

Airside Pavement Restoration 2024 Project Greater Toronto Airports Authority (GTAA)



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Agenda

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AIRSIDE PAVEMENT RESTORATION 2024 AT TORONTO PEARSON INTERNATIONAL AIRPORT



TORONTO PEARSON INTERNATIONAL AIRPORT (YYZ)

Canada's largest & busiest airport. Serves as a major global hub, handling over 50 million passengers annually



PROJECT OBJECTIVES

- **Scope & Scale:** Extend lifespan and improve reliability of critical airside surfaces (rehabilitate approx. 500,000 m²)
- **Safety & Operational Reliability:** Ensure safety, operational continuity, and capacity maintenance
- **Sustainability:** Improve sustainability and reduce environmental impact (LED upgrades)
- **Capital Planning:** Strategic capital investment under long-term planning



THE TEAM



3rd Party Electrical Review

Owner's Representative

Contractor



With Support from:



WP1

WP2

WP3

WP4

WP5

WP6

Civil Design

Electrical Design



Project Overview - Scope Summary

Civil scope includes:

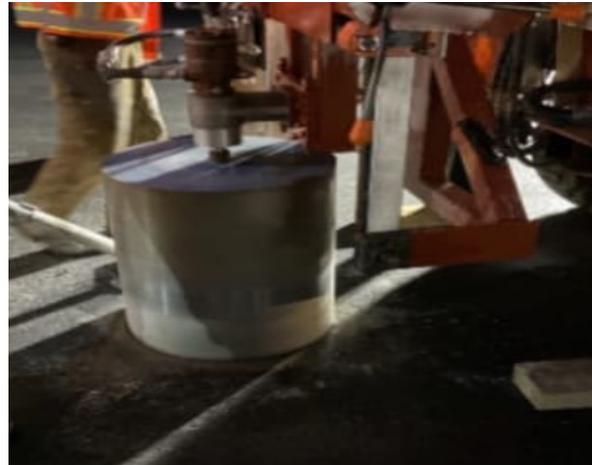
- Milling and grinding.
- Asphalt and concrete paving (removal & replacement/reinstatement).
- Saw cutting and crack sealing in asphalt, saw cutting and joints sealing in concrete.
- Asphalt and concrete repairs/patching, airfield grading, storm sewer and catch basin repairs/adjustments
- Line painting, topsoiling, seeding/sodding.



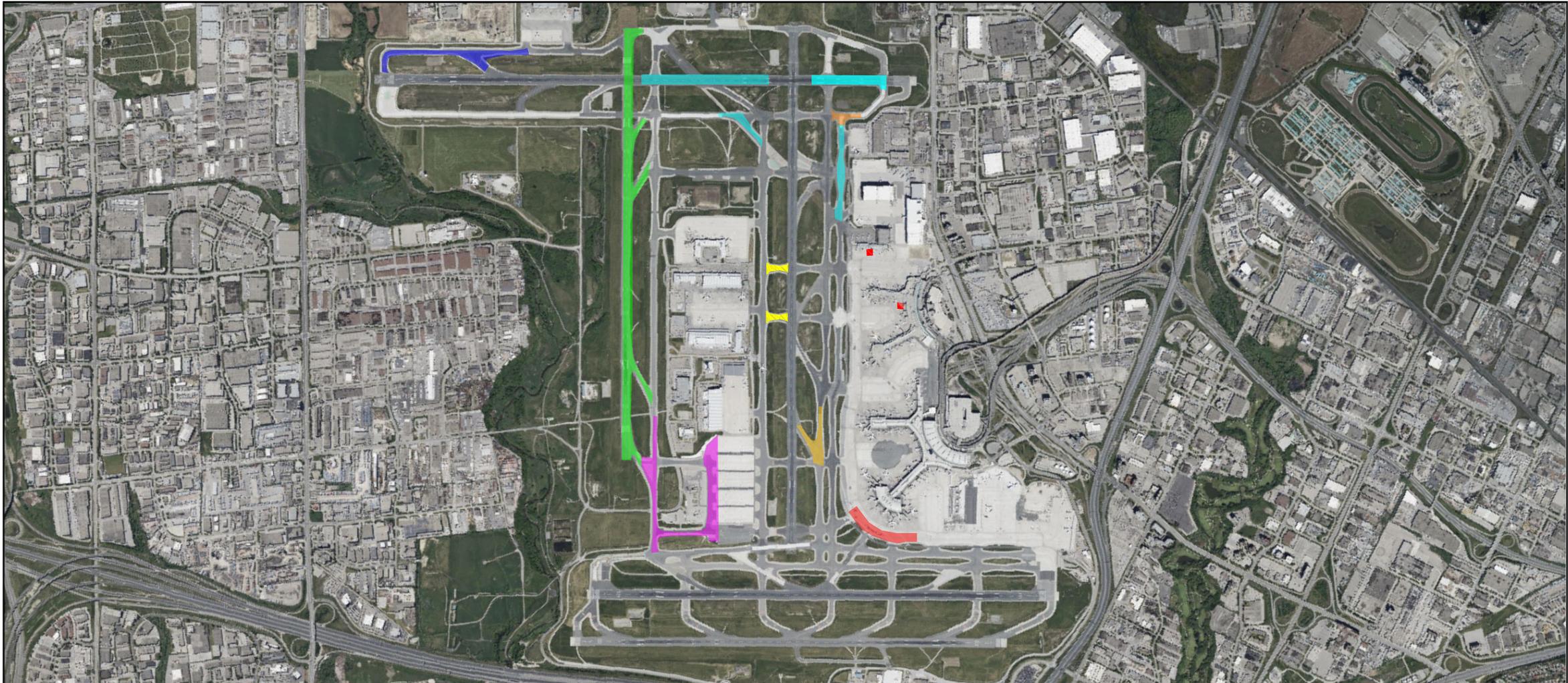
Project Overview - Scope Summary

Electrical scope includes:

