

**North Carolina  
Government Data Analytics Center  
Program**

**February 2014**

**North Carolina  
Office of the State Controller**

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## **Executive Summary**

Since 2007, North Carolina state government's data integration and business intelligence efforts have been led and managed by the Office of the State Controller (OSC). During this time, the program has developed, implemented and maintained a variety of program efforts ranging from early support of agency projects, to the development and statewide deployment of an integrated criminal justice system, to current efforts with fraud, waste and compliance analytics as well as general program reporting and analytics.

Session Law 2012-142, HB 950, expanded the State's current data integration and business intelligence initiatives by creating the OSC Government Business Intelligence Competency Center (GBICC) to manage the State's enterprise data integration and business analytics efforts. Session Law 2013-360, SB 402, amended Article 9 of Chapter 143B and codified the data integration and business intelligence, changed the name of the program to the Government Data Analytics Center (GDAC), and authorized recurring administrative appropriations. Session Law 2013-360, SB 402, also directed the transfer of the GDAC program to the Office of the State Chief Information Officer (SCIO) effective July 1, 2014. OSC and the GDAC program staff worked collaboratively with the SCIO to support the development of a transition plan for the transfer.

The GDAC manages enterprise program activities as well as the development and support of analytics projects and systems including the North Carolina Financial Accountability and Compliance Technology System (NC FACTS) fraud, waste and improper payment detection project, the Criminal Justice Law Enforcement Automated Data Services (CJLEADS) criminal justice data integration system, and state reporting and analytics efforts. Consistent with OSC's past data integration efforts which have been "scoped to success," the GDAC has had a targeted focus and has been incrementally expanding the scope of applications as expertise and capacity grows. As the GDAC enterprise efforts have matured, the program has learned that analytic efforts cross specific project areas. As a result, the GDAC is in the process of reorganizing its staff and operations to better support enterprise efforts. The GDAC will consist of three program areas:

- GDAC Program Management and Business Services,
- CJLEADS Operations and GDAC Technical Environment, and
- GDAC Solution Development.

The major accomplishments for the last quarter include:

### **GDAC Solutions – Fraud and Compliance Alerts (NC FACTS)**

The enterprise NC FACTS application is comprised of a variety of fraud and compliance solutions designed to meet the individual business needs of each agency partner. GDAC, vendor and agency partner resources have been aligned to support multiple parallel workstreams to allow individual solution development at different stages of the systems development life cycle.

As the NC FACTS fraud and compliance foundation continues to mature, the program provides the ability to develop incremental solutions in a timely and efficient manner.

NC FACTS is currently working with the following agency partners:

- Department of Commerce – Division of Employment Security (DES) - unemployment insurance (UI) fraud and overpayment analysis,
- Secretary of State - corporation network analysis,
- NC Industrial Commission - workers’ compensation (WC) insurance compliance, and
- Department of State Treasurer – State Health Plan of NC – medical and pharmacy analysis.

The chart below provides status for the current GDAC solutions:

<u>NC FACTS Solution</u>	<u>Current Status</u>	<u>Target Release Date</u>
UI Wage/Tax Analysis and Alerts	Release Deployed	December 2013
UI Claims and Benefit Analysis and Alerts	Quality Assurance Testing	March 2014
Corporation Network Link Analysis	User Acceptance Testing	February 2014
WC Insurance Compliance Alerts	Finalizing Build	April 2014
Health and Pharmacy Claims Analysis	Execution and Build	Q2 2014 (Pilot)

**GDAC Solutions – Reporting and Analytics**

- Implemented NC SAS Enterprise Authentication Tool (NCSEAT) in production – the NC SEAT tool is integrated with NCID, the State’s standard identity management tool and allows for authentication and authorization of users to GDAC solutions
- Deploying Procurement card reporting and analytics to pilot agencies – February 2014
- Operationalizing State Health Plan Analytics Repository in the GDAC production environment - Q1 2014

**GDAC Program Management and Business Services**

- On-boarded and trained DES users for both NC SEAT and NC FACTS
- Delivered NC SEAT and NC FACTS User Guides
- Continued to support CJLEADS business services including training, user administration, help desk support and auditing

**CJLEADS Operations and GDAC Technical Environment**

- Continued CJLEADS 24x7 Operations
- Provided jail data extract to the North Carolina Sentencing and Policy Advisory Commission to support the Commission’s recidivism and Justice Reinvestment Act analysis
- Deployed CJLEADS Release 10

- Deployed the Pistol Purchase Permit Revocation reporting process with the NC Sheriffs' Association and the Sheriffs' Office to support new legislation related to review and revocation of pistol permits for individuals with disqualifying offenses
- Began support of NC SEAT

This report provides a detailed status on the GDAC activities as well as challenges, financials, and future efforts.

## **I. GDAC Background**

The Office of the State Controller has led and managed the North Carolina data integration and business intelligence initiative since its inception in 2007. Following the Building Enterprise Access for NC's Core Operation Needs (BEACON) Strategic Plan for Statewide Data Integration, the program has provided education on the value and capabilities of an enterprise analytics program, established governance and security policy and procedures, developed enterprise solutions including CJLEADS and NC FACTS, and provided business operations for the enterprise initiatives.

Session Law 2012-142, HB 950, expanded the State's existing data integration and business intelligence initiatives by creating the OSC Government Business Intelligence Competency Center (GBICC) to manage the State's enterprise data integration and business analytics efforts. Session Law 2013-360, SB 402, amended Article 9 of Chapter 143B, codified the data integration and business intelligence, changed the name of the program to the Government Data Analytics Center (GDAC), and provided recurring operational funding. The GDAC manages enterprise program activities as well as the development and support of analytics projects and systems including the North Carolina Financial Accountability and Compliance Technology System (NC FACTS) fraud, waste and improper payment detection project, the Criminal Justice Law Enforcement Automated Data Services (CJLEADS) criminal justice data integration system, and state reporting and analytics efforts.

