Public Sector** Andrew Kimbrough, Samsara	**STC152**
4:15 PM	**Regional Innovative Projects with Previous Recipients** Amanda Graor & Ray Webb | Mid-America Regional Council (MARC)	**College Center Conference Room**
5:00 PM	**TRANSITION TO HILTON GARDEN INN**	
5:30 PM	**SOCIAL RECEPTION & EXHIBITOR SHOWCASE**	**Hilton Garden Inn**

KDOT INNOVATIVE TECHNOLOGY SUMMIT 2023

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AGENDA

AUGUST 2, 2023 – K-STATE SALINA

TIME	SESSION	LOCATION
8:00 AM	**BREAKFAST** Exhibitors & Partners	**College Center Conference Room**
9:00 AM	**Electric Vehicle (EV) Charging Plans for Kansas** Tami Alexander | KDOT	**STC118**
9:30 AM	**Charging Hub Investment Potential (CHIP) – a Publicly Available Economic Planning Tool for National Electric Vehicle Infrastructure (NEVI) Station Developers** Christine Holland | Pacific Northwest National Laboratory (PNNL)	**STC118**
9:00 AM	**Uncrewed Aircraft Systems (UAS) 101 - State of the Industry** Travis Balthzor, Kansas State University	**STC120**
9:30 AM	**Implementing Uncrewed Aircraft Systems (UAS) Technology in Kansas** Andrew Wilson | KDOT	**STC120**
9:00 AM	**Local Street Network Innovations** Luke Peter & Sheldon Bina | Professional Engineering Consultants (PEC)	**STC152**
10:00 AM	**BREAK**	
10:15 AM	**Kansas Low Distortion Projection (LPD) Coordinate System / Continuously Operating Reference Stations (CORS) Network Session** Ron Feldkamp, Mike Dillner, Jonathan Baker | KDOT	**STC118**
10:15 AM	**Uncrewed Aircraft Systems (UAS) Demonstration** Travis Balthzor | Kansas State University	**STC120 with transition to outdoor area**
10:15 AM	**Digital Infrastructure for the Next Generation** Miguel Jaramillo | Integrated Roadways	**STC152**
11:15 AM	**Panel with Transportation Researchers** Husain Aziz | Kansas State University & Chris Depcik | University of Kansas	**College Center Conference Room**

SESSIONS

AUGUST 1, 2023

Welcome to KDOT Innovative Technology Summit

1:00 p.m. – 1:10 p.m. | College Center Conference Room
Presenters: Cory Davis, KDOT | Lisa Koch, University of Kansas

The Role of Innovative Technology in Kansas' Transportation Future

1:10 p.m. – 2:00 p.m. | College Center Conference Room
Moderator: Cory Davis, KDOT
Speakers: KDOT Secretary Calvin Reed, Representative Pam Curtis, Senator J.R. Claeys, Kurt Carraway & Amanda Graor
Overview: The Eisenhower Legacy Transportation Program (IKE) established the Innovative Technology Program to be funded at $2 M per year. Following local consult conversations in 2019, it was clear that Kansas should leverage innovative technology investment opportunities to position the state for the future. The Innovative Technology Program provides financial assistance to partners for innovative technology projects that improve safety, leverage state funds to increase total technology investment and help both rural and urban areas of the state improve the transportation system. Join this panel as the discuss the program and answer your questions!

Great Plains Rural Freight Technology Corridor Project (U.S. 83)

2:00 p.m. – 3:00 p.m. | STC 118
Moderator: Matt Stormer, KDOT
Speakers: Raja Govindaswamy, KDOT | Charles Miller, HNTB | Shari Hilliard, KDOT
Overview: The Great Plains Rural Freight Technology Corridor Project will utilize technology aimed at improving safety and economic productivity along U.S. 83. The project limits extend approximately 131 miles, from the Thomas/Sheridan county line south to the Finney/Haskell county line. The project is leveraging $7 million in Advanced Transportation and Congestion Management Technologies Deployment grant funding from the Federal Highway Administration. The presentation will provide an overview of the project, discuss early planning efforts that position KDOT to obtain the grant funding, present the technologies being considered for deployment in the corridor and the public engagement process.

