



UTILITY CO-ORDINATION MANUAL

Major Capital Planning and Delivery Roads Projects


York Region

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REVISIONS TRACKING LOG

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Dec 2021	Appendix U: Alectra Joint Use Guideline	New appendix
Dec 2021	Appendix V: Utility Coordination Meetings Agenda Items	New appendix

1. INTRODUCTION

The co-ordination of projects between The Regional Municipality of York (York Region) and utility service providers is an integral factor in project planning, design and construction. To provide for efficient accommodation of utilities and minimize delays at all phases of a project, it is necessary to co-ordinate the process from inception to completion. This can be accomplished by using a comprehensive utility co-ordination process. This process is intended to provide early identification and resolution of possible delays and confusion that may add unnecessary complexity and cost to a project.

This manual is intended to provide utility co-ordination tasks to the project design team when utility relocation is required. The process tasks are put forth to encourage consistency and minimize conflicts when coordinating utility relocation projects.

This manual provides:

- Overview of the roles and responsibilities of York Region and the utility agencies
- General description of the laws, rules, regulators and regulations in York Region's Construction Environment
- Flow chart illustrating key communication milestones between York Region and utility agencies required to successfully navigate from the Environmental Assessment (EA) Phase of a project to the final Post Construction Phase

2. ROLES AND RESPONSIBILITIES

2.1 GENERAL

The key to successful utility co-ordination efforts is the establishment of a team approach to each project. Like a team, each member plays a key role in completing their portion of the project. This manual is organized to describe the key steps in the utility co-ordination process along with the specific players responsible for completing each step. This section outlines some of the key players on the team that have involvement with utility co-ordination and their roles and responsibilities.

2.2 YORK REGION (PROJECT OWNER)

York Region is a municipal corporation having control of the construction, improvement, alteration, maintenance or repair of Regional roads. Depending on the size and nature of a project York Region may have an internal and / or external Utility Co-ordinator (UC) assigned to projects, or it may be completed by York Region's project manager. York Region is responsible for outlining the scope of the project, setting up agreements with key parties and facilitating the final job.

2.3 UTILITY CO-ORDINATOR (UC)

The UC is the person(s) on a project team responsible for co-ordination of all stages (planning, design, construction and close out) of the project's utility relocations. Simple projects may have one UC whereas more complex utility relocations may assign several UCs. The UC is typically York Region's project manager. York Region may choose to assign the UC responsibilities to the project's consultant (planning and / or detail design) or a specialist in utility co-ordination. The utility agencies may assign their own UC to a project to protect the utility agency's interests.

2.4 DESIGNER

The designer is typically a consulting firm hired by York Region to complete the road design. The designer can also be an internal group within York Region's organization. Depending on the size and nature of the project the designer may have a dedicated UC assigned to the project, or it may be completed by the designer's project manager.

The designer is responsible for the project's EA design and / or detailed design including utility related aspects. They must communicate with both York Region and utility agencies to facilitate the project.

2.5 UTILITY AGENCIES

Utility agencies are the owners of the utility infrastructure. In many cases York Region is also the utility agency (i.e. watermains, sewers, traffic / streetlight electrical systems and YorkNet telecommunications).

Utility agencies are responsible for providing records of their existing infrastructure, reviewing plans, participating in design and related meetings, submitting relocation plans, schedules, estimates and coordinating their relocation work with York Region / designer and UCs. Their involvement will vary from project to project depending on the impacts to their infrastructure.

2.6 OTHER AUTHORITIES

Several other authorities may be involved with the utility co-ordination aspects of the projects such as Ministries of the Environment, Toronto Region or Lake Simcoe conservation authorities and, utility regulatory authorities (e.g. Electrical Safety Association), and non-utility right of way agencies (e.g. Railway, Pipeline and Airport Authorities).

These authorities typically regulate certain aspects or certain parties. They provide valuable input to ensure the projects are being completed in accordance with relevant laws, rules and regulations.

Permits / Approval from other authorities will need to be obtained by each utility agency, if required, prior to the commencement of any construction.

