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# General Aviation and NextGen

**Presented by**

Kathryn Vernon,
FAA Regional Administrator - Northwest Mountain Region

# What is NextGen?


- NextGen represents the transformation of our national airspace system
- It integrates new and existing technologies, procedures and policies

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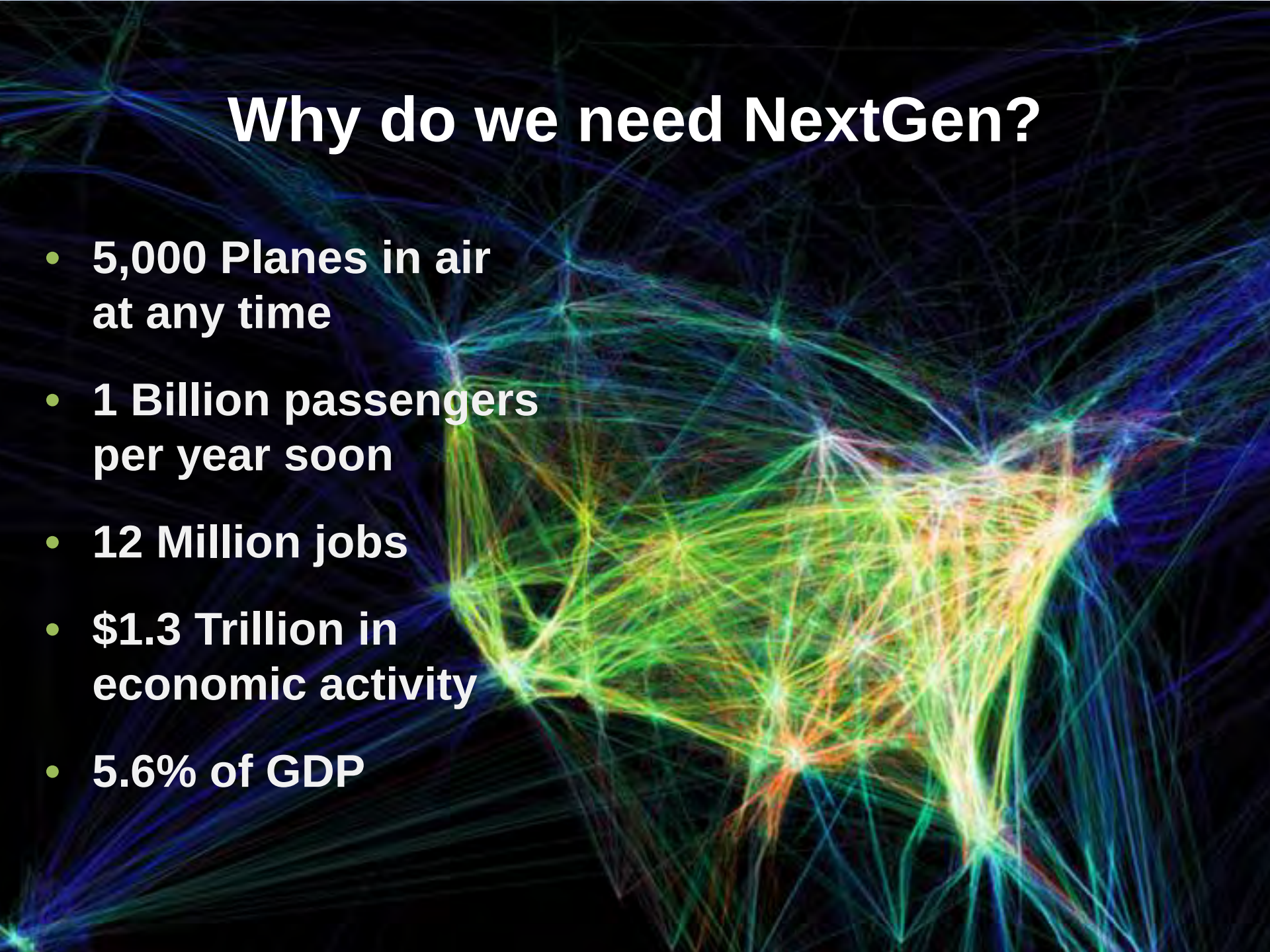
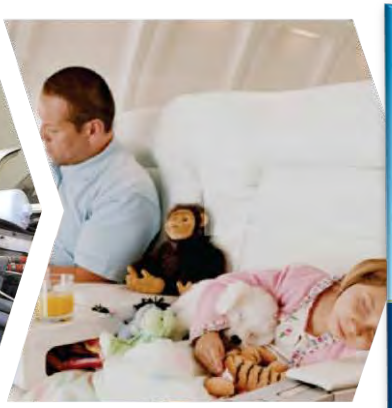
# Why do we need NextGen?

