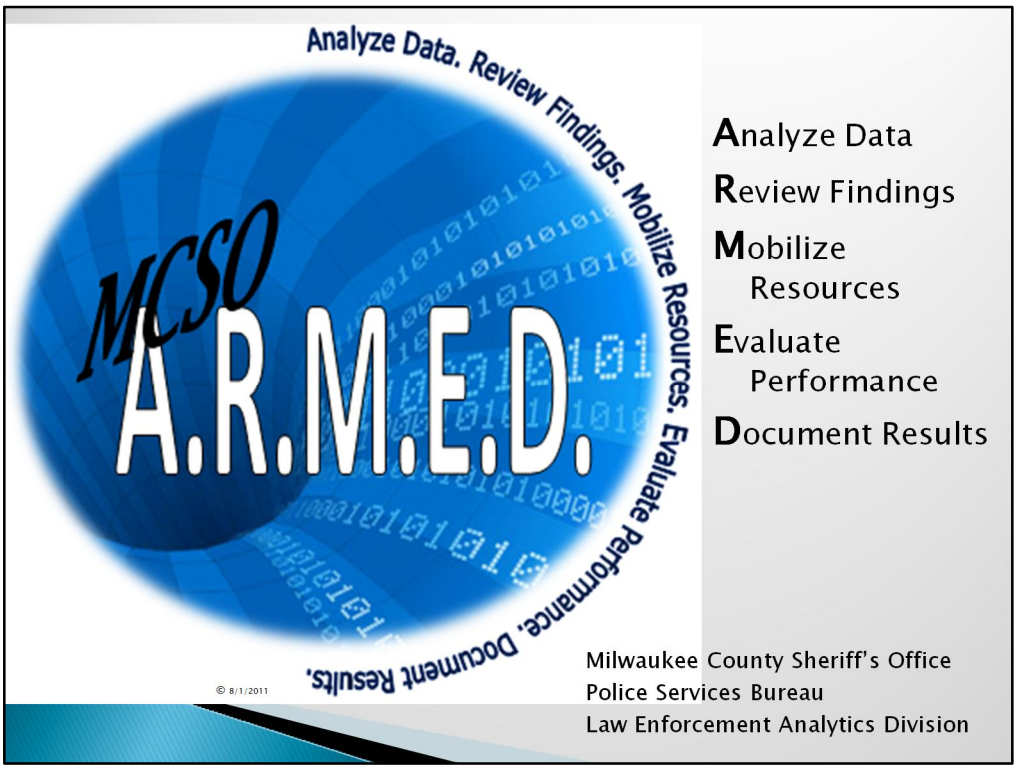
Collaborative effort between;
ÅMilwaukee County Sheriff's Office
ÅIMSD
ÅInformation Builders

ÅLaw Enforcement Analytics Solution (LEA)

ÅImplement an agency wide platform that delivers rich, interactive information to a wide range of command staff, deputies, and other employees via solutions such as dashboards, portable analytics, and true do-it-yourself ad hoc reporting.

Collaborative project involving;
- Milwaukee County Sheriff's Office
- IMSD
- Information Builders

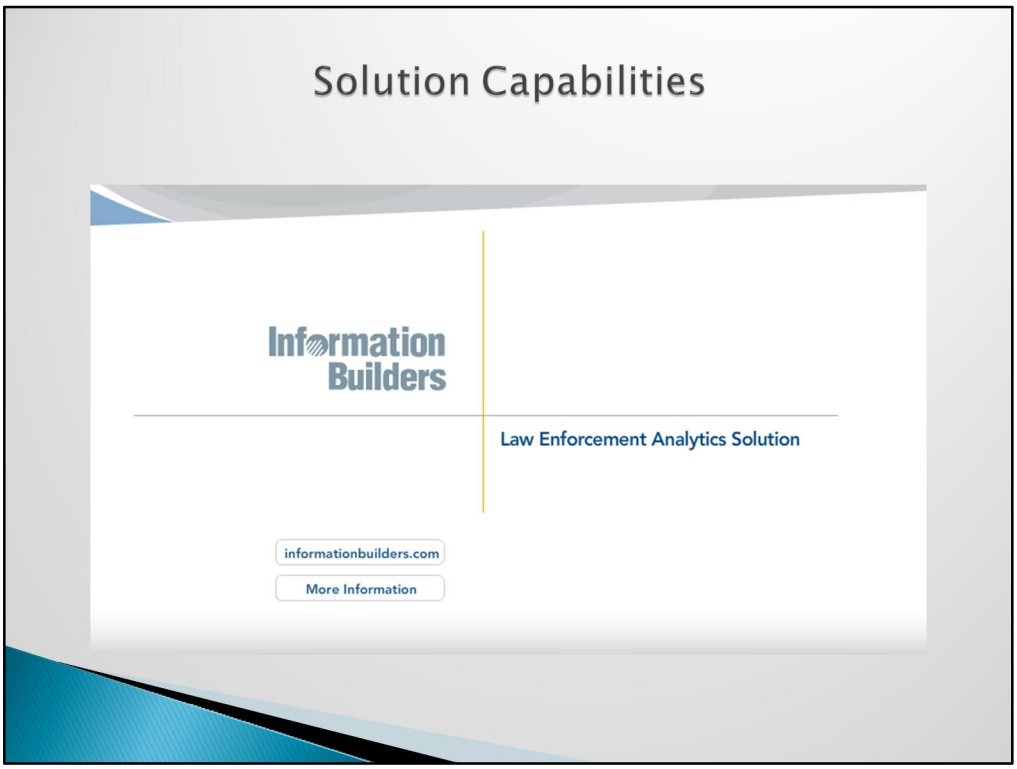


Responsible for:

- Leveraging technology to provide timely, targeted information related to crime patterns and trends.
- Provide actionable information and intelligence support to Sheriff operations
- Develop dashboards, reports, alerts, maps
- Further the goal of being a data driven organization

To further the goal of being a data driven agency, the Sheriff desired a “Completely Integrated Business Intelligence System”

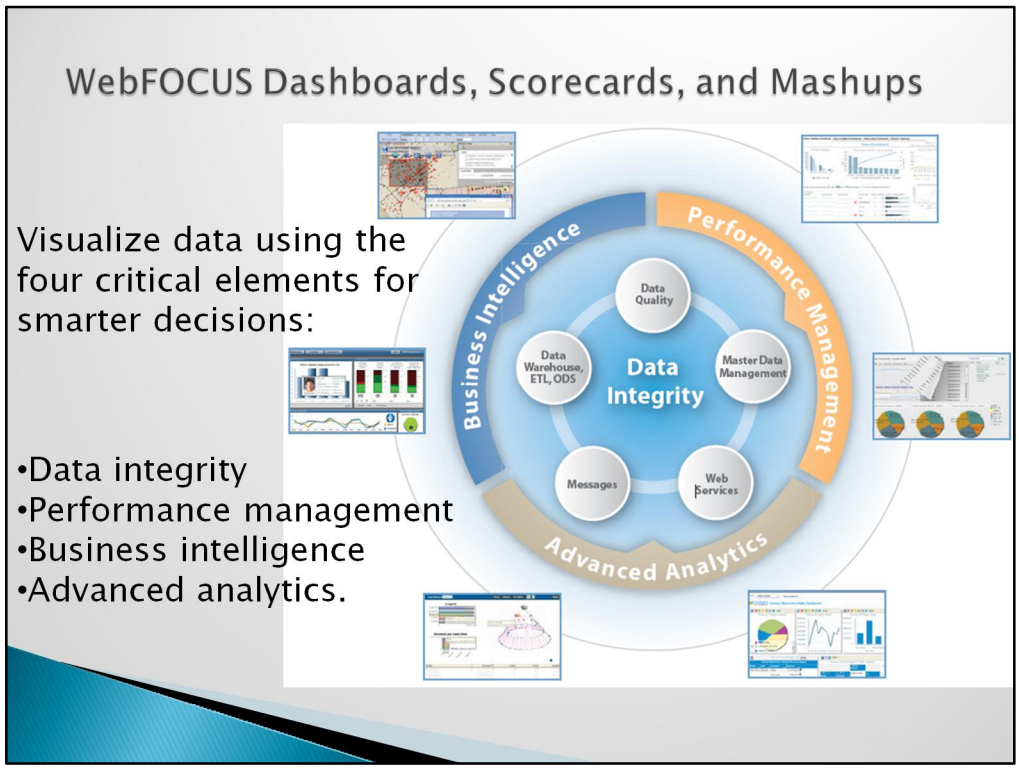
- Reporting with multiple delivery formats
- Custom Application
- Dashboard
- Maps
- Analysis



The Law Enforcement Analytics Solution offered by Information Builders provided A “Completely Integrated Business Intelligence System” and was selected to meet The needs of the Sheriff’s Office.

