

**Makael Kakakhel, P.Eng, M.Eng, PMP.  
Senior Manager – Hurontario LRT  
Capital Projects Group, Metrolinx**

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April 2019

**Subject: Independent Director -Naya Pakistan Calling Program**

This is in reference to the position of Independent Director at company that will utilise my experience for the betterment and prosperity of Pakistan.

I have more than fifteen (15) years of experience in the management of high complexity transportation infrastructure projects within public and private sectors. Currently, I am working for Metrolinx as Senior Manager - Hurontario LRT (\$2B) project, responsible for the delivery of civil infrastructure and Utilities.

Prior to Metrolinx, I worked for the Ministry of Transportation Ontario (MTO) as an Area Manager-Hamilton/Niagara Region managing a staff of eight project managers to deliver a program worth \$1.5 Billion.

My transit and rail related experience consists of planning, detail design and construction of Transit facilities, including Bus Rapid Transit (BRT) Design, Light Rail, Bus Stations and Maintenance facilities. Some the projects that I worked on includes MTO technical lead on Hamilton LRT, Mississauga BRT from Hurontario to Cawthra, Realignment of CPR railway track and signalization in Thorold, Carpool lots and Bus stations on Highway 5/6 and Highway 406/Glendale. In addition, I was the Value Engineering advisor for Highway 427/ 407 Transitway study and GTA West Transitway projects.

While working at MTO I managed large multidimensional teams to deliver a program of complex infrastructure projects including Garden City Skyway Bridge – AFP (\$580M), Highway 5/6 Interchange (\$120M), Design Build of QEW/Seventh St Interchange (\$85M), Five Bridge Structures in Niagara Region (\$35M) and Design Build of three bridge structures in Welland (\$25M).

Besides my regular duties, I spearheaded the MTO - Central Region Value Engineering (VE) initiative. In this capacity, I work with various project teams to manage VE and Risk Assessment studies on multi-billion dollar projects, for example GTA West Stage 2, 407 East Phase 2 and Garden City Skyway. I was recently awarded the Ontario Provincial Service highest award for excellence, which is the Amethyst award, as part of the Value Engineering team at MTO.

The above professional experience has given in-depth knowledge of procurement methods (including Design Bid Build, Design Build, CMGC and AFP projects), management/construction of complex projects with multiple stakeholders, contract tendering, negotiation of complex legal and cost sharing agreements, value engineering/risk assessment, policy development, change management and applicable acts and bylaws.

I believe that my professional qualification, in conjunction with my interpersonal skills and the drive to achieve excellence, makes me a strong candidate for your team. Thank you for your time and consideration, I look forward to discussing my qualifications with you.

Sincerely,

Makael Kakakhel

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I am a dedicated and high energy leader with more than fifteen (15) years of experience in program and project delivery of high complexity transportation projects. My experience spans from public and private sectors, with a proven track record and industry wide reputation of competence and project delivery.

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## **EMPLOYMENT HISTORY**

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- Senior Manager - Hurontario LRT July 2018 - Present
- Manager - Hurontario LRT- Metrolinx April 2017 – July 2018
- Area Manager - Niagara/Hamilton Region – MTO 2016 - April 2017
- Sr. Project Manager - Planning & Design, MTO 2011 - 2015
- Project Manager - Planning & Design, MTO 2009 - 2011
- Project Engineer- McCormick Rankin Corporation (MRC) 2007 - 2009
- Jr. Construction Engineer- Dufferin /Morrison Hershfield Limited 2006 - 2007
- Engineer in Training - Shaheen and Peaker Limited 2004 – 2006

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## **EDUCATION**

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- Master of Civil Engineering (M-Eng) 2009, Ryerson University
- Bachelor of Civil Engineering (B-Eng) 2005, Ryerson University
- Licensed Professional Engineer (P-Eng) 2009, in the Province of Ontario, Canada
- Project Management Professional (PMP) 2013

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## **AWARDS**

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- Recipient of Ontario Public Service Highest Award - Amethyst Award for Value Engineering
- Ontario Public Works Association (OPWA) Project of the year award for Design Build of Seventh Street Interchange