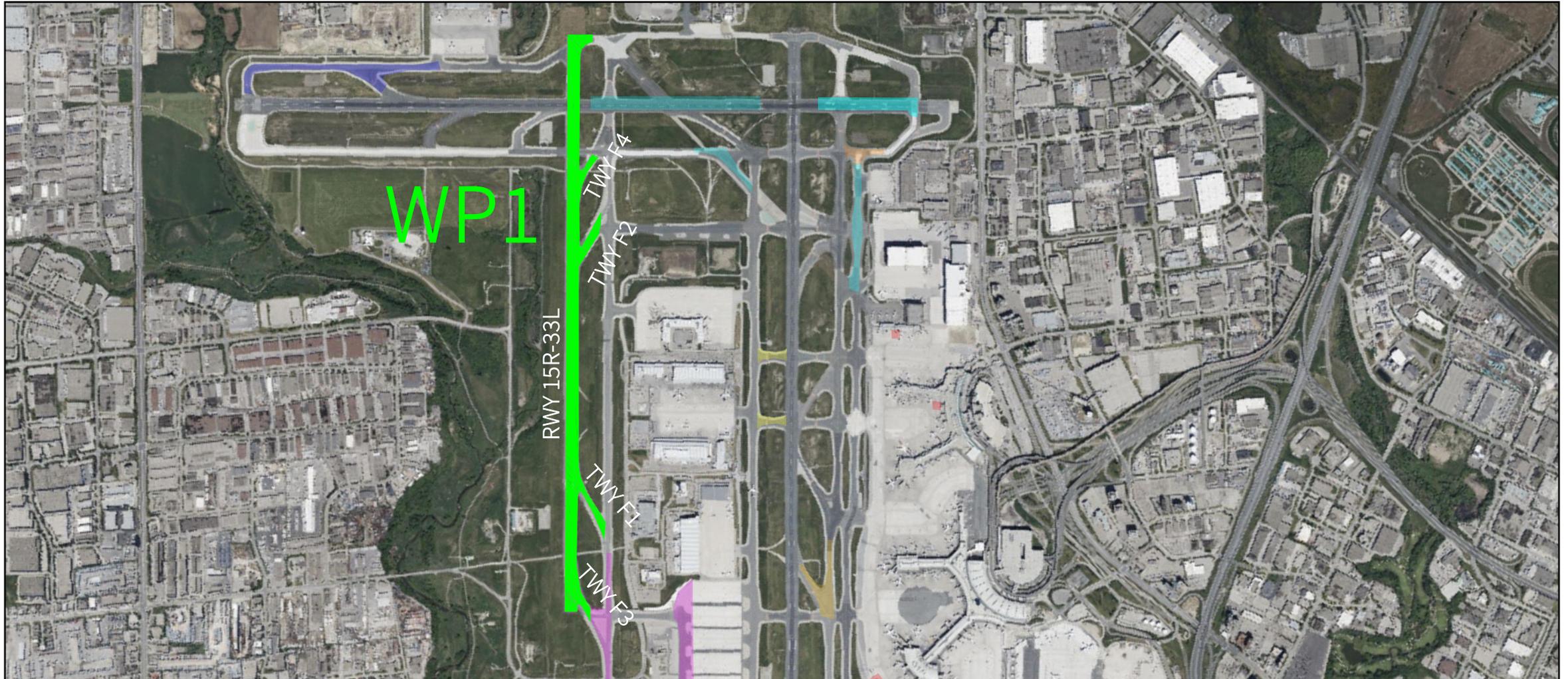
- Removal of base-can extension assemblies and re-installation to accommodate new asphalt paving.
- Removal of failed/damaged base-can and replacing with new deep two-piece base-can assemblies to allow for future repairs.
- Replacing existing inset and elevated fixtures with new LED type.
- Replacing existing guidance signs with new LED type c/w new concrete guidance sign pads, isolation transformers, and sign base-cans.
- Testing & commissioning (Light checks, Ground rod resistance tests, Megger tests, CCR calibration, photometric testing, etc.).
- TCAT checklists for all electrical fixtures.
- Maximo data review for all new electrical fixtures.



