Drone Hub Location Strategy for Prime Air

By:

Aditya Shetty
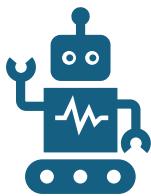
Aishwarya Anandan

Varshini Kuppusami

Vipin Kumar Karthikeyan

Focus Area

Online Business Trends
Analyze e-commerce growth, identify drone-compatible items (lightweight, high-demand), and assess fulfillment potential.

Drone Delivery Technology
Evaluate drone capabilities (range, cost, emissions), patent innovations, and regulatory readiness for FAA-compliant operations.

Population & Demand Analysis
Use Massachusetts demographic and geographic data to classify areas as rural, suburban, or urban, assessing demand and feasibility.

Location Analysis & Rollout Plan
Select three hub sites (Springfield, Worcester, Cambridge) and design a phased 18-month launch plan based on delivery volume, infrastructure, and coverage reach.
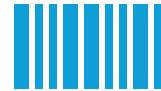
E-commerce Boom Makes Drones Essential

Online shopping has exploded! The U.S. e-commerce hit **$1.19 trillion in 2024**, more than double what it was in 2019.

As more people shop online, the pressure to deliver faster and more efficiently keeps growing.

Around **86% of Amazon orders weigh under 5 lbs**, which makes them perfect for drone delivery.

Drones are a great fit for everyday items like books, small electronics, and personal care products.

With customers expecting deliveries in **hours, not days**, drones help meet that demand quickly and sustainably.

Built of Drones

Carry up to 5 lbs perfect for most Amazon orders

Range up to 12 miles enough to cover neighborhoods and small towns

Flight time of 30–60 minutes supports short-distance, same-hour delivery

Top speed of 62 mph fast enough for urgent orders

Cuts delivery costs by up to 22% fewer vans, less fuel, lower labor costs

Regulations are evolving FAA now allows Beyond Visual Line of Sight (BVLOS) operations in select areas

Why Massachusetts is a Prime Market

Nearly 7 million residents
A dense, digitally connected population with growing delivery expectations.

Median age: 40
Majority are working-age adults — active buyers with consistent online shopping habits.

Median household income: $101K+
Strong spending power = higher demand for fast, premium services like drone delivery.

High-density counties drive demand

- Middlesex: 1.6M

- Worcester: 830K

- Suffolk: 800K

- Essex & Norfolk: 700K–800K

These regions are ideal for high-volume, quick-turnaround drone operations.

Phased Rollout Plan

Phase 1 – Springfield (Months 1–6):

Pilot rural operations, test solar hubs, gather performance data

15K packages/week | ~200K people | 30% within 15 min

Phase 2 – Worcester (Months 7–12):

Integrate hybrid delivery (drone-to-van/locker), optimize mid range routes

25K packages/week | ~400K people | 50% within 15 min

Phase 3 – Cambridge (Months 13–18):

Launch full-scale urban model with AI & Smart City tech

50K packages/week | ~800K people | 70% within 15 min

Strategy: Gradual scaling, collect data and feedback at each phase before expanding further.

Why This Strategy Works

Efficient & Sustainable Delivery Drones enable faster, lower-cost, and low-emission deliveries supporting both operational goals and environmental commitments.

Smart Geographic Coverage Hub locations strategically cover Eastern, Central, and Western Massachusetts, ensuring broad reach and service consistency.

Future-Ready Logistics This model aligns with rising e-commerce trends and growing demand for fast, lightweight deliveries, positioning Amazon for long-term success.