WebFOCUS users don't need training and it is easy for developers to create and maintain the BI solutions.
All levels of users who want access to raw data, can easily create their own reports and analysis using the latest technology for ribbon-based interfaces.

Every bit of content in WebFOCUS is shareable and reusable.



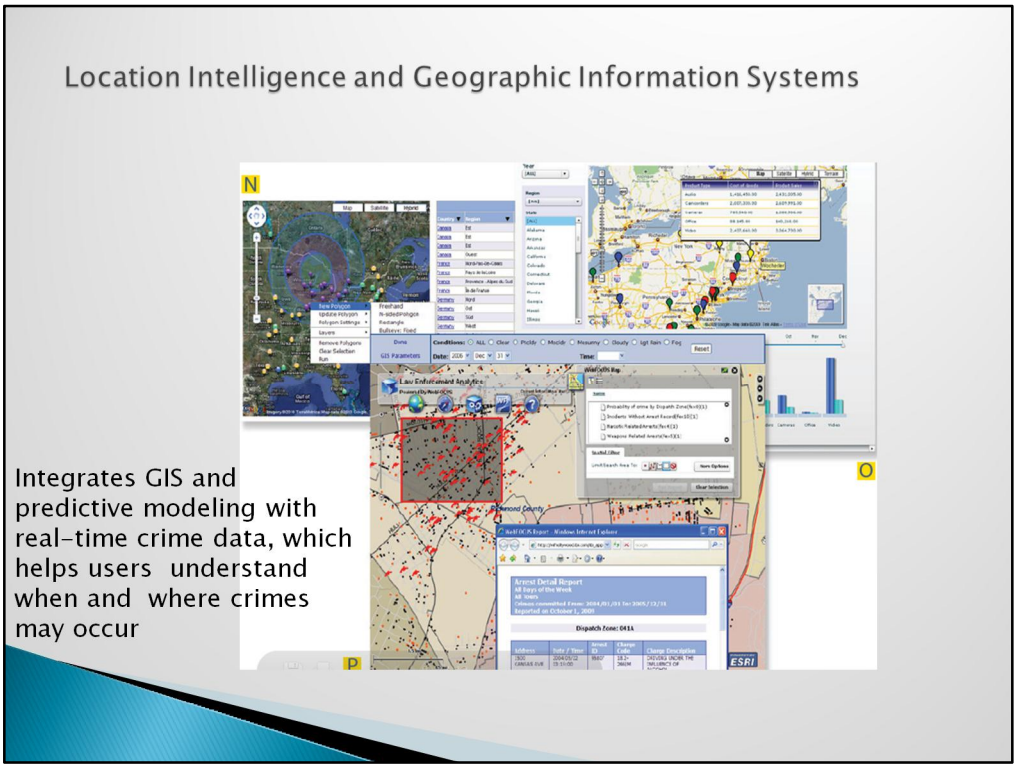
A Comprehensive, Flexible Platform with cutting-edge features and capabilities
ÅWebFOCUS integrates the four critical elements for smarter decisions:
- ÅData integrity
- ÅPerformance management
- ÅBusiness intelligence
- ÅAdvanced analytics

Data Integrity
Åncludes a comprehensive data quality management to ensure data quality
ÅCentralized data management to create a single source of validated data derived from disparate sources
ÅReal-time extract, transform, and load (ETL) capabilities and full integration with real-time data adapters to ensure the timeliness of
dashboard content

Performance Management
An out-of-the box solution for monitoring, tracking, and driving performance by communicating goals, measuring execution, and assessing enterprise risk.

Business Intelligence
ÅWebFOCUS helps all users make smarter decisions by delivering rich, real-time, consumable, interactive dashboards and reports to a wide audience.
ÅWebFOCUS empowers analysts and decision makers with portable dashboards that use Active Technologies for offline analysis or with portable devices such as laptops, netbooks, smartphones, or PDAs
ÅEnd users at any level can create their own dashboards, subscribe to existing ones, and schedule them for automatic e-mail delivery
ÅWebFOCUS maximizes the communication and comprehension of information through data visualization and the ability to output dashboards in any format, such as Adobe Flex, Excel, Adobe PDF, and portable dashboards (with Active Technologies)

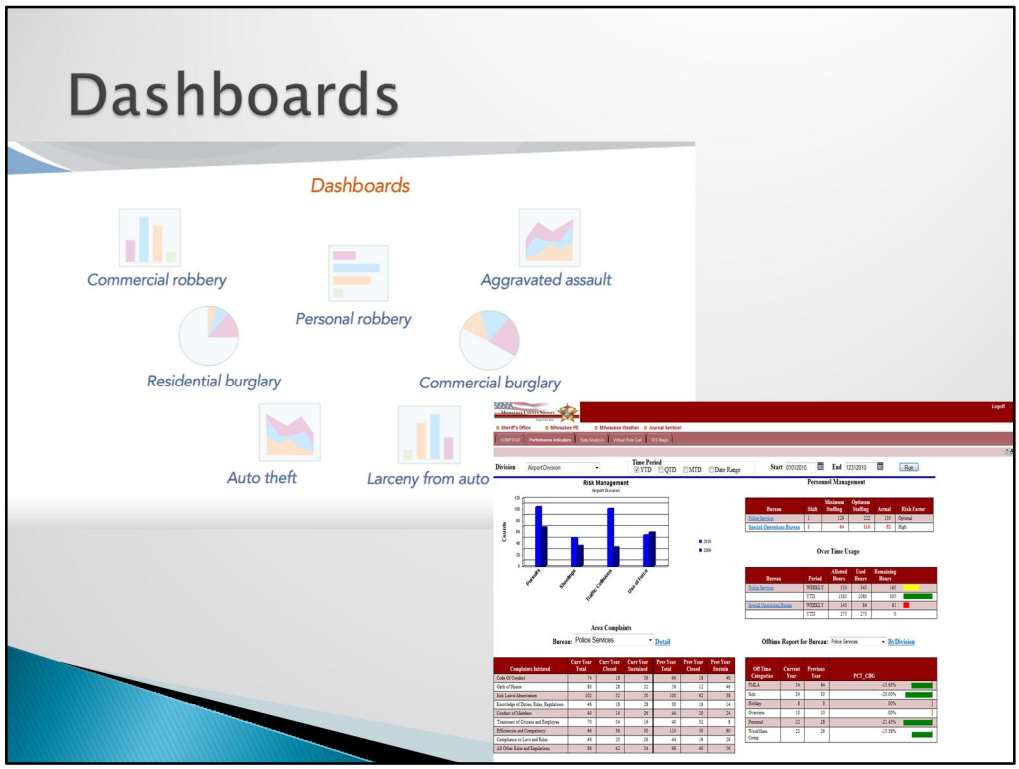
Advanced Analytics
ÅAnalysts have access to in-memory analytic dashboard tools offering cutting-edge visualization
Åcapabilities for intuitive visual-based OLAP and multivariate analysis, such as identifying key trends and root causes.
ÅWebFOCUS Visual Discovery uniquely provides data-driven conditional formatting (also known as traffic lights or stop-lighting), where outliers are rendered visually without the need to create thresholds and conditions
ÅWebFOCUS Visual Discovery visualizations, color coordination, and interactivity provides context-based analysis so users can drill down while simultaneously viewing higher-level data
ÅIn-memory capabilities leverage the 64-bit architecture of desktop computers to represent more than 100 million rows of data in interactive visual displays



ÅSolution integrates WebFOCUS and leading mapping solutions from ESRI, Google, and Adobe Flex.

