Free sample from The Drone Kit & Flight Planner. This is worksheet 6 of 11. Get all 11 worksheets: dronegearsetup.com/kit/drone-kit-flight-planner

Mapping Mission: GSD, Overlap & Coverage

Altitude decides the deliverable, so choose it first

Pilot	**Job**
Date	**Site**

Ground sample distance in centimetres per pixel equals (sensor width in mm x altitude in m x 100) divided by (focal length in mm x image width in px). It scales linearly with altitude, so halving the altitude halves the GSD and roughly quarters the area one battery covers. Decide the GSD the client needs, then work backwards to altitude.

Camera constants, filled in once per aircraft

Input	Value
Sensor width (mm)	
Image width (px)	
Focal length, actual not equivalent (mm)	
GSD at 100 m (cm/px)	

A 1-inch 20 MP camera with a 24 mm equivalent lens gives roughly 2.7 cm per pixel at 100 m. Use your own numbers, because the equivalent focal length is not the one in the formula.

Mission parameters

Parameter	Planned	Flown
Required GSD (cm/px)		
Altitude AGL (m)		
Front overlap (percent)	75 typical	
Side overlap (percent)	65 typical	

Parameter	Planned	Flown
Ground speed (m/s)		
Shutter interval (s)		
Flight line spacing (m)		
Site area (acres)		
Acres per usable battery		
Batteries required		
Ground control points placed		

At 100 m with 75 percent front and 65 percent side overlap, a typical 1-inch sensor prosumer aircraft covers roughly 25 to 40 acres per 20 minute usable battery at about 2.7 cm per pixel.

Before the mission flies

- [ ] Airspace checked and authorization obtained where required
- [ ] Terrain relief noted, because AGL over a hill is not AGL over the launch point
- [ ] Obstructions surveyed: towers, wires, tall trees on the flight lines
- [ ] Sun angle chosen to avoid hard shadow across the site
- [ ] Ground control points placed and their positions recorded
- [ ] Home point and alternate landing area identified
- [ ] Card cleared and formatted in the aircraft
- [ ] Client told the GSD they are getting, in writing

Ground control point log

GCP	Description of position	Coordinates	Photographed?

Researched guidance, not professional advice. FAA weight thresholds, Remote ID rules and airspace authorizations change. Confirm the current rule at faa.gov/uas before you rely on this kit, and treat every figure here as a planning aid rather than an authorization.