Kansas Next Generation 911

GIS & NG911

DASC

KANSAS 911 COORDINATING COUNCIL

KU KANSAS GEOLOGICAL SURVEY
The University of Kansas

Background

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Data Access & Support Center (DASC)

Kansas Geological Survey

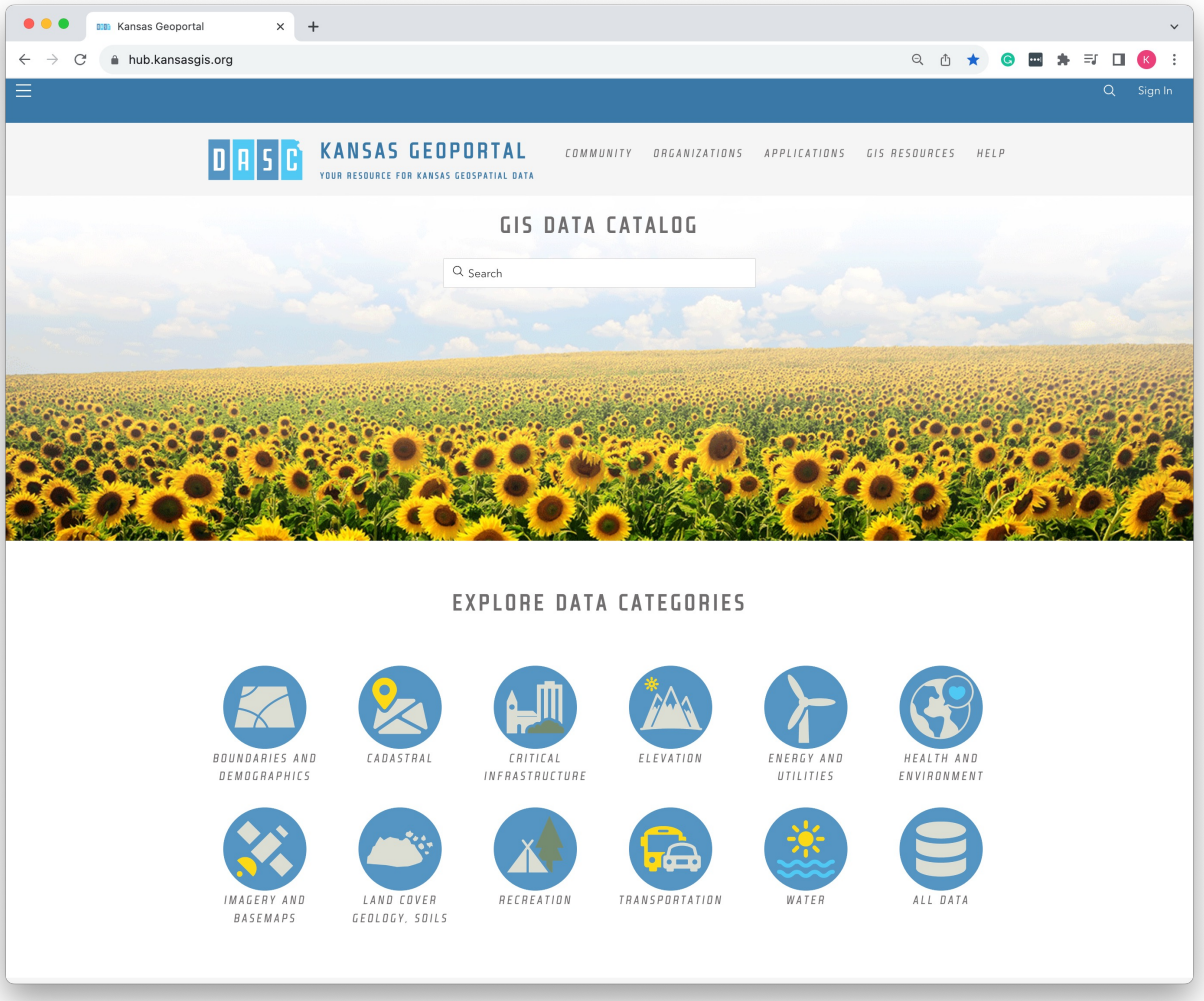
University of Kansas

DASC Overview

- Established by the GIS Policy Board in 1991
- Located at the Kansas Geological Survey at the University of Kansas since its inception
- Central repository of GIS databases of statewide & regional importance
- Operates under contract with the Kansas Department of Administration's Office of Information Technology Services (OITS)