ÅLets users more intuitively process and comprehend spatially oriented data to better visualize and understand information so they can more rapidly discern critical patterns and trends.

ÅAggregate real-time information from disparate databases and spreadsheets Åbuild individual ad hoc queries and formatted reports, and instantly transform the results into compelling geographic maps.



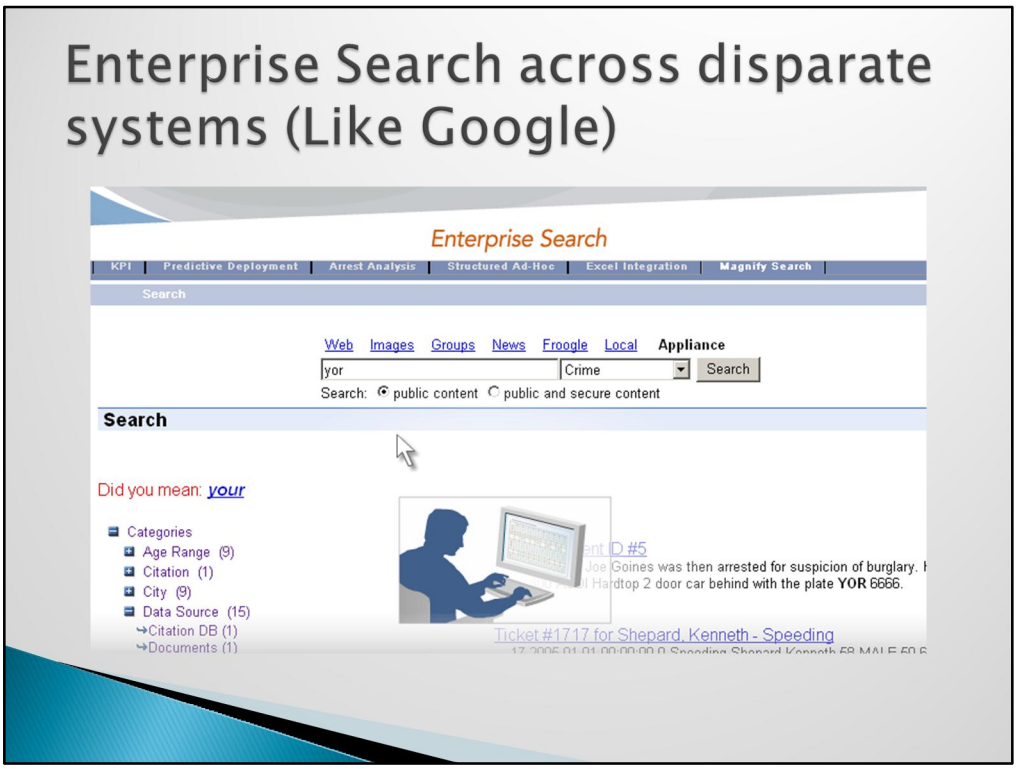
Dashboards can be deployed in any format – including HTML, Adobe PDF, Flash, and Excel – and can be
accessed on any device – from desktops to laptops to smartphones.

Dashboards can also be distributed dynamically via e-mail, to printers, Web portals, or report archives – at schedule-driven intervals or
when critical business events occur.

Dashboards allow organizations to define, share, and monitor crucial metrics and performance indicators across all levels of the business.

Fully customizable according to user roles, dashboards enable executives to obtain a high-level view of broad-reaching strategies, while line-of-business managers can track the day-to-day tactical activities that link to those strategies.

This allows everyone to actively participate in corporate performance monitoring, ensuring that all
projects or initiatives are fully aligned and that all goals are being reached.



Enterprise information can often be extremely difficult to retrieve.

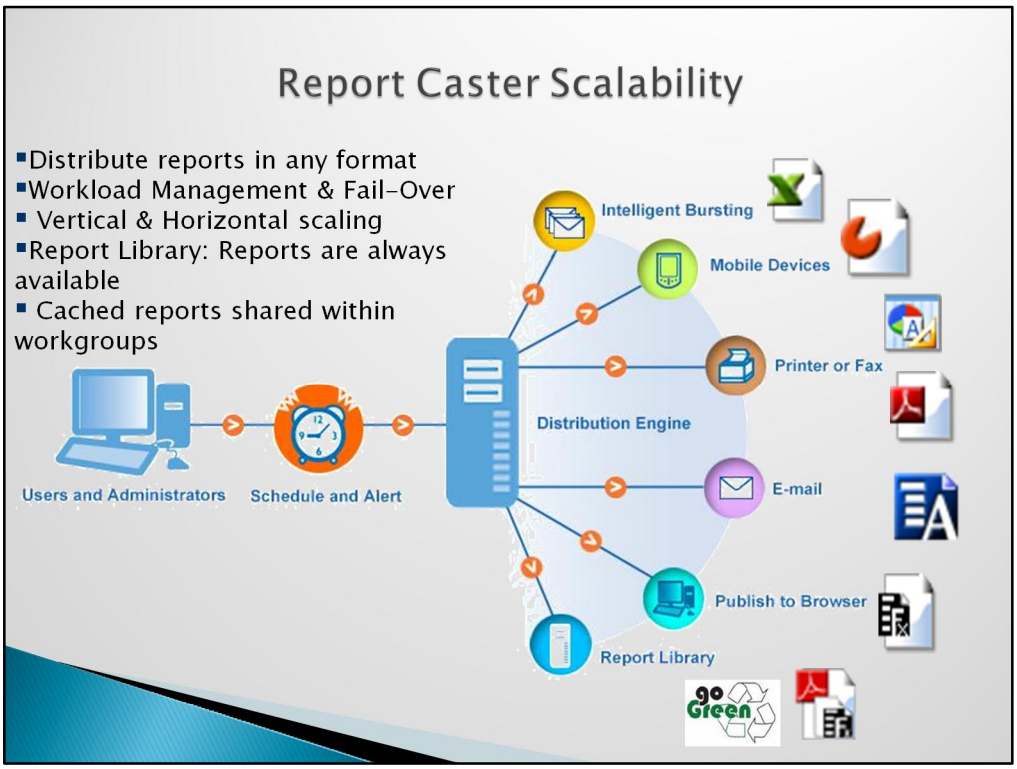
With WebFOCUS Magnify, any structured or unstructured data, regardless of its source or location, is easy to index and search. Magnify allows users to leverage a familiar and intuitive Google-like interface to instantly access detailed records, unstructured documents, aggregate summaries, and more.

Example:

1. Search multiple systems based on specific text such as red bird tattoo. This will return results where “Red Bird” was entered in any text field or written report and present those results to the user for review
2. Retrieve all contacts the department has had with an individual across multiple systems to aid in investigations (warrants, civil papers, witness, victim, offender, tickets, accident, arrest, mugshots, etc…)

Ad Hoc Dashboards

ÅWebFOCUS InfoAssist gives users greater control over their content with comprehensive ad hoc reporting, querying, and cube-browsing capabilities. ÅDashboards can be constructed from any data source, and output in a variety of formats including Active Dashboards, Excel, PowerPoint, and Adobe PDF, Flash, and Flex PDF.



Scheduling and distribution capabilities for delivery via e-mail, to a report archive, printer, or FTP site.

Report distribution is arguably one of today's most critical business tasks.

Companies are inundated with data, an ever-growing glut of documentation, which they must be able to easily distribute to anyone, anywhere, at any time, and in any format.