### **AREAS OF EXPERTISE**

<b>Leadership/Management</b>	<b>Program/Project Management</b>	<b>Technical Knowledge</b>
<ul style="list-style-type: none"><li>• Strategic planning</li><li>• Planning and policy</li><li>• Governmental leadership</li><li>• Risk management</li><li>• Resource management</li><li>• Change management</li></ul>	<ul style="list-style-type: none"><li>• Project delivery (AFP/DBB)</li><li>• Program management</li><li>• Commercial management</li><li>• Stakeholder management</li><li>• Legal agreements</li><li>• Construction management</li></ul>	<ul style="list-style-type: none"><li>• Public Transit</li><li>• Heavy Rail</li><li>• Highway Engineering</li><li>• Bridge Engineering</li><li>• Traffic Engineering</li><li>• Utilities and EA's</li></ul>

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**CURRENT ASSIGNMENT – Manager – Hurontario LRT (HuLRT) April 2017-Present**

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- Currently responsible for managing/leading a team of internal and external staff to deliver civil infrastructure on HuLRT.
- Review and approval of project tender documents including Project Specification Operating Standards (PSOS) documents, Project Agreement and Data Room documents.
- Led workshops to resolve comments from major stakeholders finalized project documents. These include comments on design, property, utility, traffic, policy, tendering, jurisdictional and asset management related complex issues.
- Successfully negotiated legal agreements between MTO and 407ETR. MTO has signed off on the MoU and 407ETR Draft Legal Agreement is under final review.
- Liaison with Infrastructure Ontario (IO) on RFI's, project status updates and risk assessment.
- Advised other projects such as Hamilton LRT (\$1.5B) on complex highway crossings and flyovers as requested.
- Provided technical guidance and direction to the Technical Advisor/ Owners Engineer regarding scope definition, design, progress reports, approval of change order/addendums, cost and schedule impacts and guidance on remedial measures.
- Provided Monthly reports and updates to senior management regarding the project, including project status, future expenditure profile and budgets.
- Communicated strategic, operational and technical matters verbally and in writing to ensure complex information is effectively conveyed in a high-profile environment.
- Ensured that the Environmental Assessment requirements are met in projects and all relevant stakeholder requirements have been incorporated in the projects. Negotiate on behalf of the Metrolinx legal agreements; assess property acquisition requirements and other contentious issues.
- Reviewed project needs and ensured that the project is aligned with corporate strategic directions, corporate priorities and political requirements. Implement policy, standards and directives as required.

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**QUALIFICATIONS AND ACCOMPLISHMENTS**

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**Program/Project Management**

- Extensive experience in the program/project management of high complexity Infrastructure Projects encompassing project planning, Environmental Assessment (EA), property acquisition, preliminary design, detailed design, preparation of tender documents, construction, contract administration/management, operations, asset management and maintenance.
- Some of the projects that I have managed include HuLRT (\$2B), Garden City Skyway (\$580M) AFP delivery, Highway 5/6 Interchange and municipal road network (\$120M), Design Build of QEW/Seventh St Interchange and four bridge structures (\$85M), Five Bridge Structures in Niagara Region (\$35M) and Design Build of three bridge structures in Welland (\$25M).
- Worked as a primary Lead for the construction phase of Design Build -Three bridge structures (\$25M), QEW/Seventh St Interchange and four bridge structures (\$85M) and Highway 403 pavement resurfacing and rock fall hazard control (\$23M). In addition, I have worked as a

Contractor Administrator on Highway 10 and Old School Rd (\$10M) and as a Junior Construction Engineer on the OPG Tunnel (\$1.6B).

- I am a certified Project Management Professional (PMP) since 2013, with proven experience in the PMP process groups and knowledge areas.
- Excellent experience in the development of project cost, budgeting, risk management. I have consistently delivered projects on schedule and within 5% of the estimated cost.