Session Law 2013-360, SB 402, also directed the transfer of the GDAC program to the Office of the State Chief Information Officer (SCIO) effective July 1, 2014. OSC and the GDAC program staff have worked collaboratively with the SCIO to support the development of a transition plan for the program.

The vision for the GDAC is to transform existing data assets into an information utility for the State's policy and operational leaders for their use in making program investment decisions, managing resources, and improving financial programs, budgets, and results. Governance, enterprise support and standardization become key areas of focus in establishing an enterprise approach to data sharing and analytics. While technology plays a key role in effective data analytics, the success of an enterprise initiative depends upon State stakeholders who are engaged and who recognize that the return on investment can be dollars saved, future cost avoidances, or that outcomes achieved through operational efficiencies or enhanced compliance. Strong communications and the ability to manage change and make the initiative relevant to the stakeholders require significant effort to ensure the advantages of the program make clear "what's in it for them" to the agencies and end users.

For more information about program and data governance, security, and the solution development approach, please see the Government Data Analytics Center Program report dated October 2013 located at:

[http://www.osc.nc.gov/GDAC/GDAC\\_Legis\\_Report\\_Oct\\_2013.pdf](http://www.osc.nc.gov/GDAC/GDAC_Legis_Report_Oct_2013.pdf)).

## **II. GDAC Solutions Development**

### **A. GDAC Fraud and Compliance Alerts (NC FACTS)**

The fraud and compliance alert capability for the GDAC is incorporated into the NC FACTS solution. The alert analysis, generation, research and disposition works similarly for all fraud, waste, improper payment and compliance efforts. Analysis begins with the iterative process to match and evaluate data, generate “quick hits,” refine the analytics, and provide resulting alerts for review and investigation by the business organization.

The alert process is incorporated into a web-based user interface that allows users to view alerts, “drill in” and research background information related to those alerts, disposition alerts by assigning to appropriate investigators, perform case management, and finally close out the alert with a resolution of the investigation.

The alert generation process incorporates criteria defined by the business organizations to help prioritize alerts that represent higher risk, greater financial exposure, or perhaps repeat activity. This prioritization allows organizations to most effectively direct their limited resources to focus on the most egregious alerts. The user interface increases staff efficiency by providing access to critical data related to an alert through a single system, minimizing research and investigative legwork.

### **GDAC Solutions – Fraud and Compliance Alerts (NC FACTS)**

Dedicated GDAC resources currently support multiple fraud and compliance solutions at various stages of the systems development life cycle. With State and vendor resources matrixed across the various solutions being developed, the GDAC is able to maintain multiple concurrent development work streams. Each solution builds upon the foundation, data and lessons learned from the previous solutions.

The GDAC fraud and compliance solution status is provided below:

### **Department of Commerce – Division of Employment Security (DES)**

#### **Unemployment Insurance Wage and Tax Analysis - Complete**

UI wage and tax analysis focuses primarily on two areas of potential fraud.

- Fictitious business alerts analyze situations where non-existent businesses are established and false wage reports are submitted for the sole purposes of fraudulently collecting UI benefits. The goal of the fictitious business analysis is to use data to more quickly identify and alert on suspect businesses allowing DES to stop benefit payments as soon as possible.
- Undocumented succession alerts analyze situations where it appears a business owner who has a high rate of UI tax establishes a new business with a lower tax rate and moves its existing employees to that new business to avoid paying UI



taxes. Analysis of the data can more quickly identify the movement of employees and alert on the suspect businesses.

- NC FACTS has delivered 425 preliminary alerts to the DES tax compliance unit. DES investigated a number of these employer-related alerts and has indicated that the first 12 alerts reviewed proved to be actionable cases with a potential impact of approximately one and a half million dollars.

Major accomplishments this quarter included:

- Implemented UI Wage and Tax Analysis solution in December 2013,
- Delivered 2,626 alerts for investigation, and  
**Note:** An alert only identifies the data that indicates suspect fictitious business or tax avoidance activity. DES will investigate and take action on alerts as appropriate.
- Initiated planning and design sessions to begin Release 2.0 unemployment wage and tax analysis. Release 2.0 will refine the analytic models and user interface as needed.

#### Unemployment Insurance Claims and Benefit Analysis - Quality Assurance Testing

UI claims and benefit analysis focuses primarily on potential fraud where individuals who are not eligible to receive UI appear to be receiving benefits. Claims and benefits analysis focuses on:

- Payments made to deceased individuals,
- Payments made to incarcerated individuals, and
- Payments made to individuals who appear to be drawing wages during the same time period.

Major accomplishments this quarter:

- Finalized design and development of claims and benefits alerts,
- Finalized Quality Assurance test cases,
- Finalized User Acceptance Test (UAT) cases, and
- Initiated planning for production release and user on-boarding.

UI Claims and Benefits Analysis is targeted for implementation in March 2014.

#### **Secretary of State**

##### Corporate Network Link Analysis – User Acceptance Testing

Corporate network link analysis provides relationship analysis of businesses registered with the State of North Carolina in a graphical format. The network link analysis supports research for corporate identity theft and other fraud solution investigations.

Major accomplishments this quarter:

- Completed analytic design and development,
- Completed Quality Assurance testing, and
- Conducting User Acceptance testing.

Corporate Network Link Analysis is targeted for implementation in February 2014.

### **North Carolina Industrial Commission**

#### **Workers' Compensation Insurance Compliance - Finalizing Build**

Workers' compensation insurance compliance analysis identifies businesses operating in the State that are subject to workers' compensation insurance rules but fail to carry the required insurance coverage. Using business information and insurance coverage data, these analytics identify companies suspected of having no coverage, gaps in coverage, or cancellations and non-renewals of coverage.

Major accomplishments this quarter:

- Finalized analytics for compliance alerts,
- Identified additional data sources required to refine compliance analytics, and
- Completed Quality Assurance (QA) testing for initial release.

