

Managing Utility Coordination at the Program Level: A York Region Case Study

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Presentation Overview

- What is an Enhanced Utility Coordination Model
- Why York Region transitioned to an Enhanced Utility Coordination Model
 - Experience with utility delays on past major capital road projects
 - The Regional Municipality of York 10-year capital plan
 - Utility Coordination Process Improvement Charter
- Managing utility coordination at the program level
- Summary
- Questions



What is an Enhanced Utility Coordination Model?

Enhanced Utility Coordination Model – Project Level

- Environmental Assessment (EA) phase
 - Early engagement of utility agencies
 - QL-B SUE investigation
 - EA utility conflict matrix
 - Comprehensive EA Utility Coordination (UC) Schedule

What is an Enhanced Utility Coordination Model?

Enhanced Utility Coordination Model – Project Level

- Detailed design phase
 - RFP utility coordination - terms of reference
 - Regular group and individual utility coordination meetings with utility agencies
 - Monthly (at a minimum) updates to comprehensive UC Schedule
 - Development and implementation of Utility Construction Coordination Plan
 - Regular utility construction progress meetings

What is an Enhanced Utility Coordination Model?

Enhanced Utility Coordination Model – Program Level

- Comprehensive utility coordination manual
- York Region Utility Coordination Subcommittee
- Regular senior management and management utility meetings
- Program level summary schedule
 - By utility agency
 - By capital project

Why York Region Transitioned to an Enhanced Utility Coordination Model

Utility delays on past major capital road projects

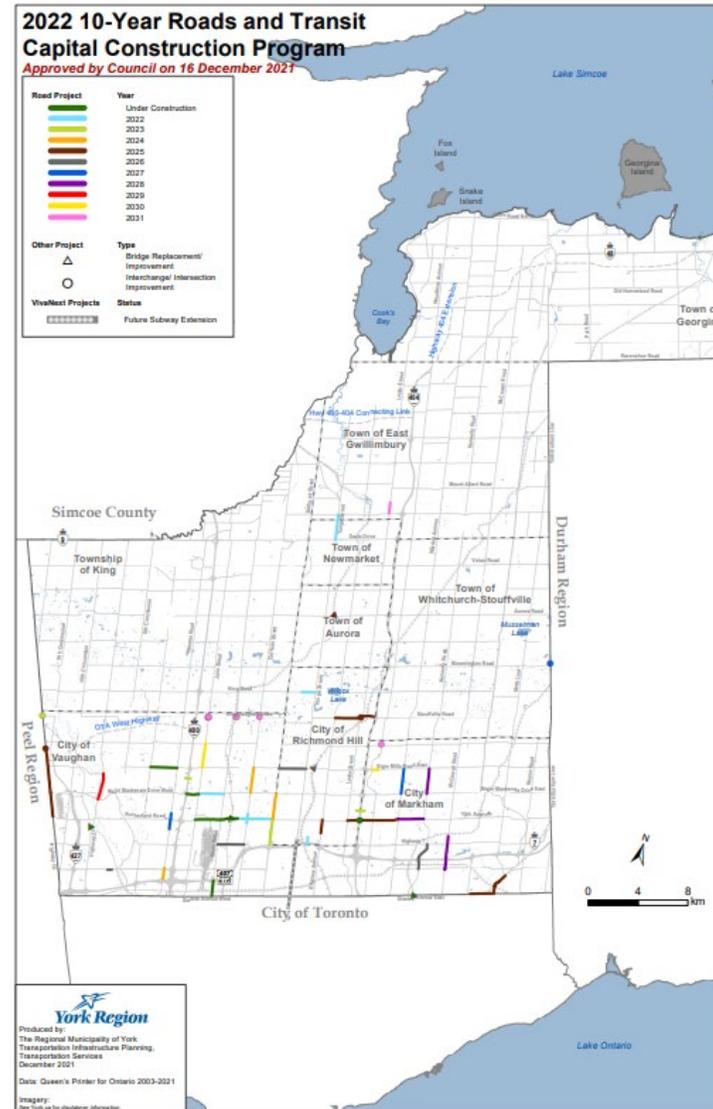
The results of a Utility Relocation Delivery Timing Study on major capital road projects between 2010 to 2020 shows that out of a total of 43 projects:

- 14 projects (32%) completed utility relocations prior to tendering
- 13 projects (30%) completed utility relocations prior to road construction but after tendering
- 16 projects (37%) completed utility relocations during road construction

Why York Region Transitioned to an Enhanced Utility Coordination Model

2022 10-year roads and transit capital construction program

Approximately \$1 billion capital delivery plan



Why York Region Transitioned to an Enhanced Utility Coordination Model

Utility Coordination Process Improvement Charter

- Determine the need for an enhance UC Model
- Participation by major utility agencies
- Identify UC process challenges
- Create an official York Region enhanced UC model project



