

BAY AREA RAPID TRANSIT DISTRICT

Proposed Surveillance Use Policy for the Integrated Helicopter Mapping System

1. Purpose

The integrated mapping system shall be used primarily for helicopter navigation and to provide support for ground units engaged in law enforcement activities.

2. Authorized Uses

- Navigation
- Search and Rescue
- Vehicle Pursuit
- Tracking Suspects
- Fire Assistance
- Evidence Collection
- Other law enforcement or first responder uses not prohibited by law
- All other uses not referenced above shall be prohibited.

3. Data Collection

The following data may be obtained through the integrated helicopter mapping system:

Mapping Software

- Address
- Business Names
- Parcel Numbers
- Topographical Information (navigational hazards only, such as towers, electrical wires, etc.)

Camera

- Regular video images
- Thermal video images

The system's camera will be activated only when there is a reasonable suspicion that a crime is occurring or a significant event is in progress.

Any data obtained through the integrated helicopter mapping system must be used and handled pursuant to this policy.

4. Data Access

- Access to live mapping information and video image is limited to the helicopter observer.
- If recorded, video footage or still images may be viewed through the helicopter monitor by the helicopter observer and Air Support Unit Sergeant.

- Video footage/still image may be downloaded and released to a third party as required by law.

5. Data Protection

The integrated mapping system will be permanently affixed to the BART Police Department's Helicopter ("Helicopter"). The view screen will remain permanently affixed inside the locked cockpit.

Helicopter shall be stored in a locked hangar in a secured, federal property. All authorized staff with access to the Helicopter shall observe all security measures to ensure that access to the Helicopter is limited to authorized personnel only.

Access to the Helicopter is limited to the following:

- Helicopter Pilot
- Helicopter Observers
- Air Support Unit Sergeant

The integrated mapping system shall be operated only by helicopter observers who have been trained in its operation.

Copies of video or still images released to the Investigating Officer for law enforcement activities shall be handled by the Investigating Officer pursuant to the Police Department's General Orders and the California Evidence Code.

6. Data Retention

Videos and photographs stored in the integrated mapping system's hard drive may be retained for a maximum of one year, unless deleted by the helicopter observer when the hard drive has reached its memory capacity, to allow the Investigating Officer sufficient time to determine if the video footage/still image will be needed as evidence for law enforcement and to serve as back-up in case the downloaded copy stored in a disk or thumb drive becomes corrupted. Data downloaded onto a disc or thumb drive or by other electronic means or hard copy image will be maintained in strict accordance to applicable state or federal evidentiary laws. All other data will be retained for no more than one year.

7. Public Access

Criminal law enforcement videos, photographs and information from the integrated mapping system are exempt from public disclosure pursuant to Government Code §6254(f)

8. Third-Party Data-Sharing

Video footage or photographs may potentially be shared with the following:

- Investigating Officer
- District Attorney's Office for use as evidence to aid in prosecution, in accordance with laws governing evidence
- Parties in a civil litigation involving the County, in response to a subpoena

- Defendant in a traffic matter, in response to subpoenas issued by the defendant
- Pursuant to a Court Order

9. Training

Training for operating the integrated mapping system will be provided by the vendor and will be limited to staff assigned as helicopter observers.

10. Auditing and Oversight

The helicopter crew shall submit a mission log each time the helicopter flies. The mission log includes the following information:

- Date
- Names of helicopter crew
- Start time and duration of each flight
- Mission activity time and mission activity events
- Detailed log regarding the start and end time of each activity and a description of each activity that includes the location, reason for going to the location, and actions taken by the crew.

The log will be reviewed by the Special Operations Administration and emailed to the Chief, Assistant Chief, and Captains assigned to Patrol Headquarters and Special Operations.

All video footage and still images stored in the integrated mapping system's hard drive are subject to review by the Air Support Unit Sergeant to ensure compliance with this policy.