Project Overview



Project Overview



Project Overview



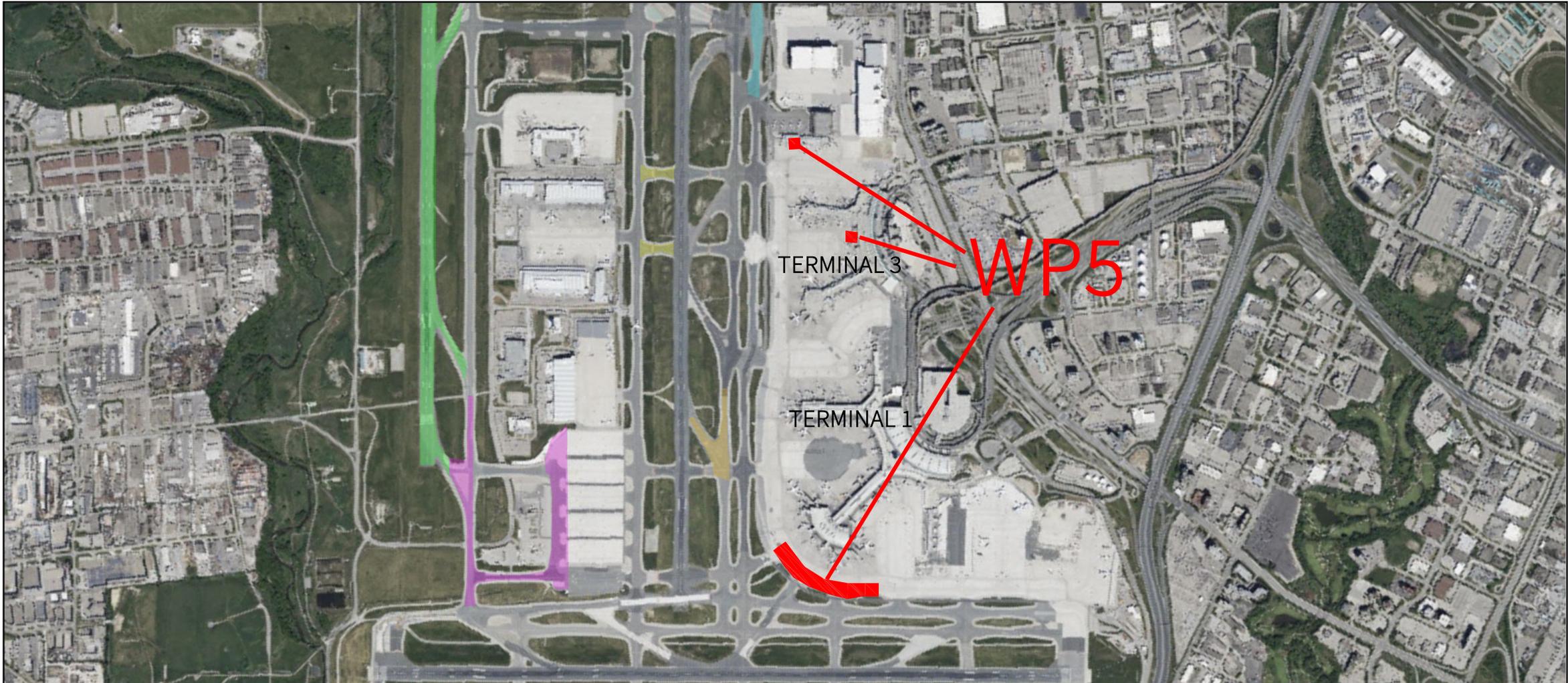
Project Overview



Project Overview



Project Overview



Project Overview

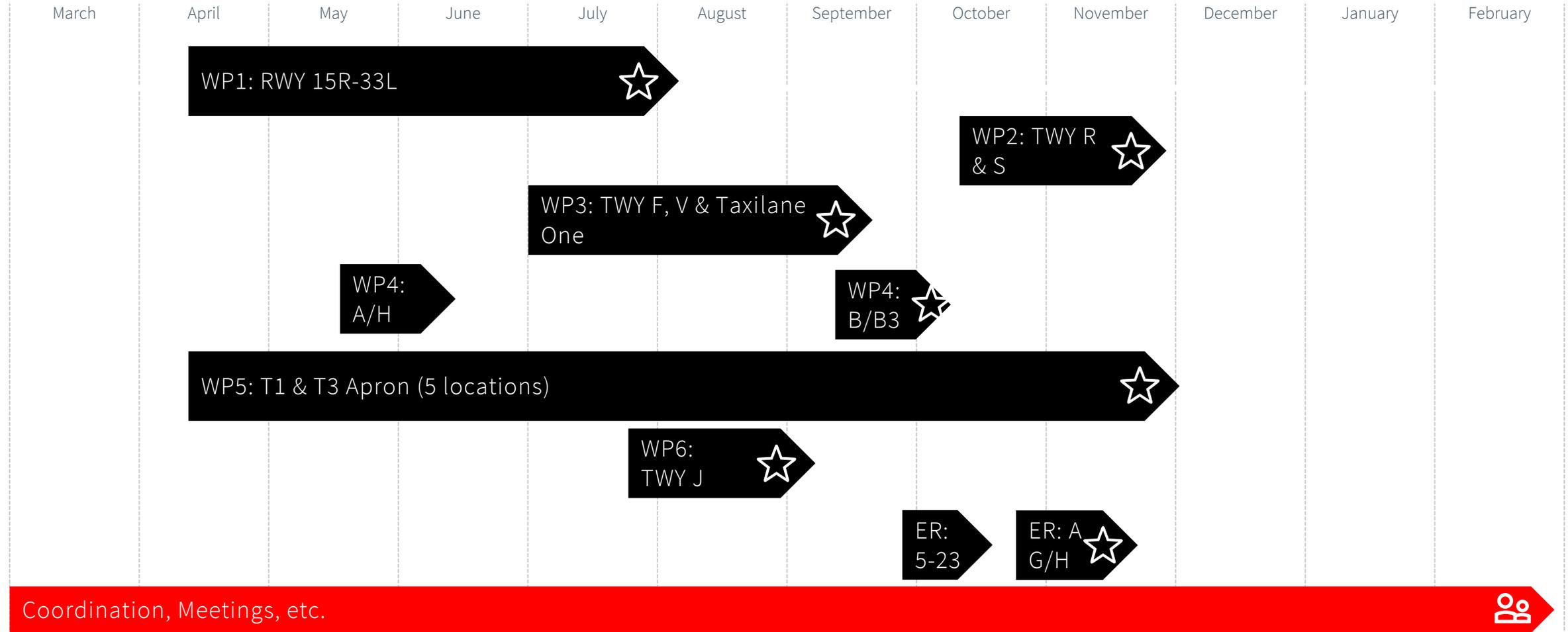


Project Overview



Timelines

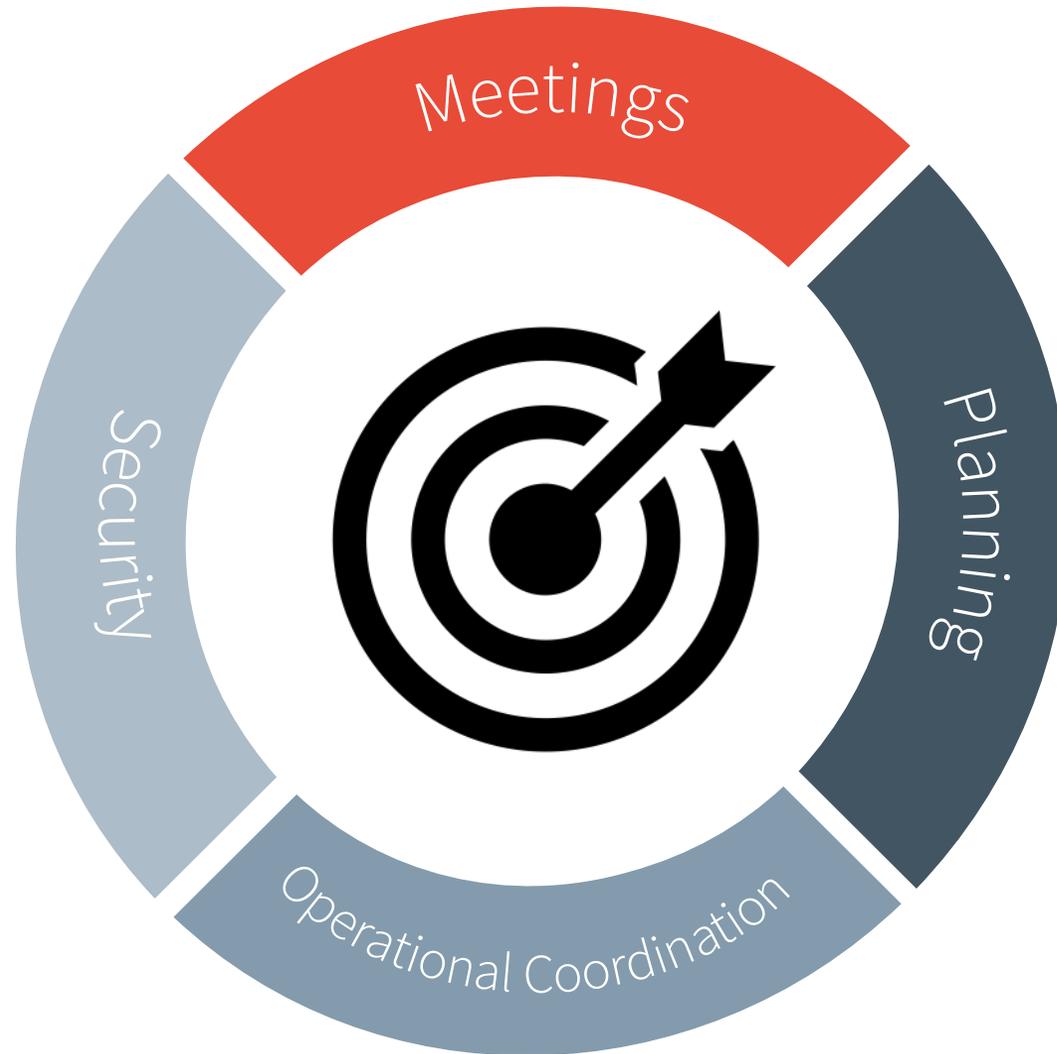
2024-2025



☆ Project Milestone

👤 Workshop

Planning & Coordination

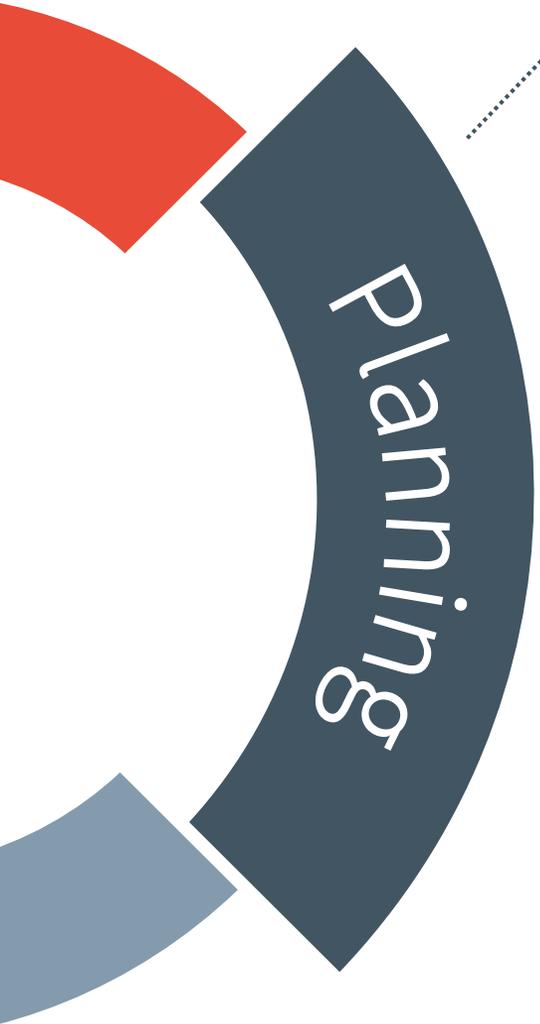


Planning & Coordination

Meetings