DASC Overview

- Database archival and distribution
- Database development & integration
- GIS web application development and hosting
- State & local government coordination & outreach
- Coordinate & manage the state government Esri Enterprise License Agreement
- Geospatial metadata development assistance
- Cartographic development
- Promotion of the Kansas GIS Initiative
- Development and maintenance of the DASC web site – *https://hub.kansasgis.org*



Outline

The presentation will focus on the GIS components of the Kansas NG911 Program…

- What is NG911? (video)
- High-level NG911 Program goals
- GIS standards, processes, and data layers
- Imagery program
- Collaboration opportunities

What is NG911?

Evolution of 911

In the beginning…

We have a plan…

We have funding…

Our timeline for statewide geospatial call routing is two years from now...

Project Lifecycle

Primary NG911 Program Goals

1. Deploy an IP-based hosted call handling solution available to all Kansas PSAP's.

2. Partner with local jurisdictions to develop the statewide, *authoritative geographic data* adhering to state and emerging national NG911 standards.

3. Align telephone provider databases with *geographic data* and plan for migration to geospatial call routing.

4. Transition PSAP's on the hosted call handling solution to a nationwide ESInet solution.

5. Communicate, train, and support project partners throughout all phases of the program.

GIS Program Opportunities

- Coordination & collaboration opportunities across all levels of government and the private sector

- Develop and maintain statewide authoritative datasets that have been desired for many years:
  - *Road centerlines*
  - *Address points*
  - *Administrative Boundaries*
  - *High-resolution imagery*

- Raise the profile of GIS across state and local government

GIS Data Requirements

- Statewide…covering every county and PSAP
- Consistent…common set of data layers, data model and implementation procedures
- Current…regularly maintained
- Authoritative…accurate and reliable
- Standardized…adheres to applicable Kansas & national NG911 GIS standards, data models and implementation guidelines
- Reusable…broadly utilized for a variety of purpose

From pilot study to statewide data

- GIS Pilot Study (2011)
- GIS Data Enhancement Project (2014-2016)
  - *GIS Data Gap Analysis*
  - *GIS Data Enhancement*
  - *GIS Data QA Audit*
- GIS Data Maintenance (ongoing)
  - *100% participation for 27 consecutive quarters: Q1 2017 – Q3 2023*

Program Management

- GIS Committee established by the Kansas 911 Coordinating Council
  - *Made up of local and state government GIS professionals*

- Established data standards and policies:
  - *Kansas NG911 GIS Data Model (what does right look like)*
  - *Kansas NG911 GIS Governance Policy*

- Outreach:
  - *NG911 GIS User Group, quarterly webinar*
  - *On-site & web-based training for Data Maintainers & Data Stewards*

