

# CITY OF OAKLAND

FILED  
OFFICE OF THE CITY CLERK  
OAKLAND

## AGENDA REPORT

To: 2009 OCT 29 PM 7:32  
Office of the City Administrator  
Attn: Dan Lindheim  
From: Police Department  
Date: November 10, 2009

**Re: A Report and Proposed Resolution Authorizing the City Administrator, on Behalf of the City of Oakland, to Accept and Appropriate Grant Funds in an Amount Not to Exceed Two Hundred and Fifty Thousand Dollars (\$250,000) from the U.S. Department of Justice, Office of Community Oriented Policing Services (USDOJ/COPS), Fiscal Year 2009 COPS Technology Grant Program, for Implementation of the Automatic Vehicle Licensing (AVL) and Global Positioning System (GPS) Programs, and Appropriate Said Funds to the Police Department**

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### SUMMARY

A resolutions has been prepared authorizing the City Administrator, on behalf of the City of Oakland to accept and appropriate grant funds in an amount not to exceed \$250,000 from the U.S. Department of Justice, Office of Community Oriented Policing Services (USDOJ/COPS), FY 2009 Technology Program (COPS TECH), in support of the Automatic Vehicle Licensing (AVL) and Global Positioning System (GPS) programs. The proposed program period for the COPS TECH program is October 1, 2009 through September 30, 2010.

### FISCAL IMPACT

Authorizing the resolution will allow the City to accept and appropriate grant funds in an amount not to exceed \$250,000 from the U.S. Department of Justice, Office of Community Oriented Policing Services to the Police Department for enactment of the AVL/GPS program. Revenues and appropriations will be allocated in the Federal Grant Fund (2999), Bureau of Services Division Org. (106410), Information Technology Division Program (PS01), in a Project Account to be determined. There is no matching funds requirement. The Information Technology Division Commander will be responsible for ensuring that the terms as set forth in the grant agreement are met.

Expense allocations are as follows:

Item: \_\_\_\_\_  
Public Safety Comte.  
November 10, 2009

| Description and Use of Funds                                                                                                                                                                                            | Amount           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>COPS TECH GRANT FUNDS</b>                                                                                                                                                                                            |                  |
| Police Officers (Sworn Overtime)                                                                                                                                                                                        | <b>\$5,150</b>   |
| Equipment <sup>1</sup> :<br>Solution Software-Server License<br>Solution Software-Client Licensing<br>Mobile AVL/GPPS Hardware<br>Server Hardware and Vendor Services<br>Data Transmission Charges and Software Support | <b>\$244,850</b> |
| <b>GRAND TOTAL:</b>                                                                                                                                                                                                     | <b>\$250,000</b> |

## BACKGROUND

The Police Department intends to utilize funds allocated through the FY 2009 COPS Technology Program to purchase, install, and maintain Automatic Vehicle Licensing (AVL) and Global Positioning System (GPS) devices in a portion of its patrol vehicles as a means to improve Police Officer safety, dispatch efficiency, and effective resource deployment.

## KEY ISSUES AND IMPACTS

The Global Position System (GPS) was developed by the U.S. Department of Defense to allow the use of satellites to calculate the precise location of an asset, vehicle, or person equipped with a GPS transmitter/receiver device. Automatic Vehicle Licensing (AVL) is a system used in conjunction with GPS for determining the location of a vehicle or mobile asset; transmitting this information to a point from where it was requested. In the law enforcement world, this information is typically used with the 911 Computer Aided Dispatch (CAD) systems for Police Officer safety, smart dispatching, and tactical planning.

Many law enforcement agencies across the United States have deployed AVL and GPS as part of their operational strategies. These technologies are also widely used by fire departments, and in corporate fleet applications. Locally, AVL and GPS technologies are being used by California Highway Patrol, as well as police departments in Brentwood, Antioch, Fresno, and Fairfield.