York Region Utility Coordination Process Improvement Charter	
 	
PART A: Project Details	
Project Name	York Region Utility Coordination Process Improvement
Project Statement	This project aims to reduce the risk of financial liability to the Region as a result of utility relocation delays and non-compliant utility relocations found during construction on major capital road projects.
Project Description	Background Moving utilities is one of the top risks for major capital road construction projects. To manage the utility risk the project team needs to understand the complexity and integration between existing utilities within the project limits. In addition the project team needs to have an understanding of the various regulatory bodies, legislation and agreements that can impact utility coordination on major capital road construction projects. Below is a list of the various federal, provincial and York Region regulatory agencies, laws, bi-laws and agreements that influence how York Region and utility agencies work together.
	Federal Regulator <ul style="list-style-type: none">> Canadian Radio-television and Telecommunications Commission (CRTC)> National Energy Board (NEB)> Department of Fisheries and Oceans (DFO)> Innovation, Science and Economic Development (ISED) Legislation <ul style="list-style-type: none">> Telecommunications Act> Broadcasting Act> National Energy Board Act> Species at Risk Act> Canada Labour Code Provincial Regulator <ul style="list-style-type: none">> Ontario Energy Board (OEB)> Ministry of Transportation Ontario (MTO)> Ministry of the Environment, Conservation and Parks (MECP)> Conservation Authorities (Toronto Region and Lake Simcoe Region) Legislation <ul style="list-style-type: none">> Ontario Energy Board Act> Electricity Act> Municipal Act> Municipal Franchise Act> Public Service Works on Highways Act (50% Labour and Labour Saving Devices)> Planning Act



Managing Utility Coordination – Program Level

York Region Utility Coordination Subcommittee (YRUCS) Terms of Reference

Type of Team	
	<ul style="list-style-type: none"> Advisory - A standing subcommittee to the York Region Utility Coordination Committee (YRUCC) was set up at the request of York Region Capital Planning and Delivery (CPD) Branch, Transportation Services
Purpose	
	<p>This subcommittee is being created to review the current utility coordination process and make recommendations for improvements to all facets of this process on York Region Capital Projects. The following is a list, but not necessarily a complete list, of utility coordination tasks that will be investigated for continual process improvements:</p> <ul style="list-style-type: none"> Determine and Implement Process Improvement Methodology (Define – Measure – Analyse – Improve - Control, Failure Modes and Effect Analysis, Sort - Set in Order – Shine – Standardize - Sustain) Identify utility coordination process “Pain Points”/Gaps Develop and Implement a formal utility coordination training program Develop alternative methods of utility coordination for special projects Develop a mechanism for Utility Relocation measurement and reporting Develop additional standards/documentation as determine by the YRUCS Develop Key Performance Indicator for utility coordination on York Region Capital Projects
Background	
	<ul style="list-style-type: none"> Between the years of 2010 and 2020 approximately 37% of the Region’s major capital road projects finished utility relocations during the road construction phase. This poses a high financial and scheduling risk to the Region. A survey of internal and external experts in utility coordination on York Region Major Capital Projects was conducted to obtain “pain points” associated with current utility coordination practices. The results identified 5 major opportunity areas for improvement (People/Resourcing, Process, Knowledge/Competency Gap, Quality and Communication) Subcommittee was created to reduce the risk of financial liability to the Region as a result of utility relocation delays and non-compliant utility relocations found during construction on major capital road projects. The sponsor of the new project to develop and implement this subcommittee is Salim Alibhai, York Region’s Direction Capital Planning and Delivery – Roads
Team Composition	Who is on the team and what are they going to do?

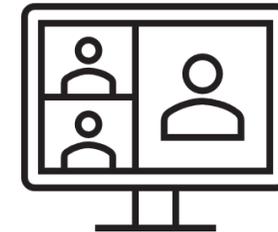
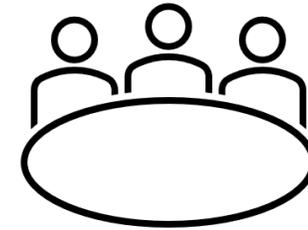
- Creation of a York Region Utility Coordination Subcommittee



Managing Utility Coordination – Program Level

Utility meetings

- Annual utility senior management meeting
- Monthly utility management meeting
- Bi-weekly utility construction progress meeting



Managing Utility Coordination – Program Level

2022-2026 CPD Utility Coordination Program
➤ Utility Coordination By Utility Agency
➤ Utility Coordination By Project
*Utility Relocation Scope Not Finalized. Utility Coordination Schedule Under Development
Schedule Certainty High
Schedule Certainty Medium
Schedule Certainty Low

