



Transportation in the Third Dimension

Preparing for On-Demand Aviation Services

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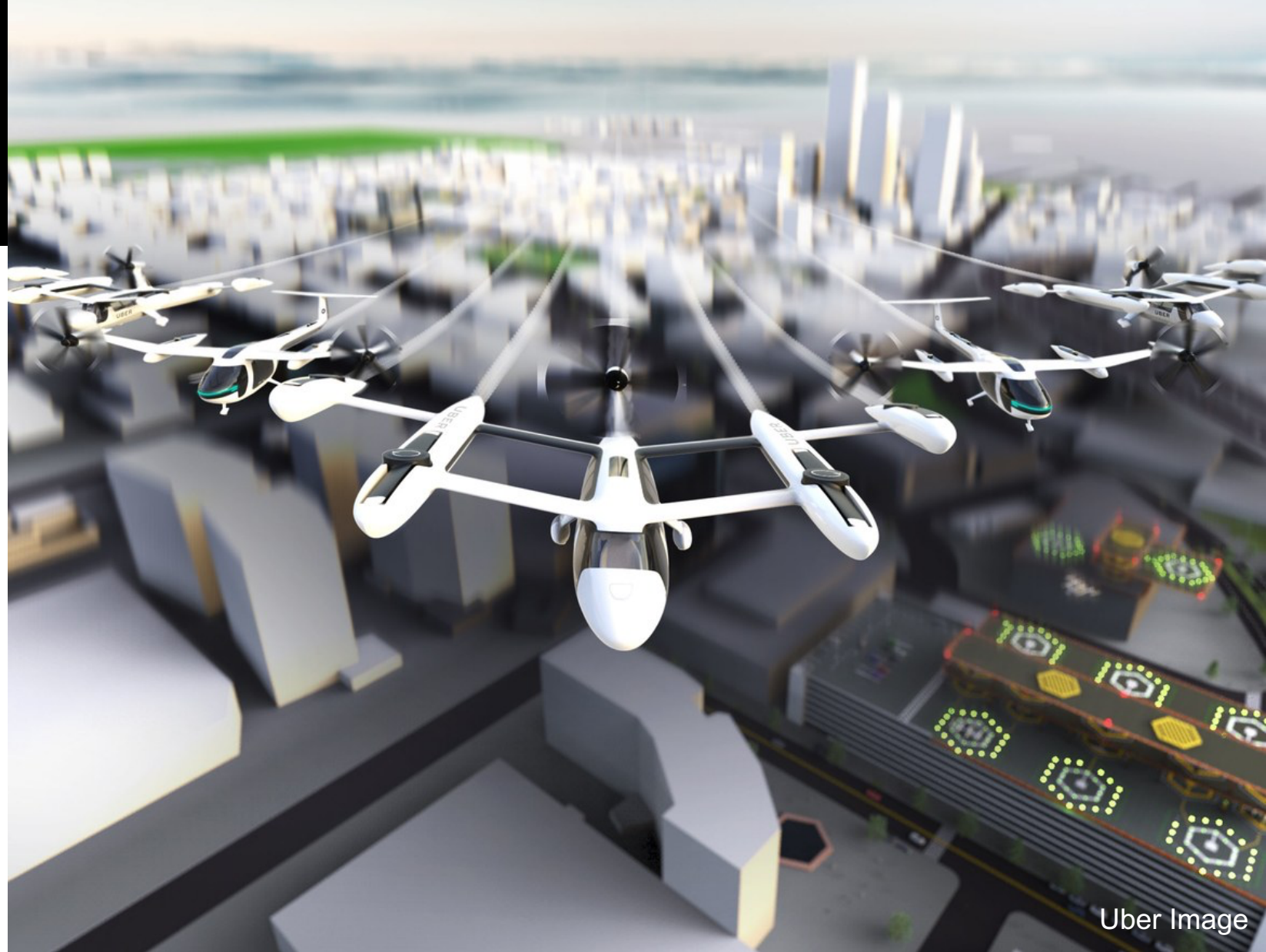
The Future is
Here



On-Demand Aviation Services

- Optimizing the 2D World
- Going Underground
- ...and in the Air

eVTOL



Uber Image

Why?

- **Faster**
- **Safer**
- **Cleaner**
- **Reliable**
- **Less Costly**

Why?

