



Surveillance Impact Report

Unmanned Aerial Vehicles ("UAV" or Drone technology)
Public Utilities Commission

As required by San Francisco Administrative Code, Section 19B, departments must submit a Surveillance Impact Report for each surveillance technology to the Committee on Information Technology ("COIT") and the Board of Supervisors.

The Surveillance Impact Report details the benefits, costs, and potential impacts associated with the Department's use of Unmanned Aerial Vehicles or Drone technology.

DESCRIPTION OF THE TECHNOLOGY

The Department's mission is: to provide our customers with high quality, efficient and reliable water, power, and sewer services in a manner that is inclusive of environmental and community interests, and that sustains the resources entrusted to our care. San Francisco Public Utilities Commission provides retail drinking water & wastewater services to the City of San Francisco, wholesale water to three Bay Area counties, green hydroelectric & solar power to Hetch Hetchy electricity customers, and power to the residents & businesses of San Francisco through the CleanPowerSF program.

In line with its mission, the Department uses Unmanned Aerial Vehicles or Drone technology to: enable more efficient use of City resources and improved ability to inspect, manage and protect City infrastructure and natural resources.

Public Utilities Commission shall use Unmanned Aerial Vehicles or Drone technology only for the following authorized purposes:

Authorized Use(s):

1. Construction Management: Examples include inspection of project sites for contract and environmental compliance.
2. Environmental Monitoring & Documentation: Examples include monitoring of vegetation type and health, wildlife, and streams/reservoirs.
3. Inspections: Conducting surveys and assessments of SFPUC properties and assets. Examples include survey of bay and ocean outfalls, inspection of large wastewater collections and power line surveys.
4. Disaster Relief: Drones may be used in disaster relief to record footage of damage and assess the role PUC may play in responding to such disasters.
5. Marketing and Public Education: Drones may be used to capture footage of the watershed, as an example, to be used in public education and/or marketing materials.

Prohibited use cases involve any uses not stated in the Authorized Use Case section.

The following use cases are expressly prohibited.

1. SFPUC UAV operations will always be consistent with our approved use cases in SFPUC Drone Policy. SFPUC shall not exchange raw drone data containing PII between City departments, or disclose such data to the public, except for exigent public safety needs or as required by law.

Department technology is located SFPUC watersheds and SFPUC construction sites.

Technology Details

The following is a product description of Unmanned Aerial Vehicles or Drone technology:

The DJI Phantom 4 Pro is an aerial survey drone that combines centimeter-level navigation and positioning with a high-performance imaging system for use during surveying, mapping or inspection operations.

A. How It Works

To function, Unmanned Aerial Vehicles or Drone technology utilizes an unmanned aircraft flown by a pilot via a ground control system, or autonomously through use of an on-board flight computer, communication links, or other any additional equipment, for the purpose of capturing images from an aerial perspective.

Data collected or processed by the Unmanned Aerial Vehicles will not be handled or stored by an outside provider or third-party vendor on an ongoing basis. The Department will remain the sole Custodian of Record.

IMPACT ASSESSMENT

The impact assessment addresses the conditions for surveillance technology approval, as outlined by the Standards of Approval in San Francisco Administrative Code, Section 19B:

- A. The benefits of the surveillance technology outweigh the costs.
- B. The Department's Policy safeguards civil liberties and civil rights.
- C. The uses and deployments of the surveillance technology are not based upon discriminatory or viewpoint-based factors and do not have a disparate impact on any community or Protected Class.

The Department's use of the surveillance technology is intended to support and benefit the residents of San Francisco while minimizing and mitigating all costs and potential civil rights and liberties impacts of residents.

A. Benefits

The Department's use of Drone technology has the following benefits for the residents of the City and County of San Francisco:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Education | Education: Drone imagery to promote SFPUC projects and educate the public and on our mission and operations. |
| <input type="checkbox"/> Community Development | |
| <input type="checkbox"/> Health | |
| <input type="checkbox"/> Environment | |
| <input type="checkbox"/> Criminal Justice | |

- Jobs
- Housing
- Other

Public Safety: Efficient inspection of critical infrastructure (dams, sewer infrastructure, power lines) helps ensure infrastructure is operating safely, minimizing overall risk of failure.

B. Civil Rights Impacts and Safeguards

The Department has considered the potential impacts and has identified the technical, administrative, and physical protections as mitigating measures:

- SFPUC utilization of Drone technology is limited to monitoring assets and infrastructure on SFPUC owned lands and private property. Staff and consultants participating in SFPUC drone operations take precautions to ensure PII is not captured. If incidental PII is captured, data is scrubbed to remove any identifying information.

