

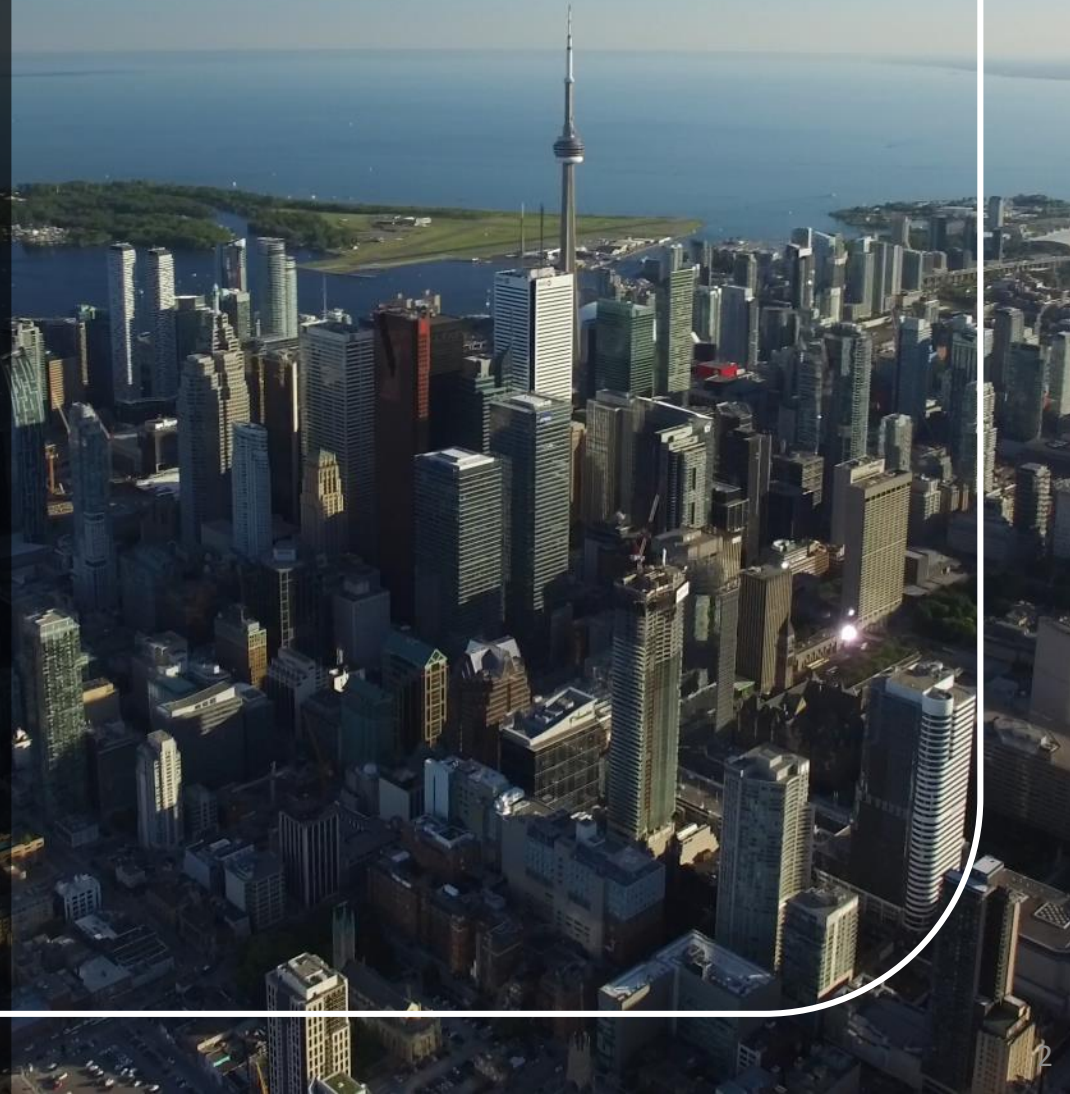
# Billy Bishop Toronto City Airport Airfield Rehabilitation Program May 30, 2019