- **Faster**
 - 150-200 mph
 - Up to 2,000 feet altitude
 - 60 miles range per single charge
 - 5 minutes to recharge
 - Humans to Machines
- **Safer**
- **Cleaner**
- **Reliable**
- **Less Costly**

TRIP DETAIL

- Marina San Francisco
- Downtown San Jose

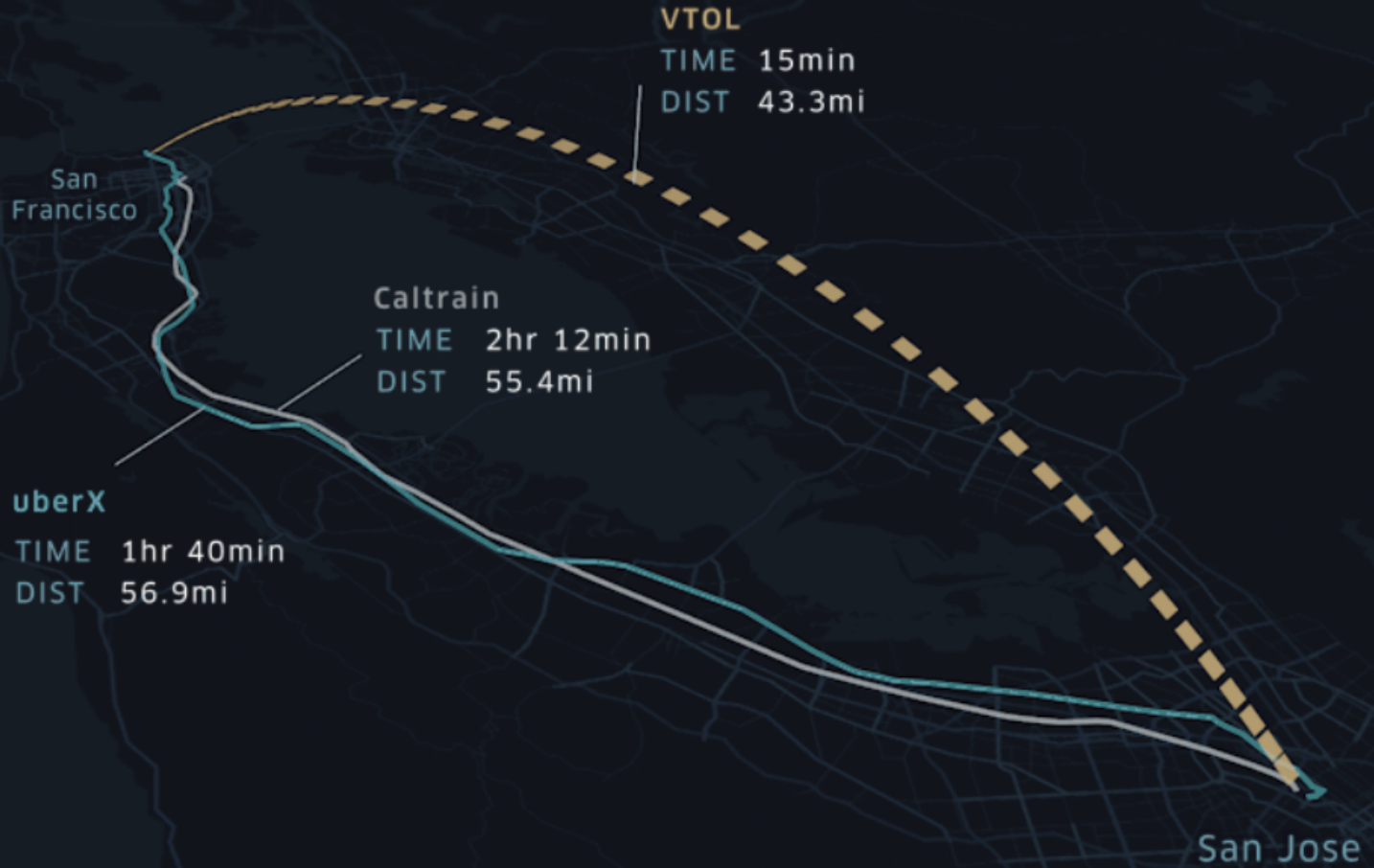
ESTIMATED PRICING

VTOL

Initial	\$129
Near-term	\$43
Long-term	\$20

Today

uberX	\$111
uberPOOL	\$83
uberX + Transit	\$31



Why?

- **Faster**
- **Safer**
 - **FAR Part 135 for Commuter/On-Demand Flights**
 - **2x Fatalities per Passenger Mile than Vehicles**
 - **eVTOL Goal: 2x Safer than Vehicles**
- **Cleaner**
- **Reliable**
- **Less Costly**

Why?

- **Faster**
- **Safer**
- **Cleaner**
 - e for Electric (eVTOL)
- **Reliable**
- **Less Costly**

Why?

