Overview

• Navigating NextGen
  – Performance Based Navigation (PBN)
    • Pros & Cons
  – RNAV has arrived
    • More procedures are in the process with the FAA

• NextGen Perspectives

• Land Use compatibility issues
Definitions

- **PBN (Performance Based Navigation):**
  - A framework for defining performance requirements in “navigation specifications”.
  - Includes RNAV and RNP.
  - Uses least amount of energy by aircraft to get from point A to B.

- **RNAV (Area Navigation):**
  - enables aircraft to fly on any desired flight path within the coverage of ground-or spaced-based navigation aids, i.e., ‘point-to-point’.

- **RNP (Required Navigation Performance):**
  - RNAV with the addition of an onboard performance monitoring and alerting capability; this enhances the pilot’s situation awareness and can enable reduced obstacle clearance or closer route spacing without intervention by air traffic control.
PBN Pros and Cons

• Pros
  – Condenses flight tracks, less dispersion
  – Saves fuel
  – Reduces Emissions
  – Enhances Safety
  – Reduces Noise for Some

• Cons
  – Condenses flight tracks, less dispersion
  – Changes flight path
  – Increases noise for some
  – Increases overflights for some
RNAV at Portland International Airport

Pre-RNAV

RNAV
Community Perspective

• Mixed reviews
  – Residents on the periphery of air routes generally like it
    • No longer have dispersed flights tracks over their home
  – Residents under air route dislike it
    • Have all the burden
Airport Perspective

• Airports have mixed reviews about RNAV/PBN
  – Could cause more problems than solutions
  – Need a transparent process
• John Wayne Airport
  – Residents requested RNAV; FAA implemented RNAV; now residents want dispersed tracks again
• Phoenix Sky Harbor Airport
  – Residents like it; condenses flight tracks to keep aircraft away from residential communities
Air Carrier Perspective

• Air Carriers love RNAV
  – Saves time: most direct route possible
  – Saves fuel = reduces emissions = less noise
    • Delta Airlines saved $25 million dollars annually
  – 40% to 50% less communication between pilots and FAA Air Traffic Control
Land Use Compatibility Issues

• Shrinking noise contours may lead to opening up compatible land use to residential development

• As contours shrink, real estate brokers may no longer need to provide potential homeowner aviation disclosure

• Give realistic expectations to community
Additional Information

- UC Davis Aviation Noise & Emissions Symposium website:
  - Navigating NextGen Now

- Questions???