3. LAWS, RULES AND REGULATION

3.1 GENERAL

All work completed must be done in accordance with Federal, Provincial and Local laws and regulations. These may vary from location to location. Therefore it is vital that all parties are familiar with and understand the laws and regulations that apply in the boundaries of York Region.

3.2 FEDERAL LAWS/REGULATIONS

Federal laws and regulations are applicable in York Region and are typically high in the hierarchy of applicable laws and regulations. The following are a list of the relevant federal regulators and legislation that impact utility co-ordination in York Region:

Regulator

- Canadian Radio-television and Telecommunications Commission (CRTC)
- National Energy Board (NEB)
- Department of Fisheries and Oceans (DFO)
- Innovation, Science and Economic Development (ISED)

Legislation

- Telecommunications Act
- Broadcasting Act
- National Energy Board Act
- Species at Risk Act
- Canada Labour Code

3.3 PROVINCIAL LAWS/REGULATIONS

Ontario Provincial laws and regulations are applicable within York Region. The following are a list of the relevant provincial regulators and legislation that impact utility co-ordination in York Region:

Regulator

- Ontario Energy Board (OEB)
- Ministry of the Environment, Conservations and Parks (MECP)
- Ministry of Transportation Ontario (MTO)
- Conservation Authorities (Toronto Region and Lake Simcoe Region)

Legislation

- Ontario Energy Board Act
- Electricity Act
- Municipal Act
- Municipal Franchise Act
- Public Service Works on Highways Act
- Building Transit Faster Act
- Building Boardband Faster Act
- Planning Act
- Drainage Act
- Occupational Health and Safety Act

3.4 YORK REGION BY-LAWS AND AGREEMENTS

York Region Council have passed by-laws and executed agreements that impact utility co-ordination. The following are the relevant by-laws and agreements that impact utility co-ordination:

By-Law

- **Fees and Charges** – outlines road occupancy permit and municipal consent fee and charge amounts

Agreements

- **Municipal Access Agreements** – executed agreements between York Region and each individual telecommunication agency. These agreements outline how York Region and the telecommunication agency do business including the relocation of utilities for York Region Capital projects. A major component in these agreements is the apportionment of costs for relocations on a York region Roads project.
- **Gas Franchise Agreement** – executed agreement between York Region and Enbridge Gas Limited. This agreement outlines how York Region and Enbridge do business including the relocation of utilities for York Region Capital projects. A major component in these agreements is the apportionment of costs for relocations on a York Region Roads project.

4. ENVIRONMENTAL ASSESSMENT (EA) PHASE

4.1 GENERAL

For new road corridors, or major changes to the alignment of an existing road, utility relocation may be a significant factor in selecting a preferred plan for eventual construction. Even small projects can be delayed or have forced revisions, if utility conflicts are not identified early in the project's life. Early engagement of Utilities in the project will allow the Utilities to fit the project into their planning cycles so that it can be properly resourced.

Any work that will affect, or be affected by, existing and planned utilities must include utility co-ordination. Utility agencies can expect requests for information on existing facilities and their long-term plans over many kilometres of transportation corridor, or within an urban lot. The quality of information used for this level of planning will vary, and the guiding principle should be to "make decisions based on the best information available".

The Environmental Assessment Phase is the process in which options are analyzed to address a particular need or problem. The Designer concludes with a recommendation to York Region of the preferred construction option.

The major players involved in the planning phase are:

- York Region
- The York Region's UC
- The Designer (York Region's EA Consultant)
- Representatives from all utility agencies and other authorities that may be affected by the construction contract.

The Utility Co-ordinator (UC) is responsible for ensuring project tasks related to utilities are completed at the appropriate time, sequence and within budget. Typically York Region's Project Manager (PM) or York Region's consultant is the UC on major Road Capital Planning and Delivery (CPD) projects. On more complex project a utility specialist may be designated as the project UC.

