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Notice: Airspace Enhancements at Billy Bishop Airport

NAV CANADA, in collaboration with PortsToronto, will be implementing enhanced arrival procedures for aircraft operators at the Billy Bishop Toronto City Airport starting December 5, 2019. Leveraging satellite-based navigation capabilities, the new procedures will:

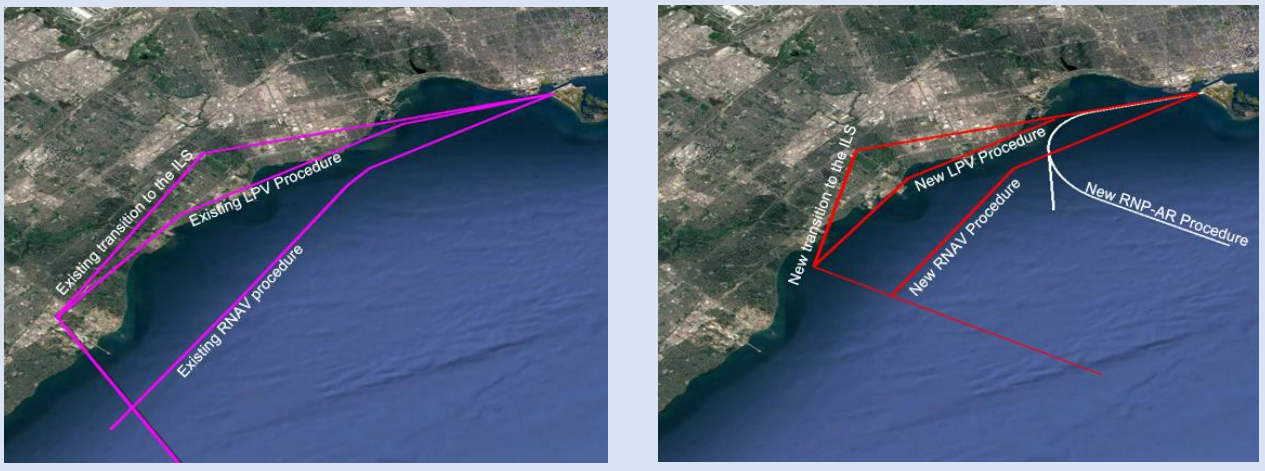
- improve traffic integration and enhance operational efficiency;
- reduce operational complexity associated with neighbouring obstacles;
- reduce noise exposure to residentially populated areas by keeping more aircraft over the water on approach;
- reduce flying time, associated fuel burn and greenhouse gas emissions.

With these enhanced arrival procedures, aircraft operators will save as much as 5 minutes of flying time, which is estimated to add up to an annual reduction of 970 metric tonnes of Greenhouse Gas emissions (GHGs). These changes are in compliance with the 1983 Tripartite Agreement and do not affect the type or number of aircraft operating at Billy Bishop Airport.

Runway 08 Arrival Procedure Enhancements

Runway 08 is predominantly used when winds are from the east, which typically occurs approximately 30-40 per cent of the time. The transitions and final approach paths to all procedures is being shortened which will reduce overflight of some communities to the west of the airport. In addition to enhancing existing procedures, a new Required Navigation Performance – Authorization Required (RNP-AR) procedure is being added which keeps arriving aircraft over the water. The graphics below illustrate the location of current procedures in pink, the new procedures in red or white, and a comparison of existing and new procedures.

Composites of existing (left) and new (right) arrival procedures to runway 08.



Comparison of existing (pink) and new (red and white) arrival procedures to runway 08.

Using Aviation Environmental Design Tool (AEDT), NAV CANADA was able to use noise modeling to compare the community noise exposure of the current and new procedures. All procedures show decreases in population overflown at noise levels above 55 dBA. The greatest reduction is associated with the new RNP-AR procedure (which keeps appropriately equipped aircraft over the water) showing a reduction of 34,000 residents exposed at to noise levels above 55 dBA.

Operational use of this procedure will commence December 5, 2019.

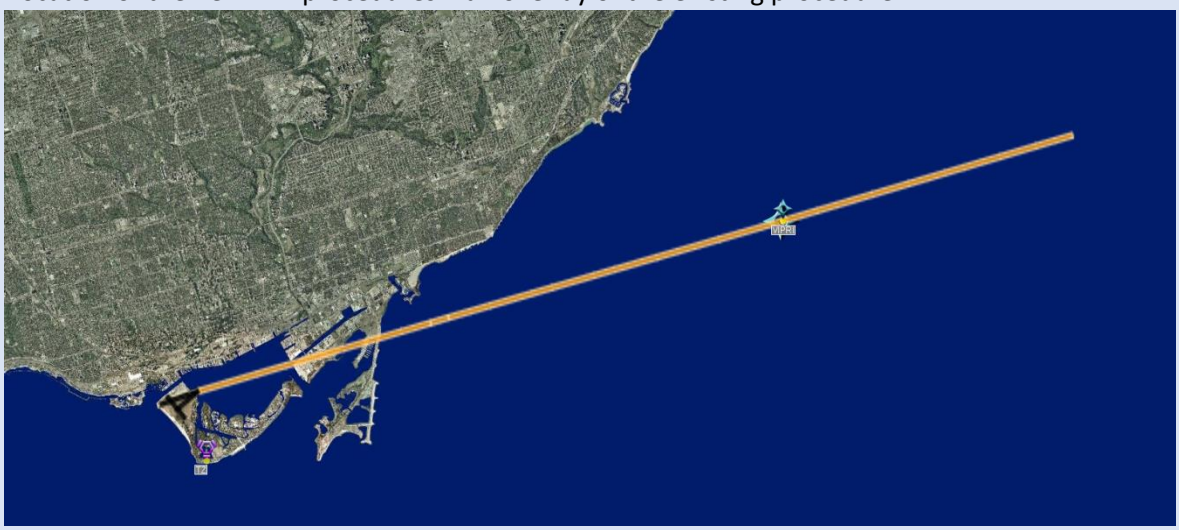
Runway 26 Arrival Procedure Enhancements

When winds are from the west (60 to 70 percent of the time), aircraft land on runway 26. Currently, operators will utilize an Instrument Landing System (ILS) in reduced visibility conditions. The procedure for the ILS is exceptional in that it has a glideslope, or rate of descent, that is much greater than the norm at 4.8 degrees. This complex procedure requires specialized training for pilots to be used effectively.

To replace this procedure, a new Lateral Precision with Vertical Guidance (LPV) approach has been created with a glideslope of 3.98 degrees, which brings it within a standard range and greatly reduces operational complexity in flying the procedure – without changing the location of the arrival procedure. The new LPV procedure will replace the ILS procedure, with the latter eventually decommissioned. Operational use of this procedure will also commence in December 2019[1].

[1] *Update from first version published, which indicated operational use to commence in January 2020.*

Location of the new LPV procedures – an overlay of the existing procedure.



In addition, the LPV procedure will enable more efficient ground positioning for departures, since aircraft will safely require less spacing in order to depart. This has the added benefit of reducing ground idling and associated fuel burn, GHG emissions and noise from aircraft waiting to depart while increasing operational resiliency in low visibility conditions.

Summary

By leveraging Transport Canada-approved design criteria and satellite-based navigation, NAV CANADA and PortsToronto will enhance the airspace structure surrounding Billy Bishop Airport in order to improve traffic operations while reducing flying time, fuel burn, greenhouse gas emissions and community noise exposure. Questions or comments can be sent to service@navcanada.ca.