Workers' Compensation Analysis is targeted for implementation in March 2014.

### **Department of the State Treasurer – State Health Plan of North Carolina (SHPNC)**

#### **Health Plan Analysis – Execution and Build**

Health plan analysis evaluates provider, member, and claims data to identify potential unusual activity in health care and pharmacy claims. Using peer group analysis to find entities that should exhibit common behavior, the alerts highlight activity that falls outside the expected patterns.

Major accomplishments this quarter:

- Integrated the health plan data into SAS Fraud Framework (SFF) standard health care analytic models,
- Completed exploratory data analysis began developing “quick hit” analysis,
- Developed standard health care alerts,
- Reviewed standard member related alert scenarios with SHPNC to identify scenarios of interest,
- Verified that claims have not been paid to deceased individuals, and
- Verified that health claims associated with incarceration periods are in accordance with business rules.

Health Plan Analysis is targeted for implementation in Q2 2014.

## **B. GDAC Reporting and Analytics**

The reporting and analytics capability for the GDAC will share the same technical environment as the NC FACTS fraud and compliance alerting solutions. This common technical infrastructure and data repository provide access to all integrated data to support

agency program analytics, metrics, predictive analysis and executive dashboards. The GDAC reporting and analytics will provide access to a variety of tools that allow the user to run standard, system-generated reports, create ad hoc reports, and view data in tabular as well as visual representations.

### Procurement Card Reporting

Procurement Card (Pcard) Reporting will provide agencies and the Department of Administration with more timely and efficient oversight of agency purchases using Pcards.

Major accomplishments this quarter:

- Completed analytic design and development,
- Initiated Quality Assurance testing, and
- Initiated User Acceptance Testing.

Procurement Card Reporting is targeted for deployment to pilot agencies in February 2014.

### State Health Plan Analytics Repository

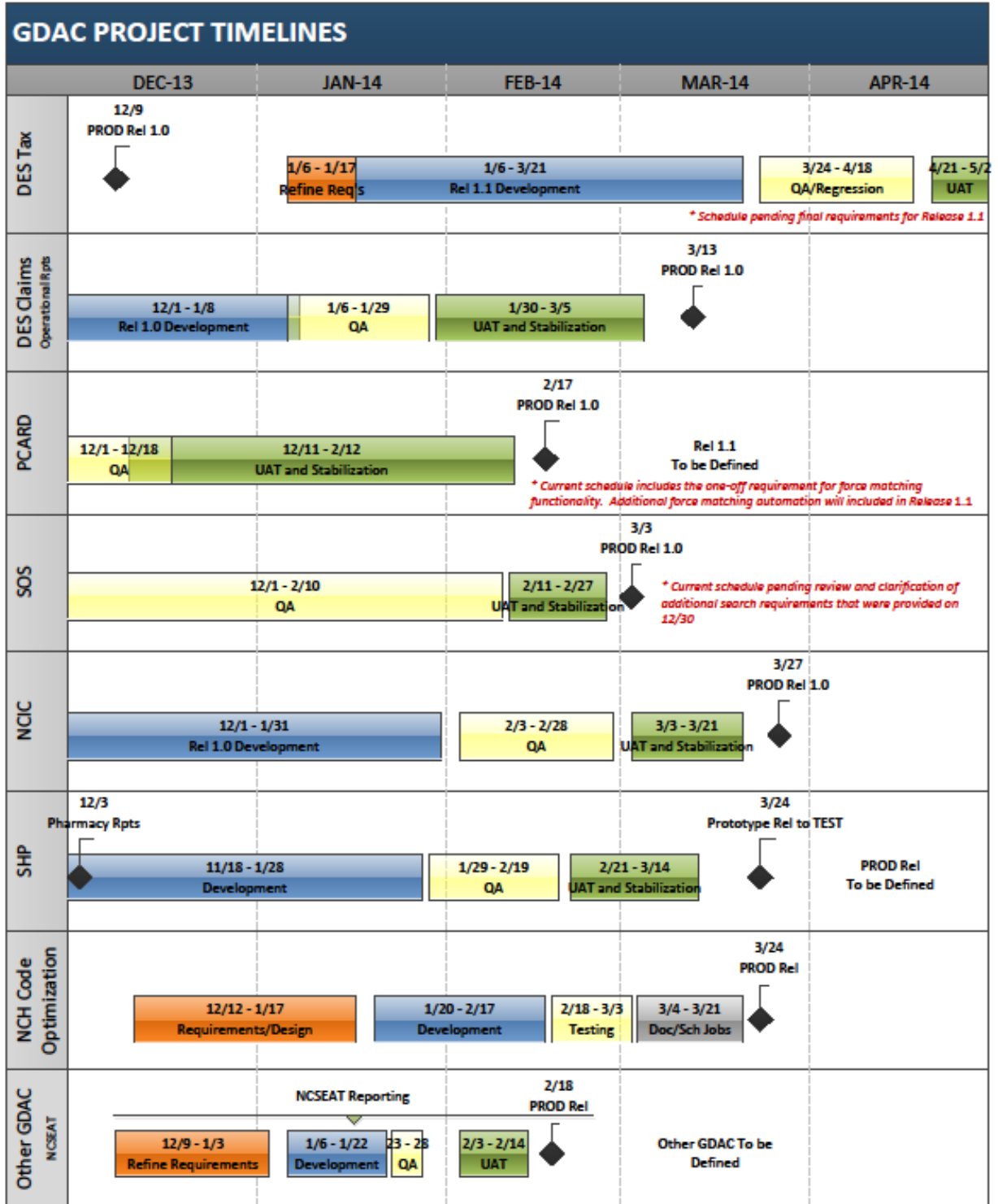
The State Health Plan Analytics Repository was migrated to the GDAC environment to provide SHPNC a more reliable and better performing analytics environment.