Program-wide utility schedule summary

- By utility agency
- By project



Managing Utility Coordination – Program Level

By utility agency

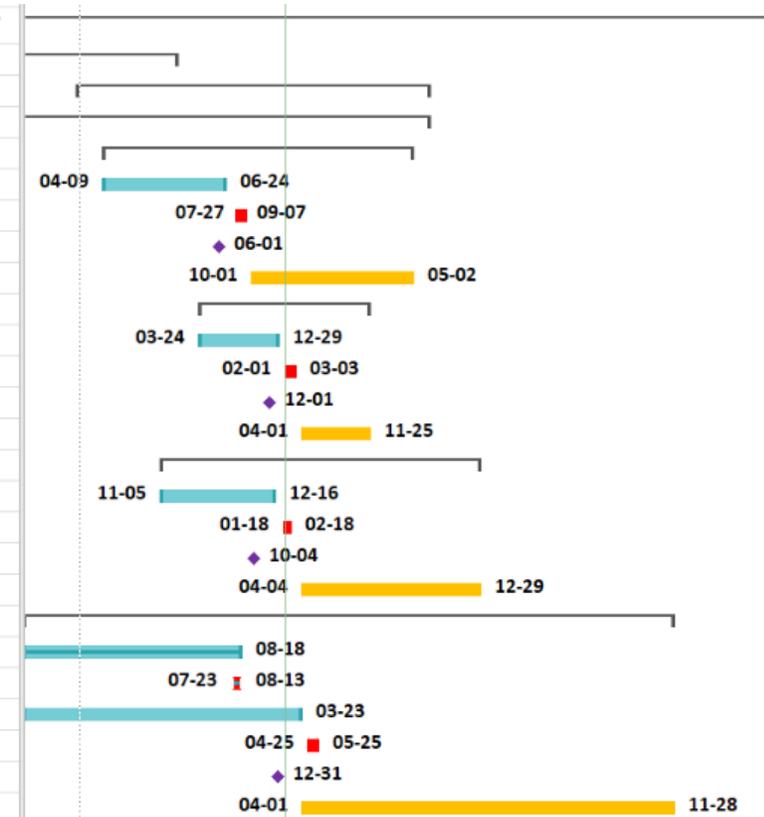
2022 -2026 CPD Utility Coordination Program

Utility Coordination By Utility Agency	Mon 17-01-23	Mon 26-11-30	2571 days?
<ul style="list-style-type: none"> ▷ Alectra 	Thu 18-02-01	Mon 26-11-30	2303 days?
<ul style="list-style-type: none"> <ul style="list-style-type: none"> *Utility Relocation Scope has not Been Finalized. Utility Coordination Schedule Under Development 	Mon 17-01-23	Mon 17-01-23	1 day
<ul style="list-style-type: none"> ▷ Bell 	Mon 17-01-23	Mon 26-11-30	2571 days?
<ul style="list-style-type: none"> <ul style="list-style-type: none"> *Utility Relocation Scope has not Been Finalized. Utility Coordination Schedule Under Development 			
<ul style="list-style-type: none"> ▷ Enbridge 	Wed 18-11-07	Mon 26-11-30	2104 days?
<ul style="list-style-type: none"> <ul style="list-style-type: none"> *Utility Relocation Scope has not Been Finalized. Utility Coordination Schedule Under Development 			
<ul style="list-style-type: none"> ▷ Rogers 	Mon 17-01-23	Mon 26-11-30	2571 days?
<ul style="list-style-type: none"> <ul style="list-style-type: none"> *Utility Relocation Scope has not Been Finalized. Utility Coordination Schedule Under Development 			

