

# **Association of Transportation Safety Information Professionals**

## **Application for Best Practices Recognition 2004**

### **Part One: Project Summary**

**Project Title: KyOPS: Kentucky's Open Portal Solution**

**Project Description (three sentences or less): KyOPS is Kentucky's solution for day-current collision data collection, extraction, and dissemination.**

#### **Nominating Person Contact Information:**

<b>Name:</b>	<b>Sergeant John Carrico</b>
<b>Title:</b>	<b>Criminal Identification and Records Branch</b>
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**Project Manager Contact Information: (Same as Above)**

**Lead Agency for Project: Kentucky State Police**

**Participating/Cooperating Agencies (if any):**

**The participating agencies included the following: Kentucky Transportation Cabinet, Louisville Police Department, Jefferson County PD, Lexington-Fayette Urban County PD, Federal Highway Administration, Governor's Highway Safety Representative, University of Kentucky Injury Prevention, State EMS, Kentucky Chiefs of Police Association, and Kentucky Sheriff's Association**

**Which National Agenda goals apply?**

- 1. Does it involve a leader(s) who promotes the importance of highway safety information systems, used for safety policy and program decision-making?**

**The following representatives have been actively involved in the development of the KyOPS (Kentucky's Open Portal Solution) and CRASH (Collision Reporting and Analysis for Safer Highways) applications: Kentucky State Police, Kentucky Transportation Cabinet, Louisville Police Department, Jefferson County PD, Lexington-Fayette Urban County PD, Federal Highway Administration, Governor's Highway Safety Representative, University of Kentucky Injury Prevention, State EMS, Kentucky Chiefs of Police Association, and Kentucky Sheriff's Association**

- 2. Does it involve the coordination of the collection, management, and use of highway safety information among various organizations responsible for highway transportation policy?**

**The KSP CRASH System serves as the statewide repository of collision data and documents. KyOPS serves as the electronic input of collision, citation, and crime data. The KyOPS Web Application allows all authorized users total access to collision data, GIS Maps, copies of the submitted collisions reports, data extracts for updates to RMS/Public Safety systems, and over 90 Standard Public Safety Management and Statistical Analysis reports.**

- 3. Does it represent an example of integrating the planning of highway safety programs with highway safety information systems?**

After the accurate collection of collision data occurs through the KyOPS application, the data is stored in the statewide collision data repository (known as CRASH). KSP generates weekly, monthly, and ad-hoc extracts for the update to SafetyNet, Kentucky Driver's Licensing, and any other entity that requires the collision data. Additionally, the Kentucky FARS analyst, the local FHA representative, and the local Federal Motor Carrier Safety Administration representative have direct access to the KYOPS system which allows unrestricted access to Kentucky's Collision Data.

4. Does it represent an example where managers and users of highway safety information have utilized or were provided the necessary resources to select the appropriate technology to meet their information needs?

The KSP systems allow for any authorized user to extract and use the data for their individual needs at no cost. Examples of utilization of data include GIS maps (example: alcohol-related collisions, high-accident locations, etc.), advanced query capabilities (ability to search on all data elements), copies of collision reports, standard, formatted management and statistical analysis reports, and extracts for updating any traffic safety system.

5. Does it represent examples of highway safety professionals being trained in the analytic methods appropriate for evaluation of highway safety information?

KSP has been conducting training on the KyOPS Web Site to access collision data for all users for problem identification and resource allocation.

6. Does it involve the promotion and use of technical standards for characteristics of highway safety information systems, critical to the development and management of highway transportation safety programs and policies?

The Commonwealth of Kentucky has standardized on one collision report and one set of data elements that are based upon ANSI Standard D16 Manual, CADRE (Critical Automated Data Reporting Elements), and the NGA (National Governor's Association) for the reporting of truck accidents. The Kentucky Collision System also utilizes over 90% of the MMUCC (Model Minimum Uniform Crash Criteria) reporting guidelines.

Which steps in the management process does the project support?

- **Establish Safety Goals**

KSP establishes goals each year in the Total Police Response Strategic Plan. KSP Criminal Identification and Records Branch also established traffic safety goals. 2003 goals included:

- 1) Decrease the total number of injury collisions.
- 2) Increase the number of users of KyOPS.
- 3) Increase the number of users of the KyOPS Web Application.