Major accomplishments this quarter:

- Developed a workplan to streamline the extract, transform, and load (ETL) process to meet GDAC standards

An early estimate of the cost to build a new stand-alone, vendor-hosted SHPNC data analytics repository was \$3 million. Even upgrades to the technical infrastructure and servers at DST to meet performance requirements would have been a significant cost to DST and SHPNC. As a result, incorporation into the GDAC was a logical, cost-effective solution.

A timeline for the deployment of these GDAC solutions is provided below:



### **III. GDAC Program Management and Business Services**

GDAC Program Management and Business Services supports the governance, policies and procedures associated with all GDAC solutions, including management of all data-sharing agreements, training, documentation, user administration, help desk support and auditing of data access and use. Leveraging the experience, best practices, and lessons learned from the implementation and statewide deployment of CJLEADS, the CJLEADS Business Operations staff has assumed support services for all GDAC solutions.

Business services include:

- GDAC program policy and procedure management - developing, maintaining and ensuring compliance with standards and best practices in accordance with the GDAC enterprise approach,
- GDAC End User Administration – developing policies and support processes for NCID user authentication as well as oversight of delegated user administrators and GDAC solution end users,
- GDAC Training – developing training documentation including user guides, job aids, class materials and well as administering training registration systems for end users and user administrators,
- GDAC Help Desk and End User Support – providing end user support for system access and issue resolution,
- GDAC Business Process Support – providing partner agencies with assistance in implementing and documenting new processes to leverage GDAC analytic tools, and
- GDAC Auditing – managing regular and recurring audit procedures to ensure appropriate and authorized use of all GDAC solutions in accordance with GDAC governance policies.

Major accomplishments this quarter:

- Developed NCSEAT and NC FACTS training programs,
- Developed NCSEAT and NC FACTS User Guides and associated documentation about application tool features and functionality,
- Implemented agency end user on-boarding processes to support the GDAC solutions,
- On-boarded DES NCSEAT and NC FACTS application users,
- Developed a production support operations manual for GDAC,
- Developed NCSEAT reporting specifications, and
- Supported CJLEADS end user and user administration training and annual audit activities
  - Over 27,300 end users have been trained in more than 2,315 CJLEADS classes,
  - 82 certified “Train-the-Trainers” have conducted 820 classes for their organizations,

- On average, over 100 user inquiries are managed weekly by CJLEADS help desk support on a 24x7x365 basis, and
- Annual audits for over 450 criminal justice organizations.

### **Enterprise Data Registry**

The enterprise GDAC program provides a central repository to store, manage and analyze a broad array of information. This repository reduces duplicative data integration design and development work, data storage and repetitive maintenance and support. Information incorporated into the repository for one purpose can be leveraged to support a variety of analytics. The enterprise repository provides a shared environment with common security, user access, improved usability and consistent look and feel, and shared business services including training, help desk support and user administration.

In conjunction with the Enterprise Reporting Repository, the GDAC has initiated the development of a data registry framework. Data inventory, standards, and management are critical to the ability to provide quick, agile, and consistent data content to meet the State's business needs. Research on industry standards and approaches to the concepts of data inventory, master data management, and data standardization is ongoing. The framework under consideration will capture information data sources including data dictionaries, update frequencies, data quality issues, and costs, if the data is purchased from an external source. Centrally managed, this registry will ensure that data integrated into the GDAC analytics repository provides reliable, timely information in clearly defined formats enabling stakeholders to analyze and interpret the data with common understanding. The registry may help the State identify data quality and standards issues where statutory and policy changes may be needed.

The following data sources are currently integrated into the GDAC repository:



## GDAC– Integrated Data Sources

NCAS	BEACON	Division of Employment Security
Purchasing Card Transactions	Employee and Position Data	Benefits Payment Information
Payment Data	Employee Earnings Information	Case Management Data
Vendor Information		Employer Tax Information
CJLEADS	State Employees Health Plan	Division of Motor Vehicles
DPS - Prison	Medical Claims Detail	Driver's License Data
DPS - Probation	Pharmacy Claims Data	Vehicle Registration Data
DPS – Local Jail	Provider and Member Information	
AOC - Criminal Court Records	Secretary of State	Industrial Commission
DOJ - Concealed Handgun Data	Corporation Information	Workers Compensation Insurance
DOJ - Sex Offender Registry	UCC Information	
Wildlife – Web Service	DHHS - Center for Health Statistics	Other – External Sources
	Vital records – Deceased Information	Bank of America P-Card Data
		Social Security Death Master File
Future Data Sources		
Retirement Information		
Unclaimed Property		
Education		
DHHS		

## **IV. CJLEADS Operations and GDAC Technical Environment**

### **A. CJLEADS**

Since 2008, the Criminal Justice Law Enforcement Automated Data Services (CJLEADS) application has served the criminal justice community, saving time, money, and lives.

Consistent with the General Assembly's intent to serve criminal justice professionals and improve the safety of North Carolina's citizens, CJLEADS has two primary objectives:

1. To provide a comprehensive view of an offender through a single application, allowing for positive identification of an offender through a photographic image.
2. To provide an "offender watch" capability to alert criminal justice professionals when an offender has a change in status.

CJLEADS is used statewide by over 27,300 criminal justice users including judges, prosecutors, clerks of court, magistrates, prison officials, probation and parole officers and law enforcement at the State, federal and local levels. The CJLEADS team maintains regular communications with end users and deploys two to four application releases each year to ensure the application is continuously improved to meet the needs of the criminal justice community.

#### **Statewide Operations Statistics**

CJLEADS is used statewide by over 27,300 criminal justice professionals. 543 federal, state, and local law enforcement organizations with operational presence in North Carolina are licensed to use CJLEADS.

In the last 12 months, criminal justice professionals have run 15 million searches and accessed nearly 12.8 million offender and DMV records. Over 10,500 users access CJLEADS each week.

