

PREVENTION OF FOREIGN OBJECT DEBRIS (FOD) DURING CONSTRUCTION

at Toronto Pearson International Airport

Presenter: Kevin Chee, P.Eng.

Date: Sept 15, 2022

Location: 2022 SWIFT - Montreal



Toronto Pearson

Prevention of FOD during Construction

Outline

- Background Information
- Challenges and Concerns during Construction
- Solution and Implementation Approach
 - Design Stage
 - Pre-Construction Stage
 - Construction Stage
- Lessons Learned with photos
- Final Remarks and Questions

Toronto Pearson – Canada's Largest Airport

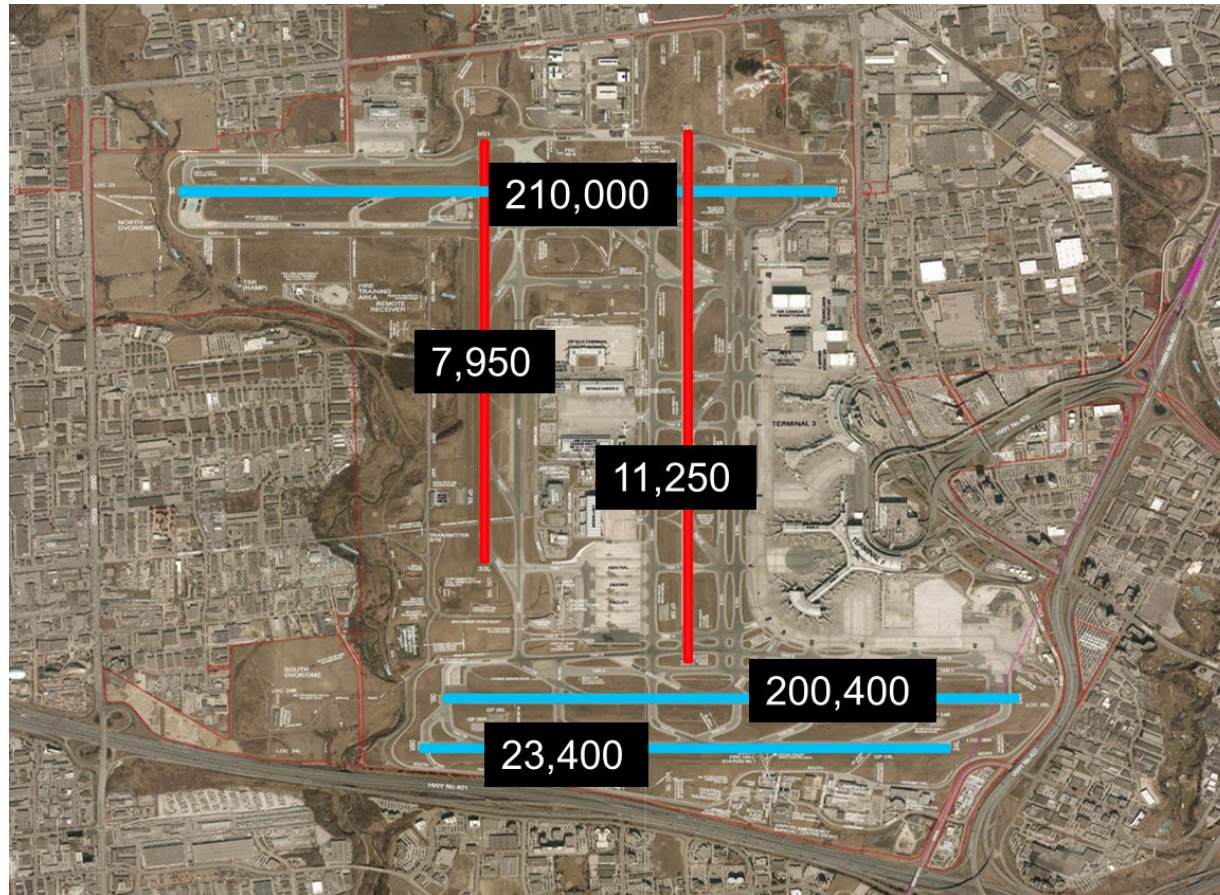
Background Information

- 2019 Passenger Volume ----- 50.5 Million PAX.
- Ranking in North America* ----- 2nd busiest airport
- Total airside paved areas** ----- approx. 5.8 million m²
- # of aircraft movements ----- approx. 453,000
- Cargo processed ----- 513,000 tonnes
- Direct Jobs created ----- 51,000
- GDP contribution to Ontario ----- \$42 Billion CAD

**In terms of international passengers, 29.6 Million PAX.*

*** includes Concrete, Asphalt and Composite pavements*

Toronto Pearson – Canada's Largest Airport



2019
Traffic
Movement

Prevention of FOD During Construction

CHALLENGES AND CONCERNS

- Location of the job site
 - Greenfield area, adjacent to high traffic area, near an active runway, etc.
- Amount of construction traffic
 - Can vary from minimal movement to over 1000 movement per 12-hr work shift
- Type of construction activities
 - Common excavation work, shave and pave work, crack sealing work, etc.