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<sup>1</sup> Please reference the attached presentation for AVL/GPS technology.

Most departments deploy GPS using their radio transmitters or cellular transmitters. Generally, law enforcement deployments of GPS and AVL are used to facilitate location, tracking, and monitoring of vehicles and Police Officers with precision; optimum route navigation; and efficient field coordination through smart dispatching. The location of police vehicles can be provided in real-time for active tracking, or without active monitoring on a historical basis. Real time tracking can be refreshed in intervals ranging from 15 seconds to 15 minutes. Locations are recorded in conjunction with dates and times. The California Highway Patrol (CHP) uses the tracking functionality on a historical basis in reporting pursuits and traffic accidents, as well as in complaint investigations. CHP officers also use the technology for navigation.

Smart dispatching allows dispatchers to coordinate field resources in the most efficient manner by determining the locations of the closest available vehicles. Officers, supervisors, and commanders can also have the ability to see unit deployments in real-time. This can aid productivity by sending the closest unit, reducing both response times and fuel costs. Furthermore, it assists in the deployment and allocation of assets in emergencies.

## **PROGRAM DESCRIPTION**

The Police Department's program goals for enactment of the FY 2009 COPS Technology Program are:

- Improve service delivery
- Provide real-time tracking of resources
- Track and reduce response time
- Improve officer safety and officer productivity
- Improve police-community relations through more effective and equitable resource allocation
- Reduce the reality and perception of crime through more efficient dispatching of police services.
- Improve the management of emergencies.

### Community Policing Strategies/Crime Prevention Activities

At the start of 2008, the Oakland Police Department reorganized from a temporal system of policing based on shifts and "watches" to a community-oriented geographic system of policing. A basic tenet of this policing model is geographic or "beat" integrity. Police commanders are encouraged to manage assigned resources and weigh problem-oriented policing efforts against the demand to respond to non-emergency calls for service.

Item: \_\_\_\_\_  
Public Safety Comte.  
November 10, 2009

Teamwork and accountability are prominent aspects of Oakland's new system of policing and central to both its community policing and crime prevention efforts. Resources are allocated to specific commands and efforts are made to hold commanders responsible for the effective deployment of those resources. The current deployment model recognizes the inefficiencies that result from "cross-district" dispatching, but lack an effective method of tracking them.<sup>2</sup> Specially funded and assigned "problem solving officers" are required to devote efforts solely on serving the residents and businesses of an assigned community policing beat.

AVL/GPS technology will enable the Department to further both its community policing strategies and crime prevention efforts by having both real-time and historical information to deploy and track police resources. A GPS/AVL system is a proven technology that can be effectively used by the Oakland Police Department for efficient resource deployment, asset tracking, quick response, and tactical crime fighting (*Attachment A*).

## **SUSTAINABLE OPPORTUNITIES**

### **Economic**

Crime prevention activities funded by this spending plan will have a positive impact on property values and business opportunities.

### **Environmental**

There are no environmental issues associated with this report.

### **Social Equity**

The services provided through this initiative will assist the community through improved police services and enhanced police-community relations.

## **DISABILITY AND SENIOR CITIZEN ACCESS**

There are no ADA or senior citizen access issues contained in this report.

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<sup>2</sup> Cross-district dispatching refers to the practice of sending officers to an assignment simply because they are "available" without consideration of their current location or the status/assignment of other officers who may be closer.

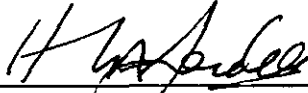
**RECOMMENDATION**

The Oakland Police Department recommends that the City Council authorize the City Administrator to accept grant funds in an amount not to exceed \$250,000 from the U.S. Department of Justice, Office of Community Oriented Policing Services, FY 2009 Technology Program for enactment of the Automatic Vehicle Licensing and Global Positioning System programs, and appropriate said funds to the Police Department.

**ACTION REQUESTED BY THE CITY COUNCIL**


Staff recommends that the City Council approve the resolution.