The WebFOCUS report distribution solution meets these enterprise challenges through dynamic delivery and storage of vital business intelligence (BI) information.

ÅRobust information management features,
ÅA complete, just-in-time business report distribution platform.
ÅA single point of control for real-time alerts, scheduling, and storing information
Å distributing it to anyone within or outside the organization.

The WebFocus and LEA customers with similar solutions
ÅMilwaukee County Office of the Sheriff
ÅHouston PD
ÅCharlotte Mechklenburg PD
ÅMichigan State Police
ÅJacksonville Office of the Sheriff
ÅErlanger Kentucky PD
ÅIrving PD
ÅRichmond Virginia PD
Å???

Significantly Enhance Operational Efficiencies

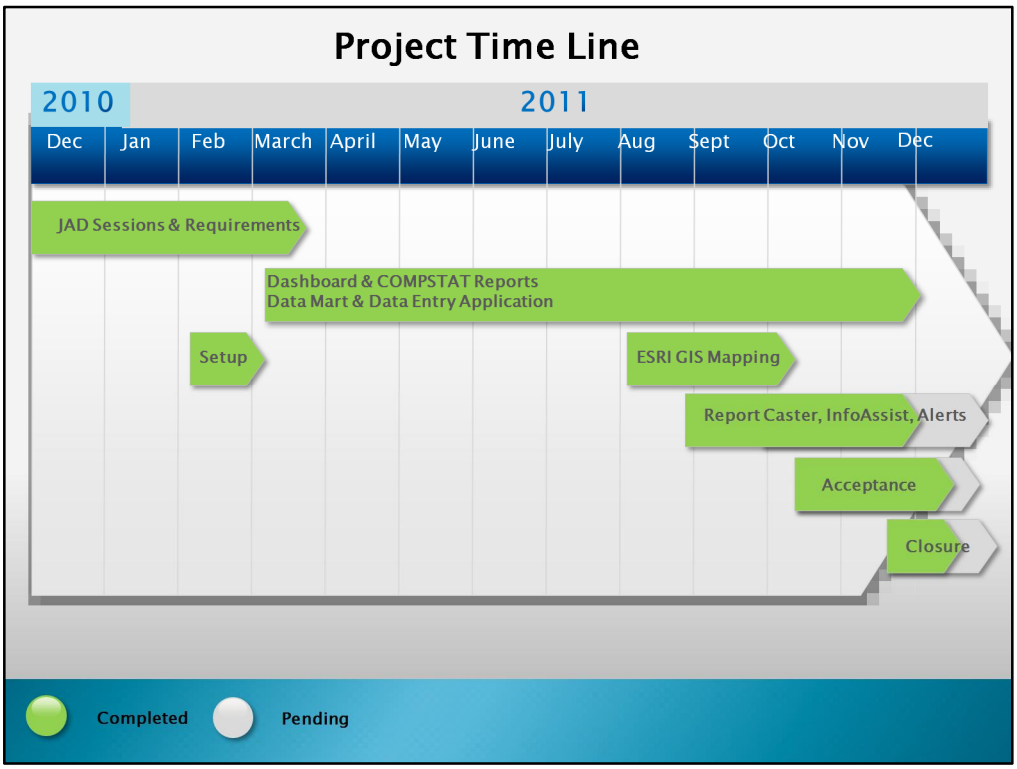
- Automate CompStat Reporting Process
- Command Staff resources focus on analyzing operations
- Improving Quality and Timeliness of Information
- Eliminating Outmoded and Redundant Operations

Aid Officers in Devising Strategies and Tactics

- Information Alerts and Triggers
- Enable enterprise wide information access

Reduce Crime

- Quickly recognize important trends
- Decisions based on current and credible information
- Provide actionable information



December 2010 – Finalized project plan and prioritization

January 2011 – JAD sessions with all divisions to gather reporting requirements
Setup of technical environment

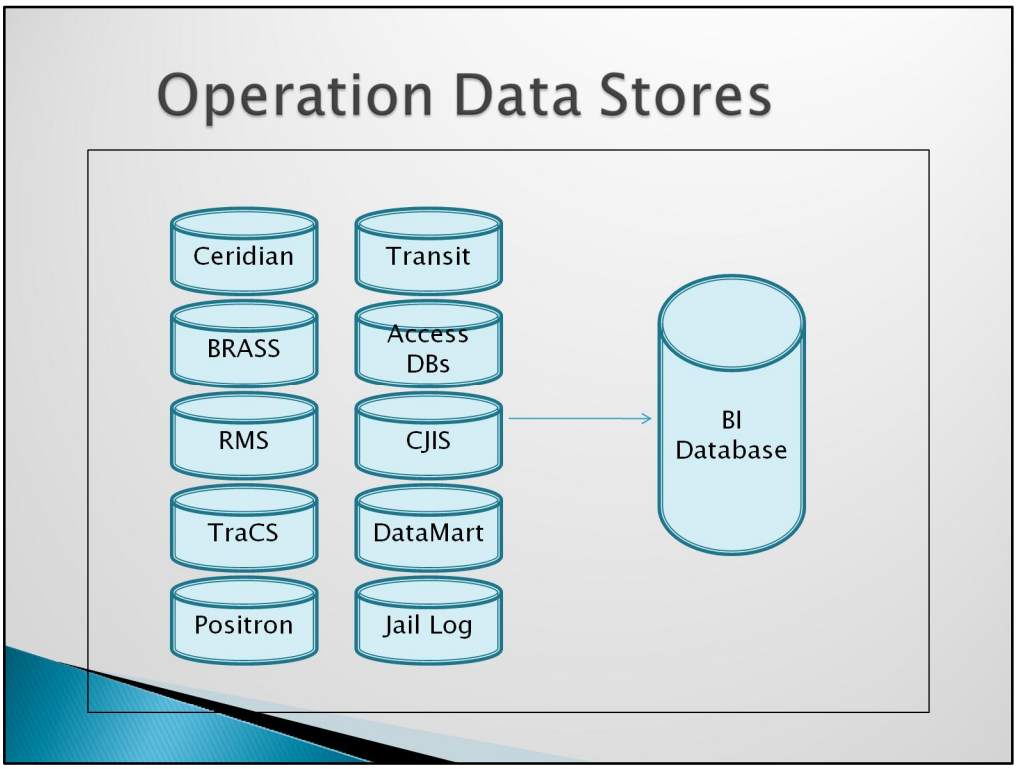
March 2011 – Started Dashboard and CompStat report development
Developed flexible web-based data entry application

August 2011 – Integrated ESRI GIS Mapping to visually represent accidents, citation, incidents

September 2011 – Implemented ad hoc reporting tools, report distribution, and alerts