4.2 CONSULTATION WITH UTILITY AGENCIES

York Region has developed a series of utility communication letters to be used for utility co-ordination ([See Appendix L for Utilities Relocation Process Letters](#)). During the EA Phase Letters #1 through #4 are utilized. The following is a summary of each of the letters.

- **Letter #1** – Notifies and gives a brief description of the planned project to the utility agency. Requests utility mark-up drawings. The project base plan is forward to the utility agencies along with the letter. (Prepared and sent to utility agencies by the project UC)
- **Letter #2** – Utility agencies' mark-up drawings. If critical / vital infrastructure is located within the project limits the project UC may schedule a meeting between York Region and the utility agency. (Prepared and sent to the project UC by the utility agency)
- **Letter #3** – Notifies the utility agencies of a scheduled Public Consultation Centre. (Prepared and sent to utility agencies by the project UC)
- **Letter #4** – Notifies the utility agencies the EA has been completed. (Prepared and sent to utility agencies by the project UC)

4.3 ENVIRONMENTAL ASSESSMENT START UP

York Region procures an EA consultant. York Region's PM is the project UC during the EA Phase. The EA consultant in consultation with York Region determines the scope of the future road project, a preliminary construction schedule and which stakeholders (including utility agencies) need to be consulted during the EA Phase.

4.4 IDENTIFYING EXISTING UTILITIES IN THE PROJECT LIMITS

Understanding the existing corridor and the location of utilities within it is a key element that the EA consultant will depend on when developing options for construction. It provides the foundation for recommendations regarding how the construction project will be designed and where the construction will take place. The American Society of Civil Engineers (ASCE) standard 38-02 gives definition to the various quality levels of Subsurface Utility Engineering (SUE) that can be utilized to identify underground infrastructure. ([See Appendix D for additional detail on Quality Levels](#)).

The EA is responsible to develop an up-to-date topographic survey and plan (base plan) of the general construction project area. The UC is responsible to ensure that the base plan is adequate for the requirements of utility co-ordination. This base plan along with **Letter #1** of York Region's Utilities Relocation Process is forwarded to all utility agencies (private and public) with a request for each utility to forward their respective mark-up drawings. The mark-up drawings display where the utility agency's records indicate the infrastructure is located within the study area. **Letter #2** (Utility Mark-Up drawings) are forwarded to the project UC by each utility agency. This information along with survey data would be a basis for some of the Quality Level D and C (QL-D, QL-C) information for the project. Many factors may influence the level of accuracy to which utilities are mapped during the EA phase. On projects where the proposed corridor is potentially congested (i.e. an urbanized corridor), alignment defined and a quick procurement period for Detailed Design is anticipated after the EA completion, increased accuracy up to a QL-A may be considered to provide information to reduce SUE investigation efforts and turn-around time during the detailed design phase. Typically, a SUE investigation of QL-D to QL-B will meet most EA requirements. ([See Appendix R – SUE – Decision Making Process for further information on determining the appropriate SUE quality level](#)). It is important that utility agencies flag any existing or planned critical / vital infrastructure, and known abandoned infrastructure, within the project's study area on the mark-up drawings.

The American Society of Civil Engineers (ASCE) Standard 38-02 defines the process used to complete Subsurface Utility Engineering (SUE) investigations that can be utilized to identify underground infrastructure. The 38-02 standard establishes quality levels for the underground utility information so that all parties can evaluate the accuracy and reliability of the data.

The EA consultant will be responsible for updating the base plan for each of the planned alignments.

4.5 UTILITY RISK ASSESSMENT WORKSHOP

Once the underground and above ground utility infrastructure has been identified and mapped, a Utility Risk Assessment workshop should be co-ordinated between the York Region design team and the utility agencies. The intent of the Utility Risk Assessment Workshop would be:

- Inform the utility agencies of the scope of the EA project
- Identify high-risk utility infrastructure within the project limits, including details of the infrastructure (i.e. 20 duct concrete structure, vital gas mains, hydro towers, national fibre cables etc.)
- Identify high-level long duration utility relocations
- Obtain high-level cost estimates on the high-risk potential utility relocations
- Identify land needs for utility relocations, if possible