- **Identify Problems**

- 1) Decrease the total number of injury collisions:
  - The challenge is identifying problem areas in a timely manner. Quick identification of those areas is needed to facilitate a correction for public safety.
- 2) Increase the number of users of KyOPS.
  - Eliminate the fear of using the KyOPS electronic submission for the local law enforcement community.
  - The challenge is to train the local law enforcement community to utilize the KyOPS electronic submission tool versus the old paper collision reports.

**3) Increase the number of users of the KyOPS Web Application.**

- Eliminate the fear of using the KyOPS Web Application to retrieve collision and reports.
- The challenge is to educate the user community on how to maximize the usefulness of the collision data that is retrieved from the KyOPS web application.

• **Plan Programs/Countermeasures**

KSP developed a plan to meet the three listed goals. This consisted of demonstrations at local conferences attended by law-enforcement and safety professionals, a quarterly newsletter, and meetings with local agencies and safety professionals.

• **Implement Programs**

Major additions were added to KyOPS in 2003 that included automating commercial vehicle information from DOT numbers, scanning drivers licenses, the integration of the electronic citation, electronic crime reporting, and additions to the data-mining tool on the web site.

• **Monitor Program Operations**

KSP has continued to monitor the effectiveness of all implemented programs, which has showed a constant increase in use of the data, an increase in users, and a decrease in injury collisions. Constant modifications to all programs have been ongoing with each implementation.

• **Evaluate Effectiveness.**

The KSP Goals for 2003 were as follows:

- 1) **Decrease the total number of injury collisions:** KSP was able to reduce the number of injury collisions by more than 5% in 2003 versus 2002. (2003 injury collisions = 32,780, 2002 injury collisions = 34,510)
- 2) **Increase the number of users of KyOPS:** In January of 2003, 79 agencies were using KyOPS equaling 19.6% of the reports. In December of 2003, 151 agencies were using KyOPS equaling 31.6% of the reports.
- 3) **Increase the number of users of the KyOPS Web Application:** January 2003 less than 15 agencies were using the data-mining tool on the web site. December 2003 over 120 agencies were using the mining tool.

Reference the priority in your traffic records strategic plan to which this project applies:

The focus of this project was to address the Number 1 priority of the Kentucky Traffic Records Strategic Plan which was the collection, management, and dissemination of accurate and timely collision data.

**Project Cost:**

Planned Cost: \$954,800 (\*) Actual: \$954,800 (\*)

\* This cost includes 7 projects where separate KyOPS components were developed and implemented.

**Extent of Project Implementation:**

As of December 2003, this software has been installed and is being used in over 40% of the Kentucky law-enforcement agencies, free of charge. Currently, over 120 agencies have been trained and are currently using the KyOPS Web Application data-mining tool.

**Summary of Project Benefits: What was improved, who benefited, and how?**

The number of injury collisions has been decreased by 1,730 collisions from 2002 to 2003 (over 5% reduction). The use of the KyOPS program has been increased from 79 agencies to 151 agencies. The use of the KyOPS data-mining tool has increased from 15 to 120.

**Part Two: Project Detail**

**Project Description:** (your opportunity to write more than the three sentences permitted in Part One)

**Overview of Total KyOPS Project**

A challenge existed in the past for any state to develop a collision reporting solution that provided every creator and user of the traffic collision data with a single set of tools and services and a single centralized repository for the capture, management, and dissemination of traffic collision information. On January 1<sup>st</sup> of 2000, the Kentucky State Police met that challenge for the Commonwealth of Kentucky with the implementation of the CRASH (Collision Report and Analysis for Safer Highways) system, a statewide-centralized collision reporting solution. Since its implementation, CRASH has been the single solution used to capture, process, store, and distribute all information related to each and every reportable collision in the Commonwealth of Kentucky. More than 1 million collision incidents are currently under the management of the CRASH system. With diligent planning, management, and execution, the CRASH solution was implemented on-time, on-budget, and on-specification.

CRASH provided the tools necessary to allow for the previously unattainable goals of “day current” processing of paper collision reports, access to the collision documents and data, electronic capture and submission of collision information, and a shared repository of information across user communities, agencies, and organizations.

The success of the CRASH solution within the KSP organization and across the state provided Kentucky with the opportunity to leverage investments in time, money, and resources to transition the CRASH solution into what is know today as KyOPS (Kentucky’s Open Portal Solution). KyOPS is a central repository and the bundle of tools necessary to capture, process, store, and distribute data and documents related to the numerous components of law enforcement and justice activities. Collision reports, case reports, citations, and firearms permits are current modules of the KyOPS solution that are available across the state. The flexibility and simplicity of the KyOPS open-architecture solution has allowed KSP to create, manage, and maintain these modules at a lower cost, in a shorter timeframe, and with a greater success rate than experienced with other projects both internally and externally.