- 5,000 Planes in air at any time
- 1 Billion passengers per year soon
- 12 Million jobs
- $1.3 Trillion in economic activity
- 5.6% of GDP



# Four Pillars of NextGen




**ECONOMIC IMPACT**

**SAFETY**

**SUSTAINABILITY**

**FLEXIBILITY**

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# How will NextGen affect me, the GA pilot?

- Think about where and how you fly and what capabilities and benefits you derive from NextGen
  - ADS-B
  - GPS — RNAV
  - WAAS LPV

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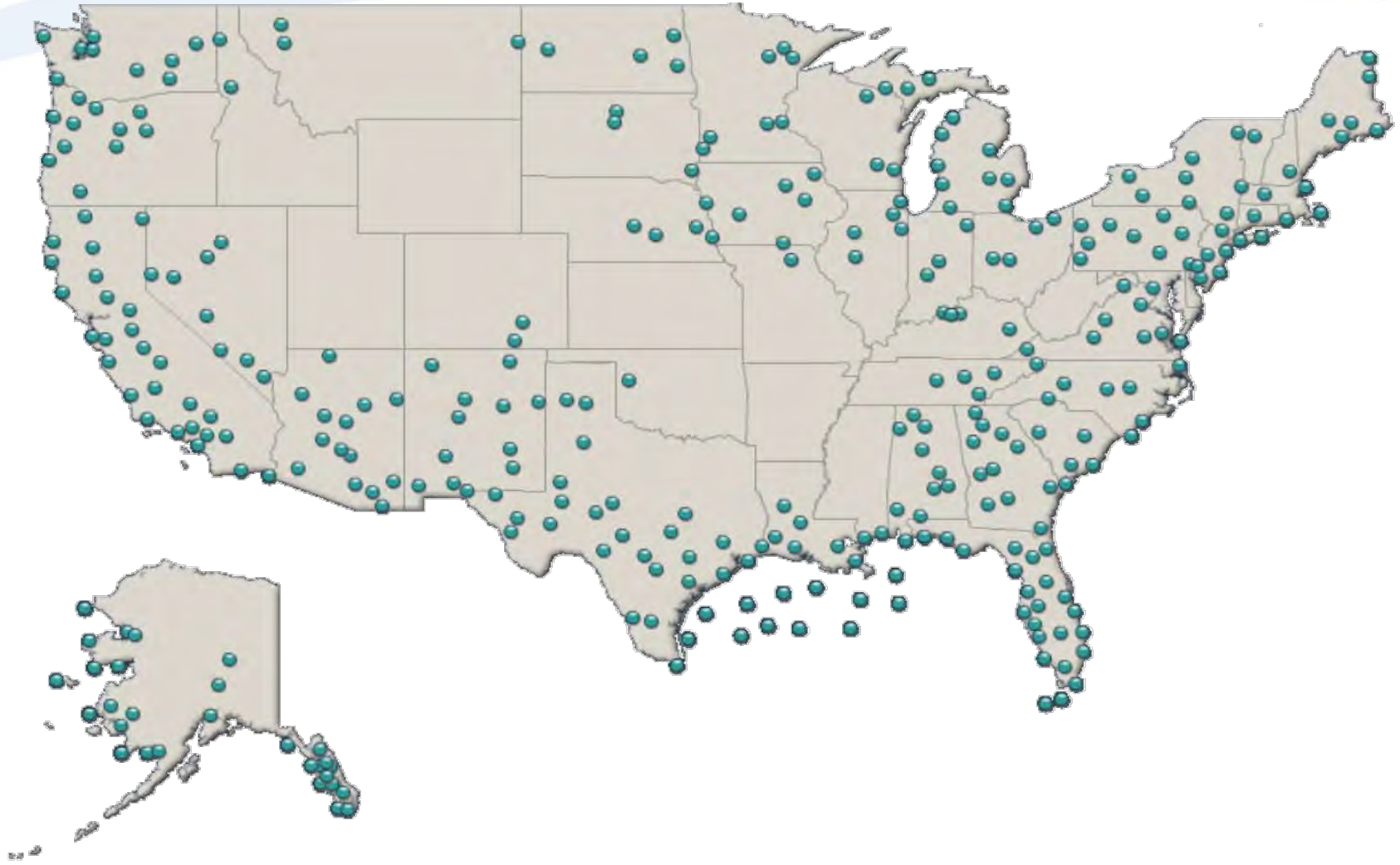
# Automatic Dependent Surveillance–Broadcast