The deliverable from the Utility Risk Assessment workshop is a Utility Risk Assessment Matrix (See Appendix T: Sample Utility Risk Assessment Matrix)

4.6 UTILITY CONFLICT ANALYSIS

Utilizing a base plan with the current SUE information and the EA design, the project UC initiates the initial Utility Conflict Analysis. The project UC creates a preliminary Utility Conflict Matrix that lists potential utility conflicts, pertinent information about the utilities and the recommended mitigation ([See Appendix F – Sample of Utility Conflict Matrix](#)). Section 5.5, Utility Conflict Analysis, will discuss utility conflict identification and utility conflict resolution in greater depth.

4.7 PUBLIC CONSULTATION CENTRE (PCC)

To allow for public engagement in a York Region road project York Region schedules a PCC meeting once the EA design progressed to an acceptable level. The project UC prepares and sends **Letter #3** to the utility agencies. Letter #3 notifies the utility agencies of the date and location of the PCC meeting. This notification gives the utility agencies the opportunity to attend the PCC.

4.8 CREATION OF PREFERRED ALIGNMENT BASE PLAN

At the completion of the EA Phase, the EA consultant will create a base plan for the preferred alignment that will be the foundation for future detailed design. **Letter #4** is prepared by the project UC and forwarded to the utility agencies.

5. DESIGN PHASE

5.1 GENERAL

The Design Phase outlines all tasks essential for utility relocation design and when these tasks need to occur during the project's detail design process. The Design Phase follows the EA Phase and continues through to the completion of all utility relocation designs required for the specific project. The project UC is responsible for ensuring these tasks are completed at the appropriate time in the project's Design phase process.

5.2 CONSULTATION WITH UTILITY AGENCIES

York Region has developed a series of utility communication letters to be used for utility co-ordination ([See Appendix L for Utilities Relocation Process Letters](#)). During the Design Phase Letters #5 through #13 are utilized. The following is a summary of each of the letters.

- **Letter #5** – Requests utility mark-up drawings. The EA base plan is forwarded with the letter. (Prepared and sent to utility agencies by the project UC)
- **Letter #6** – Utility agencies' mark-up drawings. (Prepared and sent to project UC by the utility agency)
- **Letter #7** – 30% DD Utility Co-ordination meeting scheduling. The 30% DD drawings and Utility Conflict Matrix are forwarded with this letter. (Prepared and sent to utility agencies by the project UC)
- **Letter #8** – High-level relocation estimate and construction duration.
- **Letter #9** – 60% DD Utility Co-ordination meeting scheduling. The 60% DD drawings and Utility Conflict Matrix are forwarded with this letter. (Prepared and sent to utility agencies by the project UC)
- **Letter #10** – Utility Municipal Consent application. (Prepared and sent to project UC by the utility agency)
- **Letter #11** – Utility agency's final estimate. (Prepared and sent to project UC by the utility agency)
- **Letter #12** – York Region's Municipal Consent Approval. (Prepared and sent to utility agencies by York Region's Corridor Control Section)
- **Letter #13** – York Region's Purchase Order. (Prepared and sent to utility agencies by the project UC)

5.3 DESIGN PHASE START UP

York Region procures a Detailed Design (DD) consultant to develop the project's design. The DD Request For Proposal (RFP) outlines the utility co-ordination duties of DD consultant. The project UC is typically York Region's PM. On complex project a utility co-ordination specialist may be assigned the project UC role. It is the project UC's responsibility to ensure the DD consultant and utility agencies complete their respective utility co-ordination tasks at the correct time during the DD process. It is also the project UC's responsibility to complete any utility co-ordination tasks that are beyond the scope of the DD consultant's RFP.