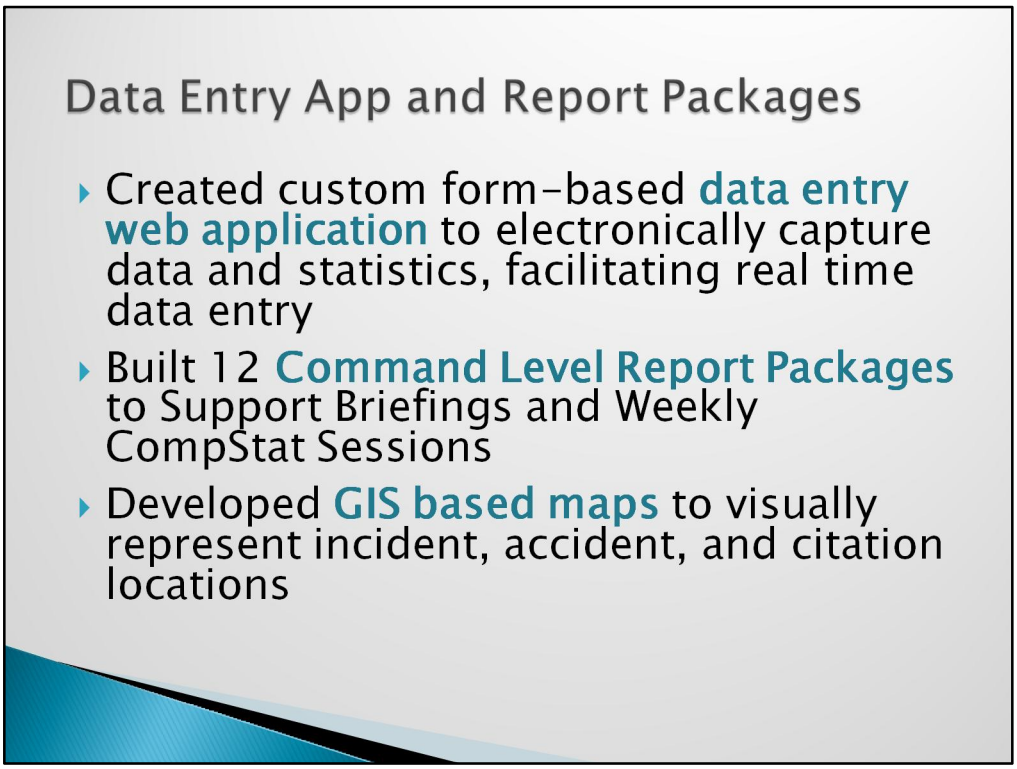
October 2011 – Continued working on reports, started acceptance process

December 2011 – Started project closure process, transition to internal staff



Multiple data stores all accessed through a single BI Database using views and stored procedures.

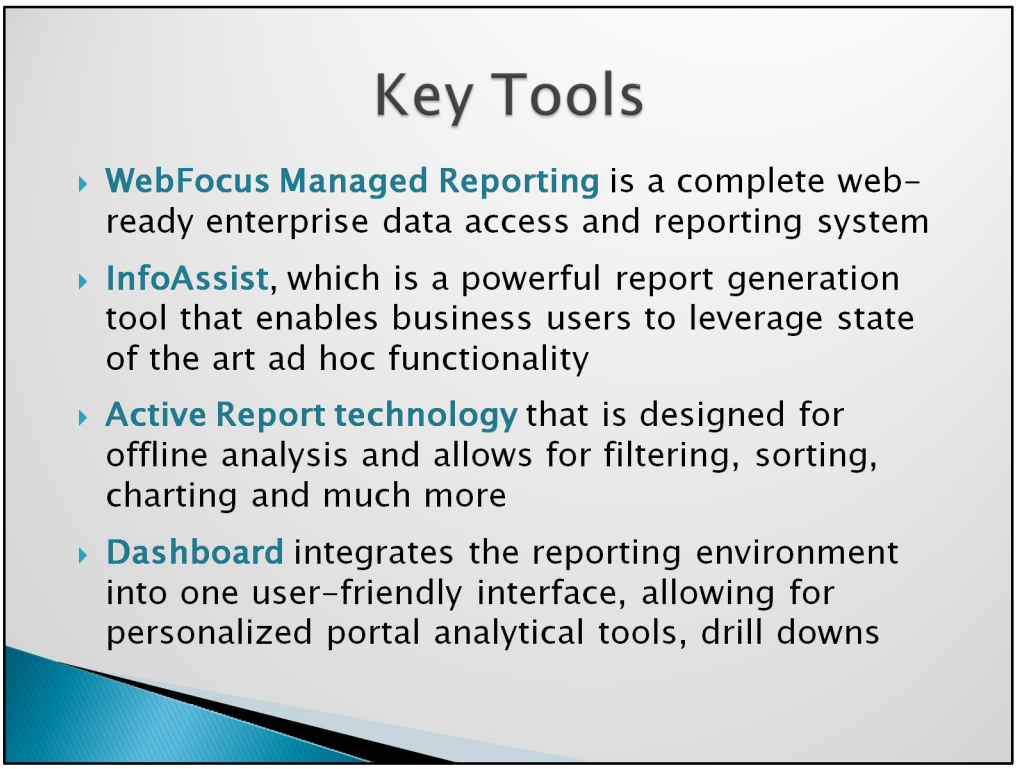
- Simplifies data management and decouples report from its data source.
- Place to store data that requires transformation or snapshots in time
- Alter data source in a single location rather than touching each report



Data Entry Application allows for the customized creation of form templates, with user defined fields, data types, drop down values for the purpose of eliminating paper processes.

Each report package consists of multiple reports, charts, and maps which are then presented through a dashboard.

Collaborated with the county GIS department to leverage existing ESRI GIS tools and service to create the presentation layer



The tools discussed are currently licenses to the Milwaukee County Sheriff's Office, but special license pricing has been pre-negotiated to allow any other county department or municipality to utilize a county hosted WebFocus server.

Currently just scratching the surface of many of the capabilities of these tools.

Key Tools

- **Report Caster** scheduling and distribution application that centralizes the execution and distribution of WebFocus reports
- **Magnify** to search structure and unstructured content across multiple data sources and systems
- **Adapters** to consume data from any data source in the county
- **Visual Discovery**, advanced data visualization for executive level dashboards
- **Other tools** include report assistant, charting tool, two-way email, mobile support

Å Shared licensing will allow other departments and municipalities to leverage the benefits of business intelligence at a fraction of the cost.
Å Share existing LEA solution with minor alterations
Å Reaching out to other police agencies to demo solution and gauge interest to participate

Å County hosted model (4-Core Server) means lower initial cost, leverage county IT services, quick deployment, centralized management, timely software updates, re-use of already developed solutions.

Opportunities

- **Unprecedented, controlled access** to system data
- **Integration** with existing desktop tools like Excel and Adobe PDF
- **Accurate, timely, and interactive information** – right at the fingertips of any user that needs it. This is the key to ensuring success at all levels

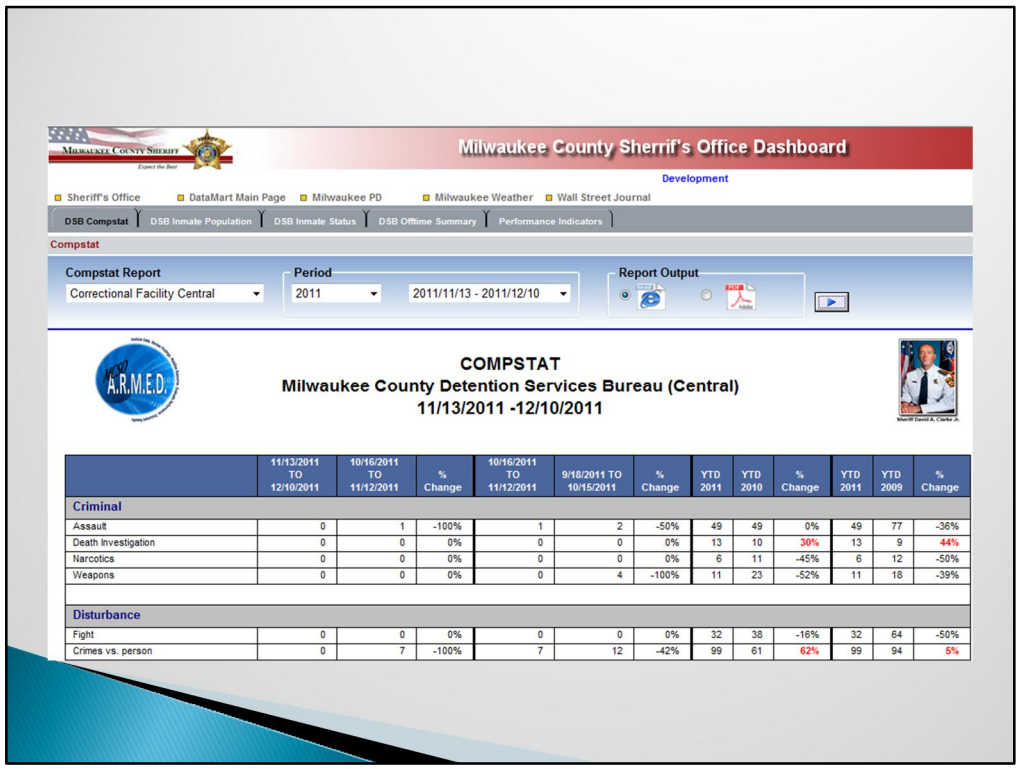
Questions

Captain **Brian Barkow**

IMSD Public Safety Business Lead
Andrew Carrion

Report Examples

For Reference Only



Milwaukee County Sherrif's Office Dashboard

Development

Sheriff's Office | DataMart Main Page | Milwaukee PD | Milwaukee Weather | Wall Street Journal