Managing Utility Coordination – Program Level

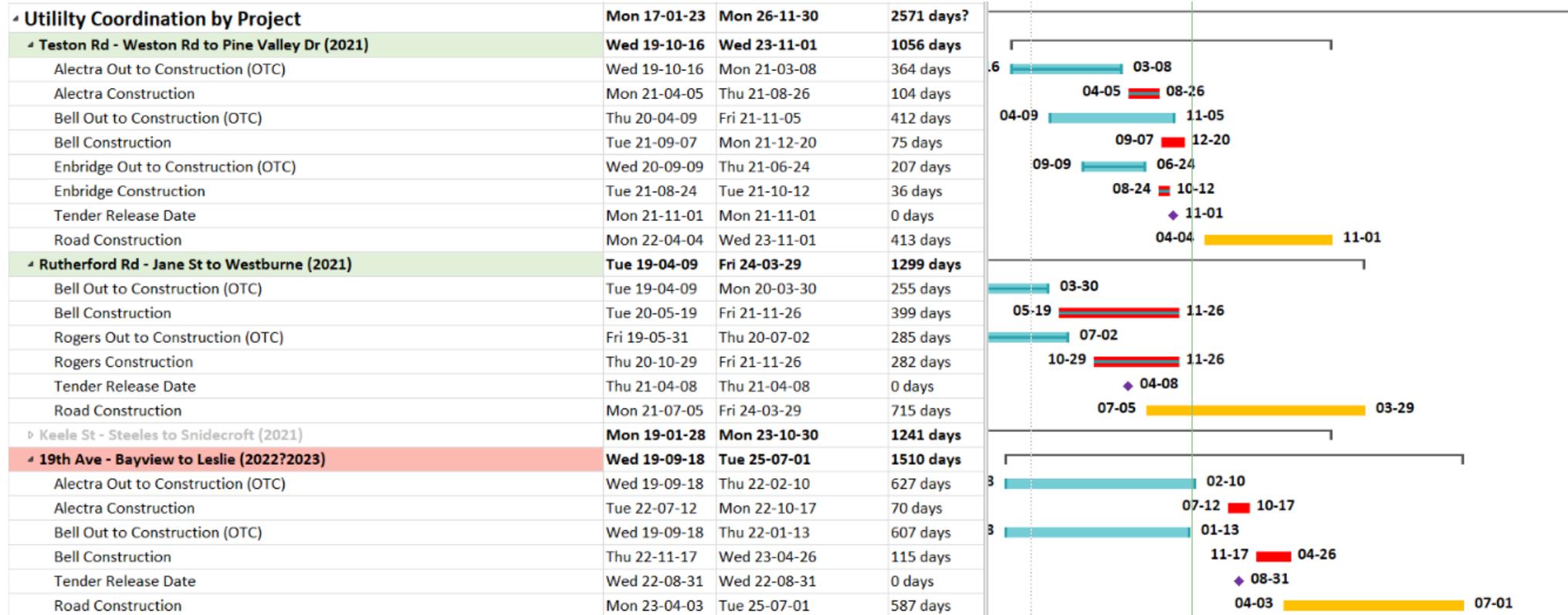
Program-wide utility schedule summary by utility agency

Enbridge	Wed 18-11-07	Mon 26-11-30	2104 days?
▸ Major Mackenzie Dr - Hwy 50 to Hwy 427 (2020)	Wed 18-11-07	Thu 20-12-31	562 days
▸ Keele St - Steeles to Snidcroft (2020)	Wed 20-01-08	Fri 23-06-30	908 days
▸ Rutherford Rd - Jane St to Westburne (2020)	Wed 19-03-06	Fri 23-06-30	1128 days
▸ Teston Rd - Weston Rd to Pine Valley Dr (2021)	Thu 20-04-09	Tue 23-05-02	799 days
Out to Construction (OTC)	Thu 20-04-09	Thu 21-06-24	316 days
Construction	Tue 21-07-27	Tue 21-09-07	31 days
Tender Release Date	Tue 21-06-01	Tue 21-06-01	0 days
Road Construction	Fri 21-10-01	Tue 23-05-02	413 days
▸ Major Mackenzie Dr - Jane St to Keele St (2022)	Wed 21-03-24	Fri 22-11-25	438 days
Out to Construction (OTC)	Wed 21-03-24	Wed 21-12-29	201 days
Construction	Tue 22-02-01	Thu 22-03-03	23 days
Tender Release Date	Wed 21-12-01	Wed 21-12-01	0 days
Road Construction	Fri 22-04-01	Fri 22-11-25	171 days
▸ King Rd - Yonge St to Bond Cr (2022)	Thu 20-11-05	Fri 23-12-29	822 days
Out to Construction (OTC)	Thu 20-11-05	Thu 21-12-16	291 days
Construction	Tue 22-01-18	Fri 22-02-18	24 days
Tender Release Date	Mon 21-10-04	Mon 21-10-04	0 days
Road Construction	Mon 22-04-04	Fri 23-12-29	455 days
▸ Mid-Block Crossing - North of 16th Ave (2022)	Fri 19-06-28	Fri 25-11-28	1676 days
Out to Construction (OTC) - Markham	Fri 19-06-28	Wed 21-08-18	559 days
Construction - Markham	Fri 21-07-23	Fri 21-08-13	16 days
Out to Construction (OTC) - RH	Fri 19-06-28	Wed 22-03-23	714 days
Construction - RH	Mon 22-04-25	Wed 22-05-25	23 days
Tender Release Date	Fri 21-12-31	Fri 21-12-31	0 days
Road Construction	Fri 22-04-01	Fri 25-11-28	956 days