# ADS-B



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# ADS-B Out Rule Compliance

Airspace affected by requirement

- Class A, B and C
- Class E airspace in the contiguous U.S. 10,000 feet MSL and above, excluding airspace 2,500 feet and less above the surface

Equipage components

- GPS receiver
- Universal Access Transceiver (UAT)operating at 978 MHz (some UATs have the GPS built-in)
- Antenna
- Multi-Function Display
  capable of receiving and displaying traffic and weather information from the UAT

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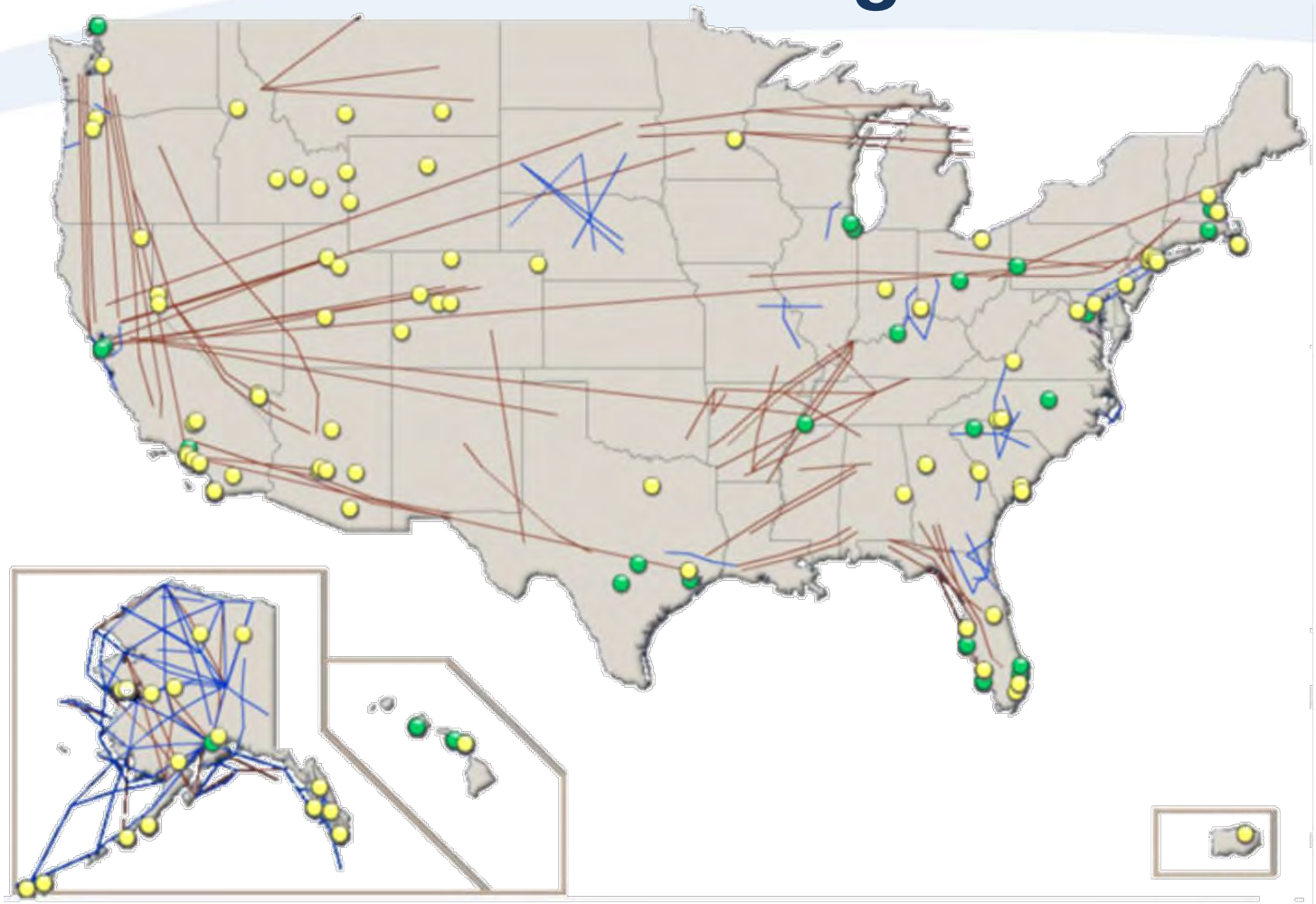
# GPS-Based Navigation