#### **Major Accomplishments**

- North Carolina Sentencing and Policy Advisory Commission – implemented a one-time jail custody data extract to support the North Carolina Sentencing and Policy Advisory Commission recidivism and Justice Reinvestment Act analysis.
- Pistol Purchase Permit Revocation Alerts – implemented, at the request of the North Carolina Sheriff's Association, a pistol permit revocations process to meet the requirements of Session Law 2013-369, HB 937. The revocation process compares permit data to CJLEADS information and provides the Sheriffs' offices with system



generated alerts for review, investigation and possible revocation. The revocation process is now available to all Sheriffs' offices statewide.

- Release 10 – deployed January 2014 including the following functionality:
  - Division of Community Corrections (DCC) Watch List – Generates probation watch lists and alerts for DCC officers who are responsible for supervising/monitoring active probationers, active absconders and expired absconders. Improves information and efficiency in locating and supervising offenders on probation or parole.
  - Group Watch List Member Notification – Provides the ability for a CJLEADS group watch list member to send a notification to other group watch list members, improving timely and efficient communications.
  - Pretrial Report – Automates the current manual process of aggregating information in preparation for a court case. Requested by Pretrial Services to improve efficiency in preparing for court.
  - Criminal Cases Report – Generates a chronological criminal history for offenders who have court cases within a specified date range. Requested by the Chief U.S. Probation Office to effectively monitor offenders on federal probation.
  - Pending Offenses Report – Generates a list of offenders who have pending charges and upcoming court dates for a selected offense category. Offense categories include Breaking and Entering, Larceny/Theft, Drug Offenses, Assault and Battery, Kidnapping, Gang, and Manslaughter, etc. This report will support more efficient investigations, court docket management and sentencing decisions.
  - Implied Consent Report – Generates a report based upon pending and disposed implied consent offenses. Requested by Conference of District Attorneys to allow prosecutor's offices to more efficiently calendar and resolve implied consent offenses.
  - Wildlife Hot Keys – Enables wildlife officers to quickly enter wildlife license and vessel numbers via hot keys, much like the existing functionality for DMV licenses and plates.
  - Link to DMV Crash Weblink – Provides a link for law enforcement to quickly access the DMV site during investigations

### Future Functionality

The following CJLEADS activities have been identified to enhance existing functionality and to support statutory requirements. The ability to develop and deploy these enhancements will be limited without CJLEADS budget expansion to \$7.6 million.

- Division of Mental Health Support – the Department of Health and Human Services, Division of Mental Health requested CJLEADS assistance in helping Local Management Entities (LME) identify individuals in their case management load who have been arrested and booked into custody in county jail facilities. Currently LMEs manually contact nearby jail facilities daily to determine if they need to provide support to an incarcerated individual. The jail data extract will be implemented by CJLEADS to provide basic information to allow the LMEs to

more easily review booking information for all jails statewide, reducing the administrative time in the Sheriff's offices.

- Federal Interface – Division of Criminal Information (DCI) - Both the courts and law enforcement have repeatedly requested access to a federal interface to allow users access to federal and other states' information via CJLEADS. CJLEADS submitted a request to the FBI for an Originating Identifier (ORI), but was denied. CJLEADS has been working with the State Bureau of Investigation, North Carolina's CJIS Security Agency to evaluate an alternative management approach to enable access to key federal data, especially Hot File status (a flag to indicate whether or not there is or is not information about wanted persons, stolen vehicles and stolen weapons on file with the DCIN) for North Carolina law enforcement officers. While considerable time and resource has been spent on this effort, to date no significant progress has been made toward establishing an approach for gaining access to federal information.
- Pistol Purchase Permit Revocation Reporting Automation – The current Pistol Purchase Permit Revocation Report process was implemented quickly to meet the legislative deadline of January 31, 2014. Efforts will now focus on automating the data handling process. This automation will improve efficiency and provide additional alerting capabilities to the Sheriffs' offices.
- DMV Enhancements
  - a. Vehicle Towing & Storage – Law enforcement has requested access the DMV information currently on file for towed vehicles. This access would help eliminate vehicles from being listed as stolen when the vehicle was actually towed instead.
  - b. Restriction Code Descriptions – Currently restriction codes are available to CJLEADS users, but without description. Since there are more than 20 restriction codes, law enforcement has requested the descriptions be included with the codes
- AOC Infractions – Law enforcement has requested access to infractions data in CJLEADS as another source of information to support the offender search capability.
- Web links
  - a. USDOT Emergency Response Guidebook (HAZMAT) – Provide a link to the guide book which contains critical information needed by first responders.
  - b. GangNet – Provide a link to the GangNet web-based application for quick access during investigations.
- Reports
  - a. Class 3 Misdemeanant Eligibility for Appointed Counsel – Generate a report for offenders with Class 3 misdemeanors based on defined report criteria. Requested by Judicial District 10 based on new legislation associated with payment for appointed counsel for Class 3 misdemeanants.
  - b. Pending DWI Report updates – Modify the Pending DWI report to allow the ability to run a consolidated report for several counties of interest.

## **B. GDAC Technical Environment**

The GDAC technical environment is a series of hosted environments at the SAS data center facilities. Unlike CJLEADS which requires 24x7 highly available operations, the GDAC technical environment is designed to support normal business hours of operations.

The GDAC hosted solution consists of three separate technical environments. The development environment is used by SAS to conduct initial data integration, code development and testing, and preliminary data analysis. When development activities are complete, data and analytics logic and models are promoted to the test environment. The test environment is used by the SAS team to perform Quality Assurance testing to ensure that the functional components of the application meet business requirements and specifications. The State project team and partner agencies use the test environment to perform User Acceptance testing to validate the functionality of the system as well as the analytic outputs. When all data and functionality is thoroughly tested and approved, the data and analytics logic is promoted to the production environment where it is released to the end user community. Similar to CJLEADS, penetration testing is completed for all major GDAC solution deployments to ensure that new data and functionality do not introduce any vulnerability to the system.