## **Construction and Design Expertise**

- Sound knowledge of civil infrastructure design and construction principals, including grading design, highway/road engineering, Transit facilities, drainage engineering, subsurface structures and piping, tunnelling, deep excavations, utilities and large scale facilities design.
- **Construction Management:** Managed projects from inception to commissioning, meeting project delivery dates, budgets and schedule. This includes complex Design Build projects with multiple stakeholders.
- **Claims Management:** Led the negotiation of complex claims during design and construction in conjunction with legal staff, project claims manager, estimators and schedulers.
- **Commissioning:** Led project commissioning team to review and approve compliance with Project Agreement, stakeholder requirements, standards and guidelines.
- **Urban Transit/Rail:** Planning and detail design of Transit facilities, including MTO Technical Lead on Hamilton Light Rail Transit (LRT), Bus Rapid Transit Design, Light Rail, Bus Stations and maintenance facilities. My transit/Rail related experience include Mississauga BRT (Designed for future upgrade to LRT), Realignment of CN railway track and signalization in Thorold, Carpool lots and Bus stations on Highway 5/6 and Highway 406/Glendale. In addition, I am the Value Engineering advisor for Highway 427/ 407 Transitway study and GTA West Transitway projects.
- **Traffic Engineering:** Extensive experience in the Traffic planning, management, train and vehicle simulation, bus scheduling, highway safety audits and construction staging/sequencing analysis.
- **Tunnelling and Utility Infrastructure Design:** Deep excavations, Micro tunnelling, trenching, pipelines, fibre optics, Boreholes management, electrical poles and subsurface utility engineering. Relevant projects include repair and upgrade of fire protection system at Thorold Tunnel and Townline rail/road tunnel and OPG Niagara tunnel.
- **Highway Engineering:** Includes the Preliminary and detail design of high complexity freeway design, including green field design, widening in highly urbanized areas, complex interchange design, complex bridge engineering, utility engineering and highway drainage. For example Highway 401 Kingston (6 lane freeway, 4 interchanges and Highway 69 conversion to freeway).
- **Environmental Assessment Studies:** In depth knowledge and experience in the environmental analysis, impact studies, noise and specifics at risk management.

## **Planning and Policy Development**

- Comprehensive understanding of Transportation industry in Ontario and Canada. This includes various levels of government and agency jurisdictions, mandate, and key decision makers.
- Led the MTO Central Region Design Build and Alternative Contracting implementation committee. Developed a Project Management Approach for the first MTO Design Build project including the development of Performance Based Specifications, Risk Management Report, Critical Success

Factors (CSF) and Key Performances Indicators (KPI). These standards were adopted by other MTO Regions as standard operating procedures.

- Triggered a number of changes to the acquisition process such as a Design Build EOI and RFP and developed requirements for Design Build Ready studies.
- Led the Regional Value Engineering team. Implemented independent studies to ensure impartiality and developed MTO policy to revise Value Engineering studies approach, reducing biases in studies.
- Risk Management Studies previously were ignored at the Project Management level. Currently developing policies to ensure risks management is part of daily project management activities.

### **Stakeholder /Utilities/ Property**

- A significant part of this job is to liaison with Federal, Regional and Municipal governments. This includes review of MTO, 407ETR policies, cost sharing agreements and coordination of intra-jurisdictional construction activities.
- Successfully negotiated and implemented cost sharing agreements with Federal, Provincial and Municipal partners. This included cost sharing agreement with the Federal Boarder Infrastructure Fund, MTO, 407ETR, City of Hamilton on Highway 5/6 and Beach Blvd pumping station, Queen Street Removal with City of Thorold and agreements with CN, CP and Trillium Railway.
- Successfully negotiated and acquired more than \$40M worth of property from 100 property owners for Highway 5/6 and settled business loss claims worth \$10M in fiscal year 2012/13.

### **Regulatory and legislative Knowledge**

- In depth knowledge of transportation related legislative acts including Contract Law, Construction Lien Act, Occupational Health and Safety Act, Ontario Environmental Assessment Act, Public Transportation and Highway Improvement Act, Fisheries Act and Drainage Act.
- Sound knowledge of rules and regulations established by Transport Canada (TC), Canadian Transportation Agency (CTA) and Environment Canada.
- In depth knowledge of MTO Transit Supportive Guidelines, BRT and LRT design guidelines and Canadian Urban Transit Association (CUTA),
- In depth knowledge of Federal, Provincial and Municipal standards including the acquisition of Ontario Municipal Board approvals and railway board orders.
- Comprehensive knowledge of the Professional Engineers Act, Environmental Assessment Act, and Professional Engineers Act, Ontario Human Rights Code and Related Orders including disability accommodation and accessibility requirements pertaining to passengers and employees.

### **Operations and Maintenance**

- At MTO I was responsible for the operation of 36 km of QEW (8 lane freeway) and 24.8 Km of Highway 403 (8 lane freeway).
- Review and approval of developments impacting MTO infrastructure. These include Traffic Impact Studies for large developments, access permits, easements and legal agreements to facilitate expansion of existing infrastructure.

- Liaison with local emergency response department to ensure speedy and prompt access to various locations around the highway corridors.