**RNAV**

Departures | Arrivals | High altitude route below FL180 | High altitude route above FL180

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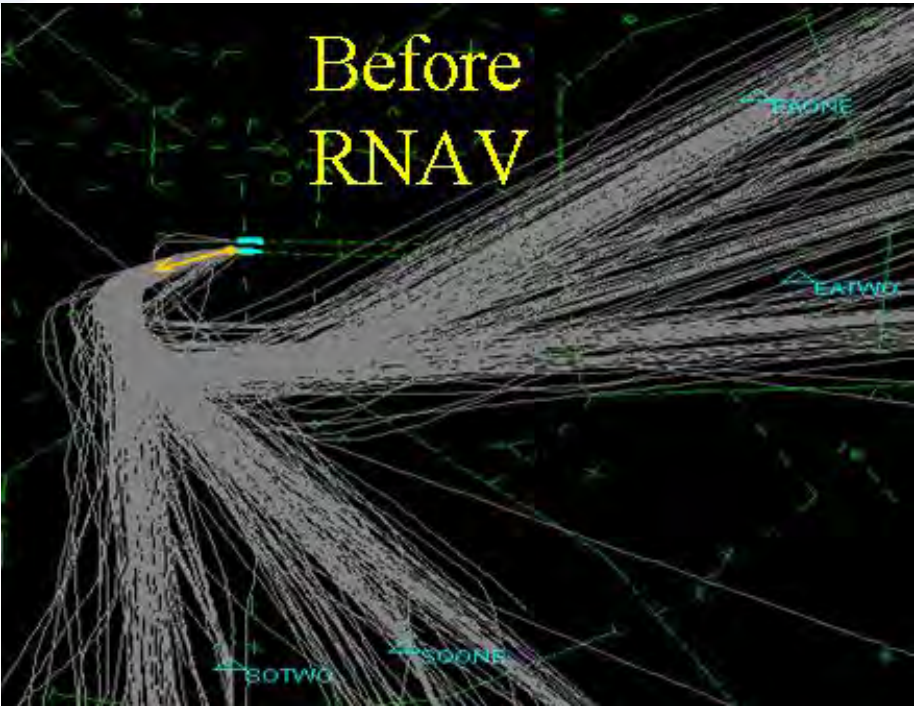
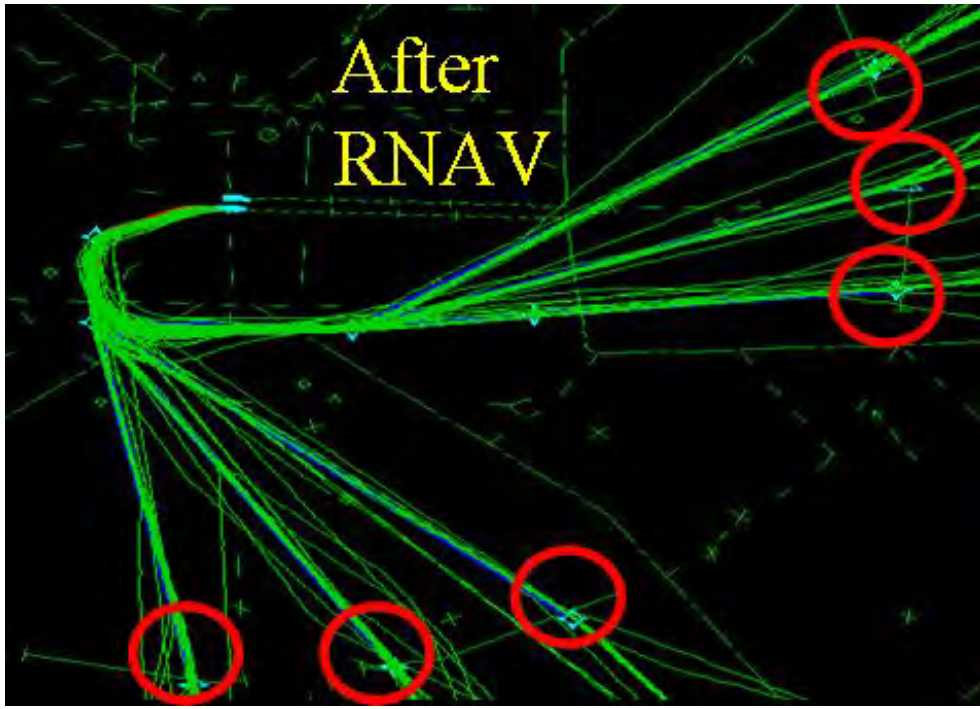
# GPS-Based Navigation