Connected Vehicle (CV) Data: What is it? And How can it be applied in Transportation Planning?

2:00 p.m. – 3:00 p.m. | STC 120
Moderator: Mitch Sothers, KDOT
Speakers: Chris Wichman, AirSage
Overview: Connected Vehicles (CVs) have brought about a wealth of data that can be leveraged by transportation professionals to shape how we plan, prioritize, and monitor transportation infrastructure investments. CV data refers to information generated by vehicles that are equipped with various sensors, telematics systems, and other connected devices. This data typically includes the vehicle's location (GPS coordinate), speed, and heading at a minimum. This session will focus on the use cases and applications of this data for transportation planning, including examples specific to Kansas.

Roadmap To Success: Unlocking Funding for Technology Projects

2:00 p.m. – 3:00 p.m. | STC 152
Moderator: Lisa Koch, University of Kansas
Speakers: Taylor McHenry, HDR
Overview: The Bipartisan Infrastructure Law (BIL) has vastly increased the number of competitive grant programs that fund technology-based projects. States, MPOs, cities, and counties must be strategic in how they apply to ensure they are competitive. Many grant programs are narrowly focused, and pre-NOFO (Notice of Funding Opportunity) planning and action can greatly increase an applicant's chances of success. This presentation with discuss the various grant programs available, funding amounts, who is eligible to apply, and the types of projects applicable. Taylor will also present strategies to increase an applicant's chances of success.

Statewide Mobile Light Detecting and Ranging (LiDAR) Acquisition and Data Extract

3:15 p.m. – 4:15 p.m. | STC 118
Moderator: Matt Stormer, KDOT
Speakers: James Stewart, KDOT
Overview: KDOT has begun its second project to collect mobile LiDAR data for the State Highway System, with plans to extract 16 GIS layers. These will be used for a variety of purposes within KDOT, such as establishing or updating asset inventories, or identifying features in need of replacement or modifications. These data will be made available to the public, as with the GIS layers extracted from the 2021 mobile LiDAR collection.

Transportation Analytics and Artificial Intelligence (AI) with Google Cloud

3:15 p.m. – 4:15 p.m. | STC 120
Moderator: Mitch Sothers, KDOT
Speakers: Willis Zhang, Google
Overview: Google is widely known for its user-friendly applications, such as Search, Maps, and Gmail, which are powered by artificial intelligence. In this session, we will demonstrate how Google Cloud helps transportation stakeholders by: Predicting incidents based on weather data Understanding video events Operationalizing customer feedback We will also discuss how artificial intelligence is being used in transportation to solve problems. This session will also include a variety of demonstrations that will help transportation stakeholders improve planning, operations, and safety. These demonstrations will showcase the latest technologies and tools that are available to transportation professionals to do their jobs more effectively. Transportation stakeholders will have the opportunity to learn about these technologies and tools and see how they can be used to improve the transportation system.

Navigating The Future: Technology At The Heart Of The Public Sector

3:15 p.m. – 4:15 p.m. | STC 152
Moderator: Lisa Koch, University of Kansas
Speakers: Andrew Kimbrough, Samsara
Overview: In recent years, technology has been a major driving force for transformation in the public sector. According to a survey conducted by The Center for Digital Government, 72% of government leaders have invested in modernizing their physical operations, and 56% are planning to upgrade their tech within the next few years - yet many are still struggling to make the shift. In this session, we will dive into the statistics behind the pace of innovation, where public sector agencies know they need to focus, and the roadblocks keeping us from reaching our goals. Join us to learn how, with the right technology partners, through the power of data, you can achieve operational efficiency, reduce risk and costs, and ensure community preparedness and service reliability. You'll leave the session inspired to lay foundations and strategies to catapult transformations within your organization.

Regional Innovative Projects with Previous Recipients

4:15 p.m. – 5:00 p.m. | College Center Conference Room
Moderator: Mitch Sothers, KDOT
Speakers: Amanda Graor & Raymond Webb, Mid-America Regional Council (MARC)
Overview: This session will cover Mid-America Regional Council's Innovative technology projects that are in the early stages. Session will cover the needs that drove the project scope. Will cover project concept and expected outcomes that will advance the region's technology. One of the projects will support an innovative approach to the training and advancement of Uncrewed Aircraft Systems Flight and Operations training and licensing. The other project will discuss the regional issues with arterial performance measures and discuss innovative tools and technology that will lead to advancements in arterial operations.