Respectfully submitted,

  
\_\_\_\_\_  
Anthony Batts  
Chief of Police

Prepared by: Candice Jessie  
Budget and Grants Administrator  
Fiscal Services Division  
Office of the Chief of Police

APPROVED AND FORWARDED TO  
THE PUBLIC SAFETY COMMITTEE:

  
\_\_\_\_\_  
Office of the City Administrator

*Attachment: Presentation*



Item: \_\_\_\_\_  
Public Safety Comte.  
November 10, 2009

**Automatic Vehicle Location  
System**

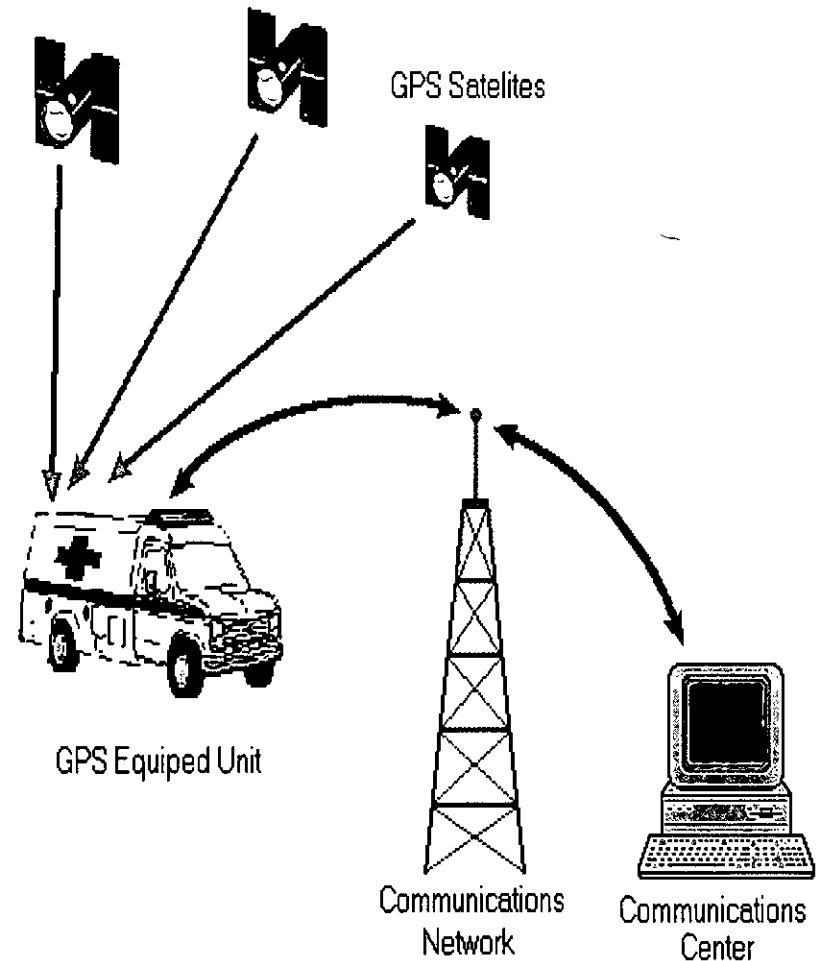
**Oakland Police Department**

Deputy Chief David Kozicki, BFO, OPD  
Ahsan Baig, Manager, Public Safety Div., DIT



