Using ArcGIS Server, Blackberry, and the FlexViewer to Combat Graffiti

ESRI User Conference San Diego, CA – July 2011

Outline

- Background Information

- Definition of Terms / Types of Graffiti

- Developing the Application

- Collecting Data

- Viewing Data Collected
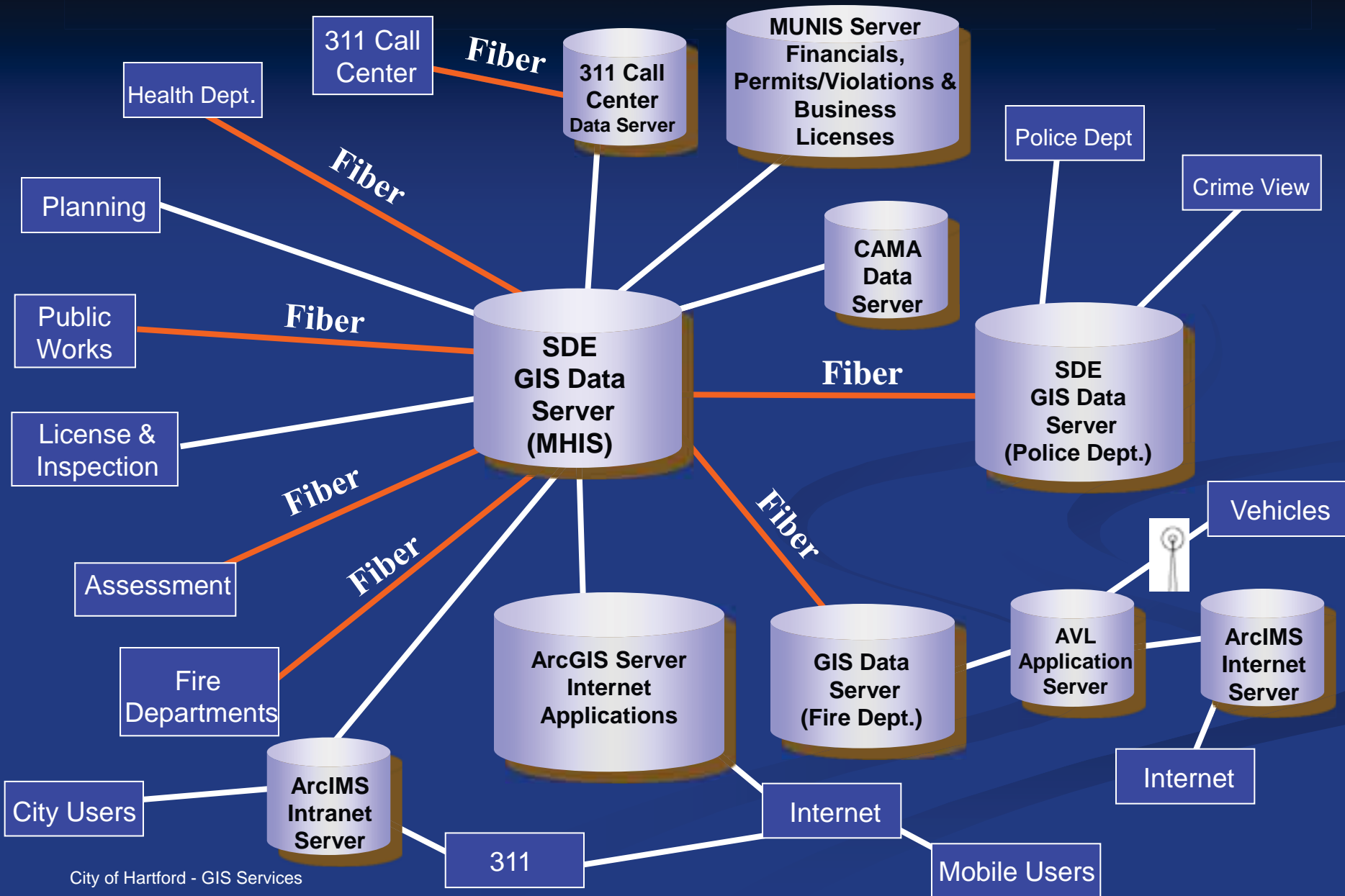
- Prosecuting Offenders / Removing Graffiti