Social Reception with Summit Partners

5:30pm – 7:00pm | Hilton Garden Inn
Moderator: Lisa Koch, University of Kansas
Overview: Join us at the social receptions to network with colleagues, exhibitors and conference partners! Dinner and drink tickets will be provided.

AUGUST 2, 2023

Electric Vehicle (EV) Charging Plans for Kansas

9:00 a.m. – 9:30 a.m. | STC 118
Moderator: Matt Stormer, KDOT
Presenter: Tami Alexander, KDOT
Overview: An overview of the Charge Up Kansas NEVI (National Electric Vehicle Infrastructure) Plan and KDOT's other plans for EV charging across the state.

Charging Hub Investment Potential (CHIP) – a Publicly Available Economic Planning Tool for National Electric Vehicle Infrastructure (NEVI) Station Developers

9:30 a.m. – 10:00 a.m. | STC 118
Moderator: Matt Stormer, KDOT
Presenter: Christine Holland, Pacific Northwest National Laboratory (PNNL)
Overview: PNNL is building a publicly available economic planning tool to support charging station development qualifying under the National Electric Vehicle Infrastructure (NEVI) Formula Program. The tool estimates life-cycle costs including installation and operation costs, revenues, and rebates or tax incentives for a variety of NEVI charging station designs. Station design options include the potential addition of solar photovoltaics (PV) and battery energy storage systems (BESS). PV and BESS provide demand charge reduction, a potential burden for charging station owners. This presentation shows preliminary results for variety of NEVI-qualified EV charging system designs in Garden City, KS. Many station configurations become cost-effective over the 10-year study horizon with competitive pricing. Further, with a 60 - 80% NEVI funding rebate for PV and BESS costs, the charging system cost-effective improves over a station design with EV chargers alone.

Uncrewed Aircraft Systems (UAS) 101 - State of the Industry

9:00 a.m. – 9:30 a.m. | STC 120
Moderator: Lisa Koch, University of Kansas
Presenter: Travis Balthzor, Kansas State University
Overview: In recent years, technology has been a major driving force for transformation in the public sector. According to a survey conducted by The Center for Digital Government, 72% of government leaders have invested in modernizing their physical operations, and 56% are planning to upgrade their tech within the next few years - yet many are still struggling to make the shift. In this session, we will dive into the statistics behind the pace of innovation, where public sector agencies know they need to focus, and the roadblocks keeping us from reaching our goals. Join us to learn how, with the right technology partners, through the power of data, you can achieve operational efficiency, reduce risk and costs, and ensure community preparedness and service reliability. You'll leave the session inspired to lay foundations and strategies to catapult transformations within your organization.

Implementing Uncrewed Aircraft Systems (UAS) Technology in Kansas

9:30 a.m. – 10:00 a.m. | STC 120
Moderator: Lisa Koch, University of Kansas
Presenter: Andrew Wilson, KDOT
Overview: In 2017, the Kansas Department of Transportation (KDOT) embarked on their UAS journey when an employee's personal Mavic Pro drone was used to capture project progress of a large river project. Realizing the vast potential of UAS technology, KDOT established a partnership with Kansas State University (KSU) Salina to further develop their UAS program.
Collaborating with KSU Salina, KDOT has successfully trained 36 pilots, equipping them with the necessary expertise to operate UAS effectively and safely. KDOT has integrated a fleet of 20 UAS into their operations, which initially comprised of DJI drones but is now shifting towards Skydio.
The integration of UAS has brought numerous advantages to KDOT. High-resolution imagery and video captured from aerial perspectives have facilitated project progress monitoring, enabling informed decision-making and assessment of ongoing work, including accurate volumetric calculations. UAS utilization has enhanced situational awareness and improved project management efficiency.
KDOT has leveraged UAS for various applications, such as bridge inspections, aerial surveys, roadway condition assessments, and identifying maintenance needs. They have utilized photographic, thermal, and LIDAR data to enhance their operations.
To ensure safe and responsible UAS usage, KDOT diligently adheres to FAA regulations and guidelines while going the extra mile. They conduct regular training sessions and maintain their UAS fleet to optimize performance and minimize risks.
Despite these achievements, KDOT has encountered obstacles hindering quick program integration. Staffing shortages have diverted trained pilots to other priorities, affecting UAS operations. The availability of trained Visual Observers required for missions has also been limited. Moreover, funding for hardware and software upgrades has presented challenges as the program evolves.
Nevertheless, KDOT has successfully harnessed UAS technology and actively strives to implement additional workflows that incorporate UAS-provided upgrades into their operations. By overcoming challenges and pushing forward, KDOT remains committed to leveraging UAS to enhance their transportation management practices.