DSB Compstat | DSB Inmate Population | DSB Inmate Status | DSB Offtime Summary | Performance Indicators

Compstat

Compstat Report: Correctional Facility Central

Period: 2011 | 2011/11/13 - 2011/12/10

Report Output

COMPSTAT
Milwaukee County Detention Services Bureau (Central)
11/13/2011 -12/10/2011

	11/13/2011 TO 12/10/2011	10/16/2011 TO 11/12/2011	% Change	10/16/2011 TO 11/12/2011	9/18/2011 TO 10/15/2011	% Change	YTD 2011	YTD 2010	% Change	YTD 2011	YTD 2009	% Change
Criminal												
Assault	0	1	-100%	1	2	-50%	49	49	0%	49	77	-36%
Death Investigation	0	0	0%	0	0	0%	13	10	30%	13	9	44%
Narcotics	0	0	0%	0	0	0%	6	11	-45%	6	12	-50%
Weapons	0	0	0%	0	4	-100%	11	23	-52%	11	18	-39%
Disturbance												
Fight	0	0	0%	0	0	0%	32	38	-16%	32	64	-50%
Crimes vs. person	0	7	-100%	7	12	-42%	99	61	62%	99	94	5%

Drill Down Reports

INCIDENTS	INCIDENTNO	ORIGDATE	PROBLEMCODE	MAINCATDESCRIP	SUBCATDESCRIP	RESPONSETYPE	ROUTENO	BUSNO
Disorderly Conduct	4092596	2010/11/14 00:00:00.000	4		Off Bus	S	15	4419
	4111343	2010/11/15 00:00:00.000	4		Intoxicated Person(s)	S	19	4432
	4112000	2010/11/15 00:00:00.000	4		Vulgar Language	S	12	4334
	4116660	2010/11/16 00:00:00.000	4		Off Bus	S	23	4825
	4128609	2010/11/16 00:00:00.000	4		Intoxicated Person(s)	S	15	4627
	4128673	2010/11/16 00:00:00.000	4				30	5003
	4161510	2010/11/18 00:00:00.000	4				18	4634
	4161743	2010/11/18 00:00:00.000	4				18	4634
	4162908	2010/11/18 00:00:00.000	4				62	4729
	4165344	2010/11/18 00:00:00.000	4		Vulgar Lan		10	4710
	4167716	2010/11/18 00:00:00.000	4		Operator Th		80	4419
	4177069	2010/11/19 00:00:00.000	4		Off Bus		27	4734
	4177941	2010/11/19 00:00:00.000	4		Off Bus		53	4119
	4187986	2010/11/20 00:00:00.000	4		Intoxicated		15	5148
	4193036	2010/11/20 00:00:00.000	4		Vulgar Lan		76	4708
	4198070	2010/11/21 00:00:00.000	4		Intoxicated		22	5109
	4200063	2010/11/21 00:00:00.000	4		Operator Th		22	5103
	4200090	2010/11/21 00:00:00.000	4		Off Bus	S	22	5103
	4202890	2010/11/21 00:00:00.000	4		Intoxicated Person(s)	S	60	4463
	4221836	2010/11/22 00:00:00.000	4		Intoxicated Person(s)	S	30	4387
	4235404	2010/11/23 00:00:00.000	4		Vulgar Language	S	53	4406
	4235920	2010/11/23 00:00:00.000	4		Off Bus	S	60	5129
	4260599	2010/11/24 00:00:00.000	4		Vulgar Language	S	12	4334
	4263724	2010/11/24 00:00:00.000	4		Vulgar Language	S	21	4817
	4268381	2010/11/25 00:00:00.000	468	Disorderly Conduct	Off Bus	S	7700	917

Sort Ascending
Sort Descending
Filter ▶
Calculate ▶
Chart
Rollup
Pivot (Cross Tab
Visualize
Hide Column
Freeze Column
Unfreeze All
Grid Tool
Chart/Rollup Tool
Pivot Tool
Show Records ▶
Comments ▶
Send as E-mail
Save Changes
Export ▶
Print ▶
Window ▶
Restore Original

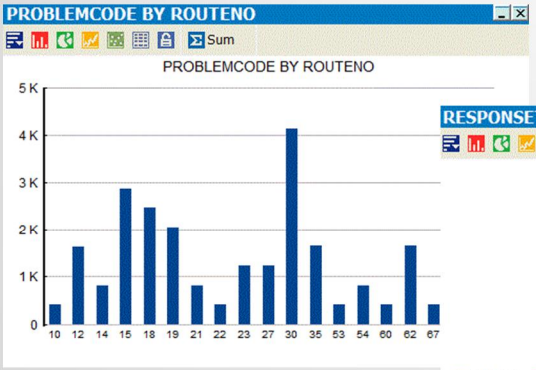
Pie
Line
Bar
Scatter

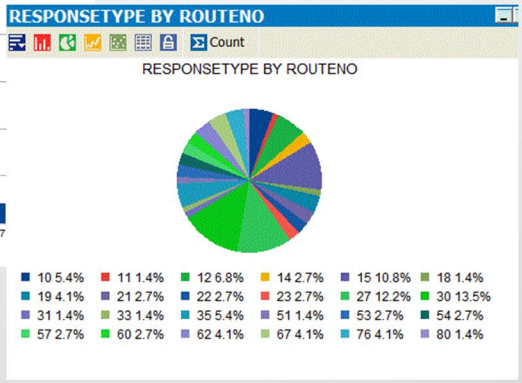
Group By (X)