Where we are From

Hartford, CT

Background Information

- 18 Square Miles

- Population 125,000 night time & 450,000 Daytime

- Thirteen Different Neighborhoods

- In the Summer 2010 the Mayor announced an initiative to reduce the amount of graffiti in the City

- Specialized Assignment to Major Crimes Division

City of Hartford GIS Network Infrastructure

311 Call Center

Fiber

311 Call Center Data Server

MUNIS Server Financials, Permits/Violations & Business Licenses

Health Dept.

Fiber

Planning

Police Dept

Crime View

CAMA Data Server

Public Works

Fiber

SDE GIS Data Server (MHIS)

Fiber

SDE GIS Data Server (Police Dept.)

License & Inspection

Vehicles

Fiber

Assessment

Fiber

Fiber

Fire Departments

ArcGIS Server Internet Applications

GIS Data Server (Fire Dept.)

AVL Application Server

ArcIMS Internet Server

City Users

ArcIMS Intranet Server

Internet

Internet

311

Mobile Users

Definition of Terms

- Tag - Graffiti Vandal's Unique Name or Symbol

- Bomb – More Detailed Tag

- Piece – Detailed Tag Usually Multiple Colors

- Tagging / Bombing – Slang for Spraying Graffiti

- Crew – Group of Graffiti Vandals

Types of Graffiti

Tag

Bomb

Piece

Crew

Developing the Application

Hardware / Software Used

- Blackberry Bold 9650

- Freeance Mobile v2.6.2

- ArcGIS Server

- SDE Database

- SQL Server 2005

Developing the Application   cont...