Local Street Network Innovations

9:00 a.m. – 10:00 a.m. | STC 152
Moderator: Mitch Somers, KDOT
Speakers: Luke Peter & Sheldon Bina, Professional Engineering Consultants (PEC)
Overview: Pavement condition is a top priority for elected officials, local government staff, and the driving public. Historically, the options available to local governments were time-consuming, outdated, and far from fiscally responsible, often using manual data entry methods and requiring a customized can explicitly designed for pavement-condition data collection. New technological advances in cameras, GIS, and software allow local governments to collect pavement condition data affordably, regularly and efficiently. PEC is also leading the way in advancements in bringing local street project designs into a 3D built environment in an effort to improve coordination efforts with local governments. 3D visualizations can also be extremely helpful for public engagement and getting approval from various stakeholders on a project.

Kansas Low Distortion Projection (LPD) Coordinate System / Continuously Operating Reference Stations (CORS) Network Session

10:15 a.m. – 11:15 a.m. | STC 118
Moderator: Matt Stormer
Speakers: Ron Feldkamp, Mike Dillner & Jonathan Baker, KDOT
Overview: (1)Speak about NOAA Continuously Operating Reference Stations (CORS), managed by NOAA/National Geodetic Survey, provide Global Navigation Satellite System (GNSS) data, supporting three dimensional positioning, and working to build a CORS network for Kansas. (2) The Kansas Regional Coordinate System, A Statewide Multiple-Zone Low-Distortion Projection Coordinate System for the State of Kansas.

Uncrewed Aircraft Systems (UAS) Demonstration

10:15 a.m. – 11:15 a.m. | STC 120 with Transition to Outdoor Area
Moderator: Lisa Koch, University of Kansas
Presenter: Travis Balthzor, Kansas State University
Overview: Join K-State flight instructors to witness the demo of flying the DJI M300 and Skydio X2.

Digital Infrastructure for the Next Generation

10:15 a.m. – 11:15 a.m. | STC 152
Moderator: Mitch Sothers, KDOT
Presenter: Miguel Jaramillo, Integrated Roadways
Overview: Nearly 50% of U.S. roads need ground-up reconstruction. Emerging Smart Cities, Internet of Things (IoT), Network Communications, and Mobility technologies are demanding access to the right-of-way which is forcing budget constrained municipalities with a growing backlog of capital improvements to rethink how roadways are designed, constructed and utilized. Integrated Roadways' vision is to transform roadways into safe, digital, self-sustaining advanced mobility corridors that support existing vehicles and the next-generation of connected, electric, and autonomous vehicles. Utilizing a public-private partnership model, Integrated Roadways works with municipalities and transportation agencies to develop large-scale, long-term digital infrastructure concessions to address two critical issues - how to affordably address the unfunded backlog of traditional public road improvements and provide a holistic solution to meet the growing demand for increased safety, mobility, and sustainability needs. Learn more about the Company's current Digital Infrastructure Showcase with the City of Lenexa, KS that received a KDOT Innovative Technology program award in 2022, and use cases for Integrated Roadways' Smart Pavement system.

Panel with Transportation Researchers

11:15 a.m. – 12:00 p.m. | College Center Conference Room
Moderator: Mitch Sothers, KDOT
Speakers: Husain Aziz, Kansas State University | Chris Depcik, University of Kansas
Overview: Join in a panel discussion with transportation researchers from the University of Kansas and Kansas State University to learn more about the ongoing innovative endeavors in the field of transportation across the world.