- Daily airside construction operational briefing
- Weekly progress meetings
- Weekly schedule and critical path
- Weekly closure coordination meetings
- Weekly security escort meetings
- Weekly technical meetings
- Permit walkthrough meetings
- Dedicated electrical touchpoint calls (twice a week) to fast-track site observations and upcoming work

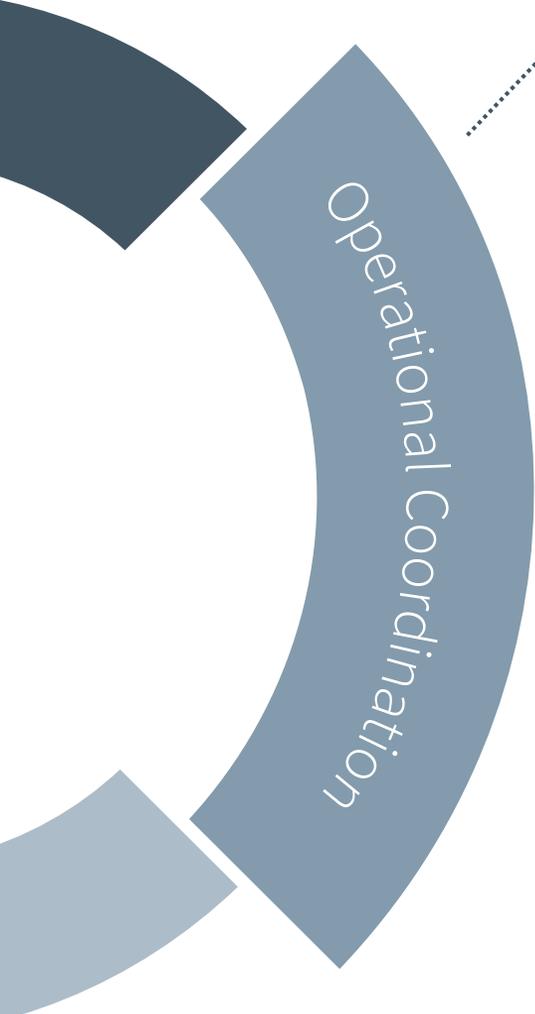
Planning & Coordination



Planning

- Diligent job planning to ensure availability of sufficient material, equipment, and labour to complete all work.
- Dividing each WP into multiple phases
- **Review and respond to all submittals, RFIs, etc. and issuance of SIs & COs in a timely manner**
- Planning and securing access gates, escorts, permits, locates ahead of time
- **Plan site delineation including ROLs, blast fence, TC54s**
- Considering weather impact and planning for make up time for critical path
- **Daily documentation (reports, photos, checklists)**