- Tech Tools:
  - Kansas NG911 GIS Toolbox
  - Kansas NG911 Program Portal

Kansas NG911 GIS Toolbox

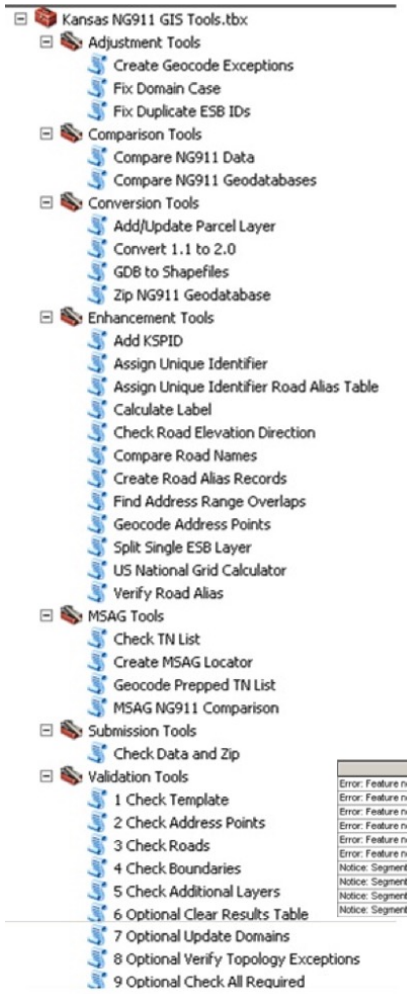
Provides a standardized set of tools to ensure data quality, consistency, and adherence with Kansas standard

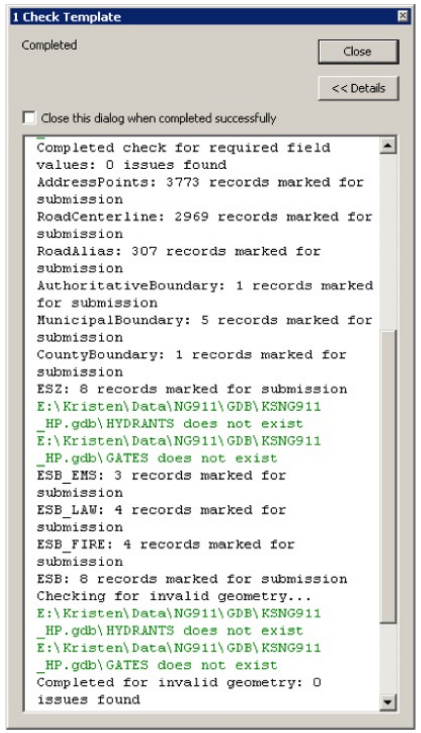
Approach:

- Deployed as GIS desktop extension
- Public domain software
- Data Maintainers run tools locally prior to submission
- Open book test

Tool categories:

- Adjustment Tools
- Comparison Tools
- Conversion Tools
- Enhancement Tools
- MSAG Tools
- Submission Tools
- Validation Tools





DESCRIPTION	LAYER	FIELD	FEATUREID
Error: Feature not inside authoritative boundary	Hydrants		148131837446990
Error: Feature not inside authoritative boundary	Hydrants		148131837446990
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Error: Feature not inside authoritative boundary	Hydrants		148131837447560
Error: Feature not inside authoritative boundary	Hydrants		148131837447580
Error: Feature not inside authoritative boundary	Gates		148123031719
Notice: Segment's address range is from high to low instead of low to high	RoadCenterline		RLC00467
Notice: Segment's address range is from high to low instead of low to high	RoadCenterline		RLC00468
Notice: Segment's address range is from high to low instead of low to high	RoadCenterline		RLC00469
Notice: Segment's address range is from high to low instead of low to high	RoadCenterline		RLC00472