# What Is GPS?

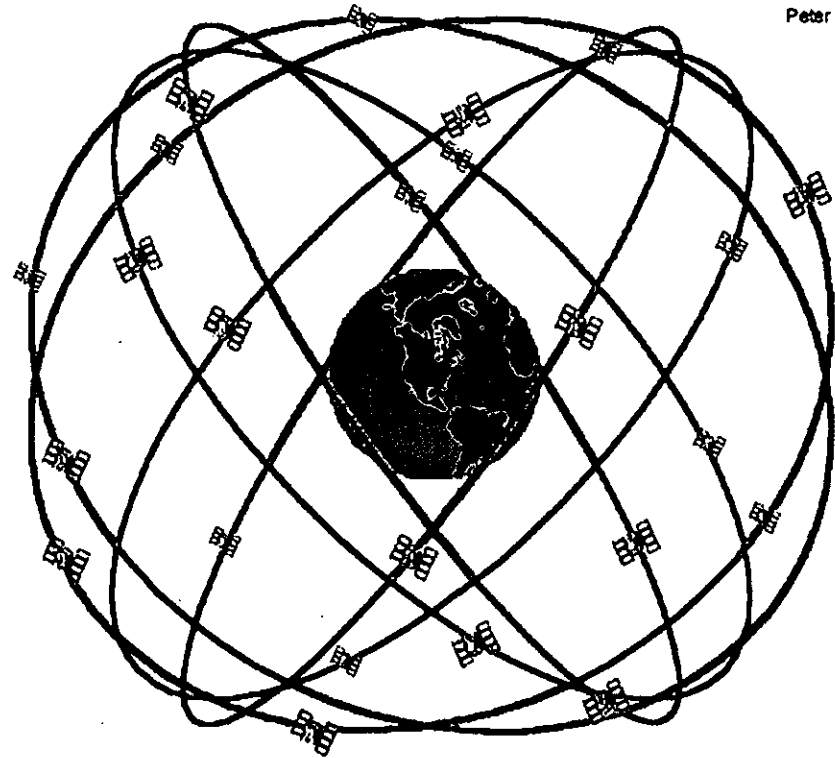
- GPS stands for “Global Positioning System”.
- It was developed and is maintained by the U.S. Department of Defense.
- GPS receiving units passively receive radio signals from these “space vehicles” (SV’s) and use the signals to calculate location, speed, heading, altitude.



# What Is GPS?

Peter H. Dana 9/22/98

- The nominal GPS Operational Constellation consists of 24 satellites that orbit the earth in 12 hours at an altitude of approximately 12,600 nautical miles.
- This constellation provides the user with between five and eight SVs (Space Vehicles) visible from any point on the earth.
- GPS antennas must have “line of sight” to satellites.

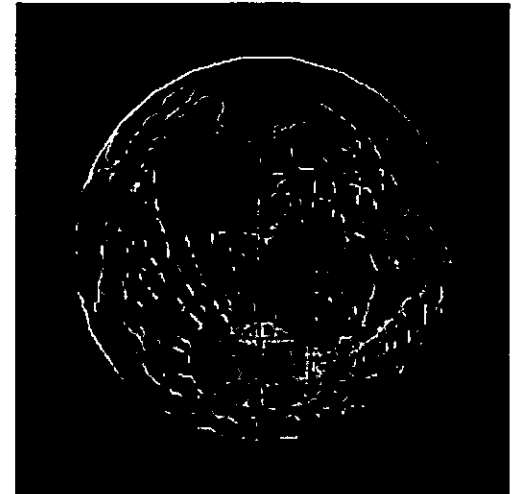


**GPS Nominal Constellation  
24 Satellites in 6 Orbital Planes  
4 Satellites in each Plane  
20,200 km Altitudes, 55 Degree Inclination**



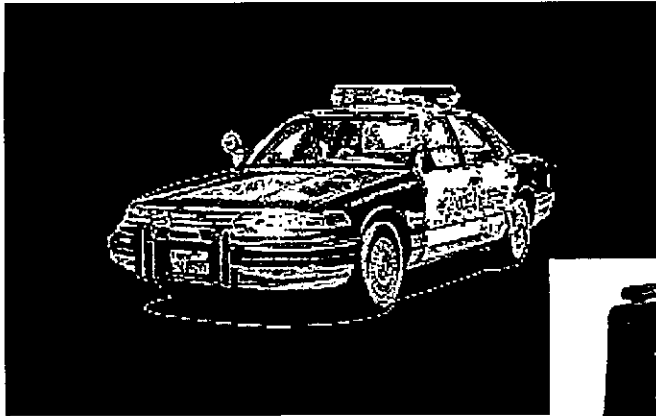
# How GPS Works?