With all GDAC analytic solutions, SAS provides secure access to a terminal server to support data analysis and verification activities. In accordance with GDAC governance, GDAC project team members strive to protect the security and integrity of all confidential information in the GDAC repository. The terminal server provides a mechanism where SAS and State project team members can share and review confidential information via secure access to this protected server. This eliminates any need to transmit sensitive information via email or other non-secure mechanisms.

In addition to the development, test and production environments, SAS has implemented the NC SAS Enterprise Authentication Tool (NC SEAT). NC SEAT is an enterprise user authentication and authorization tool that has been developed to support all State solutions hosted at SAS. NC SEAT integrates with the State's standard identity management technology, NCID. The integration with NCID, allows the GDAC to ensure that users attempting to gain access to GDAC solutions using authorized NCID accounts that adhere to State security policies. NC SEAT also provides the ability to manage key solution authorizations including role-based security and user attributes.

## **V. GDAC Challenges and Opportunities**

While the CJLEADS and NC FACTS programs have been underway for some time, the GDAC is still in the early stages of policy and program development. Institutionalizing an enterprise program like the GDAC inherently comes with new challenges and new opportunities. Some of challenges and opportunities are discussed below.

### **A. Agency Commitment/Resource Limitations**

The GDAC alerts, reporting and analytics solutions, offers state agencies new and advanced tools that add value to compliance, fraud, waste and overpayment identification efforts as well as program management analysis. Agencies have begun to see the value in the program's mission and have expressed interest in participating in this enterprise initiative. Currently there are several significant project initiatives that have been proposed from Department of Justice Medicaid Investigation Division, the North Carolina Sentencing and Policy Advisory Commission, and the Department of State Treasurer.

To successfully implement new analytic solutions, subject matter expertise is needed from the partner agency to assist with understanding and evaluating the data, developing data extracts, providing business knowledge, defining the business needs, and reviewing and validating the analytic results. While the agencies recognize there are potential efficiencies and information to be gained from these analytic efforts, agency resource limitations continue to impact the commitment to engage in GDAC program activities.

To address this issue, the GDAC team has provided business process re-engineering support, as needed, to assist client agencies in identifying new process and procedure efficiencies. To minimize the impact on technical resources within agencies, the GDAC program team has also encouraged the use of existing data extracts when possible. While existing extract content may not be as comprehensive as that of a newly developed extract, the existing extract may provide sufficient data to begin analysis and can be adapted as additional data needs are identified.

GDAC will continue to identify specific business and technical resources needs and possible mitigation strategies to present for legislative consideration in the future.

## **B. Data Sharing**

As noted in previous quarterly reports, the data needed for effective enterprise analysis includes highly sensitive and secure information. The GDAC governance approach, based on our citizens' expectation of privacy, is focused not only on leveraging enterprise data for analysis but protecting that information to the highest extent possible for access only by authorized users of the GDAC system.

The ability to protect Personal Identifying Information (PII), adhere to security and compliance requirements for the Health Information Portability and Accountability Act (HIPAA), and meet the constraints associated with other state and federal laws and regulations associated with tax information, educational, and employment data, is critical to sharing information across the enterprise. The GDAC has worked closely with agencies, our vendor, and legal counsel to develop the required policies, procedures, contractual agreements, and memorandums of understanding or agreements to define the parameters associated with data sharing within this initiative. Stringent application security, including physical security, user authentication, role-based security, and data encryption among others, are key components in the implementation of the enterprise fraud detection system.

New statutory language gives broader authority for data sharing to GDAC. While some agencies are limited in sharing data due to statutory, regulatory or legal regulations, GDAC will continue to work closely with client agencies to develop data sharing agreements and governance that allow legally permissible data sharing in a controlled and managed manner.

## **C. Program Funding/Measurement of Benefits Realized**

The GDAC program's enabling legislation was codified by the legislature during this past legislative session and established recurring funding for the administration of the program. The legislation promotes the use of analytics to support a broader vision of a State culture focused on fiscal responsibility and accountability at all levels of State government. Funding for the analytic tools, vendor hosted technical environment and analytic services, however, continue to be authorized as non-recurring funds. Also noteworthy, in FY 2014-2015, \$5M dollars of the program cost is to be funded from anticipated dollar savings resulting from analytic output.

North Carolina State Government serves its citizens and is responsible for ensuring that taxpayer dollars are used in a fiscally appropriate manner. Statutory compliance, enhanced business analytics, and the ability to identify fraud, waste, and improper payments begins with fostering a culture within State government focused on accountability and transparency. While the GDAC anticipates the ability to report significant return on investment for dollars spent, the potential

recovered overpayment, cost avoidance, improved process efficiencies, and better informed business decisions may not result in sufficient funds available to cover program costs.

By federal or by State law, recovered dollars may be obligated to specified programs and cannot be returned to the General Fund for program expenses. Additional savings from prevention of fraudulent or improper payments before they are made are of significant value to the State, but again do not represent funds returned to the General Fund. While future dollars savings may result from statutory changes in the future, funding for the analytic tools, technical environment and analytic services will be required in FY 2014-2015.

Return on investment will be based on a combination of fraudulent payments identified and recovered, improper payment prevention through better controls and deterrence, cost avoidance and internal operating improvements, as in the case of the State Health Plan (mentioned earlier in this report). The GDAC program offers other key benefits including an enterprise repository of data that will continue to grow and mature for better business decisions, and key documentation about data quality and standards issues.

As solutions are deployed and incorporated by agencies into their business processes, future GDAC reports will provide specific cost-benefit information on each solution, as well as the other operational impacts of the GDAC efforts.

## **VI. GDAC Budgets**

CJLEADS annual operating expenses are approximately \$7.6 million dollars. This annual expenditure provides:

- Highly available, dual datacenter architecture to ensure reliable 24x7 access to the CJLEADS systems as well as hosting and technical support resources,
- Oracle database technology to ensure optimal performance in data loads, offender searches and reporting,
- Unlimited software licensing for all criminal justice professionals operating in North Carolina,
- Business operations including training, 24x7 Help Desk, user administration, and annual auditing, and
- Technical and business resources to support on-going maintenance as well as two to three releases annually to provide functional and data enhancements to the needs of the criminal justice community and to implement changes related to legislative mandates.