PORTS  
TORONTO

# PORTS TORONTO

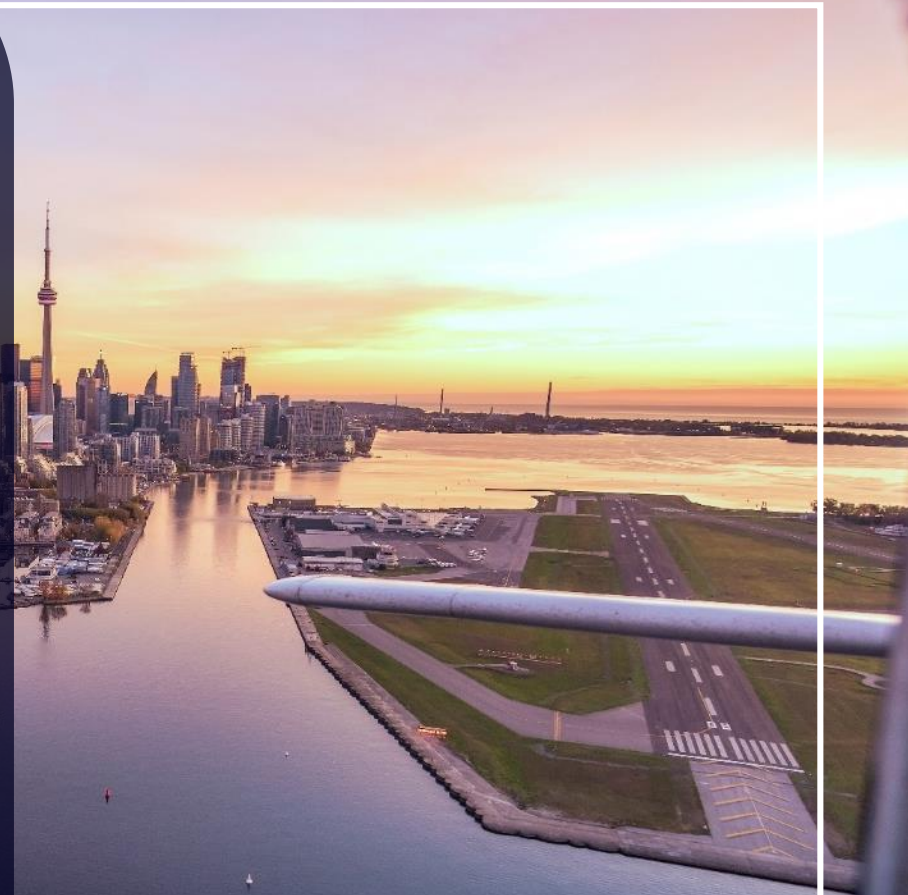
- Billy Bishop Toronto City Airport, owned and operated by PortsToronto, is located on an island minutes from downtown Toronto and on the southern edge of a thriving mixed-use neighbourhood.





# Billy Bishop Toronto City Airport

- Served 2.8 million passengers in 2018 and is Canada's ninth-busiest airport.
- Offers service to more than 20 cities in Canada and the U.S., with connection opportunities to more than 80 international destinations via our airlines' networks.
- Billy Bishop Airport is a key international gateway and economic driver, generating more than \$470 million in Gross Domestic Product (GDP) each year.



**BILLY  
BISHOP**  
TORONTO CITY AIRPORT



## Airfield Rehabilitation Project

- Completed September 2018.
- Significant three-year project included:
  - ✓ Complete resurfacing of the airport's aging runways, taxiways and apron;
  - ✓ Grooving of the main runway;
  - ✓ 100 per cent LED lighting and signage retrofit; and,
  - ✓ Construction of a Ground Run-up Enclosure (GRE) designed to dampen noise associated with high-power aircraft engine ground run-up operations.



# Environmental Benefit

## Ground Run-up Enclosure: Effective Mitigation of Noise Pollution

- Three-sided open top facility effectively absorbs noise with specialized acoustic panels lining the interior walls.
- Facility has immediately and significantly reduced acoustic impact of engine run-ups on the surrounding community.
- 161 noise complaints related to engine testing in 2013 vs 0 in 2018.
- Design requirement aimed to reduce noise impacts by 15db. Actual acceptance tests show reduction of 18db, exceeding requirements by 20 per cent.





The image is a composite. The top-left portion shows a night view of a city skyline, featuring the CN Tower and several illuminated skyscrapers. The bottom-left portion shows a road at night with a glowing centerline light fixture. The right half of the image is a dark blue gradient containing text.

## Environmental Benefit

### LED Retrofit: Reduced Energy Consumption & Improved Safety

- Lighting retrofit has reduced energy usage by 75 per cent.
- New centerline lighting provides pilots with additional guidance on approach; improved safety during periods of low visibility.



An aerial photograph of a runway surface. The runway is dark asphalt with several distinct grooving patterns. A prominent feature is a wide, bright yellow center line with a diagonal grooving pattern. Above and below this line are other grooving patterns, including a series of parallel white lines and a series of diagonal white lines. The overall texture is highly detailed due to the grooving.

# Sustainable Design

## Runway Grooving

- Newly grooved runway creates more friction, reducing emissions.
- Grooving directs water on runways more quickly, reducing potential for flooding and aircraft hydroplaning.
- Design element put to the test during Toronto Island's record-breaking flooding in spring 2017; airport operations were largely unaffected as runways remained dry.