BAY AREA RAPID TRANSIT DISTRICT

Anticipated Surveillance Impact Report for the Integrated Helicopter Mapping System

1. Information Describing the Integrated Helicopter Mapping System and How It Works

An integrated helicopter mapping system is a set of devices that link the helicopter's mapping software, a compatible camera, and GPS. An Internal Measurement Unit (IMU) is paired with the helicopter's GPS to allow synchronization of the camera's field of view with the mapping software, so that the mapping information is overlaid over real-time video images. The resulting image is similar to Google Maps which augments satellite imagery with street names and other data.

Sample Image of Integrated Mapping System



Mapping Software

Information available in the mapping software:

- Address
- Business Names
- Parcel Numbers
- Topographical Information (navigational hazards only, such as towers, electrical wires, etc.)

Camera

As with the camera currently installed in the BART Police Department's helicopter, the camera compatible with the IMU can switch between a regular view and a Forward looking infrared (FLIR) camera. FLIR cameras use a thermographic camera that senses infrared radiation. The sensors installed in FLIR cameras—as well as those of other thermal

imaging cameras—use detection of infrared radiation, typically emitted from a heat source (thermal radiation), to create a "picture" assembled for video output.

Thermal imaging cameras detect the heat given off by an object or person. Thousands of sensors on the array convert the infrared energy into electrical signals, which create a video image. The infrared camera measures and displays a “thermal profile” of objects in relation to the temperature of surrounding objects. So a person, warmer than the surrounding air, appears “white” while the cooler surrounding air or buildings will appear in varying shades of gray. The “white” images do not always show a clear silhouette and, as such, are subject to the observer’s interpretation.

Sample Image of Vehicle Pursuit (San Diego)



Sample Image of Suspect Running through Backyard with Police in Pursuit



2. Proposed Purpose

The integrated mapping system is primarily used as a navigational device. When flying to a specific location, the helicopter observer can enter an address, an intersection, or a grid section in the mapping system to obtain information regarding the shortest route to the location, navigational hazards, and a digital map of the destination. If paired with the camera, the observer can view the ground image along with the mapping information.

During routine patrol, the observer makes “naked eye” observations of the ground area. The camera is activated only if there is a reasonable suspicion that a crime is occurring or if a significant event is in progress, such as:

- **Vehicle Pursuit / Tracking Suspects**

Once the helicopter observer has located the fleeing vehicle or suspect, the camera can be turned on to track the vehicle or suspect. Since an integrated mapping system would allow the observer to view both real-time video images and mapping information at the same time, the observer can quickly provide pursuing ground units with information such as the vehicle or person’s precise direction of travel, potential hazards in specific areas, and other logistical information to minimize the hazards inherent in pursuits.

- **Search and Rescue**

Search and Rescue often encompass a wide area and/or remote locations. The integrated mapping system would allow the helicopter crew to quickly conduct a search and provide ground crews with the subject’s location. The FLIR camera can also be used to aid in a night time search for a missing person.

- **Fire Assistance**

The integrated mapping system can be used to assist in firefighting efforts by locating hot spots and residual fires, or assist in transporting first responders to remote locations.

- **Evidence Collection**

If the observer believes that an incident needs to be recorded as evidence or is instructed by the Field Commander or Investigating Officer to record an incident as evidence, the observer can record a video footage of events or take still images of crime scenes or death investigation scenes.

3. Locations Where Integrated Mapping System May Be Deployed

The Police Department’s helicopter, and by default, the integrated mapping system is deployed over navigable airspace throughout the BART Jurisdiction. “Navigable airspace” is defined under 49 USCS § 40102 (32) as:

Above the minimum altitudes of flight prescribed by regulations...including airspace needed to ensure safety in the takeoff and landing of aircraft.

Specifically, the Police Department's helicopter normally flies at an altitude of 1,000 to 1,200 feet above ground level. For safety reasons, the minimum altitude that the helicopter can fly is 800 feet above ground level.

Because the helicopter is also considered a mutual aid asset, it may also be deployed in other Bay Area jurisdictions that request assistance. The helicopter has been utilized in the counties of Santa Cruz, Contra Costa, and Alameda County.

4. Potential Impact on Civil Liberties & Privacy

The Supreme Court has held that observing and photographing people's homes and surrounding areas from a helicopter, flying at 400 feet, does not violate the Fourth Amendment. The Police Department recognizes that all people have an inalienable right to privacy and is committed to protecting and safeguarding this right by adhering to the strictest requirements of both state and federal law by operating the helicopter well above the minimum level allowed by law.