5.4 IDENTIFYING EXISTING UTILITIES IN THE PROJECT LIMITS

To obtain greater certainty of the location of existing utilities within the project limits further SUE investigations should be implemented. A Quality Level B (QL-B) is an excellent method to gain greater certainty in the accuracy of the existing utilities horizontal alignment. Test holes (QL-A) may also be completed in key areas to aid in the development of the detailed design. The project UC prepares and sends Letter #5 to the utility agencies. This letter is a Detailed Design commencement notification and a request for mark-up drawings. The utility agencies forward **Letter #6**, the mark-up drawings, to the project UC. Using the mark-up drawings and the additional SUE investigation information the DD consultant updates the utility information on the project's base plan.

Implementing a SUE Investigation

It is recommended an ASCE 38-02 QL-B SUE investigation be performed prior to the selection of the QL-A (test pits) locations. Since the QL-A SUE investigations are the most costly of the SUE quality levels it is prudent to select locations only at critical locations that would help identify utility conflicts with the project design and that are necessary to further the project's detailed design. Having greater certainty of the horizontal location of the existing underground infrastructure is fundamental in determining the critical QL-A locations for the project.

New Installation / Betterments

New third-party utility installation(s) / betterments requirements must be identified during the design phase. Municipal Consent Approval of the proposed installation(s) is required in accordance with Section 5.14.

5.5 UTILITY RISK ASSESSMENT WORKSHOP

Once the existing underground and above ground utility infrastructure has been updated and mapped a Utility Risk Assessment Workshop should be co-ordinated between the York Region design team and the utility agencies. The intent of the Utility Risk Assessment Workshop would be:

- Update the EA Utility Risk Assessment Matrix if completed in the EA Phase

If an EA Utility Risk Assessment Matrix has not been completed, follow the outline below:

- Inform the utility agencies of the scope of the Detailed Design project
- Identify high-risk utility infrastructure within the project limits, including details of the infrastructure (i.e. 20 duct concrete structure, vital gas mains, hydro towers, national fibre cables etc.)
- Identify high-level long duration utility relocations
- Obtain high-level cost estimates on the high-risk potential utility relocations
- Identify land needs for utility relocations, if possible

The deliverable from the Utility Risk Assessment workshop is a Utility Risk Assessment Matrix (See [Appendix T](#): Sample Utility Risk Assessment Matrix)

5.6 UTILITY CONFLICT ANALYSIS

Identifying utility conflicts is not always a simple task as there could be several design and construction elements that can result in a conflict. Typically, there are two types of utility conflicts: a physical conflict and a constructability conflict.

- **Physical Conflict** – a physical conflict is when an existing utility location is vertically or horizontally in conflict with the project design or another utility relocation or the existing utility location encroaches into the minimum clearance zones ([See Appendix P – York Region Minimum Clearances](#)). An example of a horizontal utility conflict is when an existing underground telecommunications cable resides in the boulevard but will be located under the pavement in the project road widening design. This would be identified as a potential utility conflict as telecommunication underground infrastructure is typically shallow. It is also not recommended that a telecommunication cable remain under road pavement to eliminate the potential for future road cuts if the telecommunication company requests access to their underground infrastructure. All horizontal potential utility conflicts are not necessarily a candidate to be relocated. Using the scenario above but changing the existing utility infrastructure to 300mm extra high pressure gasmain it may be prudent for the project to leave the existing gasmain under the future pavement due to cost and duration to relocate this type of utility plant. In this case test pitting to find the vertical depth of the gasmain may be the determining factor if relocation is required. A vertical conflict is when a project design element impacts an existing utility vertically. An example is if there is a significant grading cut or fill at hydro poles. A potential utility conflict would be identified at this location. Another vertical utility conflict is when a gravity sewer and an existing utility intersect each other at the same vertical elevation.

*Note: When identifying physical conflicts, the Utility Co-ordinator must look at existing conditions, proposed temporary designs and proposed ultimate design for both underground and aboveground infrastructure.

- **Constructability Conflict** – a constructability utility conflict is not as apparent as a physical conflict. Expertise and experience in road construction expertise is needed to identify these potential utility conflicts. A constructability conflict is when an existing utility is not physically in conflict but its location prevents an aspect of the road construction to occur. An example of a typical constructability utility conflict occurs when aerial hydro is not physically in conflict with the proposed bridge, but the equipment required to deliver the proposed work encroaches within the regulated clear zone. This aerial hydro would be identified as a potential utility conflict.