- Freeance Mobile Uses ArcGIS Server

- Use Either PostGreSQL or SQL Server Database

- Create a Table in SQL Server with an ObjectID Field

- Use Identity Property in SQL Server to increment ObjectID

- Create Additional Fields as Needed for Data Capture

- Security is Managed at the Firewall

Developing the Application cont...
Connect Freeance Mobile to SDE
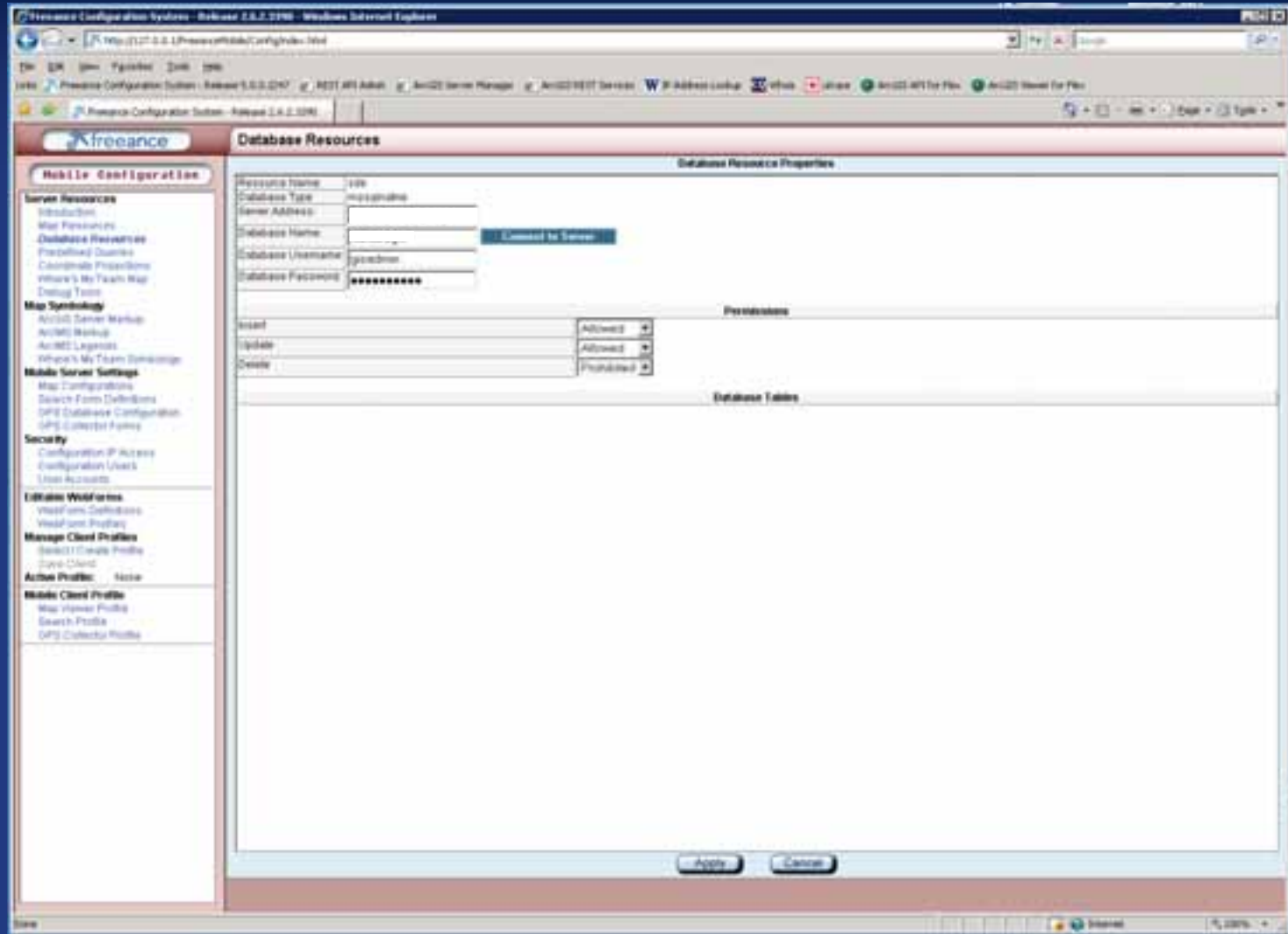
Developing the Application   cont...
Define GPS Database Configuration