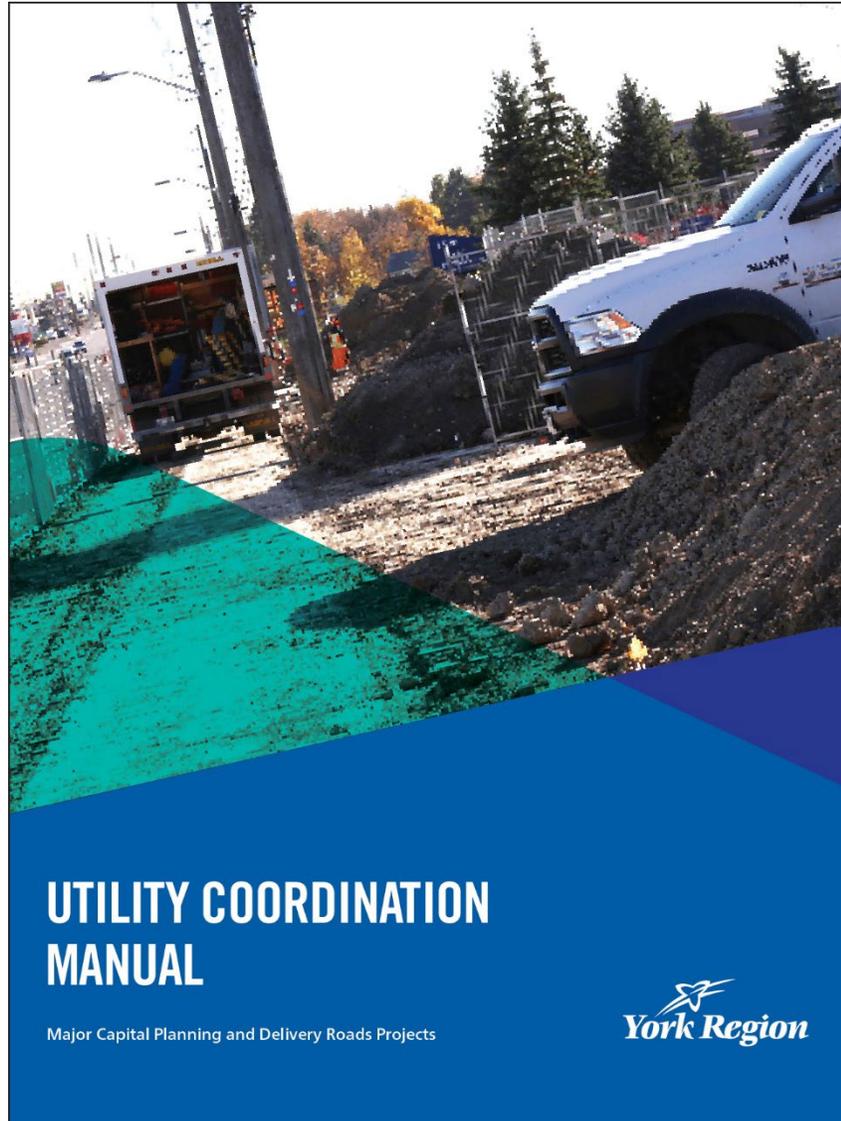


Managing Utility Coordination – Program Level

Program-wide utility schedule summary by project



Managing Utility Coordination – Program Level



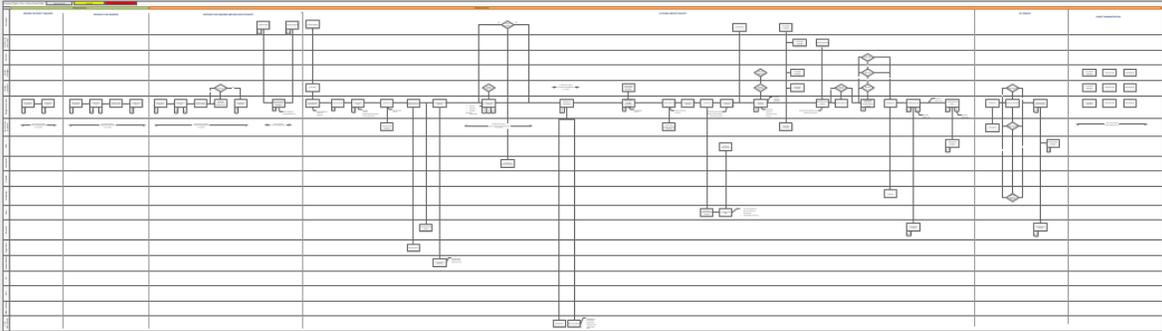
- Comprehensive Utility Coordination Manual
 - A project level process roadmap