The Police Department also recognizes that the integrated helicopter mapping system could raise concerns regarding real and/or perceived threats to civil liberties and privacy. To address those issues, the Police Department conducted a privacy impact assessment using relevant sections of the Homeland Security *Privacy Impact Assessments Official Guidance* and incorporated issues raised by civil liberties and privacy advocacy groups. The assessment revealed that the integrated helicopter mapping system does not pose any significant impact on civil liberties and privacy based on the following:

- a) The integrated mapping system is primarily designed for navigational purposes. It is not designed to establish the identity of individuals. All information available through the integrated mapping system such as an address, business name, or image is considered public record/information that may be obtained by anyone through direct observation, an online search such as the Assessor's Office property records, an online search map such as Google Maps, or through the use of regular GPS navigational devices.
- b) While the helicopter observer may potentially see members of the public who are not suspected of engaging in criminal conduct, the observer would only be able to view the image for a brief period through the helicopter monitor since the focus would remain on the vehicle, suspect, or missing person being tracked. Additionally, no recording is made unless there is a reasonable suspicion that a crime is occurring or a significant event is in progress.
- c) In general, the public is concerned about police helicopters using powerful zoom lenses and FLIR cameras that may be used for discriminatory targeting or other purposes. It must be noted that:
 - The helicopter camera is not equipped with a powerful zoom lens since focusing too closely on a vehicle or a person causes the observer to lose perspective of the

surrounding area. The whole purpose of using the camera is to direct ground units to a vehicle or person's location and/or direction of travel.

- Contrary to popular belief, FLIR cameras cannot see through exterior walls, roofs, cars, clothing, or any object that would normally block a view observable by the naked eye. They also cannot see through glass because glass has its own thermal profile.

Unlike night vision cameras that have the ability to see in low light conditions, FLIR cameras can only detect an abnormal heat source which would appear "white" while the cooler surrounding air or buildings will appear in varying shades of gray. The "white" images do not always show a clear silhouette and, as such, are subject to the observer's interpretation.

- Concerns over voyeurism often stem from operators who work alone since it provides the most opportunity for abuse. The helicopter observer cannot operate the integrated mapping system without the helicopter pilot since the system can only be operated while the helicopter is in flight.

Additionally, all recordings made by the helicopter observer are subject to review by the Air Support Unit Sergeant.

5. Fiscal Cost

Initial Purchase Cost

Based on a quote from a prospective vendor, the cost is approximately \$620,000 plus the cost of a mandatory performance bond required by the grant providers.

Personnel Costs

There are no additional personnel costs associated with the purchase of the integrated mapping system.

Ongoing Costs

There are no ongoing costs associated with the purchase of the integrated mapping system. Most vendors offer free training, a three-year warranty for the equipment, and free updates of the mapping software for the life of the equipment.

The anticipated lifespan of the system is about eight (8) years. However, with proper maintenance, staff anticipates the useful operational lifespan of the system to exceed eight years.

Potential Sources of Funding

The integrated helicopter mapping system will be fully funded with grants from UASI (Urban Areas Security Initiative) and SHSGP (State Homeland Security Grant Program).

BART Police Department

Sample Annual Surveillance Report for an Integrated Helicopter Mapping System

This is the 2017 Annual Report for the Integrated Helicopter Mapping System owned and operated by the BART Police Department. This Report is intended to satisfy the requirements of the BART Privacy & Surveillance Ordinance.

This Report includes a summary of how BART police generally used the System, data sharing with non-BART entities, community complaints related to the System, the results of any internal audits of the System, crime statistics for the BART system, and the total annual costs for the System. Further details about the rules governing the use of the System and its data can be found in the Surveillance Use Policy.

Background

BART Police own and operates an Integrated Helicopter Mapping System. An integrated helicopter mapping system is a set of devices that link the helicopter's mapping software, a compatible camera, and GPS. An Internal Measurement Unit (IMU) is paired with the helicopter's GPS to allow synchronization of the camera's field of view with the mapping software, so that the mapping information is overlaid over real-time video images. The resulting image is similar to Google Maps which augments satellite imagery with street names and other data.