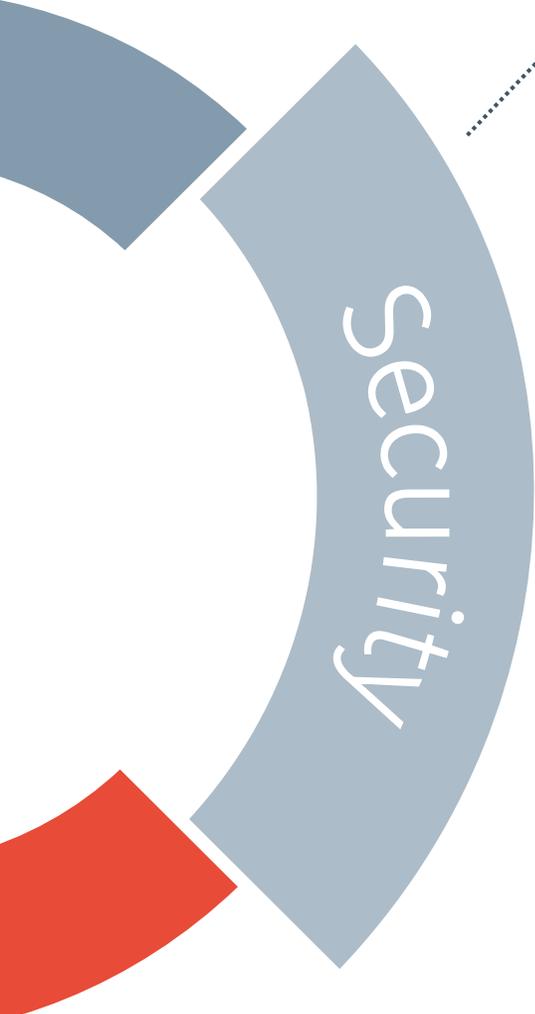
Planning & Coordination



Operational Coordination

- Access gates with routes
- Work areas & closures
- Utilizing night, overnight & non-peak hours work
- Recall procedures
- Early engagement with stakeholders and clear work zone phasing