The KyOPS solution has proven itself to be a robust, flexible, and extendable offering that has delivered an outstanding Return on Investment (ROI) in both dollars and services to KSP and the Commonwealth of Kentucky. The external validation of this solution was delivered in June of 2002 when the State of Indiana chose to implement a statewide collision reporting solution based on the Kentucky model. The solution was successfully implemented on-time, on-budget, and on-specification in January of 2003 and plans are in progress to extend the solution to other law enforcement and justice functions across the State of Indiana.

## Summary of KyOPS Electronic Transmission Modules and Web Site

The modules within KyOPS (Kentucky's Open Portal Solution) provide the processing and automation to address the data, document, and operational requirements related to a specific area of law enforcement and justice. Functionality provided within these modules provides the tools required by the users of KyOPS to perform their specific job functions efficiently and accurately. The program also includes a supervisor review process for all law-enforcement agencies to review all reports prior to final transmission to the central repository. Some examples of the tools provided include: Electronic Capture and automated processing, Statistical Analysis, and Web Portal. The current KyOPS modules and the tools provided include:

### **A. KyOPS Electronic Collision Reporting Component: E-CRASH**

- 1) **Electronic Submission:** The E-CRASH application is a connectionless electronic data capture application that allows officers the ability to create and submit collision reports. The E-CRASH application contains all of the CRASH Quality Control business edits (over 1,200) to ensure the accuracy of the collision report. The E-CRASH reports are automatically processed, stored, managed, and maintained in the CRASH Data and Document repositories. Commercial Motor Vehicle Carrier data is automatically imputed from a provided DOT number. The application also integrated handheld scanners for the extraction of drivers license data into the collision report.
- 2) **KyOPS Statistical Analysis:** The KyOPS application provides the user of the system the capability of using the collision data to decrease accidents and improve the safety of the roads in Kentucky. KyOPS users have the ability to review, analyze, and utilize the data through queries, formatted reports, extracts and maps to better manage the staffing and deployment of officers and to pass information to highway engineers to review the safety of our roadways.
- 3) **KyOPS Web Portal:** The KyOPS application provides a single web portal for access to all of the query, report, extract, statistical analysis, and mapping functionality. Examples of the benefits of the web portal to all law enforcement agencies include the following:
  - Elimination of the copying and filing requirements by utilizing the KyOPS Simple Query tool to provide instant access to collision documents to the public.
  - Internet-Access to real-time data to better manage resource allocation and to identify problem areas such as high-accident locations with causative factors.

### **B. Additional Programs Incorporated in the KyOPS Program**

- 1) **E-CITATION:** The E-Citation Application allows officers across the state a tool to create, print, and transmit citation reports from the vehicle in a very timely fashion to ensure the safety of the officer and the public. Linkages between the citation module and the Administrative Office of the Courts systems will automate the transfer and processing of citation data between organizations.
- 2) **E-CRIME:** The E-CRIME Application allows police officers to create, submit, and edit electronic Uniform Offense Reports for summary reporting to the FBI. The E-CRIME application contains all of the paper UOR Quality Control business edits to ensure the accuracy of the report.
- 3) **E-NIBRS (in development):** The E-NIBRS application will enable the migration by the Commonwealth of Kentucky to a NIBRS reporting state to the Federal Bureau of Investigation. The E-NIBRS application will contain the required edits as identified by the National Incident-Based Reporting standards. Implementation date Spring 2004

These flexible, reliable, and scalable “services” have provided the foundation for the rapid expansion of the applications offered through the KyOPS solution. Because these services are being re-used and re-configured rather than re-built, KSP has been (and will continue to be) able to effectively deliver their solutions efficiently and successfully to the KSP user community.

### **Accomplishments**

The KyOPS suite of products has provided numerous benefits to the Commonwealth of Kentucky and the Kentucky State Police. Some of these accomplishments include:

- Serves as the statewide repository for all collisions, cases, citations, and firearm permits that occur in the Commonwealth of Kentucky.
- The KyOPS/CRASH application is 100% compliant with ANSI D16: Manual on Classification of Motor Vehicle Traffic Accidents.
- The KyOPS/CRASH application is 100% compliant with all federal motor carrier requirements.
- The KyOPS/CRASH application adheres to over 90% of the MMUCC requirements.
- The collision, cases, citation, and permit applications within KyOPS contain thousands of business edits to ensure the accuracy of the submitted paper and electronic reports.
- Allowed KSP to eliminate backlogs and become day-current in the processing of paper reports submitted (collisions, case, citations, CCDW applications).
- Increased the percentages of electronically submitted collision reports (0% in 2000 versus 41.7% in the January of 2004).
- Integrated GPS Mapping of collision and case locations.
- Enabled City, County, and State Police Organization the ability to utilize and analyze the data to better manage their agencies.
- Provided access to statewide collision data to authorized Federal Highway Administration personnel.
- Provided access to statewide collision data to every Kentucky Transportation Cabinet Engineer and authorized users for the identification of causative factors, high-accident locations, and collision trends to improve the safety of Kentucky roads.
- Incorporated 2-D barcode scanner technology. This allows the police officer to scan the driver’s licenses. The data is auto-populated in the appropriate fields within the E-CRASH, E-CRIME, E-Citation and E-NIBRS applications. The Commonwealth of Kentucky is planning to 2-D barcode the vehicle registration forms. When implemented, the data from the vehicle registration forms will be auto-populated in the KyOPS applications.



**Referring to the National Agenda Goals, tell how your project relates to each one you listed in Part One of this application:**

- 1. Does it involve a leader(s) who promotes the importance of highway safety information systems, used for safety policy and program decision-making?**

The users of the data developed the entire KyOPS program. In addition to the larger users listed previously, there were over 35 agencies that participated in the design of the KyOPS application. The following are just a few who have been actively involved in the development of the KyOPS (Kentucky's Open Portal Solution) applications:

- Kentucky State Police Project Manager
- Commonwealth of Kentucky's Governor Highway Safety Representative
- The Kentucky representative for the Federal Highway Administration (FHA)
- The Kentucky representative from Federal Motor Carrier
- All participating law enforcement agencies across the Commonwealth of Kentucky

- 2. Does it involve the coordination of the collection, management, and use of highway safety information among various organizations responsible for highway transportation policy?**

The KSP CRASH system serves as the statewide repository of collision data and documents. KyOPS serves as the electronic input of collision, citation, and crime data. The system allows all authorized users total access to collision data, GIS Maps, copies of the submitted collision reports, data extracts for updates to RMS/Public Safety systems, and over 90 Standard Public Safety Management and Statistical Analysis reports.

- 3. Does it represent an example of integrating the planning of highway safety programs with highway safety information systems?**

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- 4. Does it represent an example where managers and users of highway safety information have utilized or were provided the necessary resources to select the appropriate technology to meet their information needs?**

The KSP systems allow for any authorized user to extract and use the data for their individual needs at no cost. Example of utilization of data include:

- GIS Maps (example: alcohol-related collisions, high-accident locations, etc.)
- Advanced query capabilities (ability to search on all data elements)
- Copies of collision reports
- Standard, formatted management and statistical analysis reports
- Extracts for updating any traffic safety system

5. Does it represent examples of highway safety professionals being trained in the analytic methods appropriate for evaluation of highway safety information?

KSP has been conducting training of the web site to access collision data for all users for problem identification and resource allocation.

6. Does it involve the promotion and use of technical standards for characteristics of highway safety information systems, critical to the development and management of highway transportation safety programs and policies?

The Commonwealth of Kentucky has standardized on one collision report and one set of data elements that are based upon ANSI Standard D16 Manual, CADRE (Critical Automated Data Reporting Elements), and the NGA (National Governor's Association) for the reporting of truck accidents. The Kentucky Collision System also utilizes over 90% of the MMUCC (Model Minimum Uniform Crash Criteria) reporting guidelines.

Referring to the management approach to highway safety, tell how your project supports the management steps you listed in Part One:

- Establish Safety Goals

The KSP established goals are as follows: (1) Decrease the total number of injury collisions (2) Increase the number of users of KyOPS, (3) Increase the number of users of the KyOPS Web Application.

- Identify Problems

The challenges associated with the 3 KSP Goals are as follows:

- Identifying problem areas in a timely manner: Quick identification of those areas is needed to facilitate a correction for public safety.
- Eliminate the fear of using the KyOPS electronic submission for the local law enforcement community and the fear of using the KyOPS Web Application to retrieve collision and reports.
- Educate and train local law enforcement on how to utilize KyOPS and to maximize the usefulness of the collision data that is retrieved from the KyOPS web application.

- Plan Programs/Countermeasures

KSP developed a plan to meet the three listed goals. This consisted of demonstrations at local conferences attended by law enforcement and safety professionals, a quarterly newsletter, and meetings with local agencies and safety professionals.