The camera compatible with the IMU can switch between a regular view and a Forward looking infrared (FLIR) camera. FLIR cameras use a thermographic camera that senses infrared radiation. The sensors installed in FLIR cameras detect infrared radiation, typically emitted from a heat source (thermal radiation), to create a "picture" assembled for video output.



A. System Use

The integrated mapping system is primarily used as a navigational device. During routine patrol, the observer makes “naked eye” observations of the ground area. When flying to a specific location, the helicopter observer can enter an address, an intersection, or a grid section in the mapping system to obtain information regarding the shortest route to the location, navigational hazards, and a digital map of the destination. If paired with the camera, the observer can view the ground image along with the mapping information.

As a general matter, the Surveillance Use Police mandates that the System only be activated where there is suspicion that a crime is occurring or if a significant event is in progress, such as:

- **Vehicle Pursuit / Tracking Suspects**

Once the helicopter observer has located the fleeing vehicle or suspect, the camera can be turned on to track the vehicle or suspect. Since an integrated mapping system would allow the observer to view both real-time video images and mapping information at the same time, the observer can quickly provide pursuing ground units with information such as the vehicle or person’s precise direction of travel, potential hazards in specific areas, and other logistical information to minimize the hazards inherent in pursuits.

- **Search and Rescue**

Search and Rescue often encompass a wide area and/or remote locations. The integrated mapping system would allow the helicopter crew to quickly conduct a search and provide ground crews with the subject’s location. The FLIR camera can also be used to aid in a night time search for a missing person.

- **Fire Assistance**

The integrated mapping system can be used to assist in firefighting efforts by locating hot spots and residual fires, or assist in transporting first responders to remote locations.

- **Evidence Collection**

If the observer believes that an incident needs to be recorded as evidence or is instructed by the Field Commander or Investigating Officer to record an incident as evidence, the observer can record a video footage of events or take still images of crime scenes or death investigation scenes.

In 2017, the Department activated the System as follows:

- **Vehicle Pursuit/Tracking Suspects:** 15 activations. On various occasions, the Department activated the FLIR system in order to assist with vehicle pursuits that originated on BART property or pursuant to related joint operations with the Oakland Police Department.
- **Search and Rescue:** 5 activations. The Department activated the FLIR system in response to search and rescue operations near the exterior of the MacArthur, Fremont, and Rockridge Stations. These incidents all occurred during the fourth quarter of 2017.
- **Fire Assistance:** 5 activations. At the request of the fire department, the Department

made available Department resources including the FLIR camera during five different fire incidents ranging in severity. See Section B. for more detail.

- **Evidence Collection:** 10 activations. The Department activated the System on multiple occasions in order to assist Department investigators with the aerial collection of data from crime scenes at and adjacent to BART property.

B. Data Sharing

The Police Department shared data collected from the system with the following entities in last year:

- Alameda County DA
 - Following a vehicle pursuit that began on BART property and resulted in a hit and run accident, System operators produced and authenticated relevant evidence (video and audio) footage for the Alameda DA following receipt of a subpoena.
- Oakland Fire Department
 - System operators shared a live feed of thermal imaging video with the Oakland Fire Department during the course of a three-alarm fire that started at the West Oakland BART station and spread into the nearby neighborhood.
- San Francisco Police Department
 - System operators participated in a joint operation to execute a criminal warrant in conjunction with the San Francisco Police Department aimed at uncovering evidence of a felony robbery that occurred in an industrial district near the Dogpatch neighborhood. The San Francisco Police retained imagery collected during this operation.

C. Community Complaints

The BART Police Department did not receive community complaints referencing the System or relating to the use of the system in 2017.

D. Internal Audits & Compliance

Use of the System is governed by a Surveillance Use Policy (Attached as Appendix A) approved by the BART Board pursuant to the BART Privacy & Surveillance Policy.