All potential utility conflicts are then given a mitigation strategy. The following are types of mitigation strategies:

- Further investigation (i.e. SUE QL-A) required to verify the conflict
- Project redesign to eliminate the conflict
- Implement utility protection
- Accept substandard condition
- Relocate utility

The utility information (i.e. utility owner, utility size, material type), location (sta. to sta.), and utility conflict mitigation strategy is tracked in the project's Utility Conflict Matrix. It is the responsibility of the project UC in consultation with the York Region design team, DD consultant and utility agency to identify all potential conflicts and their mitigations strategies. The project UC is also responsible for the preparation and updating of the Utility Conflict Matrix.

5.7 30% DETAILED DESIGN UTILITY CO-ORDINATION MEETING

The DD consultant progresses the project design to the 30% DD milestone. The project UC updates the Utility Conflict Matrix or creates an initial Utility Conflict Matrix if one was not prepared during the EA Phase based on the 30% DD that contains the updated base plan. The project UC prepares and sends **Letter #7** along with the 30% DD drawings and Utility Conflict Matrix to the impacted utility agencies at least 2 to 3 weeks prior to the 30% DD Utility Co-ordination meeting. See [Appendix V](#) for typical agenda items for the 30% DD Utility Co-ordination Meeting.

Based on the test pitting (SUE QL-A) decisions made at the 30% DD Utility Co-ordination meeting the project UC co-ordinates the additional SUE QL-A investigation. Once the SUE report is received the DD consultant updates the project's the 30% DD with the new information. The project UC forwards the SUE report to the utility agencies.

5.8 COMPOSITE UTILITY PLAN PREPARATION

The DD consultant prepares a Composite Utility Plan (CUP). The CUP is a living document plan containing the existing and proposed utilities and the most recent detailed design ([See Appendix H – Sample of Composite Utility Plan](#)). The CUP is updated every time there is new SUE information, an approved proposed utility design within the project's limits, As-Built utility installation information received and at each DD milestone. The project UC shares the CUP with the utility agencies to ensure they have the most recent project information. The CUP will be the project's key document for reviewing new utility designs that occur within the project's limits.

5.9 HIGH LEVEL COST ESTIMATES AND RELOCATION DURATIONS

The utility agencies prepare high level relocation cost estimate and construction duration (**Letter #8**). The utility agencies forward letter #8 to the project UC. The PM updates the project utility relocation budget based on letter #8 cost estimate. In some circumstances the PM may decide to use the utility agency's high-level estimate to obtain the utility agency's purchase order. The utility agency's estimate should have a sufficient amount of information for the project UC to complete a York Region Standard Utility Relocation Estimate Form ([See Appendix Q – York Region Standard Utility Relocation Estimate Form](#))."

5.10 INITIAL UTILITY CO-ORDINATION SCHEDULE

With relocation durations received from the utility agencies and utilizing the Utility Conflict Matrix the project UC prepares a high-level Utility Co-ordination Schedule ([See Appendix I – Sample of Template Utility Co-ordination Schedule](#)). In preparing a Utility Co-ordination Schedule the project UC must understand the utility relocation design and construction dependencies. An example of a utility design dependency is an aerial telecommunication relocation design will require the project accepted hydro pole relocation design to commence their design if the telecommunication company is joint use on the pole. In summary to complete a Utility Co-ordination Schedule one would require the following information:

- A copy of the York Region Utility Co-ordination Schedule Template
- All utility agencies impacted by the project
- The scope of the relocation for each utility agency from the Utility Conflict Matrix
- Predecessors for each task in the Utility Co-ordination Schedule
- Duration (days) for each task in the Utility Co-ordination Schedule
- Utility relocation phasing, if any

5.11 ENABLING WORKS

Enabling Works also known as Early Works or Preparatory Works are construction tasks that need to be completed to enable a utility relocation construction to commence. Examples of Enabling Works are tree removals, fence removal, pre-grading, sign removals etc.