- Location is calculated by determining the amount of time it took for a GPS signal to travel from the satellite to the GPS device.
- Using signals from four or more satellite signals, and an internally maintained almanac of satellite locations, a GPS device can pinpoint its location in three dimensions.
- Speed and Heading are calculated by analyzing the Doppler shift of the received GPS radio signal.

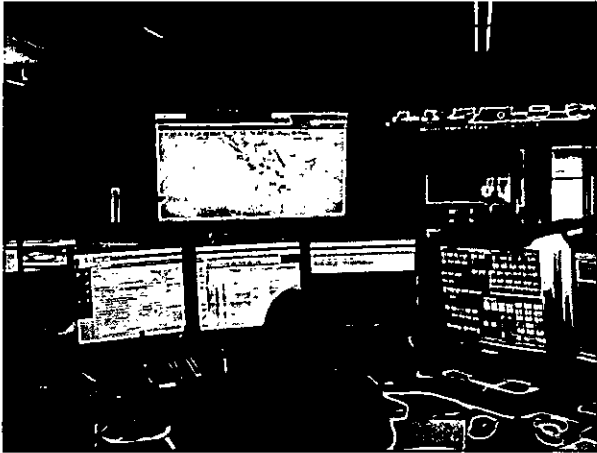


# GPS Accuracy (Speed/Heading)

- The carrier signals used to calculate speed and heading are unaffected by atmospheric or multipath conditions.
- Speed accuracy is 0.1 Meter/Sec (0.23 MPH).
- Vehicle must be moving to determine Heading.



# GST Public Safety Technology Attachment A One Common Operating Picture



Dispatch View



Mobile View

(Using Sprint EVDO Rev A Card)