In January 2017, the Department conducted a training for officers using the System. This training covered the functioning and instructions for safe operation of the System. Half of the training course (approximately 6 hours) was focused on the Surveillance Use Policy and its instructions for use of the System. After completion of the training, officer-operators were asked to sign a form confirming receipt of the training and associated instructional materials.

In 2017, there were no reported instances of use of the System that violated the Surveillance Use Policy. This conclusion is based on the consultation of System audit and usage logs, records relating to the use of the Department's helicopter resources, and interviews with unit

commanders. Based on this assessment, the Department is able to conclude with reasonable confidence that the System was not activated in 2017 for a purpose other than one authorized by the surveillance use policy.

As of the date of this report, no citizen has provided the required notice regarding alleged violations, pursuant to Section 8 of the ordinance. The BART Police Department is unaware of any pending civil action pertaining to its use of the System.

E. Efficacy

BART's use of the System contributed to 18 arrests. For most of these arrests, BART system operators alerted on-the-ground BART patrol officers in real-time as to vehicle location of driver's suspected of wrongdoing. Several arrests were made after evidence collection resulted in subsequent identification of suspects, or additional leads that resulted in identification of suspects. Following is a summary of the arrests:

Arrest Warrants Obtained	18
Search Warrants Obtained	24
Statements Taken	25
Felony Prosecutions	12
Misdemeanor Prosecutions	6
DA Refused To Prosecute	4

Arrest Warrants Obtained were for the following:

PC 242	4
PC 243	12
PC 487(c)	2

Search Warrants Obtained were for the following:

PC 211, 214, 215	16
PC 487(c)	8

Stolen Vehicles or Other Property Recovered:

Vehicles	4 (\$68,530)
Personal Electronic Devices	28 (\$4,120)
Cash	(\$9,480)

BART's use of the system for investigation of possible fires led to three alerts to local fire departments (Berkeley, Oakland, San Leandro), and two false alarms.

BART's use of the system for search and rescue resulted in four false-alarms, and one vehicle location which allowed the San Leandro Police Department to pursue additional leads.

F. Public Records Requests

BART received 4 requests under the California Public Records Act (Cal. Gov't Code, S. 6250 et seq.) in 2017 for records related to the System. What follows is a summary of those requests as well as hyperlinks for the records released in response to the requests.

Request: Records related to the purchase of the System, including invoices and agreements.
Records: <http://www.bart.gov/recordrequests/FLIR-PRA2017.1.30.pdf>

Request: Thermal imaging footage captured during a fire that started at the West Oakland BART station and spread into the nearby neighborhood.

Records: <http://www.bart.gov/recordrequests/FLIR-PRA2017.4.15.pdf>

Request: Footage obtained during the execution of a warrant during joint operation with San Francisco Police Department.

Request: Withheld under Govt. Code S. 6254(f).

Request: Training manual for officers using the System.

Request: Response pending

G. Total Annual Costs

Initial Purchase Cost

The initial purchase cost totaled \$620,000 plus the cost of a mandatory performance bond required by the grant providers.

Personnel Costs

The System is used concurrently with helicopter operations already funded by the BART Board of Directors. As such, the System does not regularly incur independent operating personnel costs. The total cost of operations initiated for the exclusive purpose of using the System totaled \$200,000 in 2017, including overtime. The Department received reimbursement in the amount of \$10,000 from the City and County of San Francisco for the use of the technology during the evidence collection operation described above.

Ongoing Costs

There are no ongoing costs associated with the purchase of the integrated mapping system. The system, including maintenance costs, is currently covered by a three-year warranty. In addition, training and software updates were provided to the Department free of charge pursuant to the purchasing agreement.

The anticipated lifespan of the system is about eight (8) years. However, with proper maintenance, staff anticipates the useful operational lifespan of the system to exceed eight years.

Initial and Ongoing Sources of Funding

The initial acquisition of the System was fully funded with grants from UASI (Urban Areas Security Initiative) and SHSGP (State Homeland Security Grant Program). Personnel costs are

funded by General Fund allocation.

Initial Cost	\$620,000
Personnel Cost	\$190,000
Ongoing Cost	\$0 (warranty; free training & software updates)
TOTAL COST:	\$810,000

SAMPLE