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# WAAS LPV Procedures

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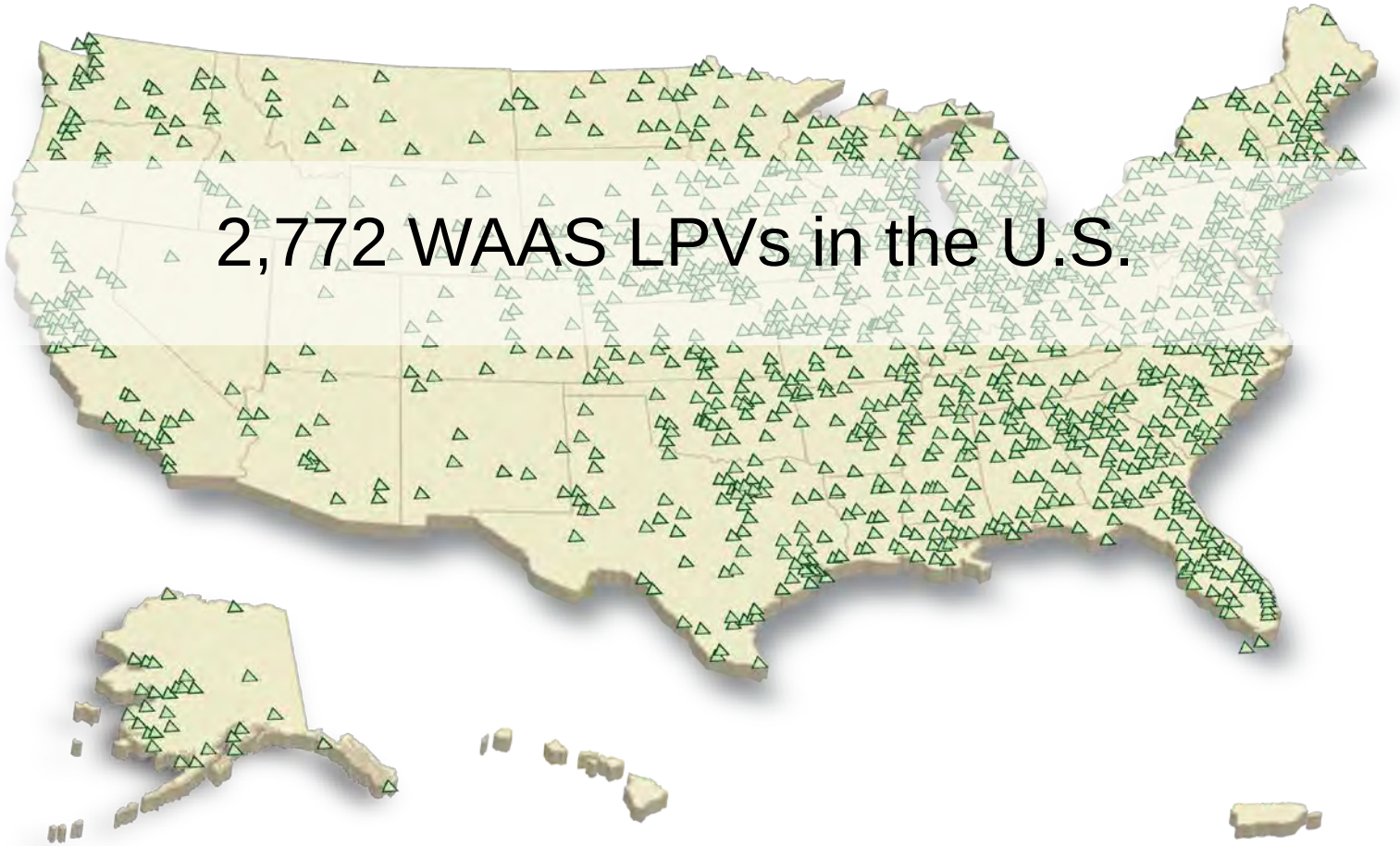
# WAAS LPV Procedures

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# In summary:
# NextGen benefits for GA

- **Improved surveillance service**
- **Improved situational awareness**
  with ADS-B
- **Fuel savings**
  with RNAV using GPS
- **Airport access during IMC**
  using GPS RNAV and WAAS LPV

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# *Greener Skies Over Seattle*

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*Thinking Globally…*
*Acting Locally*

# Required Navigation Performance (RNP) Approaches

- Consistent, controlled approaches
- Substantially shortened flight path length (green vs. blue)
- Noise exposure reductions with accurate routings over less noise sensitive areas (e.g. Elliott Bay)
- Reduced greenhouse emissions
- Minimized operational costs


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# Seattle Greener Skies Goals and Objectives

- Reduce track mileage to minimum possible distance
- Optimized Profile Descents (No level-offs, flown at idle thrust from cruise until established on final
- Absorb delays at cruise altitude
- Reduce/eliminate low altitude radar vectoring
- Reduce fuel burn
- Identify and implement the tools, technologies and practices that enable achievement of these goals

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# Understanding Optimized Profile Descent (OPD) Operations

Optimized Profile Descent Operations:

- Are enabled by airspace design, procedure design, and ATC facilitation
- Allow aircraft to descend continuously
- Employ minimum engine thrust, in a low drag configuration
- Objective: Usable by 85% of aircraft, 85% of the time

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# Questions?

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nextgen@faa.gov

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