

CITY OF OAKLAND
AGENDA REPORT

FILED
OFFICE OF THE CITY CLERK
OAKLAND

2008 OCT 16 PM 6:31

To: Office of the City Administrator
Attn: Dan Lindheim
From: Department of Information Technology and Police Department
Date: October 28, 2008

Re: Action on A Report From The Department Of Information Technology And The Oakland Police Department On The Status Of Installing GPS In Police Vehicles And/Or Police Radios In The City Of Oakland

SUMMARY

As requested by the Rules and Legislation Committee, staff has prepared this report detailing the feasibility of installing Global Position System (GPS) devices in police vehicles and Automatic Vehicle Location (AVL) systems for officer's safety, dispatch efficiency, and effective resource planning. There is currently no active project involving GPS or AVL for the Oakland Police Department.

FISCAL IMPACT

Staff has not requested a formal Request for Proposal (RFP) nor has a formal estimate been prepared; however, it is projected that the cost to implement this project is estimated at \$750,000 including GPS devices, AVL software, radio interface, and integration with the Computer Automated Dispatch (CAD) software. The annual maintenance cost is estimated at approximately \$45,000 for the AVL hardware and software. This cost does not include the monthly recurring charges for communicating the location data stream back to the communications center for smart dispatching¹ (an approximate cost of \$25 per month, per GPS device). The exact cost can only be determined once the exact data stream and frequency of location is defined.

Should the Department move forward to implement a GPS and/or AVL project, staff will submit to the Council specific funding requests and fiscal implications for each of the projects.

BACKGROUND

GPS was developed by the U.S. Department of Defense and allows the use of satellites to calculate the precise location of an asset, vehicle, or person equipped with a GPS transmitter/receiver device.

¹ 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.

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An AVL system is used in conjunction with GPS for determining the location of a vehicle or mobile asset and transmitting this information back to the point from which it was requested. In the law enforcement profession, this information is typically used with the 911 CAD systems for Officer's safety, smart dispatching, and tactical planning. With the Geographical Policing model used in Oakland, the AVL could be an effective tool for ensuring that officers are spending more time on their assigned beat by providing location and cross-dispatching (between beats) reports. This ability is currently not available with the CAD system.

Many law enforcement agencies across the United States have deployed GPS and/or AVL as part of their operational strategies. These technologies are also being widely used by fire departments, and in corporate fleet applications. Locally, GPS and/or AVL are being used by California Highway Patrol (CHP), Brentwood, Antioch, Fresno, and Fairfield, California Police Departments. Most departments deploy GPS using their radio transmitters or cellular transmitters. In general, law enforcement deployments of GPS and AVL are used to facilitate location, tracking, and monitoring of vehicles and officers with precision, optimum route navigation, and efficient field coordination through smart dispatching. With the use of this technology, locations can be provided in real-time for active tracking or by showing where vehicles were located in the past (historical data). Real time tracking (simultaneous tracking of position) can be refreshed in intervals ranging from 15 seconds to 15 minutes, and locations are recorded in conjunction with dates and times.

CHP uses the tracking functionality on an historical basis for reporting pursuits and traffic accidents, as well as in complaint investigations. CHP officers also use the navigational component for obvious reasons. The Oakland Police Department could effectively use GPS on an historical basis as part of the In-Car Video Management System (ICVMS) currently being introduced. Brentwood, Fairfield, Fresno, and Antioch currently utilize GPS with AVL for smart dispatching purposes.

In the City of Oakland, the Fire Department has been using GPS/AVL with Advanced Tactical Mapping (ATM) since 2004 to track fire trucks/engines and crew locations and provide driving directions. The AVL/ATM system was deployed as part of the Integrated Public Safety System (IPSS) project, and integrated with the Fire Department CAD system. The same backend infrastructure could possibly be used for the Police CAD system with some integration services. The ICVMS currently being deployed in Police Department vehicles includes GPS devices; all 101 police vehicles equipped with the ICV have GPS transceivers. The ICV system uses the historical location information with the video recordings, and could possibly be used with the other real-time applications. The Department of Public Works is in the process of deploying the GPS/AVL system in their vehicles for fleet management.