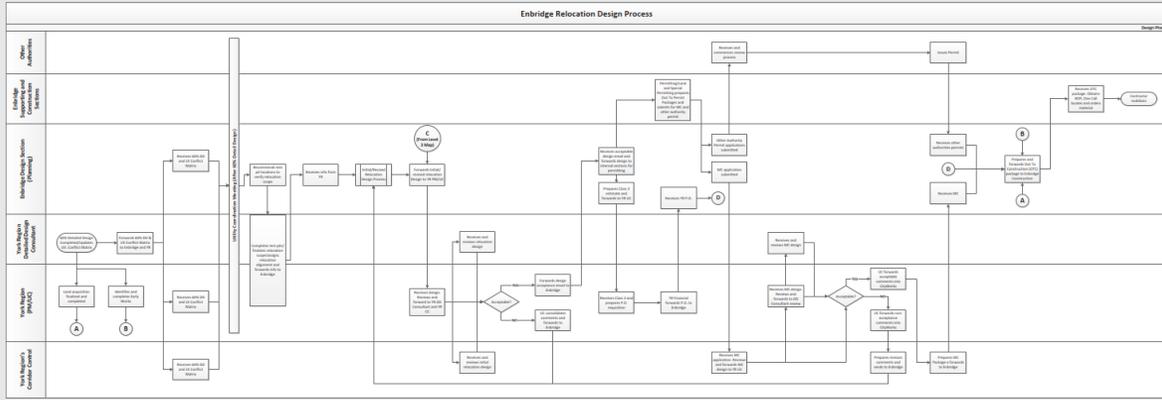
Managing Utility Coordination – Program Level

APPENDIX M: UTILITY AGENCY RELOCATION DESIGN PROCESS

ALECTRA UTILITIES



ENBRIDGE GAS



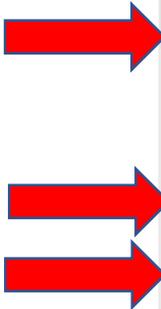
York Region Utility Coordination Manual

- Template UC tools
- Utility agencies design processes
- Annually updated



Managing Utility Coordination – Program Level

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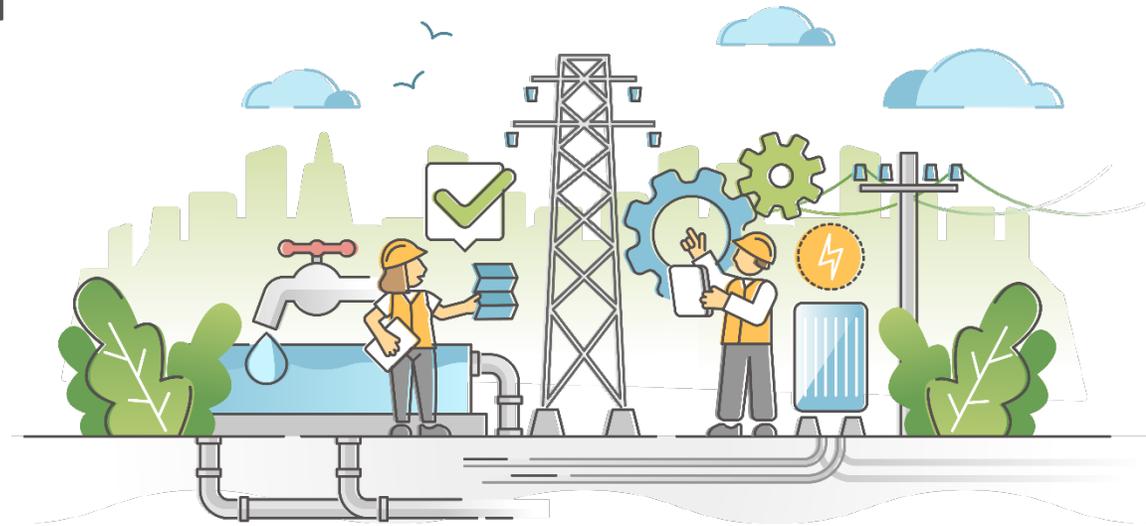
Key UC process information



Managing Utility Coordination – Project Level

Project detailed design utility coordination

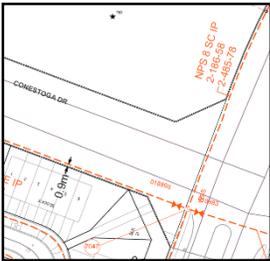
- Utility investigation
- Utility conflict identification
- Utility conflict analysis
- Utility coordination sequencing/
scheduling (design and construction)
- Utility relocation design and permitting tracking
- Utility relocation construction tracking
- Utility coordination close out



Managing Utility Coordination – Project Level

Utility investigations

SUE investigation as per ASCE 38 to identify the location of existing utilities within the project limits.