## Sustainable Implementation

- Overall project plan incorporated multiple individual project elements into single construction contract; reduced overall impacts of construction.
- Sustainable Procurement Policy sought local business and contractors who shared our commitment to sustainability.
- Quantity of earthworks required for project reduced through specific pavement design strategies; re-use of quality granular material from existing pavement structure.
- Large quantity of asphalt millings re-used in construction of new facilities such as airside perimeter roads.



An aerial night photograph of Toronto, Ontario, Canada. The city's lights are visible in the background, with the airport's runways and taxiways illuminated in the foreground. The water of the harbor is dark, and the sky is a deep blue. The image is framed by a white border with rounded corners.

# Challenges

- Geography. Airport located on Toronto Island steps from a thriving community and waterfront.
- Single runway: No option to close down or alternate runway to accommodate construction work.
- One of most noise-restricted airports in North America.
- Construction work occurred at night when airport closed to commercial operations; goal to complete work without disrupting community.
- Continue to accommodate overnight emergency Medevac flights.
- Construction site to be fully operational every morning by 6:45am to maintain operations.



# Effective Implementation

Virtually Invisible to Passengers and the Community

- Most complicated project ever undertaken at airport.
- One, six-minute delay in operations over course of three-year project.
- Only two community complaints related to construction lighting.





# Community Engagement

- Community outreach strategy commenced well in advance of project start.
- Through comprehensive community engagement, developed innovative measures and policies to best mitigate potential construction-related disturbances such as noise, emissions, and excessive lighting.





# Innovative Solutions

## Barging Operation

- Barged materials to site via water, avoiding neighbourhood roads.
- Operation eliminated noise, traffic and emissions in surrounding airport community.
- Removed equivalent of approximately 6,000 trucks off community streets.





# Innovative Solutions

## Mitigating Noise and Lighting Impacts

- Construction lighting cast downwards and away from city to avoid disturbing neighbours.
- Policy implemented to reduce use of vehicle and equipment back-up alarms to further avoid noise disturbances.





A photograph of a Porter airplane on a runway with the Toronto skyline and the CN Tower in the background. The image is split vertically, with the left side showing the real scene and the right side being a dark blue overlay with white text.

# Community and Stakeholder Engagement

Comprehensive engagement strategy included:

- Individual briefings for representatives from all levels of government.
- Project specific website updated weekly to provide public, media, partners and tenants with program related information.
- Town Hall style public meetings held; included live Q&A, demonstrations, comparative photo renderings etc.
- Worked closely with First Nations communities to ensure no evidence of archaeological materials on GRE site.



## Partners in Excellence

- Ongoing, daily collaboration with carriers, tenants and partners vital to smooth implementation and success of program.





## Partners in Excellence

- Successfully accommodated all Medevac flights despite nighttime work.
- Entire apron reconstructed without any closures or delays to gate operations.
- No incursions or any significant safety violations.





An aerial photograph of a city skyline at sunset. The sun is low on the horizon, casting a warm orange and yellow glow over the water and the city. The city features numerous skyscrapers and a dense urban layout. A large body of water is visible in the foreground, with a bridge structure extending into it. The sky is filled with soft, colorful clouds.

## Cost Effectiveness

- Project completed on budget; cost of \$35 million.
- Paid for by PortsToronto through Airport Improvement Fees and not taxpayers.
- Value and efficacy of program proven by overwhelmingly positive results.



An aerial photograph of a city skyline at sunset. The sky is a mix of orange, pink, and purple. The city features numerous skyscrapers and buildings. In the foreground, there is a large body of water, likely a river or bay, with a long pier extending into it. The water reflects the colors of the sky. The overall scene is a blend of urban development and natural elements.

## Applicability: Case Study for Urban Airports

- Innovative program serves as case study for other urban airports looking to develop similar programs to mitigate the impacts of operational related disturbances on passengers, the community and the environment.
- Demonstrates commitment to investing in long-term future of the airport while conducting business with respect for the environment and the community.



An aerial photograph of Toronto, Canada, taken from an elevated perspective, likely from an airplane. The image captures the city skyline at sunset, with the sun low on the horizon, casting a warm, golden glow over the scene. The Toronto skyline is prominent, featuring numerous skyscrapers and the iconic CN Tower. The city is situated along the western shore of Lake Ontario. In the foreground, a large body of water, likely the harbor, is visible, with a long pier extending into it. To the right, a runway and taxiway are visible, indicating the proximity to an airport. The overall atmosphere is serene and picturesque. The text "THANK YOU" is overlaid in the center of the image in a large, white, sans-serif font.

THANK YOU