5.12 60% DETAILED DESIGN UTILITY CO-ORDINATION MEETING

The DD consultant progresses the project design to the 60% DD milestone. The DD consultant updates the CUP and the project UC updates the Utility Conflict Matrix based on the 60% DD. The project UC prepares and sends **Letter #9** along with the 60% DD drawings and Utility Conflict Matrix to the impacted utility agencies at least 2 to 3 weeks prior to the 60% DD Utility Co-ordination meeting. See [Appendix V](#) for typical agenda items for the 60% DD Utility Co-ordination Meeting.

Based on the test pitting (SUE QL-A) decisions made at the 60% DD Utility Co-ordination meeting the project UC co-ordinates the additional SUE QL-A investigation. The DD consultant prepares the utility agency requested cross sections / profiles. Cross sections at each existing and proposed hydro pole are required to determine the hydro relocation scope (existing hydro poles) and for designing the proposed hydro poles. The project UC finalizes the utility relocation scope for each utility agency utilizing the SUE information and the cut / fill information. The Utility Conflict Matrix is updated by the project UC to reflect the finalized relocation scope. It is recommended the project UC prepare a Utility Relocation Matrix to track the identified utility relocations required for the project ([See Appendix G – Sample of Utility Relocation Matrix](#)). The project UC forwards the SUE report, cross sections / profiles, cut / fill and the Utility Relocation Matrix to the utility agencies.

5.13 COMPOSITE UTILITY PLAN UPDATE (CUP)

The DD consultant updates the CUP with the 60% DD and additional SUE information. It is recommended that the DD consultant in consultation with the project UC and York Region's Corridor Control Section also show the proposed relocation alignments for each utility on the CUP. York Region's standard utility corridors should be applied whenever possible ([See Appendix N – York Region's Standard Utility Corridor Drawing](#)). The CUP should be updated by the DD consultant whenever an approved utility design (Municipal Consent approval) within the project limits is received. The Municipal Consent approval could be a relocation design for the project or a utility agency project design that occurs within York Region's project limits. The project UC shares the CUP with the utility agencies each time it is updated to ensure they have the most recent project information.

5.14 UTILITY RELOCATION / NEW INSTALLATION DESIGN

Utilizing all the project information received prior to and after the 60% DD Utility Co-ordination meeting each utility agency prepares an initial relocation design. The initial relocation design should be submitted to the project UC in the timeframe negotiated at the 60% DD Utility Co-ordination meeting. The utility relocation design must identify new third-party utility installation(s), also referred to as betterments, requirements.

The project UC circulates the initial utility relocation design to York Region's PM and DD consultant. Utilizing the CUP and the current detailed design the DD consultant and project UC review the initial utility relocation design. All review comments are forwarded to the utility agency by the project UC. The utility agency revises their design based on the comments received and resubmits the revised design to the project UC. The revise, resubmit, review, and comment process continues until a design is acceptable to the utility agency and the project design team. The project UC informs the utility agency via email that the relocation design is acceptable. It is highly recommended that York Region Corridor Control section also review each relocation design to obtain their comments. ([See Appendix M for further information on the individual utility agencies' relocation design process](#)).

Using the acceptable relocation design the utility agency prepares and submits to York Region's Corridor Control section a Municipal Consent (MC) application (**Letter #10**). York Region Corridor Control forwards the MC design to the project UC for review. The project UC forwards the design to the PM and DD consultant for review and comments. The project UC forwards all comments to York Region Corridor Control who in turn forwards the comments to the MC applicant. The utility agency revises the design based on the review comments receives and resubmits the MC application. This revise, resubmit, review and comment process continues until the design is acceptable. The negotiated relocation construction completion date form part of the final acceptable MC review comment. York Region Corridor Control forwards the approved MC to the utility agency (**Letter #12**) and copies the project UC.

