Next-Gen Flight Procedure Analysis: Design vs. Real World Realities

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PDX RNP Approach Project

Catalyst: Port’s decision to decommission the PDX-VOR

Problem: FAA had numerous flight procedures tied to the PDX-VOR
RNP Project Influences

**FAA Priorities**
- Categorical Exclusion
- Minimize Development Time
- Maximize Efficiency

**Airport Priorities**
- Calculate Environmental Impacts
- Analyze all Flightpath Alternatives
- Quantify Noise Impacts to Community

**Boeing Priorities**
- Reduce Aircraft Environmental Footprint
- Validate Performance Models
- Collect Real World Operations Data
Boeing – Airport Collaboration Goals

- Leverage Unique Expertise
- Seamless Information Exchange
- Improve Fidelity of the Data
- More Accurate Environmental Analysis
Information Exchange Between Boeing and the Airport

**Boeing Inputs**
- Vertical Flight Profile
- Flap and Gear Deployment Schedules
- Fuel Burn and Emissions Data
- Aircraft Performance and Weights

**Airport Inputs**
- Flight Track Data
- Fleet Mix Data
- Airport Operations Data
- Real Time Aircraft Noise Data
Existing Approach Track Dispersion
Existing Approach Flight Track Concentrations
Proposed RNP Approach Tracks
Single Event Noise Contour 737-800W (CFM56-7B27)
Vertical Profile Difference Between RNP-Z and Traditional Stepdown Approach to Runway 28L