LEARN MORE ABOUT THE PRESENTERS

PARTNERS

GOLD

HDR

HNTB

samsara

Google for Government

SILVER

Gades Sales Co. Inc.
TRAFFIC CONTROL SPECIALISTS
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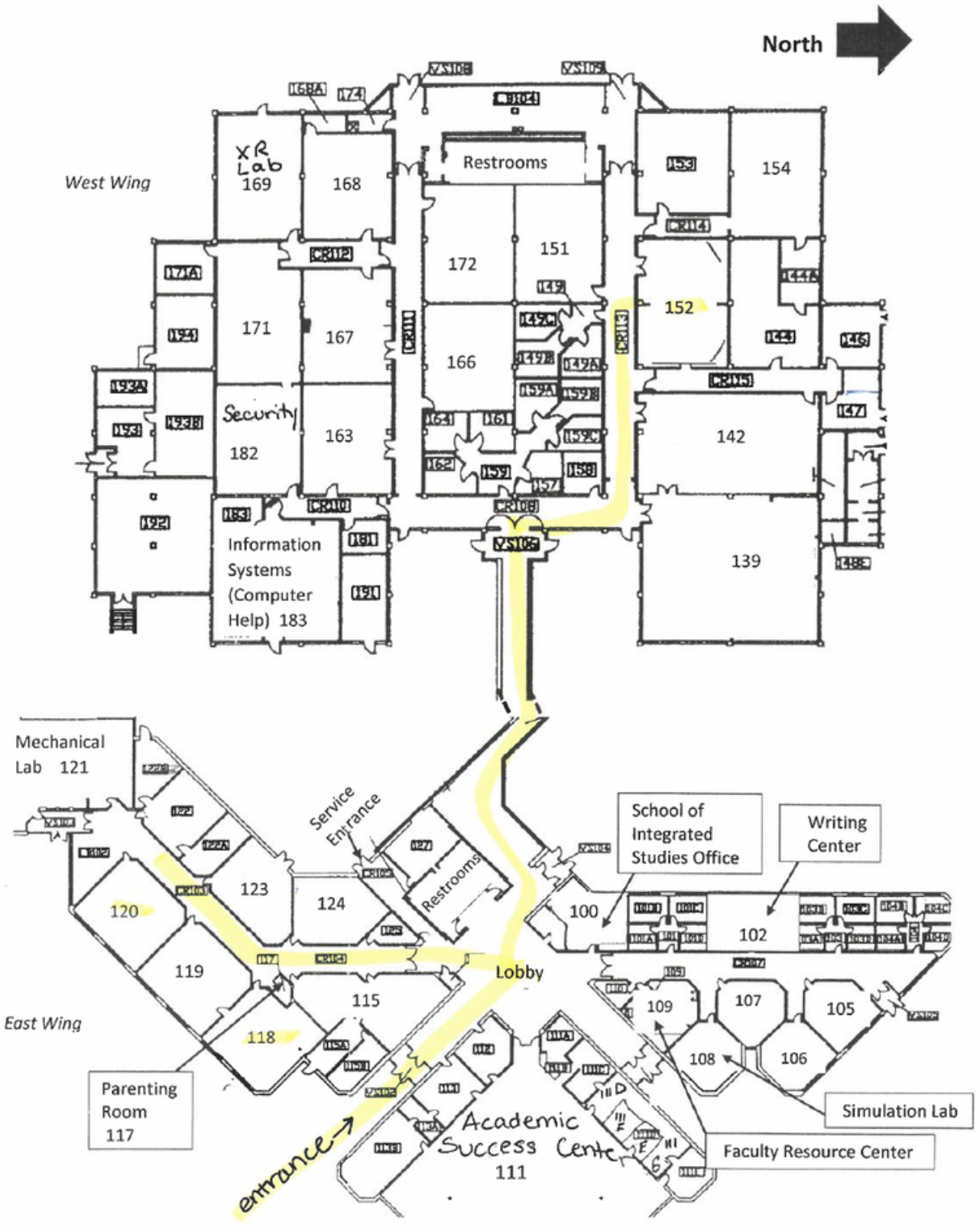
TRAFFIC SIGNAL CONTROLS

BRONZE

TrafficVision

EXHIBITOR

CUBIC Transportation Systems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August 17, 2016