INCIDENTS
INCIDENTNO
ORIGDATE
PROBLEMCODE
MAINCATDESCRIP
SUBCATDESCRIP
RESPONSETYPE
ROUTENO
BUSNO
LOCATION

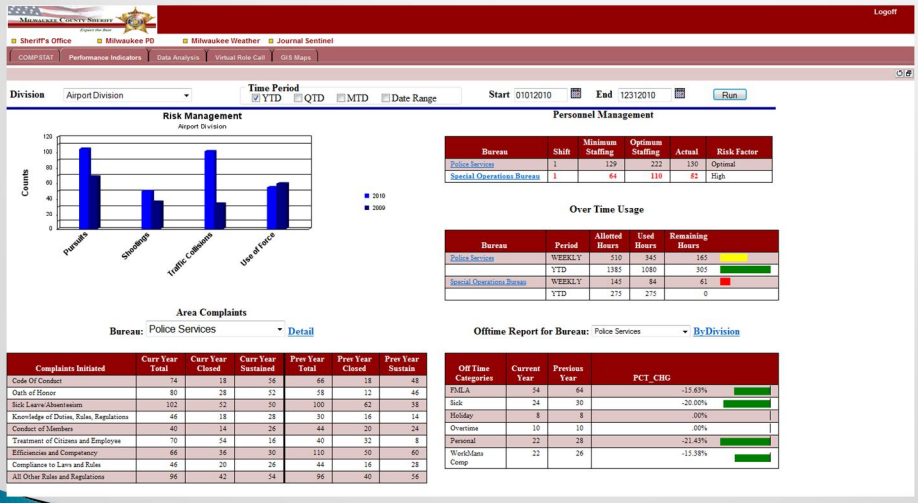
Active Reports

Generate Graphs and Reports Which Can Be Emailed

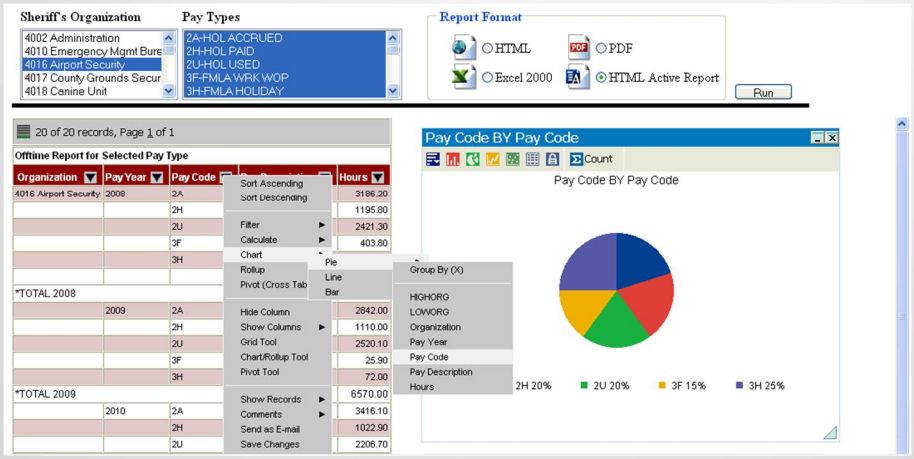




Performance Indicators Report

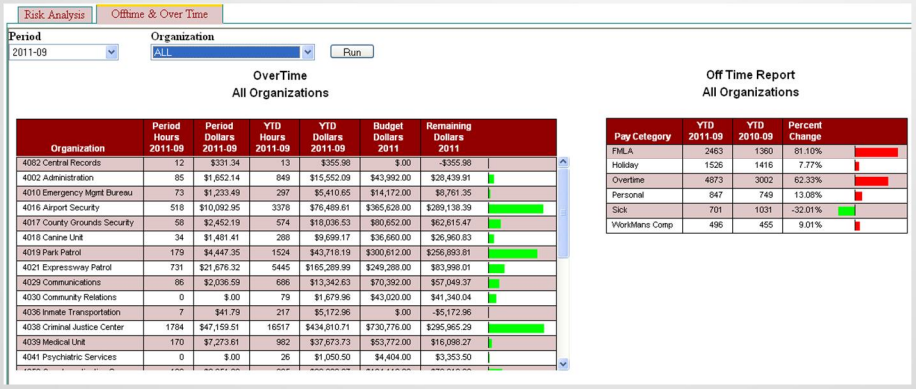


Performance Indicators – Pay



Types Showing Active Report With Pie Chart Reports output into HTML, Excel, PDF or Active Report

Overtime and Off Time Reports
With graphic indicators



Organization	Period Hours 2011-09	Period Dollars 2011-09	YTD Hours 2011-09	YTD Dollars 2011-09	Budget Dollars 2011	Remaining Dollars 2011
4082 Central Records	12	$331.34	13	$355.98	$.00	-$355.98
4002 Administration	85	$1,652.14	849	$15,552.09	$43,992.00	$28,439.91
4010 Emergency Mgmt Bureau	73	$1,233.49	297	$5,410.65	$14,172.00	$8,761.35
4016 Airport Security	518	$10,092.95	3378	$76,489.61	$365,628.00	$289,138.39
4017 County Grounds Security	58	$2,452.19	574	$18,036.53	$80,652.00	$62,615.47
4018 Canine Unit	34	$1,481.41	288	$9,699.17	$36,660.00	$26,960.83
4019 Park Patrol	179	$4,447.35	1524	$43,718.19	$300,612.00	$256,893.81
4021 Expressway Patrol	731	$21,676.32	5445	$165,289.99	$249,288.00	$83,998.01
4029 Communications	86	$2,036.59	686	$13,342.63	$70,392.00	$57,049.37
4030 Community Relations	0	$.00	79	$1,679.96	$43,020.00	$41,340.04
4036 Inmate Transportation	7	$41.79	217	$5,172.96	$.00	-$5,172.96
4038 Criminal Justice Center	1784	$47,159.51	16517	$434,810.71	$730,776.00	$295,965.29
4039 Medical Unit	170	$7,273.61	982	$37,673.73	$53,772.00	$16,098.27
4041 Psychiatric Services	0	$.00	26	$1,050.50	$4,404.00	$3,353.50

Pay Category	YTD 2011-09	YTD 2010-09	Percent Change
FMLA	2463	1360	81.10%
Holiday	1526	1416	7.77%
Overtime	4873	3002	62.33%
Personal	847	749	13.08%
Sick	701	1031	-32.01%
WorkMans Comp	496	455	9.01%

Risk Management Report

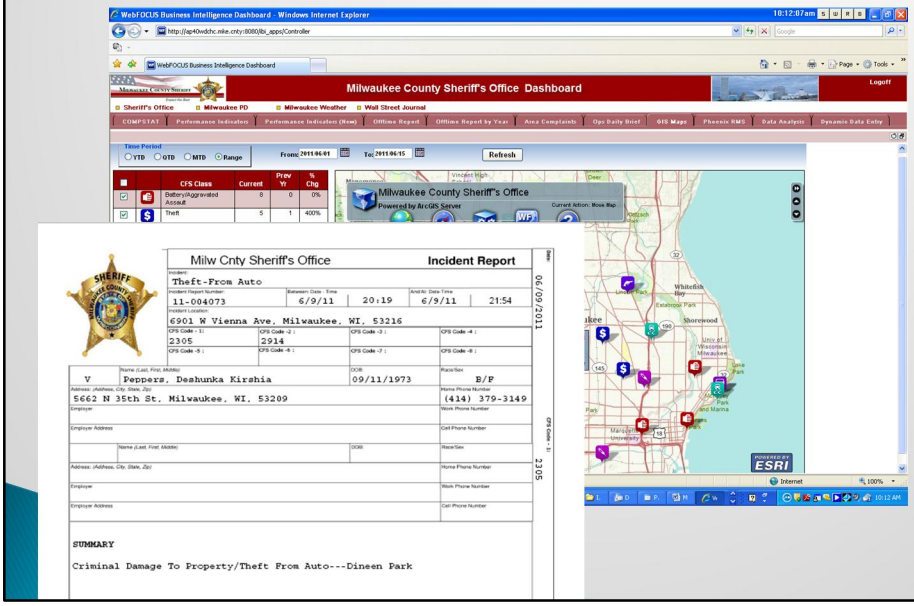
Risk Management Report
Bureau: Police Services
Airport Division