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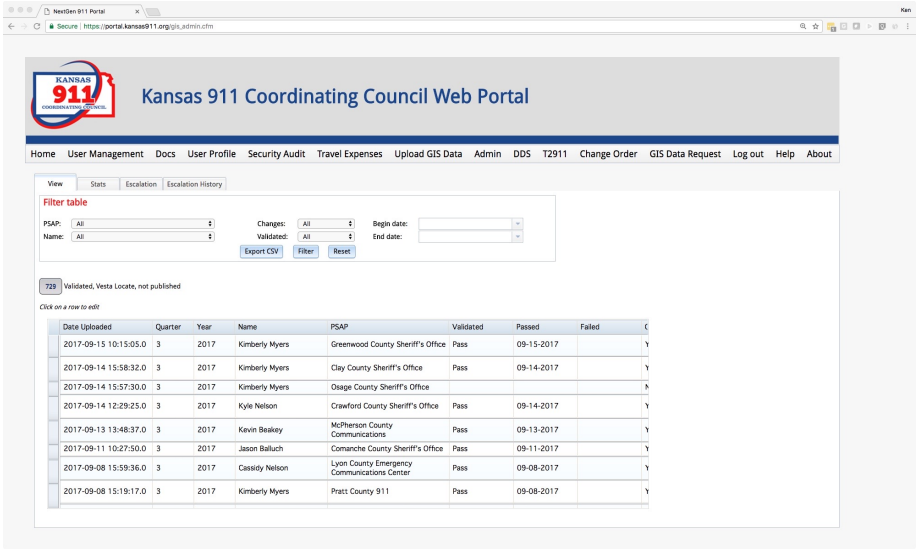
Kansas NG911 Program Portal

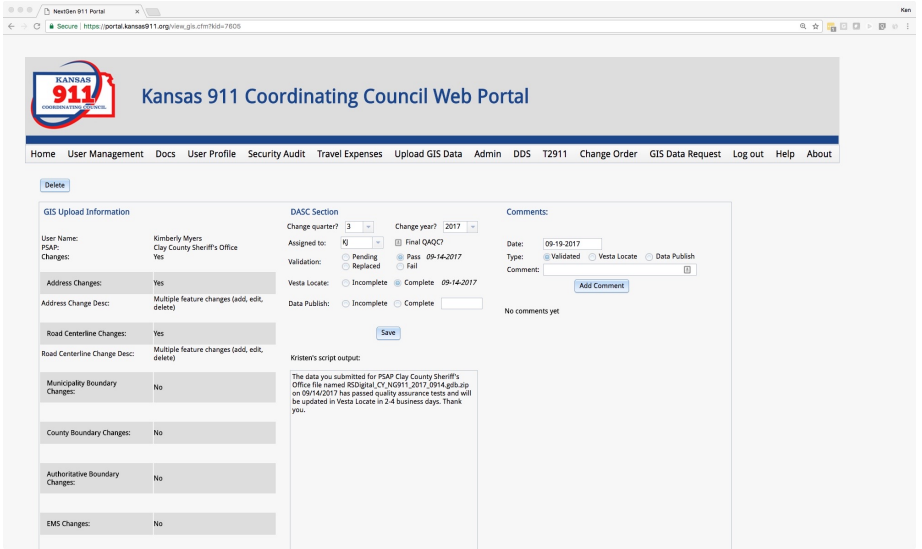
NG911 Program Portal has become the centralized location for all content, documents, and data:

- Change Order Request
- *GIS Data Submission*
- GIS Data Request
- PSAP Security Audit
- PSAP Expenditure Reporting
- PSAP Outage Notification
- Telephone Service Provider (TSP) monthly reporting
- User profile & management

GIS Data Submission Module



GIS Data Submission Detail



Kansas NG911 Data Layers

Primary data layers:

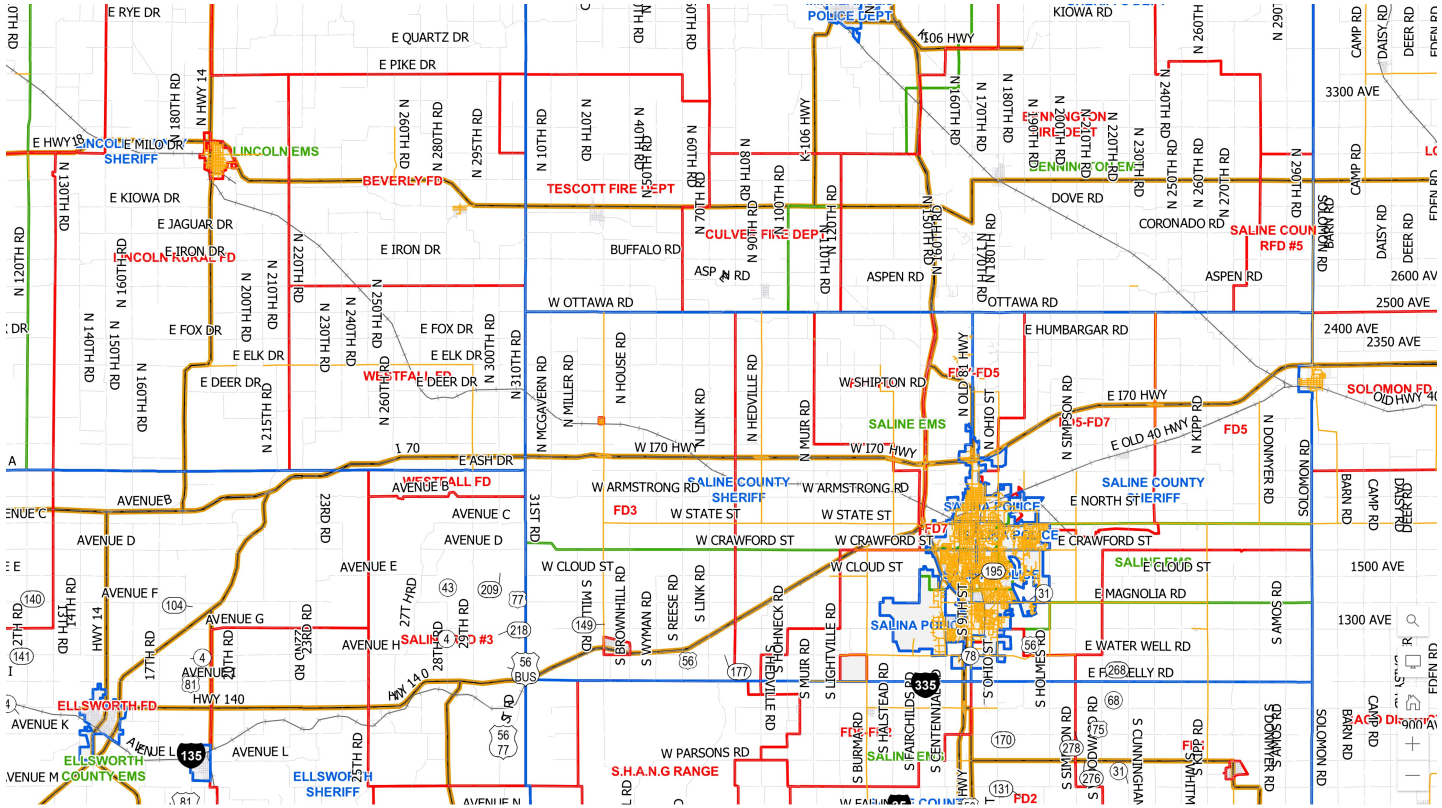
- Road Centerlines
- Address Points
- Emergency Service Boundaries
- PSAP Boundaries
- Orthoimagery

Optional data layers:

- Bridges
- City Boundaries
- County Boundaries
- Gates
- Hydrants
- Land Parcels
- Utility Service Areas

Emerging/under evaluation:

- Building footprints
- Indoor mapping



Kansas NG911 Imagery Program

- Statewide Acquisitions:
  - 2014/15
  - 2018
  - 2021
  - 2024 (planned for spring 2024)

- Abbreviated Project Specs:
  - Statewide, 1-foot pixel resolution, acquired during the leaf-off flying season
  - 4-band image, natural color and color infrared
  - Horizontal accuracy (+/- 1 foot)

- Funding:
  - Largely funded by the Kansas 911 Coordinating Council
  - KDOT/TRCC cost share ($100K) on the 2018 & 2021 project, planned for 2024
  - KDOR cost share ($45K) on the 2018 project