- Implement Programs

Major additions were added to KyOPS in 2003 that included automating commercial vehicle information from DOT numbers, scanning drivers licenses, the integration of the electronic citation, electronic crime reporting, and additions to the data-mining tool on the web site.

- Monitor Program Operations

KSP has continued to monitor the effectiveness of all implemented programs, which has showed a constant increase in use of the data, an increase in users, and a decrease in injury collisions. Constant modifications to all programs have been ongoing with each implementation.

- Evaluate Effectiveness.



The KSP Goals for 2003 were as follows:

- 1) Decrease the total number of injury collisions: KSP was able to reduce the number of injury collisions by more than 5% in 2003 versus 2002. (2003 injury collisions = 32,780, 2002 injury collisions = 34,510)
- 2) Increase the number of users of KyOPS: In January of 2003, 79 agencies were using KyOPS equaling 19.6% of the reports. In December of 2003, 151 agencies were using KyOPS equaling 31.6% of the reports.
- 3) Increase the number of users of the KyOPS Web Application: January 2003 less than 15 agencies were using the data-mining tool on the web site. December 2003 over 120 agencies were using the mining tool.

Describe the major process steps for your project, including any unique aspects that enhanced success:

The cooperation and impute of all highway safety professionals. The enhanced success is partly due to the feeling of ownership each agency has over the system. We have had no major complaints about the system in 3 years.

Provide the evidence and reasoning used to determine the success of the project:

Through the extensive use of the KyOPS application, Kentucky achieved the stated goal of decreasing injury collisions. As proof, Kentucky experienced a 5% decrease in injury collisions in 2003. (2003 injury collisions = 32,780, 2002 injury collisions = 34,510).

These improvements were made possible by (1) KSP successfully completed an aggressive training initiative to increase use of the KyOPS software and (2) better utilization of the data by local agencies. As proof of the increased focus and utilization of KyOPS, review the following:

- In January of 2004, more than 44% (4,590 out of 10,426) of the accepted collision reports were submitted electronically through KyOPS (E-CRASH component).
- In January of 2004, there were more than 45% (151 out of 333) of the agencies in Kentucky that submitted KyOPS electronic reports versus paper reports. (For a historical trend, please reference the table below.)

<u>Year</u>	<u>Paper</u>	<u>Electronic (KyOPS)</u>	<u>Total</u>	<u>Percentage of Electronic</u>
2000	157,628	1,282	158,910	0.8%
2001	139,965	14,828	154,793	9.6%
2002	123,316	30,062	153,378	19.6%
2003	103,268	47,610	150,878	31.6%
2004 (Through 1/31)	5,836	4,590	10,426	44.0%

Why should this project be recognized as a best practice in traffic records?

Prior to the implementation of the KyOPS application, the Kentucky State Police faced many challenges associated with the collection and management of collision data and documents. Kentucky has been able to resolve and overcome these issues with the development and implementation of the KyOPS application. KyOPS is a total statewide collision reporting system that collects and manages information from every traffic collision that occurs within the state of Kentucky. KyOPS electronic reports can be processed and accessible through the KyOPS Web

**Application within one hour of the collision. Some of the benefits to the authorized users of KyOPS include the following:**

- **Have access to the data 24 hours a day and 7 days per week.**
- **Download the data to populate other highway safety and public safety systems.**
- **Utilize the data on a real-time basis to make better decisions on highway safety issues.**
- **Access the data free of charge through the Kentucky State Police Web Page.**
- **Provides every law-enforcement agency with standard data elements and transmission methods. This eliminates problems with data conversions and data quality. Kentucky has obtained great success with increasing the data quality from this program.**

**Additionally, agencies using KyOPS have eliminated almost every error associated with the submission of collision reports due to the over 1200 edits built into the program. The advantage of the edits at the officer level is that you are less likely to submit incorrect data. The KyOPS program has allowed officers to transmit collision reports and have them in the system within one hour of the collision. Additional benefits of KyOPS include:**

- **This increases the ability of public safety officers to identify and target problem areas with causative factors.**
- **KyOPS users no longer have to be reactive due to the lack of timeliness of collision data.**
- **Officers can be proactive with enforcement actions.**
- **Engineering issues can be identified and resolved quicker.**

**We know of no other state that can produce accurate statewide data as quickly as Kentucky. The key to increasing the ability of highway safety officials to decrease collision injuries to the general public is to identify and resolve safety issues quickly. KyOPS has proven it can do this job.**