Recurring funding for CJLEADS annual operating expenses has been reduced to \$6,544,068. To manage the operating expenses of CJLEADS, the program has used

funds remaining in the original program budget or the General Assembly has appropriated one-time funds to support specific upgrades. With limited remaining one-time funds, the FY 2013-2015 budget of \$6.6 million, with no expansion, will allow the continued operations and essential maintenance CJLEADS but will impact the ability to provide future data and functionality enhancements.

The following chart details this year's CJLEADS funding and expenditures:

As of December 31, 2013	<b>FY 2013-2014 Budget</b>	<b>Actuals</b>	<b>Available Balance</b>
<b><u>CJLEADS Funding</u></b>			
Recurring Funding	\$6,544,068		
Carry-Over From Prior Year	\$778,373		
Anticipated Withdrawal from On-Time Monies Held	\$275,000		
	<u>\$7,597,441</u>		
<b><u>CJLEADS Expenditures</u></b>			
Total Program: FY 2013 - 2014			
State Project Team Expenditures	\$1,595,297	\$762,071	
Hosting Contract Services	1,400,000	900,000	
Development/Support Contract Services	2,600,000	2,450,000	
SAS ELA Renewal	2,000,000		
	<u>2,000,000</u>		
<b>CJLEADS Total</b>	<b><u>\$ 7,595,297</u></b>	<b><u>\$ 4,112,071</u></b>	<b><u>\$ 3,483,226</u></b>

CJLEADS return on investment analysis is provided on the next page.

ROI Source	Actual							FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
	Total Active Users (as of June 2013)	Actual Number of Records Accessed (FY 12-13)	Annual Records Accessed (Estimated Usage Based on 3% Growth)	Research Time Saved per Record Accessed (minutes)	Hours Saved (FY 12-13)	Annual Hours Saved (Projected Years)	Hourly Rate								
<b>Improved Efficiency and Automation</b>															
<b>Judicial Staff</b>															
Judicial	227	17,273	17,791	10	2,879	2,965	\$30			\$ 15,840	\$ 32,920	\$ 86,365	\$ 88,956	\$ 88,956	\$ 88,956
Clerks	855	44,012	45,332	10	7,335	7,555	\$30			\$ 44,790	\$ 98,010	\$ 220,060	\$ 226,662	\$ 226,662	\$ 226,662
Magistrates	483	50,111	51,614	10	8,352	8,602	\$30			\$ 100,800	\$ 175,295	\$ 250,555	\$ 258,072	\$ 258,072	\$ 258,072
Prosecutors	848	195,091	200,944	10	32,515	33,491	\$30			\$ 114,570	\$ 364,805	\$ 975,455	\$ 1,004,719	\$ 1,004,719	\$ 1,004,719
<b>Sub Total</b>	<b>2,413</b>	<b>306,487</b>	<b>315,682</b>		<b>51,081</b>	<b>52,614</b>				<b>\$ 276,000</b>	<b>\$ 671,030</b>	<b>\$ 1,532,435</b>	<b>\$ 1,578,408</b>	<b>\$ 1,578,408</b>	<b>\$ 1,578,408</b>
<b>Law Enforcement Staff</b>															
Law Enforcement	22634	8,812,457	9,076,831	5	734,371	756,403	\$25			\$ 1,777,435	\$ 9,953,331	\$ 18,359,285	\$ 18,910,064	\$ 18,910,064	\$ 18,910,064
Law Enforcement Support	2133	186,504	192,099	5	15,542	16,008	\$20			\$ 24,765	\$ 204,897	\$ 310,840	\$ 320,165	\$ 320,165	\$ 320,165
<b>Sub Total</b>	<b>24,767</b>	<b>8,998,961</b>	<b>9,268,930</b>		<b>749,913</b>	<b>772,411</b>				<b>\$ 1,802,200</b>	<b>\$ 10,158,228</b>	<b>\$ 18,670,125</b>	<b>\$ 19,230,229</b>	<b>\$ 19,230,229</b>	<b>\$ 19,230,229</b>
<b>Corrections Staff</b>															
Probation	2354	352,953	363,542	5	29,413	30,295	\$20			\$ 6,378	\$ 453,830	\$ 588,255	\$ 605,903	\$ 605,903	\$ 605,903
Prison Intake & Support	74	909	936	5	76	78	\$20			\$ 892	\$ 1,962	\$ 1,515	\$ 1,560	\$ 1,560	\$ 1,560
<b>Sub Total</b>	<b>2,428</b>	<b>353,862</b>	<b>364,478</b>		<b>29,489</b>	<b>30,373</b>				<b>\$ 7,270</b>	<b>\$ 455,792</b>	<b>\$ 589,770</b>	<b>\$ 607,463</b>	<b>\$ 607,463</b>	<b>\$ 607,463</b>
<b>Juvenile Justice Staff</b>															
Court Counselors	25	2,003	2,063	5	167	172	\$20			\$ 4,533	\$ 4,400	\$ 3,338	\$ 3,438	\$ 3,438	\$ 3,438
<b>Improved Efficiency &amp; Automation Sub-total</b>	<b>29,633</b>	<b>9,661,313</b>	<b>9,951,152</b>		<b>830,650</b>	<b>855,570</b>				<b>2,090,004</b>	<b>11,289,450</b>	<b>20,795,669</b>	<b>21,419,539</b>	<b>21,419,539</b>	<b>21,419,539</b>
<b>Improved Safety - Cost Avoidance</b>															
			<b>Number of Potential Lives Saved Annually</b>			<b>Value of a Life</b>	<b>Total Value</b>								
Save four lives with integration of offender information			4			\$ 1,125,000	\$ 4,500,000			\$ 2,250,000	\$ 4,500,000	\$ 4,500,000	\$ 4,500,000	\$ 4,500,000	\$ 4,500,000
<b>Total Improved Efficiency and Automation and Improved Safety</b>										<b>\$ 4,340,004</b>	<b>\$ 15,789,450</b>	<b>\$ 25,295,669</b>	<b>\$ 25,919,539</b>	<b>\$ 25,919,539</b>	<b>\$ 25,919,539</b>
<b>Development Cost</b>															
<b>ANNUAL</b>															
<b>Actual Development Costs</b>										\$ 2,128,091	\$ 7,643,027	\$ 7,876,469	\$ 7,876,469		
<b>Estimated Development Costs</b>												\$ 7,705,737	\$ 7,996,377	\$ 7,996,377	\$ 7,996,377
<b>Total Costs</b>										\$ 2,128,091	\$ 7,643,027	\$ 7,876,469	\$ 7,876,469	\$ 7,705,737	\$ 7,996,377
<b>Estimated Implementation Savings</b>												\$ 4,340,004	\$ 15,789,450	\$ 25,295,669	\$ 25,919,539
<b>CUMULATIVE</b>															
<b>Total Costs</b>										\$ 2,128,091	\$ 9,771,118	\$ 17,647,587	\$ 25,524,056	\$ 33,229,793	\$ 41,226,170
<b>Estimated Implementation Savings</b>												\$ 4,340,004	\$ 20,129,454	\$ 45,425,123	\$ 71,344,661
<b>Return</b>												\$ (13,307,583.25)	\$ (5,394,602.25)	\$ 12,195,329.50	\$ 30,118,491.31
<b>Improved Efficiency and Automation</b>	Efficiency savings for law enforcement is based on the actual number of DMV and offender queries during the month of May, 2012, with a 10% growth in FY 2013. Conservatively, if each inquiry saves a law enforcement officer has 5 minutes of research time, Courts personnel have indicated that they are saving 33% of the resource time required to research information, approximately 10 minutes per investigation. Savings associated with courts usage is based on the actual number of DMV and offender queries run														
<b>Improved Safety</b>	The cost of a human life is estimated at 1.125 million. Computation of Human Life value requires a detailed analysis of many factors. For simplicity if an individual is murdered at 35 and has 30 years of future income of which 75% is spent on his/her family then the value of the life would equal (30*(50,000*.75)) The value of a human life would equal 1,125,000														