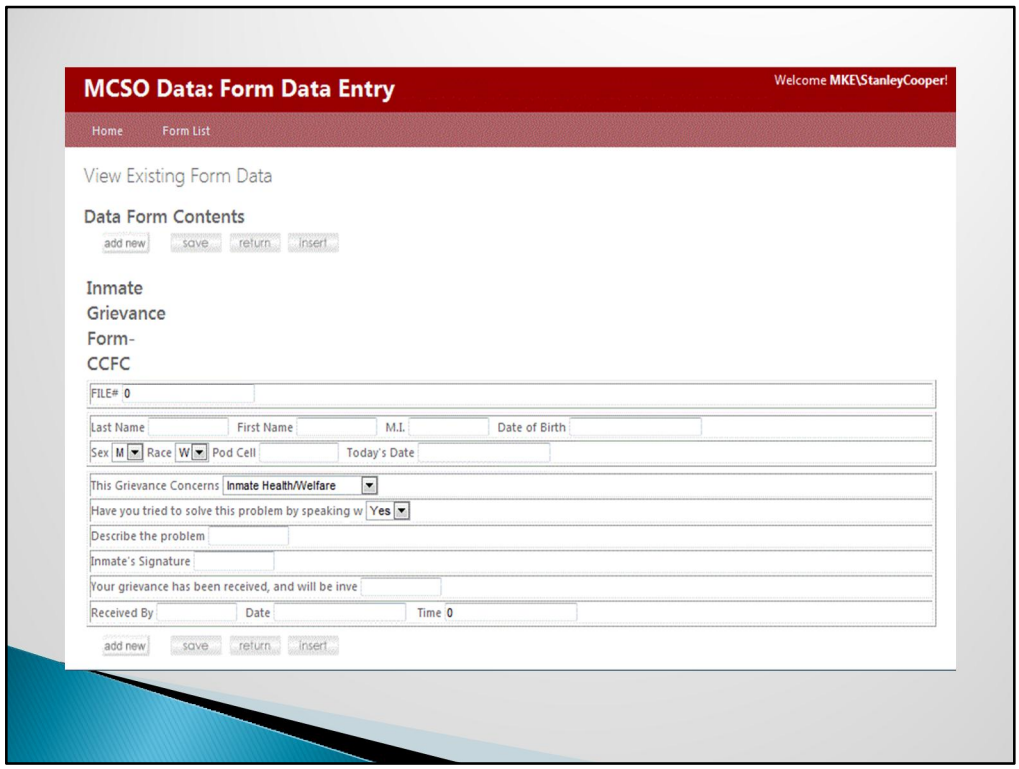
Unit	Risk Management	Current Year	Last Year	Percent Change
Unit 1	Pursuits	34	45	-24.44%
	Use of Force	33	16	106.25%
	Traffic Collisions	22	12	83.33%
	Shootings	11	11	.00%
Unit 2	Pursuits	56	11	409.09%
	Use of Force	11	23	-52.17%
	Traffic Collisions	56	11	409.09%
	Shootings	33	21	57.14%
Unit 3	Pursuits	14	13	7.69%
	Use of Force	11	21	-47.62%
	Traffic Collisions	23	11	109.09%
	Shootings	6	4	50.00%
*TOTAL RISK_MGMT.RISK_MGMT.DIVISION Airport Division		**	**	55.78%

Run Date: July 28, 2011

Incident Calls For Service Interactive Mapping

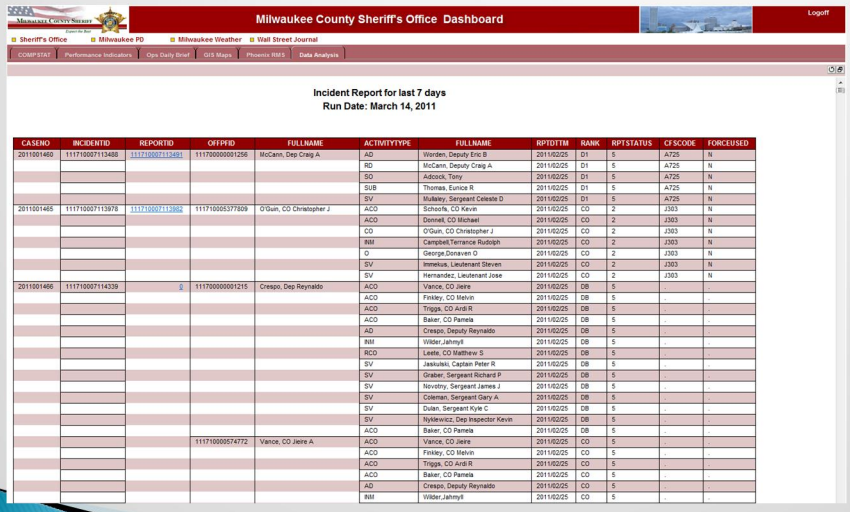
Drill Down From Map to Incident Report in RMS




MCSO Data: Form Data Entry
Welcome MKE\StanleyCooper!
Home
Form List
View Existing Form Data
Data Form Contents
add new
save
return
insert
Inmate Grievance Form- CCFC
FILE# 0
Last Name
First Name
M.I.
Date of Birth
Sex M
Race W
Pod Cell
Today's Date
This Grievance Concerns Inmate Health/Welfare
Have you tried to solve this problem by speaking w Yes
Describe the problem
Inmate's Signature
Your grievance has been received, and will be inve
Received By
Date
Time 0
add new
save
return
insert

Data Analysis

Incidents from the RMS system for the last 7 days



Milwaukee County Sheriff's Office Dashboard

Logoff

Sheriff's Office | Milwaukee PD | Milwaukee Weather | Wall Street Journal

COMPSTAT | Performance Indicators | Ops Daily Brief | GIS Maps | Phoenix RMS | Data Analysis

Incident Report for last 7 days
Run Date: March 14, 2011

CASENO	INCIDENTID	REPORTID	OFFPFID	FULLNAME	ACTIVITYTYPE	FULLNAME	RPTDTTM	RANK	RPTSTATUS	CFSCODE	FORCEUSED
2011001460	111710007113488	111710007113491	111700000001256	McCann, Dep Craig A	AD	Worden, Deputy Eric B	2011/02/25	D1	5	A725	N
					RD	McCann, Deputy Craig A	2011/02/25	D1	5	A725	N
					SO	Adcock, Tony	2011/02/25	D1	5	A725	N
					SUB	Thomas, Eunice R	2011/02/25	D1	5	A725	N
					SV	Mullaley, Sergeant Celeste D	2011/02/25	D1	5	A725	N
2011001465	111710007113978	111710007113982	111710005377809	O'Guin, CO Christopher J	ACO	Schoofs, CO Kevin	2011/02/25	CO	2	J303	N
					ACO	Donnell, CO Michael	2011/02/25	CO	2	J303	N
					CO	O'Guin, CO Christopher J	2011/02/25	CO	2	J303	N
					INM	Campbell,Terrance Rudolph	2011/02/25	CO	2	J303	N
					O	George,Donaven O	2011/02/25	CO	2	J303	N
					SV	Immekus, Lieutenant Steven	2011/02/25	CO	2	J303	N
					SV	Hernandez, Lieutenant Jose	2011/02/25	CO	2	J303	N
2011001466	111710007114339	0	111700000001215	Crespo, Dep Reynaldo	ACO	Vance, CO Jeire	2011/02/25	DB	5	.	.
					ACO	Finley, CO Melvin	2011/02/25	DB	5	.	.
					ACO	Triggs, CO Ardi R	2011/02/25	DB	5	.	.
					ACO	Baker, CO Pamela	2011/02/25	DB	5	.	.
					AD	Crespo, Deputy Reynaldo	2011/02/25	DB	5	.	.
					INM	Wilder,Jahmyll	2011/02/25	DB	5	.	.
					RCO	Leete, CO Matthew S	2011/02/25	DB	5	.	.
					SV	Jaskulski, Captain Peter R	2011/02/25	DB	5	.	.
					SV	Graber, Sergeant Richard P	2011/02/25	DB	5	.	.
					SV	Novotny, Sergeant James J	2011/02/25	DB	5	.	.
					SV	Coleman, Sergeant Gary A	2011/02/25	DB	5	.	.
					SV	Dulan, Sergeant Kyle C	2011/02/25	DB	5	.	.
					SV	Nyklewicz, Dep Inspector Kevin	2011/02/25	DB	5	.	.
					ACO	Baker, CO Pamela	2011/02/25	DB	5	.	.
			111710000574772	Vance, CO Jeire A	ACO	Vance, CO Jeire	2011/02/25	CO	5	.	.
					ACO	Finley, CO Melvin	2011/02/25	CO	5	.	.
					ACO	Triggs, CO Ardi R	2011/02/25	CO	5	.	.
					ACO	Baker, CO Pamela	2011/02/25	CO	5	.	.
					AD	Crespo, Deputy Reynaldo	2011/02/25	CO	5	.	.
					INM	Wilder,Jahmyll	2011/02/25	CO	5	.	.