QL-D



QL-C



QL-B



QL-A

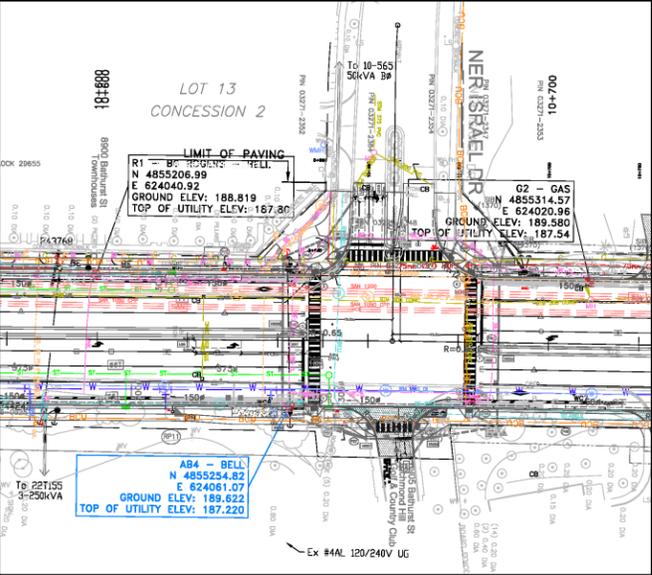


Increasing Certainty

Managing Utility Coordination – Project Level

Utility conflict identification

- Composite utility plan
- Utility conflict matrix



UTILITY CONFLICT MATRIX													
Project Name		Client		Completed By									
Project Number		Rev Date		Checked By									
Utility Investigation Information										Utility Conflict Identification and Analysis			
Con#	Utility Ty	Utility Owner	Location	Station (Start)	Station (Finish)	Size (mm)	Utility Encasement	Material Type	SLE Qual	Depth (m) Top	Depth (m) Bottom	Conflict Identification and Analysis	Conflict Resolution
1	Telecom	Bell	North Blvd	0+100	1+200	2000	PVC	FOC	B	0.75	0.9	Bell is conflict with the proposed curb. Telecom cannot be located under the proposed curb. It will be in conflict with the road structure and subdrains.	Relocate Prior
2													
3													
4													
5													
6													
7													
8													
9													
10													
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Managing Utility Coordination – Project Level

Utility conflict analysis

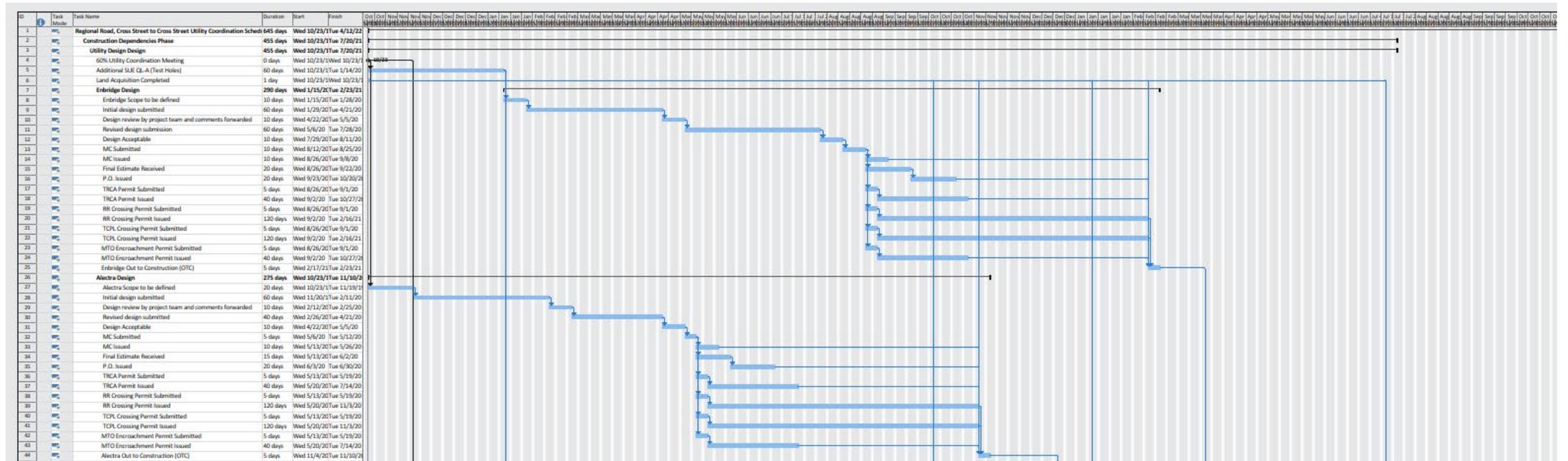
- Utility conflict mitigation strategies
 - No relocation
 - Project design alterations
 - No conflict verification via additional SUE
 - Substandard condition acceptable
 - Protect in place
 - Relocate
 - Prior to project construction
 - During project construction
 - After project construction



Managing Utility Coordination – Project Level

Utility coordination sequencing/scheduling (design and construction)