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KEY ISSUES AND IMPACTS

The AVL system is a proven technology, effectively used for efficient resource deployment, asset tracking, quick response, and tactical crime fighting. There are three different ways the technology could be deployed in Oakland. The following table depicts these options with the pros and cons associated with each.

Options	Technology	Pros	Cons
Officer Tracking (Real Time)	<ul style="list-style-type: none"> • Radios based • Each M/A-Com Radio needs to be upgraded with the GPS 	<ul style="list-style-type: none"> • Individual Officer's Safety • Personnel Location Services • Precise response • Higher Accountability 	<ul style="list-style-type: none"> • Impact on Data loading • Could be expensive if used with the Cellular System • Possible backlash due to "Big Brother" watching • Privacy Issues • Poor inside building coverage
Vehicle Tracking (Real Time)	GPS based with cellular system	<ul style="list-style-type: none"> • Vehicles are tracked • Personnel Location Services • Precise response with better field coordination • Better reports for Area Cross Dispatch 	<ul style="list-style-type: none"> • Could be expensive if used with the Cellular System • Possible backlash due to "Big Brother" watching • Could be used with the Radio system with substantial overhead
Vehicle Tracking (Non-Real Time)	GPS but no real-time data transfer	<ul style="list-style-type: none"> • Vehicles are tracked • No communication overhead • Better reports for Area Cross Dispatch 	<ul style="list-style-type: none"> • No real-time information • Could be laborious to develop reports and analysis

Research, as well as discussion with agencies currently deploying GPS and AVL, revealed the following issues and impacts:

- Smart dispatching decreases response times.
- Officer safety and accuracy is enhanced by having precise location information available.
- Turn-by-turn navigation reduces guesswork, fuel costs, and response times.
- Location information coupled with date and time stamps may assist in complaint investigations/redactions.

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- Officers may believe the functionality will be used in unfair performance analysis. (One agency implemented policy that supervisors could not initiate investigations based solely on GPS data.)
- Additional hardware will be required as the current OPD CAD system does not support GPS or AVL.
- Wireless network coverage can affect performance.
- GPS hardware and software would need to be purchased.
- Systems integration and installations issues will need to be identified and addressed.

PROJECT DESCRIPTION

There is currently no active project involving GPS or AVL for the Oakland Police Department; therefore no project description is available.

SUSTAINABLE OPPORTUNITIES

Economic: As stated, turn-by-turn navigation reduces fuel costs, which translates to City savings in the cost of fuel for police vehicles.

Environmental: There are no environmental opportunities associated with this report.

Social Equity: Implementation of GPS systems in police vehicles will result in decreased response time to calls for service, thereby increasing the ability for officers to arrive at crime scenes in a timelier manner and improving arrest statistics.

DISABILITY AND SENIOR ACCESS

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

RECOMMENDATION

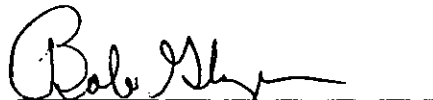
Staff recommends acceptance of this report.

The DIT and OPD will continue to develop an RFP to solicit vendors who can meet the technological needs of the Oakland Police Department and the City as related to the GPS/AVL project.

ACTION REQUESTED OF THE COUNCIL

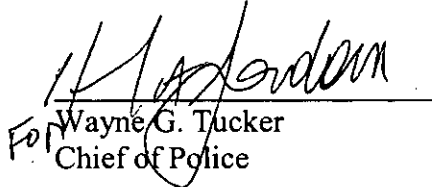
Staff requests that the Council accept this report.

Respectfully submitted,



Bob Glaze, Director
Department of Information Technology

Respectfully submitted,

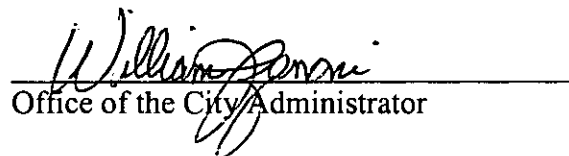


For Wayne G. Tucker
Chief of Police

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APPROVED AND FORWARDED TO THE
PUBLIC SAFETY COMMITTEE:



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