### **Value Engineering (VE) and Risk Assessment (RA)**

- Some of the projects that I functioned as VE and RA advisor include GTA West, Highway 407 East, and Garden City Skyway, Highway 427 future planning study / 407 Transitway and Holt Road Interchange CRAVE study.
- Developed scope of VE/RA studies for a number of mega projects in conjunction with the project team. Also, introduced Monte Carlo method on Highway 427 planning study and the risk associated with 407 Transitway crossing.
- Reorganized the VE study format and developed policies/directives to make them independent of the consultant and MTO project team in order to reduce biases.
- Introduced CRAVE format to MTO and applied it Highway 401 and Holt Rd interchange projects successfully. This was a complex project with very tight deadlines and requirements specified by a Darlington nuclear plant.

### **Human Resource Management**

- Successfully led a staff of eight (8) including project managers and senior project managers and office assistants.
- Management of staff workloads, gap analysis, delegation, chairing of progress meetings, evaluation of resource allocation requirements and taking corrective measures. Mentoring junior staff, providing formal training and evaluation of training requirements for staff.
- Significant experience in working and managing unionized workforce and external consultants, contractors and partners.

### **Interpersonal and Communication Skills**

- Excellent communication skills demonstrated by presentations to elected officials, senior officials, general public and to large group of people in Public Information Centres (PIC).
- Highly adapt in relationship building and negotiations of highly sensitive legal and financial matters at various levels of government, agency and private firms.
- Extensive experience in writing of politically sensitive briefs, ministerial letters to public and house/parliamentary briefing notes.
- Trained OPS public speaker with presentation to large and small group of people, electronic/print media and public gatherings.

### **RELEVANT PROJECTS**

#### **1. Hurontario LRT (\$2 billion) AFP/P3 Delivery – Procurement Stage**

Currently, I am managing HuLRT interface with MTO, 407ETR, traffic interface with City of Mississauga and the design of OMSF facility. This includes design, traffic management, property acquisition requirements, and jurisdictional issues and complex legal agreements for construction and OM requirements.

## **2. Hamilton LRT – AFP/P3 Planning Stage**

As the MTO Area Manager for Hamilton/Niagara Region, I was responsible for the review of Hamilton LRT proposed design and its impacts on MTO infrastructure. This includes the LRT crossing at Highway 403, Station locations and its traffic impact on the wider highway corridor, impacts to MTO future plans and system planning issues.

## **3. Garden City Skyway (QEW) Tendering (\$580 million) AFP Delivery – Procurement Stage**

While at MTO, I managed the tendering of the largest project currently being delivered by the MTO by dollar value. The assignment includes conducting a delivery model analysis (AFP, DB and GMGC), Treasury Board Submission and Funding approval for Stage 2 Cabinet Approval. In addition, I was also responsible for holding an international design competition and advancing the design to 30% detail design prior to tendering the project. This project has given me an understanding of the provincial government processes at the highest level.

## **4. Value Engineering and Risk Advisor for Highway 407 East Phase 2 AFP/P3 – Construction Completed**

This study focused on the project delivery, construction methods, risk management and long term transportation needs.

The transportation corridor included Mainline Section from Brock Road to Highway 35/115 a length of approximately 50 km; Two north-south freeway links connecting the proposed 407 extensions to Highway 401, one in Whitby (West Durham Link) and the other in Clarington (East Durham Link), each approximately 10 km in length; and Protection for a dedicated transitway corridor.

## **5. Mississauga Bus Rapid Transit , Mississauga – Construction Completed**

I was one of lead Design Engineer on the Mississauga Bus Rapid Transit (BRT) preliminary and detail design project. This was a fully-exclusive/grade-separated busway running east-west within the Highway 403/Parkway Belt corridor across the City of Mississauga. 11 km long dedicated bus rapid transit system (BRT) section between Hurontario Street and Renforth Drive, complete with 9 barrier-free stations.

## **6. Value and Risk Study Advisor for Highway 427 Albion Rd and Highway 7 (Including 407 Transitway protection)**

The VE study for this project concentrated on Highway 427 from its existing terminus at Highway 7 to Major Mackenzie Drive, with protection for a dedicated Transitway along the west side including significant expansions to the carpool lot and future bus station.

## **7. Ontario Power Generation Niagara Tunnel Project - Design Build Delivery (\$1.6 billion)**

The project included the design and construction of 10.2km long tunnel, with a diameter of 12.7m, to transport water from Niagara River to Sir Adam Beck dam.

*References available upon request*