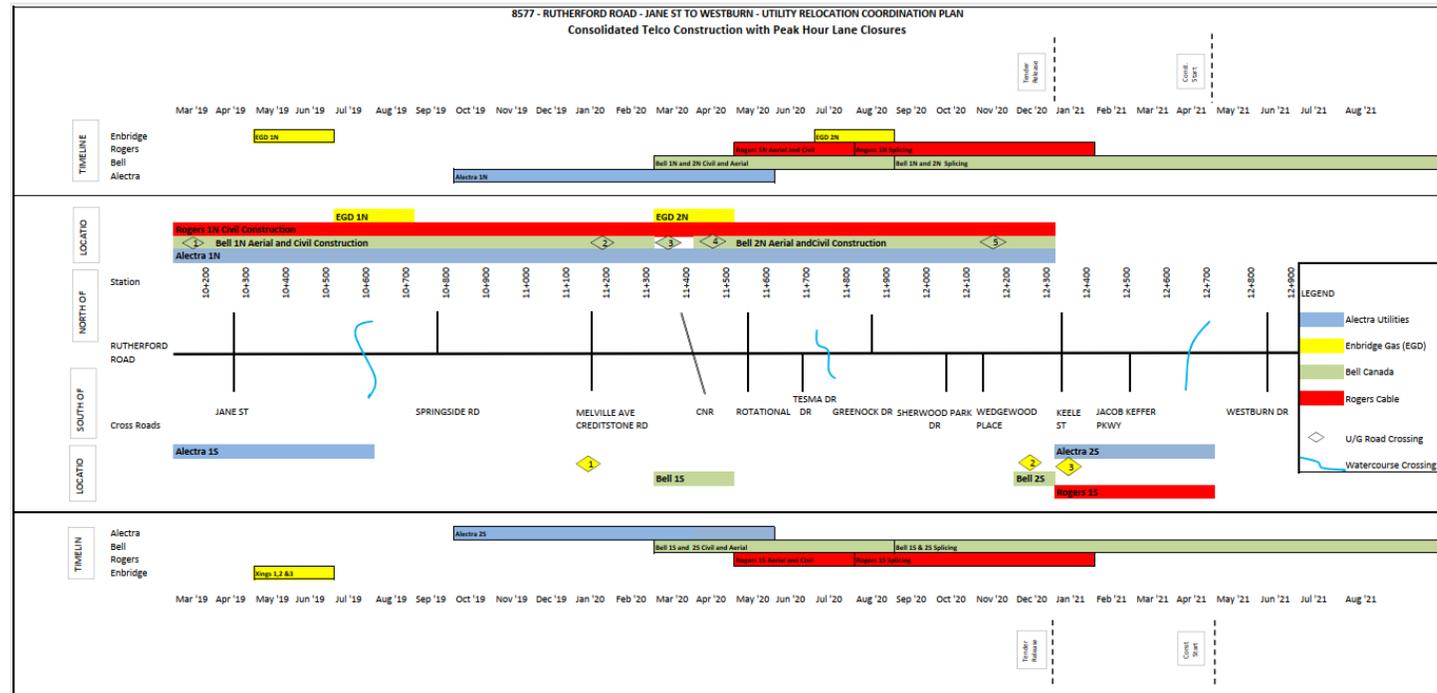
Utility coordination schedule



Managing Utility Coordination – Project Level

Utility coordination sequencing/scheduling (construction)

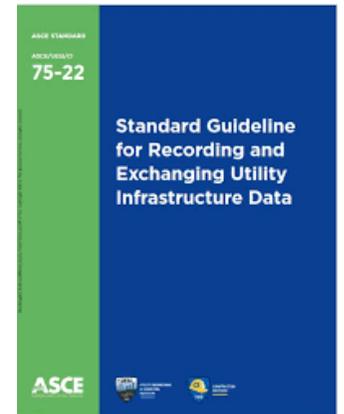
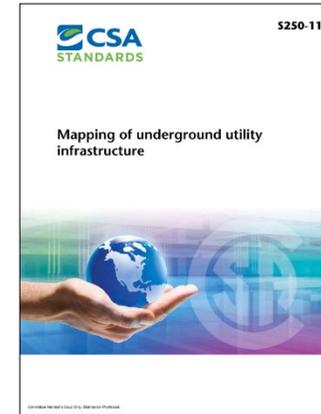
Utility construction coordination plan



Managing Utility Coordination – Project Level

Utility coordination close out

- Utility “as built” review and acceptance
- Utility invoicing
 - Invoice review
 - Invoice dispute resolution
 - Invoice payment



Managing Utility Coordination – Summary

1. “Project within a project, within a program”
2. Properly utilize the UC tools
3. An experienced, knowledgeable Utility Coordinator
4. Quality information

**Good information in + good information out
= better project & program level decisions**

QUESTIONS?

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