Prevention of FOD During Construction

CHALLENGES AND CONCERNS cont'd

- Number of construction workers
 - Can vary from several workers to over 400 workers per 12-hr work shift
- Location of the access/haul routes
 - Crossing active manoeuvring surface vs not crossing active manoeuvring surface
- Daytime construction vs Night-time construction
 - Ability to spot/identify FOD concern

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SOLUTION AND IMPLEMENTATION APPROACH

Design Stage

- Clearly indicate expectations in the Contract Document and comply with GTAA's Airport Construction Code

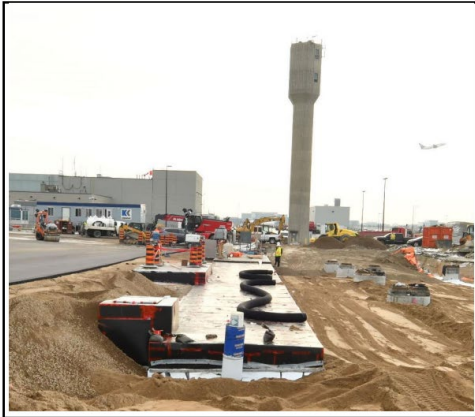
Pre-Construction Stage

- FOD action plan must be part of the Site-Specific Health and Safety Program including Threat & Hazard Identification and Risk Assessment (THIRA)
- Identify potential problematic areas based on construction activities/tasks

Prevention of FOD During Construction

Related Documents

Toronto Pearson – Building for the Future!



Toronto Pearson International Airport



2021

Airport Construction Code v7.0



| | | |
|-----------------|----------|------------------|
| A-NMS01 74 11++ | | |
| GTAA – TPIA | Cleaning | Section 01 74 11 |
| Airside and | | Page 1 |
| Infrastructure | | 2021-11-01 |

PART 1 – GENERAL

- | | | |
|--------------------------------|----|--|
| <u>1.1 Section Includes</u> | .1 | Progressive cleaning. |
| | .2 | Waste management. |
| | .3 | Final cleaning. |
| <u>1.2 Related Section</u> | .1 | Section 01 35 43 – Environmental Protection. |
| | .2 | Section 01 35 44 – Erosion and sediment control. |
| | .3 | Section 01 77 00 – Closeout Procedures. |
| <u>1.3 General</u> | .1 | The Contractor shall conduct cleaning and disposal operations to comply with Foreign Object Damage (FOD)-free surfaces, local ordinances and anti-pollution laws and regulations. |
| <u>1.4 Project Cleanliness</u> | .1 | The Contractor shall: .1 Maintain Work in tidy condition, free from accumulation of waste products and debris. .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by GTAA's Representative. Do not burn waste materials on site. .3 Clear snow and ice from access routes, related facilities and buildings, remove same from site. .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris. .5 Provide on-site containers with lockable tight covers for collection of waste materials and debris as specified in Section 01 35 43. .6 Remove waste material and debris from site and deposit in waste container at end of each working day or as directed by GTAA's Representative. |

Dufferin Construction Company – Site Specific Safety Plan
2022 Airfield Rehabilitation Program
Runway 06L-24R & Associated Taxiways 13253
DCC Job ID: 10-00084

GREATER TORONTO AIRPORT AUTHORITY (GTAA)

2022 AIRFIELD RESTORATION PROGRAM

RUNWAY 06L-24R & ASSOCIATED TAXIWAYS

CONTRACT # 13253

DCC JOB #10-00084

**CONSTRUCTION COMPLIANCE
PACKAGE**

Prevention of FOD During Construction

SOLUTION AND IMPLEMENTATION APPROACH cont'd

Construction Stage

- It's everyone's responsibility to pick up FOD if they see it and to dispose in a garbage bin
- Provide garbage bins throughout the work site
- Conduct FOD walks every morning and at the end of each workday
- Ensure there are no loose items that wind can pick up
 - All loose items must be tied/weighed down or disposed of in the garbage bin

SOLUTION AND IMPLEMENTATION APPROACH cont'd

Construction Stage cont'd

- Maintain adequate sweepers and vacuum trucks on-site at all times to ensure all active manoeuvring surfaces and access/haul routes are free from construction debris and dust concerns
- Maintain adequate lighting for Night-time work
- Conduct housekeeping as needed and at a minimum of once per day

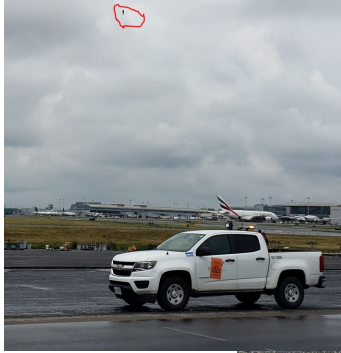
Prevention of FOD During Construction

Photos: Potential Issues due to FOD and Dust Concerns



Prevention of FOD During Construction

Photos: Potential Issues due to FOD and Dust Concerns cont'd



Prevention of FOD During Construction

Photos: Potential Issues due to FOD and Dust Concerns cont'd



Prevention of FOD During Construction

Photos: Potential Issues due to FOD and Dust Concerns cont'd



Prevention of FOD During Construction

Photos: Best practice to mitigate FOD and Dust Concerns



Prevention of FOD During Construction

Photos: Best practice to mitigate FOD and Dust Concerns cont'd



Prevention of FOD During Construction

Photos: Best practice to mitigate FOD and Dust Concerns cont'd



Prevention of FOD During Construction

Photos: Best practice to mitigate FOD and Dust Concerns cont'd



An aerial photograph of the Toronto Pearson International Airport. The image shows the extensive runway system, taxiways, and parking lots. In the foreground, there are large terminal buildings and a complex system of elevated highways and overpasses. The city skyline is visible in the far distance under a clear sky. A semi-transparent white banner with a slight 3D effect is centered over the image, containing the text 'Thank You' in a bold, dark blue font.

Thank You

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