

Region's General Aviation Community Prepares for NextGEN

General aviation airports within the central Puget Sound region are preparing for the arrival of NextGen air traffic control — a switch from radar to a satellite based system with significant safety and operational benefits.

A study by the Puget Sound Regional Council, in conjunction with the Federal Aviation Administration identified constraints on general aviation access to the airports in the region and concepts for improving air traffic control, reduction of noise and emissions and improved safety with the implementation of NextGen strategies.

Next steps will involve the region's aircraft owners, pilots, airports and state and federal agencies.

The Study

PSRC's NextGen Airspace Optimization Study explored how NextGen technologies and programs could be applied to the region's general aviation airports. The study, sponsored by the Federal Aviation Administration (FAA), included extensive outreach to members of the aviation community who play a key role in determining the priority applications for NextGen technologies.

The study focused on nine general aviation airports within King, Pierce, Snohomish and Kitsap counties:

- King County International — Boeing Field
- Snohomish County Airport — Paine Field
- Renton Municipal Airport
- Crest Airpark (Kent)
- Pierce County Airport — Thun Field
- Tacoma Narrows Airport
- Auburn Municipal Airport
- Bremerton National Airport
- Harvey Field

For each of the airports, potential NextGen concepts were identified and evaluated, and recommendations were made.

Concept Evaluation and Recommendations

The study identified constraints affecting general aviation airspace within the central Puget Sound region and concepts for addressing them.

One major constraint is that Boeing Field and the Renton airport are located close to the Seattle-Tacoma International Airport (Sea-Tac) and must share Sea-Tac's airspace. This is a Boeing Field/Renton airport issue, not driven by Sea-Tac needs. Concepts identified in the study would allow general aviation aircraft to fly and operate independently of Sea-Tac — taking advantage of the different way airspace can be designed with NextGen. There would be no changes to Sea-Tac operations.

The constraints identified in this Study include:

- Airports in close proximity to Sea-Tac: Sea-Tac, Boeing Field, and Renton are less than 5 nautical miles apart.
- Poor weather access to Boeing Field, Renton, and Paine Field.
- Shared arrival procedures with Sea-Tac.
- Shared departure airspace with Sea-Tac.
- Local airport terrain/obstructions constraints that reduce options for deconflicting airspace.
- Environmental (noise, emissions) and land use patterns near airports.
- Cascade Mountain terrain.

The Next Generation Air Transportation System (NextGen)

will revolutionize how airplanes fly and how airspace is managed. NextGen technology will transform air traffic control from a ground-based radar system to a satellite-based system, allowing aircraft to safely fly closer together on more direct and precise routes.

Benefits include reduced delays, increased capacity, fuel savings, lower emissions, and reduced noise. Elements of NextGen will be implemented in stages across the United States between now and 2025. NextGen satellite-based arrival procedures are already being used by major airlines at commercial airports like Sea-Tac, saving fuel, reducing emissions and noise, and improving safety.



Concepts to address constraints include:

Improved departure and arrival plans for the study airports. These plans increase north and south flow and provide for less conflicted operations, especially at Boeing Field, Renton Airport, and Paine Field.

Improved north flow instrument arrival procedures. These improve operations in poor weather, and reduce conflicts between Boeing Field, Renton, and Paine Field.

Advanced technologies applied to identifying airport obstructions. These GPS technologies can be used to improve the accuracy of how aviation obstructions are identified. With more accurate obstruction identification, instrument procedures can be more precisely designed. This will allow for landings in lower visibility weather conditions which keep airports open during periods of inclement weather and improves safety.

New instrumented routings over the Cascades. A new “T Route” over the Cascades allows aircraft to fly at a lower altitude, which results in a lower risk of icing, especially during winter, and reduced air traffic controller workload to descend the aircraft.

Next Steps

Getting the region ready for NextGen will require actions by the Puget Sound Regional Council (PSRC), local airport operators, and state and federal agencies and pilots.

PSRC: The PSRC is the local government linkage to NextGen efforts in the Region. As NextGen strategies are implemented by the FAA, the region’s airports and pilots, PSRC will explore ways to inform local governments about the opportunities and implications. PSRC will also explore ways track the implementation of NextGen strategies, and collect feedback from local government to ensure that changes to flight procedures minimize local impacts to the extent possible without affecting safety.

Local Airport Operators: The implementation of NextGen strategies requires airports to collect up-to-date airspace obstruction information for buildings, structures, terrain and trees using the latest digital mapping technology. If obstruction information isn’t current, the FAA must base procedure design on a set of generic standards that may impede access to an airport during low visibility weather. Currently, Boeing Field, Renton, Puyallup and Sea-Tac are all collecting digital data to map the existing obstructions around the airport as part of their airport master plan efforts.

WSDOT Aviation: The state will be conducting follow-up to assist with the implementation of newly identified concepts. For example, the state Aviation System Plan Phase II will collect survey-grade data at four airports — Auburn, Tacoma Narrows, Harvey Field and Bremerton — to enable NextGen improvements. This work will complement the work currently underway by the airport operators listed above so that the Region has a comprehensive picture of obstructions around all airports.

FAA: Once a concept has been vetted and is ready for the next step of becoming a procedure, it is submitted to the FAA, which has the authority to design and approve approach and departure procedures. This study resulted in several concepts being proposed to the FAA to improve access for general aviation airports in the region, however, concepts are dependent upon the collection of obstruction data as previously mentioned.

Pilots: Pilots are encouraged to equip their general aviation aircraft with NextGen technology to secure the benefits of improved access to the local airports. Because aircraft equipage is an ongoing effort by private aircraft owners, one priority in the study was to improve communication regarding what NextGen improvements were being considered. The communication needed to stress how improved safety and the benefits of access in all weather conditions could outweigh the cost of aircraft equipage. This communication will be done through an iPad application developed as part of this study. The iPad app will be shared with pilot communities through known stakeholders, airport owners/operators, and local pilot groups. The app will contain information regarding advantages to equipping and animations of the concept procedures for airports in the PSRC region.

Contact Information

Joelle Briggs

Federal Aviation Administration
Manager, Seattle Airports District Office
425-227-2657 • joelle.briggs@faa.gov

Robin Mayhew, AICP

Puget Sound Regional Council
206-464-7537 • rmayhew@psrc.org

<http://www.psrc.org/transportation/airtrans>

Coming soon: iPad application at the Apple App Store; search “Puget Sound NextGen”.