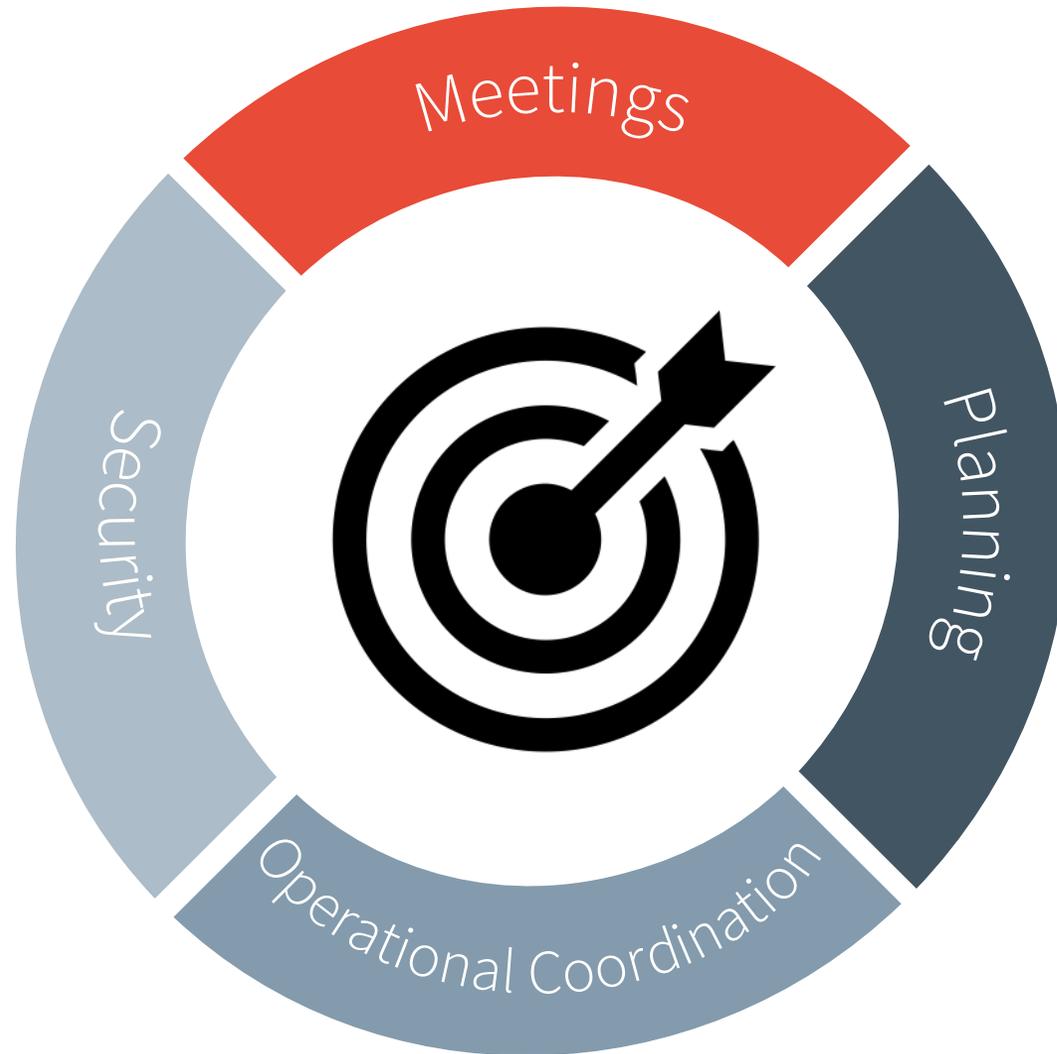
Planning & Coordination



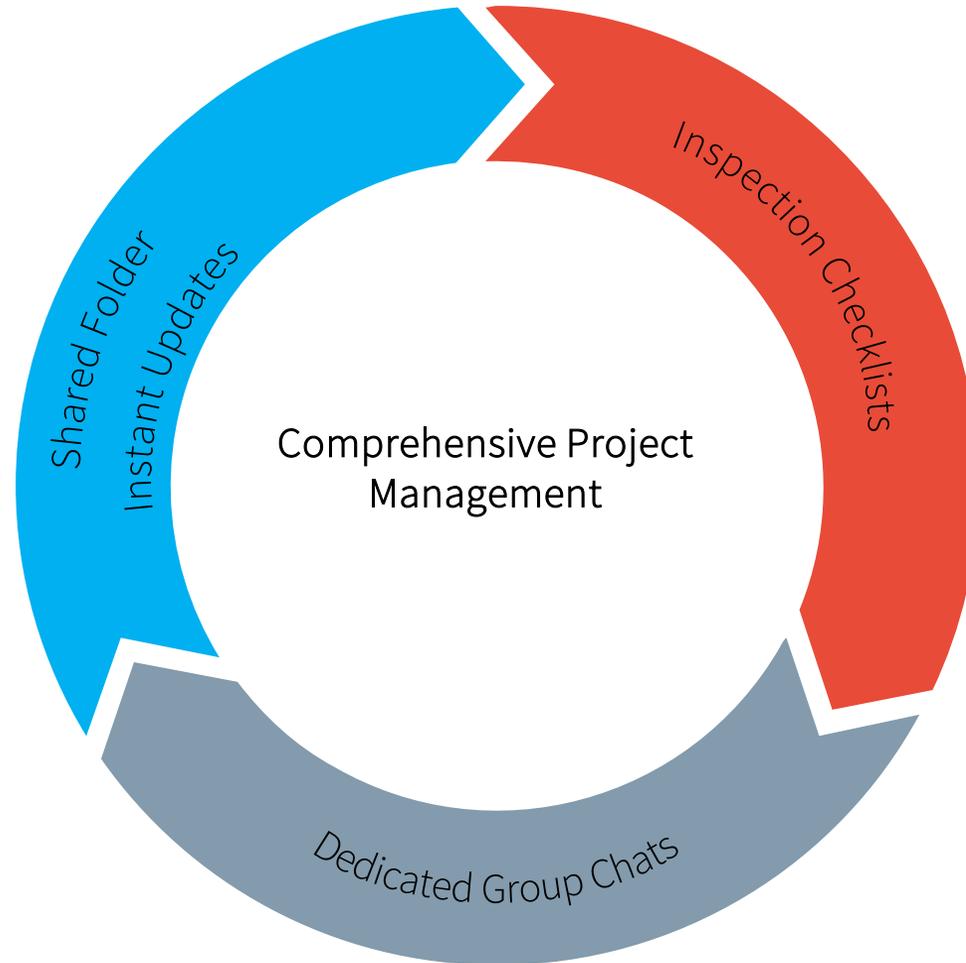
Security

- RAICs
- Dedicated security team to issue permits
- Designated personnel as primary security contacts
- 2 weeks look-ahead to ensure security guards availability
- Applying for permits with sufficient times specially for critical areas

Planning & Coordination



Communication – Real Time, Real Impact



Impact:

- Clear, real-time coordination
- Foster strong partnership and work effectively with diverse teams
- Reduced wait time for decisions and clarifications
- Improved responsiveness during site inspections
- Managed scope adjustments quickly
- Rigorous QA/QC implemented and achieved

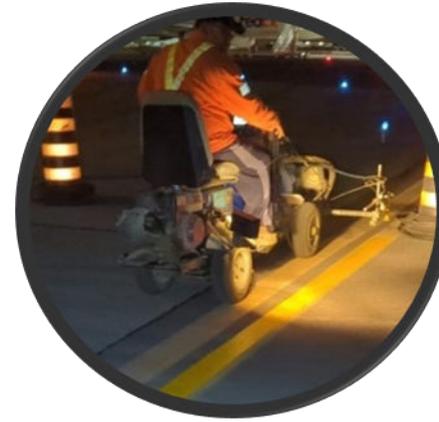
Construction Highlights



Echelon Paving



Portable Blast Fence



24/7 & Overnight Work



GTAA Regulatory & Compliance Team



Runway Pullpits



Inset Base-Cans



Existing Ground Loops



CCR Calibration & Photometric Testing

Construction Highlights



Echelon Paving

Using 6 staggered pavers on RWY & 4 staggered pavers on TWY

~100,000 ton of asphalt



Portable Blast Fence



24/7 & Overnight Work



GTAA Regulatory & Compliance Team

Construction Highlights



Echelon Paving



Portable Blast Fence



24/7 & Overnight Work



GTAA Regulatory & Compliance Team

Planning with airside coordination and security teams, routes & methods for efficient and quick moves for safety & to avoid any operational impact