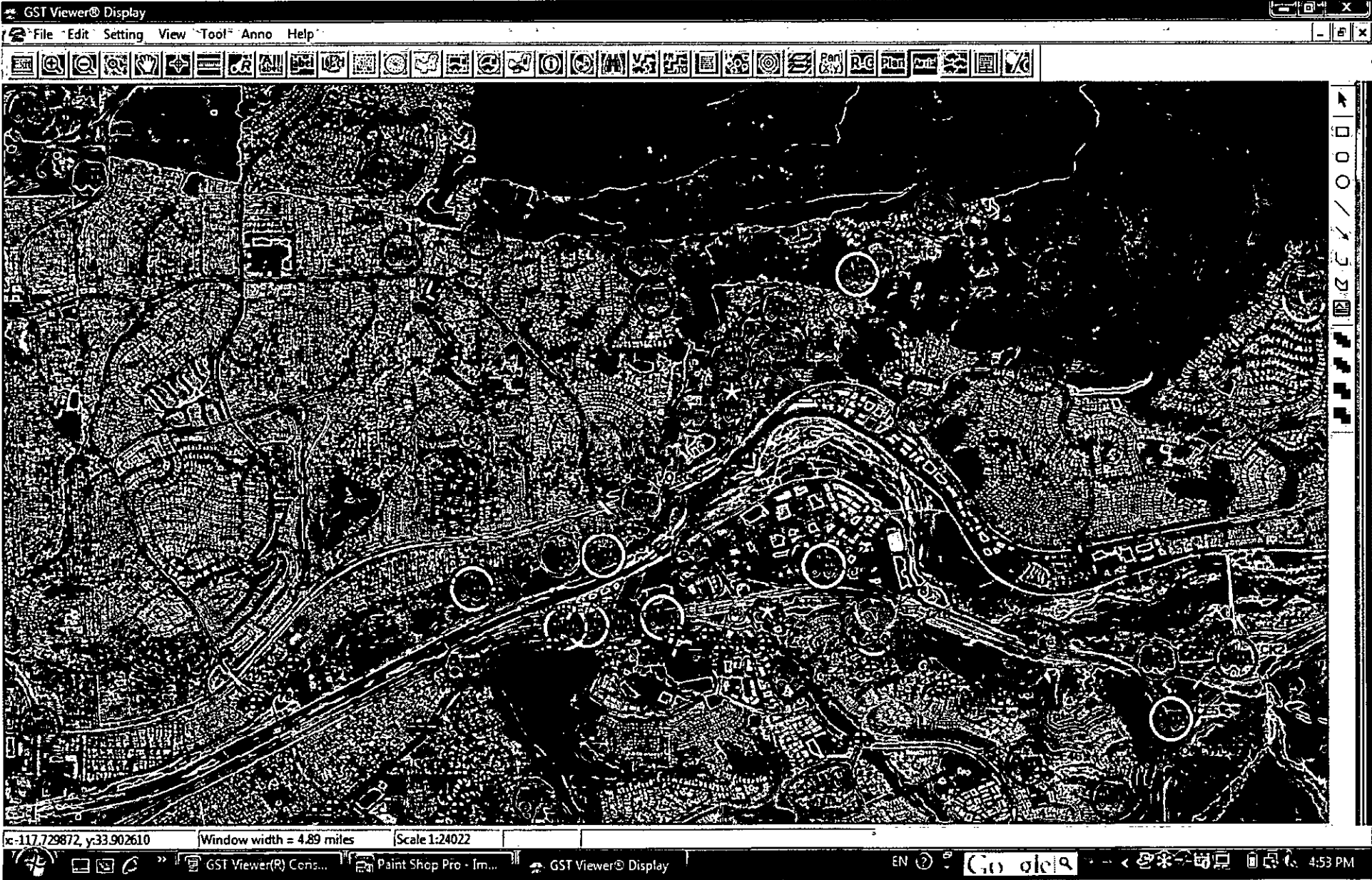
## Features:

- **View Persons - Handset, Blackberry, PDA**
- **View Vehicles – GPS Modems / REV A Cards (Multiple Communication Protocols)**
- **Multiple Viewing Platforms (Web, GIS Data –ESRI)**
- **Display Multiple Layers (Aerial, Scanned Images)**
- **Regional Interoperability**
- **GST Open CAD Interface**
- **Create Geofence with Notifications**
- **History Playback**



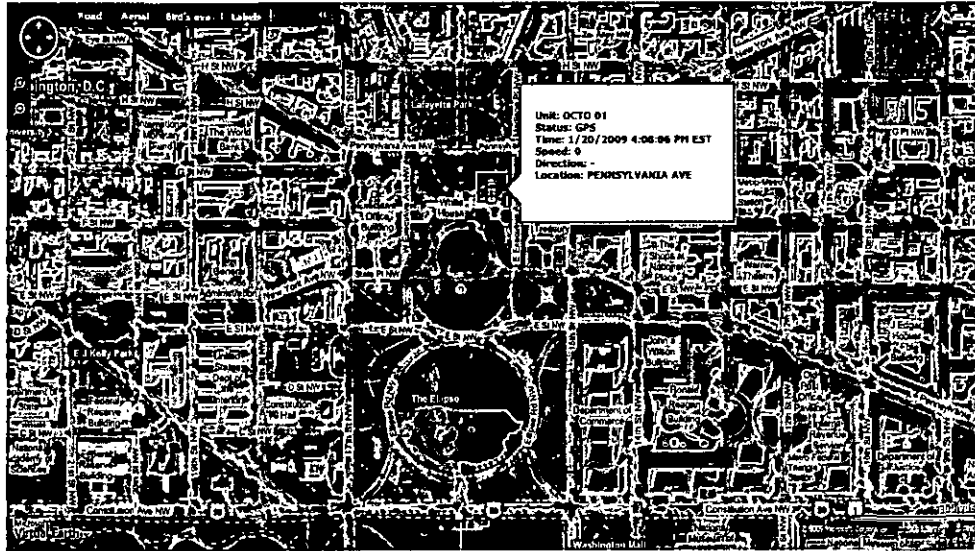
Attachment A

Regional Interoperability with Multiple Agencies including Police, Fire, Public Works, Public Utilities using different GPS devices under multiple networks and multiple CADs