- Uses:
  - Primary source of imagery for NG911 GIS data maintenance
  - Supports NG911 GIS data maintenance and call handling mapping system
  - Default imagery layer within the Open Records for Kansas Appraisers (ORKA) application
  - Utilized by nearly *all state and local government* mapping departments

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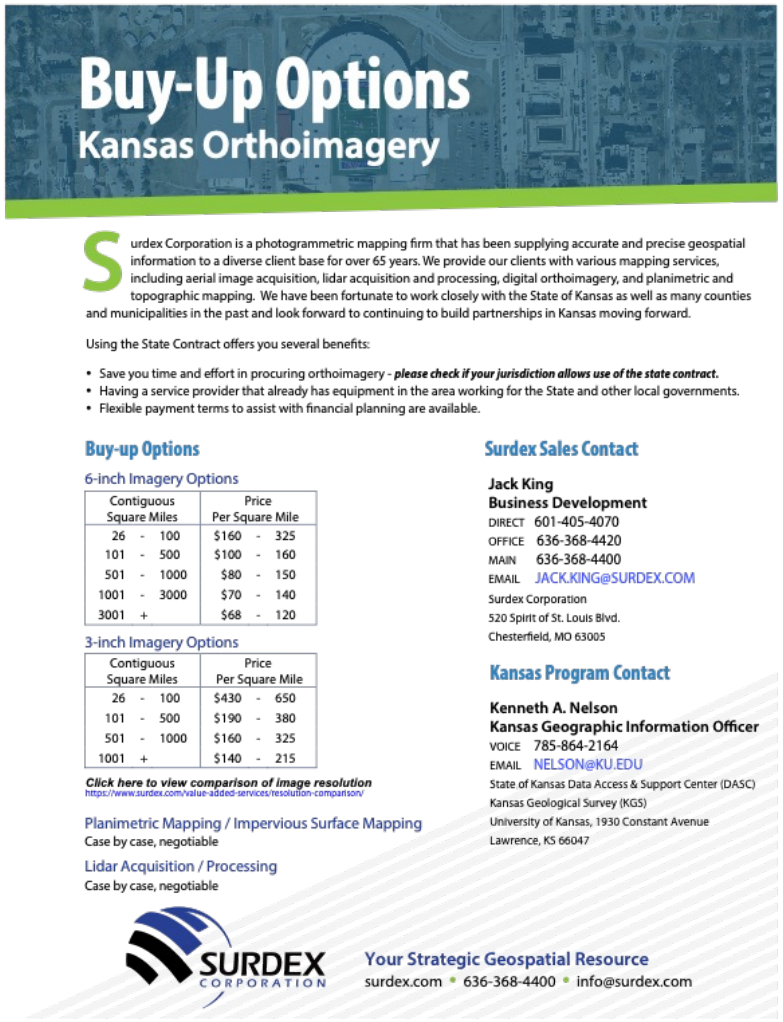
Kansas NG911 Imagery Buy Up Program



Buy-Up Options
Kansas Orthoimagery

Surdex Corporation is a photogrammetric mapping firm that has been supplying accurate and precise geospatial information to a diverse client base for over 65 years. We provide our clients with various mapping services, including aerial image acquisition, lidar acquisition and processing, digital orthoimagery, and planimetric and topographic mapping. We have been fortunate to work closely with the State of Kansas as well as many counties and municipalities in the past and look forward to continuing to build partnerships in Kansas moving forward.

Using the State Contract offers you several benefits:

- Save you time and effort in procuring orthoimagery - ***please check if your jurisdiction allows use of the state contract.***
- Having a service provider that already has equipment in the area working for the State and other local governments.
- Flexible payment terms to assist with financial planning are available.