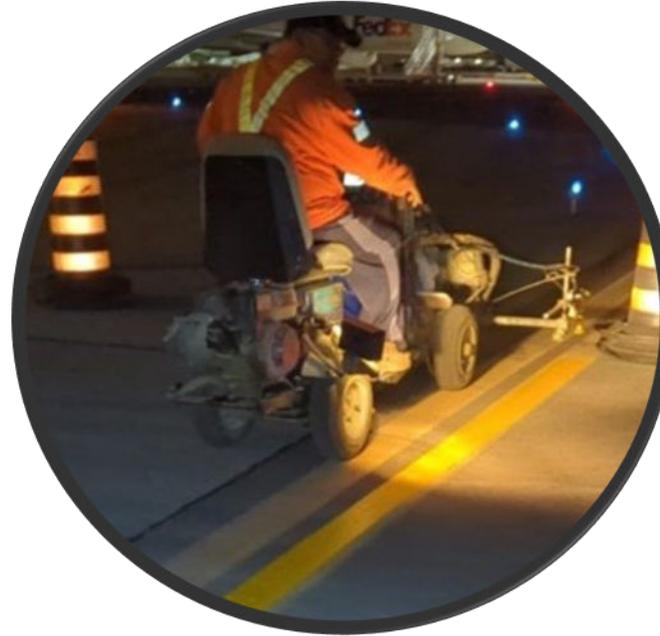
Construction Highlights



Echelon Paving



Portable Blast Fence



24/7 & Overnight Work

Whenever possible to limit operational impact & fast track some areas to return to service



GTAA Regulatory & Compliance Team

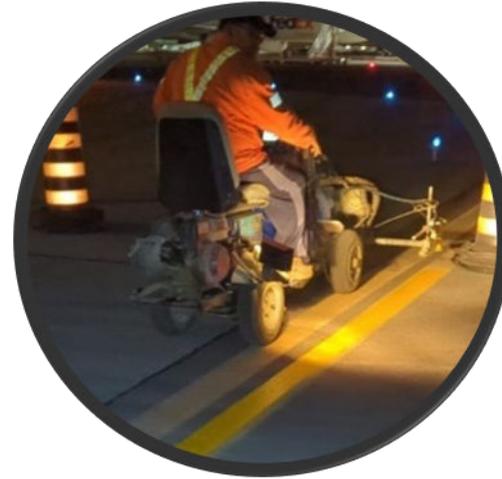
Construction Highlights



Echelon Paving



Portable Blast Fence



24/7 & Overnight Work



GTAA Regulatory & Compliance Team

Planning standby crews for any last minute changes required for returning areas to service after thorough review by GTAA Regulatory team

Construction Highlights



Runway Pullpits



Inset Base-Cans



Existing Ground Loops



CCR Calibration & Photometric Testing

Change in asphalt elevation needed to raise runway edge and end lights on existing older style pullpits made from 18" and 24" diameter PVC pipe

Custom made risers with different heights

Construction Highlights



Runway Pullpits



Inset Base-Cans

Replacement with deeper 2-piece base-can assemblies.

Use of deep extension rings & eliminated the re-use of cast iron bases were possible



Existing Ground Loops



CCR Calibration & Photometric Testing

Construction Highlights



Runway Pullpits



Inset Base-Cans



Existing Ground Loops



CCR Calibration & Photometric Testing

Delicate cabling that needed to stay protected after the mill and pave operations. Cooperative effort with the help of GTAA Electrical, Maintenance, Engineering, and CDF Team to mark out existing path loops & test them

Construction Highlights



Runway Pullpits



Inset Base-Cans



Existing Ground Loops



CCR Calibration &
Photometric Testing

36 FEC cells were witnessed to be calibrated around the airfield.

1000+ lights worked on and upgraded to LED type

Challenges & Resolutions

Closures & Recall

Planned and continued coordination between all parties to complete work within short and strict timing

Work scope shifted and makeup days allocated for completion of work within the closure period

Weather & Rainfall

Undocumented Utility Conflicts & Existing Conditions

Hydro-vac investigations & fast coordination between all parties to find alternative solutions on site

Rotating shifts implemented with complete & smooth handover and work sequence

Fatigue during 24/7 work

Challenges & Resolutions

Real-Time Pavement Markings Adjustments

Quick on-site investigations with knowledge and coordination implementing real-time solutions

Teamwork on-site to address issues and come up with plans and solutions

Survey Issues

Comprehensive TCAT Recording

Preparing in advance live docs and PDFs on iPads & detailed titled photos to show the progressive installation process

Weekly technical meetings and ongoing communications and implementing change management plan

Scope Changes

Airside Pavement Rehabilitation 2024 Toronto Pearson International Airport



Project Takeaways

Engage the OR (Owner's Representative) team early in the process and allocate sufficient time for thorough doc review



Engage construction team early to provide practical insights during design and procurement



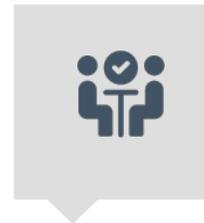
Ensure timely purchase order (PO) submissions for all long-lead items



Implement a rigorous and structured review process throughout the design phase



Foster close collaboration among all stakeholders during the design phase to align objectives and mitigate issues early



Conduct regular design coordination meetings to proactively resolve conflicts and ensure integration across disciplines

Let's build positive change, together.

This capital rehabilitation project illustrates the complexity and precision required to execute large-scale infrastructure upgrades in constrained, safety-critical environments. Through disciplined planning, stakeholder collaboration, and daily execution focus, the project achieved its core objectives on time and on budget with the highest quality and safety

Thank you.

“Compliance has commended the quality of your work. Please continue to uphold these high standards.”

- Aiman Zeeb