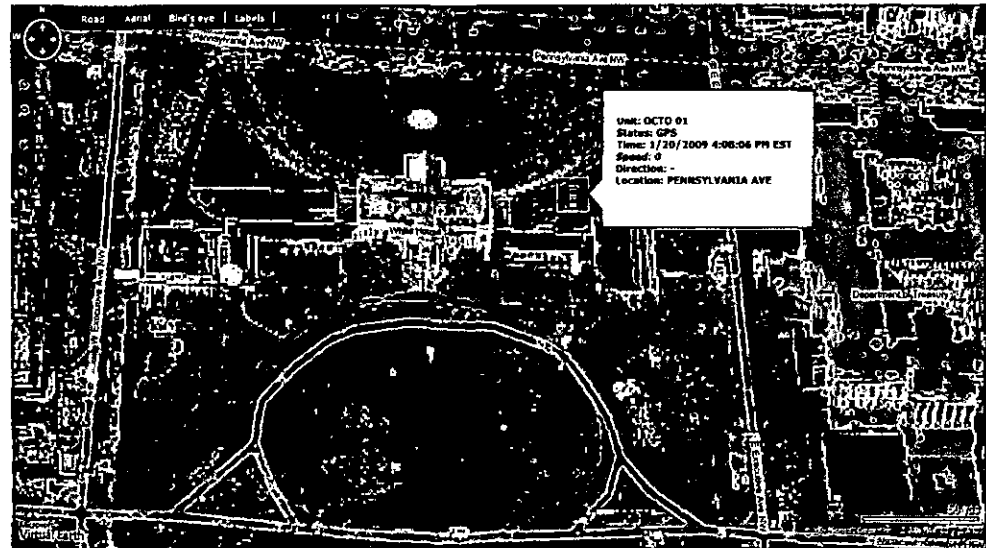
# GST Technology used in President Obama's Inauguration January 20, 2009

Attachment A



Aerial View

Bird's Eye View



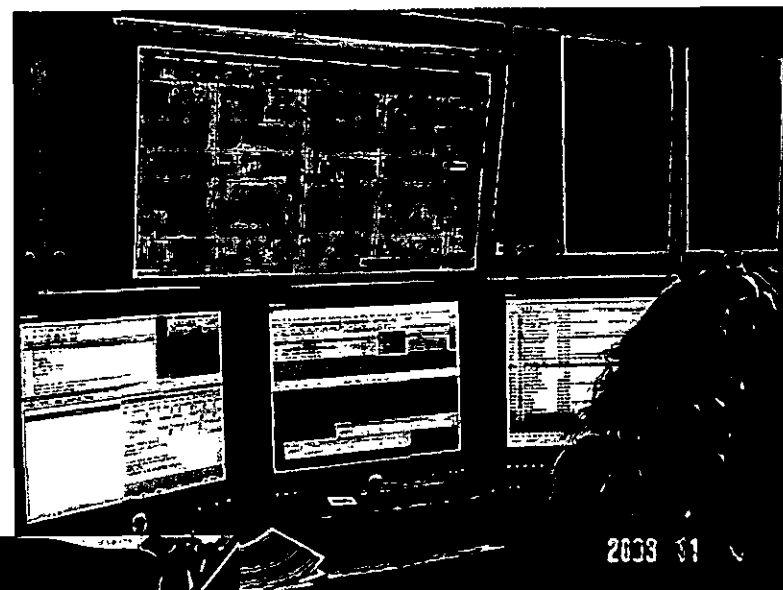
# Situational Awareness with Attachment A