Developing the Application cont...
Define GPS Collector Form

Developing the Application   cont...
Deploying the Application

Collecting Data
Blackberry Bold 9650

Collecting Data cont...
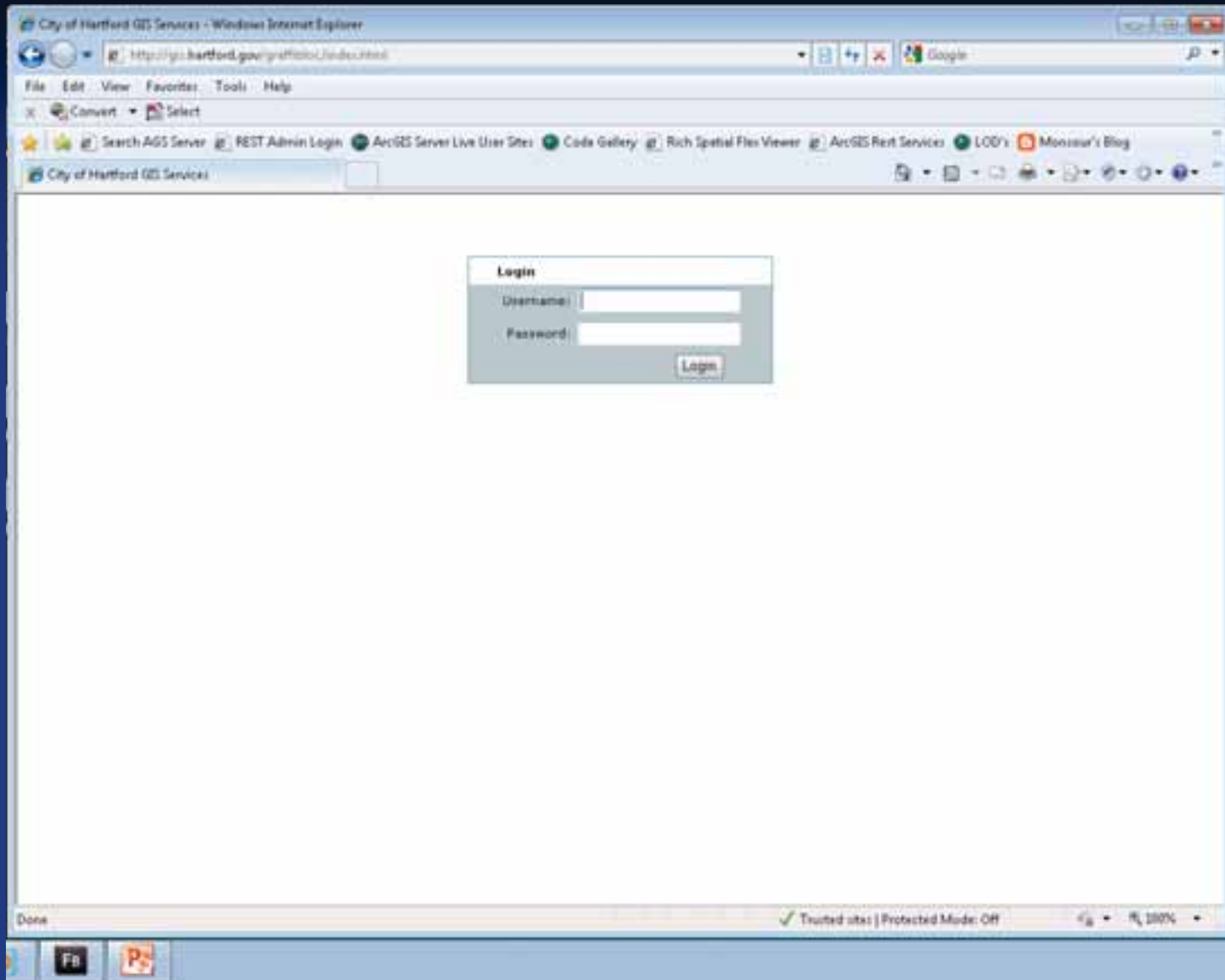## Blackberry Bold 9650

Collecting Data   cont...

When a Record is Saved

- Attributes are Written to SQL Table Using the Internet

- Time is Stored as GMT

- Image Name is Written to the SQL Table

- Image is Uploaded Using the Internet to ArcGIS Server

- Use SQL Trigger to Populate with Server Time

- Use SQL Trigger to Create a Hyperlink Field

Viewing Data Collected

- Create a ArcMap Document

- Set Projection to be GCS_WGS_1984

- Add Points as XY Event Theme Using Lat Long Fields

- Create ArcMap Document to be used as Basemap

- Publish both Map Documents as Map Services

- Create ArcGIS Flexviewer Project to Display Information

- Secured Using HTML Wrapper and Proxy Page

Viewing Data Collected cont...

Viewing Data Collected cont...

Viewing Data Collected   cont…

Prosecuting Offenders

- Statute of Limitations for Misdemeanor is 1 Year

  - Property Damage Under $1,500

- Statute of Limitations for Felony is 5 Years

  - Property Damage Greater than $1,500

- Simple Description of the Application Included in the Warrant

- Pictures of Graffiti and Map are Provided to the Court

- Cases are Prosecuted in the Hartford Community Court

- Vandals Sentenced to Restitution, Community Service and/or Jail

Removing Graffiti

- City Contracts for Removal with Knox Park Foundation

- Cost for Removal – (rate $45 per hour)

  - Street Sign - $45

  - Utility Box - $70

  - Building Exterior Wall - $1,500

  - Bridge or Overpass - $1,500

  - Railroad Tunnel - $2,500

  Note: Costs are Approximate.

Questions ?

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