Buy-up Options

6-inch Imagery Options

Contiguous Square Miles	Price Per Square Mile
26 - 100	$160 - 325
101 - 500	$100 - 160
501 - 1000	$80 - 150
1001 - 3000	$70 - 140
3001 +	$68 - 120

3-inch Imagery Options

Contiguous Square Miles	Price Per Square Mile
26 - 100	$430 - 650
101 - 500	$190 - 380
501 - 1000	$160 - 325
1001 +	$140 - 215

Click here to view comparison of image resolution
https://www.surdex.com/value-added-services/resolution-comparison/

Planimetric Mapping / Impervious Surface Mapping
Case by case, negotiable

Lidar Acquisition / Processing
Case by case, negotiable

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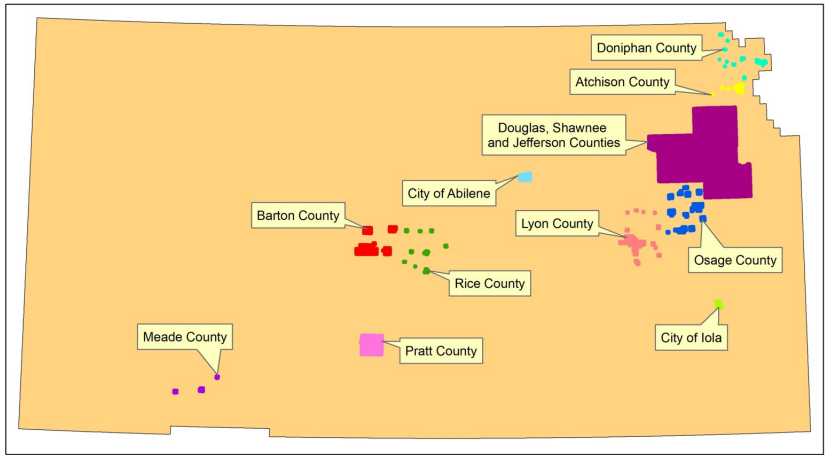
- Buy-up participants:
  - 12 buy-up projects
  - 3,540 square miles



- All buy-up projects are designed and estimated based on the needs of each organization
- Typically buy-up to 3” or 6” imagery
- Simplified the procurement process
- Agreements between organization and Surdex

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NG911 GIS Data Maintenance Workflow

GIS data maintenance performed by NG911 GIS Data Maintainer

GIS data submitted to the Kansas NG911 Program Portal

GIS data is aggregated into statewide layers and published on a weekly basis

Local validation using the NG911 GIS QA Toolbox

Data submissions are validated using the NG911 GIS Toolbox. Data must adhere to the KS NG911 Data Model. Data issues are reported to the Data Maintainer & Data Steward.

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Collaboration Opportunities

Data Sharing:

- Share statewide authoritative GIS data layers for integration into other systems
- Share statewide high-resolution imagery
- Share web maps and web services published by DASC

GIS Software:

- Leverage Kansas Esri State Government Enterprise Agreement

Collaboration Opportunities

Lightning Mobile application:

- The Kansas 911 Coordinating Council recently approved the procurement of RapidDeploy's new mobile application called Lightning
- Unlimited use license that can be shared with state and local government
- Kansas will be the first statewide adopter and is working directly with RapidDeploy on functionality requirements
- Ongoing outreach & education activities
- Beta testing will begin in December 2023

911 call data and critical information delivered directly to first responders' smartphones and tablets

Key Lightning app features include:

- Responder location sharing, providing a holistic view of critical incidents and tracking of first responders
- Live incident board for a common operating picture, improved communications and efficient video-sharing, for large-scale incidents
- Vehicle telematics crash data with crash severity scores and cut plans to aide in extrication
- Direct access to CCTV and real-time video sharing
- Detailed Next Gen mapping, from GIS to indoor floorplans to the z-axis
- Zero trust architecture and single sign on (SSO) for secure and controlled access
- BYOD (bring your own device) with broad capability including iOS and Android devices

Source: https://rapiddeploy.com/blog/reimagining-emergency-response-with-lightning

Thank you

- Questions?