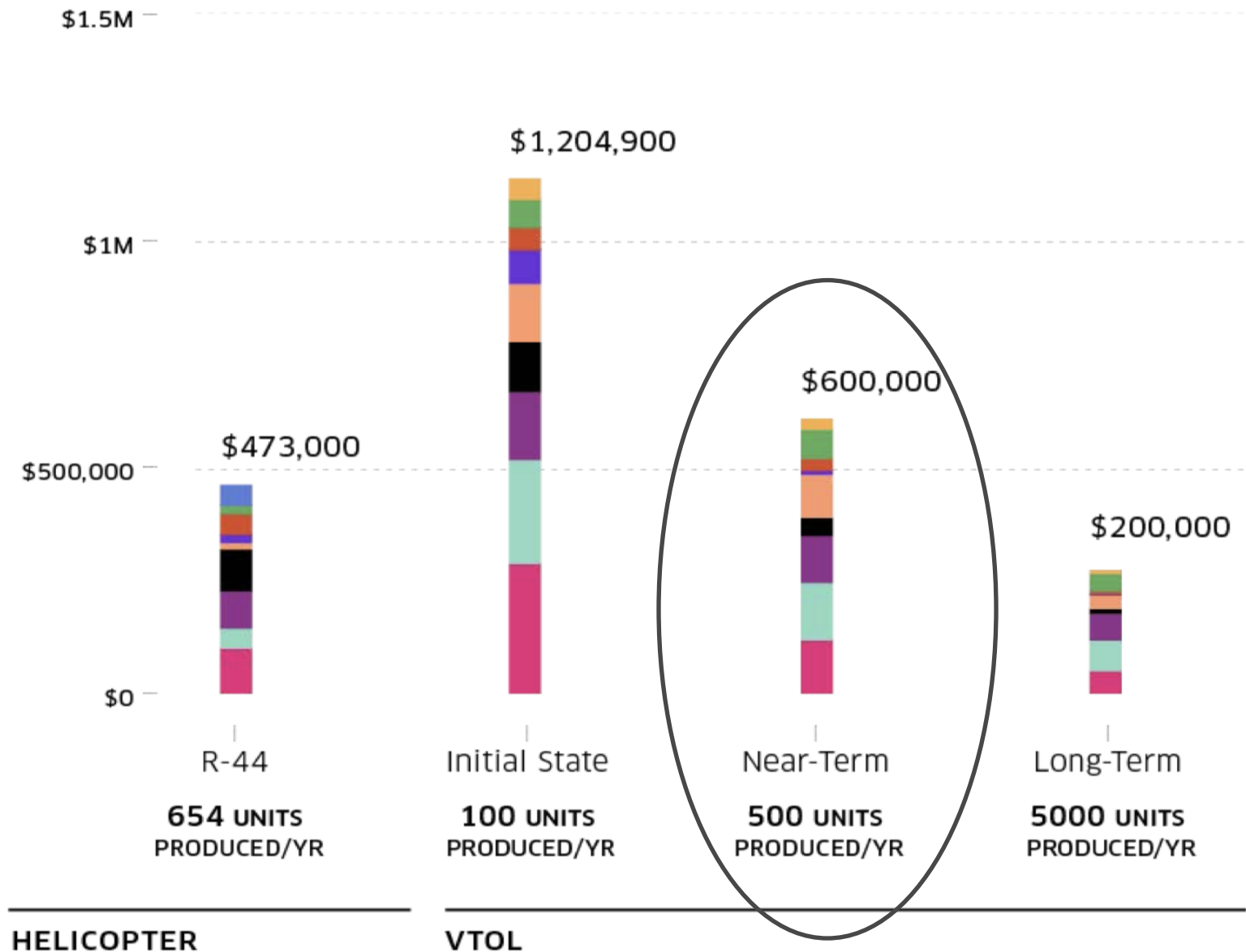
- **Faster**
- **Safer**
- **Cleaner**
- **Reliable**
 - **No Congestion**
 - **Incidents, Weather, Humans!**
- **Less Costly**

Why?

- **Faster**
- **Safer**
- **Cleaner**
- **Reliable**
- **Less Costly**

VTOL Cost Breakdown

- Dealer Markup
- Tooling
- Materials
- Mfg. Markup
- RDTE
- Equipment/Batteries
- Liability/Reserve
- Avionics
- Propulsion
- Labor



UBER

VTOL battery costs (not included above) are assumed to be \$56K (Initial), \$28K (Near-Term), \$14K (Long-Term). Dealer Markup is only shown for R-44 helicopters.



On-Demand Aviation: Planning & Integration Considerations

FAA to Fly

Cities to Land

- Technology
- Regulatory
- Policy
- **Partnerships**
- **Infrastructure Planning, Design and Integration**
- **Operations and Maintenance**

QUESTIONS?

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