## One Common Operating Picture

EOC



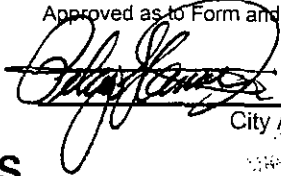
Dispatch



Vehicle MDC

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OAKLAND

## OAKLAND CITY COUNCIL

  
 City Attorney

2009 OCT 29 PM RESOLUTION No. \_\_\_\_\_ C.M.S.

**RESOLUTION AUTHORIZING THE CITY ADMINISTRATOR, ON BEHALF OF THE CITY OF OAKLAND, TO ACCEPT AND APPROPRIATE GRANT FUNDS IN AN AMOUNT NOT TO EXCEED TWO HUNDRED AND FIFTY THOUSAND DOLLARS (\$250,000) FROM THE U.S. DEPARTMENT OF JUSTICE, OFFICE OF COMMUNITY ORIENTED POLICING SERVICES (USDOJ/COPS), FISCAL YEAR 2009 COPS TECHNOLOGY GRANT PROGRAM, FOR IMPLEMENTATION OF THE AUTOMATIC VEHICLE LICENSING (AVL) AND GLOBAL POSITIONING SYSTEM (GPS) PROGRAMS, AND APPROPRIATE SAID FUNDS TO THE POLICE DEPARTMENT**

**WHEREAS**, it is anticipated that grant funds in an amount not to exceed \$250,000 will be awarded by the U.S. Department of Justice, Office of Community Oriented Policing Services (USDOJ/COPS), FY 2009 Technology Program, for enactment of the Automatic Vehicle Licensing and Global Positioning System program in the Police Department; and

**WHEREAS**, enactment of the Automatic Vehicle Licensing (AVL) (also known as Automatic Vehicle Locator) and Global Positioning System (GPS) initiative shall assist in improving Police Officer safety, dispatch efficiency; and

**WHEREAS**, the AVL/GPS program shall also assist in the improvement of the Department's police-community relations through more effective and equitable resource allocation, as well as overall public safety management during times of emergency; now therefore be it

**RESOLVED:** That the City Council hereby authorizes the City Administrator, or his designee, to accept grant funds in an amount not to exceed \$250,000 from the U.S. Department of Justice, Office of Community Oriented Policing Services (USDOJ/COPS), FY 2009 Technology Program, in support of the Police Department's AVL/GPS initiative, and to increase revenues and appropriate said budget to the Police Department; and be it

**FURTHER RESOLVED:** That grant funds from the U.S. Department of Justice, Office of Community Oriented Policing Services, shall be maintained in the Federal Grant Fund (2112), Bureau of Services Division Org. (106410), Information Technology Division Program (PS01), in a Project Account to be established; and be it

**FURTHER RESOLVED:** That the City Administrator or his designee is hereby authorized to complete all required negotiations, certifications, assurances and documentation required to accept, modify, extend and/or amend the grant awards; and be it

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NOV 10 2009

**FURTHER RESOLVED:** That the City Attorney shall review and approve said agreement as to form and legality and copies of said agreement shall be filed with the Office of the City Clerk.

IN COUNCIL, OAKLAND, CALIFORNIA, \_\_\_\_\_, 20\_\_\_\_\_

**PASSED BY THE FOLLOWING VOTE:**

AYES- BROOKS, DE LA FUENTE, KAPLAN, KERNIGHAN, NADEL, QUAN, REID, and PRESIDENT BRUNNER

NOES-

ABSENT-

ABSTENTION-

ATTEST: \_\_\_\_\_

LaTonda Simmons  
City Clerk and Clerk of the  
Council of the City of Oakland, California

**PUBLIC SAFETY COMTE.**

**NOV 10 2009**