

# Plotrol MVP Plan

## MVP Goal:

Demonstrate trusted, automated land/asset monitoring using satellite imagery + AI change detection, surfaced through a web GIS dashboard with alerts and auditable evidence.

## MVP must prove:

Satellite-based plot change detection works

Geo-AI insights are usable by real users

Alerts + evidence trail can be trusted

Platform is cloud-native and scalable

## 1) MVP Scope (What is IN vs OUT)

What is included in MVP

### Functional:

Web-based GIS dashboard

Plot boundary management

Satellite imagery ingestion (optical)

AI-based change detection (batch)

Alert generation & basic workflow

Evidence storage (images + reports)

Immutable audit hash (light PlotVault)

### Technical:

Multi-tenant backend (basic)

Secure auth (OAuth)

Cloud object storage

PostgreSQL + PostGIS

Batch AI pipeline (no real-time drones)

## Excluded from MVP (Phase 2+)

Mobile app

Drone orchestration

IoT / edge sensors

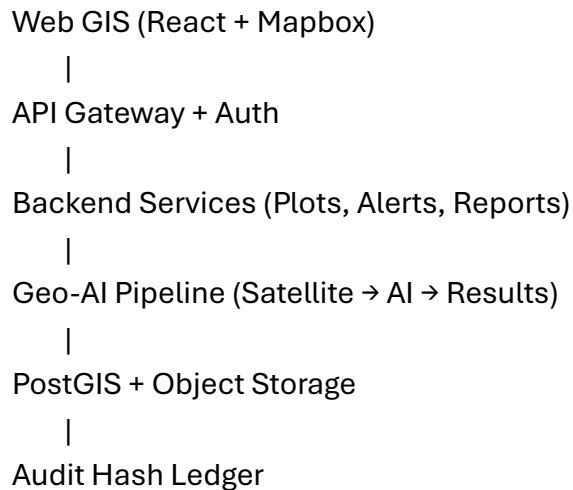
ZKP proofs (hashing only)

Hyperspectral analytics

Bank / government integrations

## 2) High-Level MVP Architecture

Simplified MVP Stack:



## 3) MVP Delivery Plan & Timeline

Total Duration: 12–14 weeks (Assuming the core development team is full-time)

Phase	Duration	Deliverables
Phase 0 – Setup	1 week	Cloud infra, CI/CD, repo setup
Phase 1 – Core Platform	4 weeks	Backend APIs, auth, PostGIS, storage
Phase 2 – Geo-AI MVP	4 weeks	Satellite ingestion, AI change detection
Phase 3 – Web GIS	3 weeks	Interactive map, alerts, dashboards
Phase 4 – Hardening & Demo	2 weeks	Security, audit hash, pilot demo

## 4) Resources Needed (Lean MVP Team)

Core Team (5-6 people)

Role	Count	Notes	FTE Planned
Solution Architect	1	Owns end-to-end design	0.5 (weekly 20 hours)
Backend Engineer	2	APIs, workflows, data	2
Geo-AI / ML Engineer	1–2	Satellite + CV models	0.5 (weekly 20 hours)
Frontend Engineer	1	Web GIS dashboard	1
DevOps / Cloud Engineer	1	Kubernetes, CI/CD	0.25 (weekly 10 hours)
QA / Test Engineer	0.5	Functional + security	0.5

## 5) Cloud Infrastructure Options (AWS vs GCP vs Azure)

Recommended for MVP: AWS

Best balance of Geo, AI, scale, and startup velocity

Why AWS fits Plotrol MVP best  
Mature S3 + PostGIS ecosystem  
Strong event-driven architecture  
GPU availability for AI  
Easier global scaling later

#### AWS MVP Stack

Compute: EKS (Kubernetes)  
Storage: S3 (imagery, reports)  
DB: RDS PostgreSQL + PostGIS  
AI: EC2 GPU (g4dn)  
Events: EventBridge / SQS  
Auth: Cognito / Keycloak  
IaC: Terraform

### 6) MVP Success Metrics (What makes this a “win”)

Detect land changes with >80% precision  
Alert generated within 24 hrs of satellite update  
GIS dashboard usable by non-technical users  
Evidence hash verifiable  
System handles 1,000+ plots reliably

### 7) What This MVP Unlocks Next

After MVP validation, you can confidently move to:  
Drone automation  
Mobile app  
Sensor fusion  
ZKP-based compliance  
Government & bank integrations