C. Fiscal Analysis of Costs and Benefits

The Department’s use of Unmanned Aerial Vehicles (“UAV” or Drone technology) yields the following business and operations benefits:

Benefit	Description	Quantity/Units
<input checked="" type="checkbox"/> Financial savings	Drones are more efficient and cost effective than traditional methods. In environmental monitoring example, for an 8,000 ft fountain thistle site, it would take an estimated 120 labor hours to collect data if done by individuals counting plants, using traditional methods, costing an estimated \$120,000. With a drone it would take two people less than two days and cost about \$22,000, including labor and equipment.	
<input checked="" type="checkbox"/> Time savings	Performing manual infrastructure inspections and environmental monitoring adds significant time to operations. See specific fountain thistle example above.	
<input checked="" type="checkbox"/> Staff safety	See construction management and inspection examples above. Using a drone to capture imagery keeps staff out of dangerous and compromising situations (high structure inspections)	
<input checked="" type="checkbox"/> Improved data quality	Some locations which are difficult to access by personnel may be more easily photographed using drone technology, providing improved overall data.	
<input type="checkbox"/> Other		

The total fiscal cost, including initial purchase, personnel and other ongoing costs is

FTE (new & existing)	2-4 employees, roughly 15-20 hours/month.
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Classification	1770 photographer, 1824 Principal Analyst, 9922 Public Service Aide		
	Annual Cost	Years	One-Time Cost
Total Salary & Fringe	\$30,364	0	\$0
Software	\$0	0	\$0
Hardware/Equipment	\$0	0	\$4,000
Professional Services	\$10,000	0	\$0
Training	\$0	0	\$0
Other	\$0	0	\$0
Total Cost [Auto-calculate]	\$44,364		

2.1 Please disclose any current or potential sources of funding (e.g. potential sources = prospective grant recipients, etc.). ^{SIR, ASR}

n/a

The Department funds its use and maintenance of the surveillance technology through

n/a

COMPARISON TO OTHER JURISDICTIONS

Unmanned Aerial Vehicles or Drone technology are currently utilized by other governmental entities for similar purposes.

APPENDIX A: Surveillance Impact Report Requirements

The following section shows all Surveillance Impact Report requirements in order as defined by the San Francisco Administrative Code, Section 19B.

1. Information describing the Surveillance Technology and how it works, including product descriptions from manufacturers.	
<p>Drone technology utilizes an unmanned aircraft flown by a pilot via a ground control system, or autonomously through use of an on-board flight computer, communication links, or other any additional equipment, for the purpose of capturing images from an aerial perspective.</p> <p>The DJI Phantom 4 Pro is an aerial survey drone that combines centimeter-level navigation and positioning with a high-performance imaging system for use during surveying, mapping or inspection operations.</p>	
2. Information on the proposed purpose(s) for the Surveillance Technology.	
The use of Drone technology enables more efficient use of City resources and improved ability to inspect, manage and protect City infrastructure and natural resources.	
3. If applicable, the general location(s) it may be deployed and crime statistics for any location(s).	
SFPUC watersheds, SFPUC construction sites.	
4. An assessment identifying any potential impact on civil liberties and civil rights and discussing any plans to safeguard the rights of the public.	
SFPUC utilization of Drone technology is limited to monitoring assets and infrastructure on SFPUC owned lands and private property. Staff and consultants participating in SFPUC drone operations take precautions to ensure PII is not captured. If incidental PII is captured, data is scrubbed to remove any identifying information.	
5. The fiscal costs for the Surveillance Technology, including initial purchase, personnel and other ongoing costs, and any current or potential sources of funding.	
Number of FTE (new & existing)	2-4 employees, roughly 15-20 hours/month.
Classification	1770 photographer, 1824 Principal Analyst, 9922 Public Service Aide
Total Salary & Fringe	\$30,364
Software	\$0
Hardware/Equipment	\$4,000
Professional Services	\$10,000
Training	\$0

Other	\$0
Total Cost [Auto-calculate]	\$44,364
n/a	
6. Whether use or maintenance of the technology will require data gathered by the technology to be handled or stored by a third-party vendor on an ongoing basis.	
Handled by third-party vendor, ongoing: <input type="checkbox"/> True	
Vendor name: SF Drone School	
Special data handling required:	
7. A summary of the experience, if any, other governmental entities have had with the proposed technology, including information about its effectiveness and any known adverse information about the technology such as anticipated costs, failures, or civil rights and civil liberties abuses.	
<p>APPENDIX B: Mapped Crime Statistics</p> <p>The general location(s) it may be deployed and crime statistics for any location(s):</p> <p>SFPUC watersheds, SFPUC construction sites.</p>	