Session Law 2011-145, HB 200, authorized funding of \$9M in the biennium budget for the development of an automated fraud, waste and improper payment data integration program. These funds support OSC's state project team staffing and expenses (\$1M) as well as contractual services for the design, development and implementation of data integration and business analytic models for fraud detection (\$8M). To ensure the public-private partnership of this initiative, the State's data integration vendor is required to contribute resources in the amount of \$5M over the next two years (\$10M total). The vendor contribution will provide hosting hardware and technical environment infrastructure, software, support and services for design, development and implementation of data integration and business analytic model development.

Because data sharing challenges significantly inhibited data analysis and development in FY 2012, to ensure adequate progress continues to be made toward satisfying the General Assembly's public/private partnership mandate, OSC negotiated a contract extension with the vendor for an additional full year at no additional cost. Payments have been delayed accordingly.

Session Law 2012-142, HB 950 appropriated \$5 million in non-recurring funds to support the enterprise BI program. Of that amount, OSC was authorized to use \$750,000 for the administration of the program. The remaining funds were reserved for initiatives recommended to and approved by the General Assembly.

The GDAC executed a contract with SAS to initiate business intelligence projects under the GDAC program. The contract provides analytics service resources and will leverage the NC FACTS technical infrastructure. The GDAC contract was extended to provide analytics licensing and services through December, 2014.

While recurring funding was provided in FY 2014 and FY 2015 for administrative support of the program, additional recurring funds will be required for vendor hosting, licensing, and analytic support to sustain long-term GDAC program efforts.

As of December 31, 2013	<u>FY 2011-2012 Actual</u>	<u>FY 2012-2013 Actual</u>	<u>FY 2013-2014 Budget</u>	<u>FY 2013-2014 Actual</u>
<b><u>GDAC Funding</u></b>				
NC FACTS FY 2011-2013 funds	1,500,000	7,500,000		
NC FACTS FY 2011-2013 carry forward **		497,228	4,948,048	4,948,048
GBICC FY 2012-2013 funds		5,000,000		
GBICC FY 2012-2013 funds carry forward **			3,947,843	3,947,843
GDAC FY 2013-2014 (R)			1,417,515	1,417,515
GDAC FY 2013-2014 (NR)			1,582,485	1,582,485
<b>Total funding</b>	<u>\$ 1,500,000</u>	<u>\$ 12,997,228</u>	<u>\$ 11,895,891</u>	<u>\$ 11,895,891</u>
<b><u>GDAC Expenditures</u></b>				
GDAC Project Team Expenditures	102,772	501,337	1,417,515	344,459
NC FACTS Vendor Contract **	900,000	2,700,000	4,400,000	3,400,000
GDAC Vendor Contract **		900,000	5,100,000	2,700,000
<b>Total expenditures</b>	<u>\$ 1,002,772</u>	<u>\$ 4,101,337</u>	<u>\$ 10,917,515</u>	<u>\$ 6,444,459</u>
<b>Fund Balance</b>	<u>\$ 497,228</u>	<u>\$ 8,895,891</u>	<u>\$ 978,376</u>	<u>\$ 5,451,432</u>
<b><u>Vendor Fraud Detection Contribution</u></b>				
Vendor Financial Contribution - Required by contract	10,000,000			
Vendor Fraud Detection Expenditures - Actual	23,664,623			
State Vendor Payments To Date	(7,000,000)			
State Vendor Payment Owed **	(1,000,000)			
<b>Total SAS Contribution</b>	<u>15,664,623</u>			
** holdback pending remaining deliverables				