In parallel with the MC application process the utility agency prepares a final relocation cost estimate. The final cost estimate shall reflect the current cost sharing formula for each respective utility agency ([See Appendix K – York Region / Utility Agency Cost Sharing Summary](#)). The estimate should contain the following information:

- Scope of relocation work
- Betterment works
- Total cost breakdown by:
 - » Labour
 - » Equipment
 - » Material
 - » Betterments

It is important that the scope of relocation work be prescriptive enough for the project UC to justify the estimate. At a minimum, but not limited to, the estimate should contain the following scope information:

- Number of poles, guys, anchors and transformers
- Conduit / gas main length, diameter and material type
- Structure size and length
- Number of Grade Level Boxes, vaults, pedestals, cabinets and Manholes

The standard York Region Estimate Form ([See Appendix Q – York Region Standard Utility Relocation Estimate Form](#)) outlines the minimum information required to proceed in issuing a purchase order to the utility agency. The utility agency forwards the final relocation cost estimate to the project UC (**Letter #11**). All estimates are to be forwarded to TRN_Utility@york.ca. York Region's Utility Co-ordination Team reviews and resolves any estimate issues. York Region's Utility Co-ordination Team makes recommendation to the PM to proceed with the P.O. Requisition. The PM prepares a purchase order requisition to obtain a York Region Purchase Order (P.O.) for the utility relocation. The York Region Finance forwards the P.O. to the utility agency (**Letter #13**) and copies the PM.

5.15 ACCELERATED UTILITY RELOCATION PROCESS

It may be necessary to accelerate the utility relocation design process due to project needs. In such cases the utility agency should be informed of York Region's intent to accelerate the utility relocation design early in the detailed design process. To proceed with an early start utility relocation design York Region complete certain project design element. The project design elements that require completion can vary from utility agency to utility agency and from project to project. This DD milestone is often reference to as an Enhance Design. Utilizing an Enhanced Design comes with inherent risks such as:

- Project streetscaping elements maybe compromised because utility relocation occurred prior to the streetscaping being finalized

- Design constraint or “design arounds” for the DD consultant because the utility relocations occurred prior to all elements of the project detailed design being completed
- Repetitive relocations of the same utility which would add significant cost and time to the project.

To limit the utility risk when utilizing an accelerated utility relocation process, it is critical that consultation with the utility agencies occur to identify the key project design elements required for an Enhanced Design.

5.16 UTILITY RELOCATION CONSTRUCTION DEPENDENCIES

Prior to a utility agency commencing the relocation construction there may be several dependencies that need to be in place. An approved York Region Municipal Consent and York Region P.O. are examples of utility relocation construction dependencies. The following is a list of potential utility relocation construction dependencies:

- York Region Municipal Consent
- York Region Purchase Order
- York Region Road Occupancy Permit
- York Region Early Works (i.e. tree clearing, sign removals, fence removals, illumination relocation, pre-grading)
- Local Municipality Municipal Consent
- MTO Encroachment Permit
- Conservation Authority Permit (TRCA and LSRCA)
- Railroad Permit (i.e. CN, CP, Metrolinx)
- Pipeline Crossing Permit (i.e. TransCanada Pipeline)
- Hydro Joint Use Permit
- Land Acquisition
- Utility contractual obligations (i.e. customer splicing sign-offs)
- Other utility agency relocation construction completion
- One Call and other locates

5.17 UTILITY CO-ORDINATION SCHEDULE UPDATE

The project UC updates the high-level Utility Co-ordination Schedule that was prepared at the 30% DD. The Utility Co-ordination Schedule tracks each utility Co-ordination construction dependency for a particular project ([See Appendix I – Sample of Template Utility Co-ordination Schedule](#)). The schedule’s information is critical to identify the critical path tasks and understanding the impacts the utility relocation timelines has on project’s tendering process.

5.18 UTILITY CO-ORDINATION PLAN

Utilizing the Utility Relocation Schedule the project UC prepares a Utility Co-ordination Plan (UCP). The UCP is a high-level tool that displays location, sequence and timing of the utility relocation to help manage the project’s constructor issues ([See Appendix J – Sample of Utility Co-ordination Plan](#)).

6. CONSTRUCTION PHASE

6.1 GENERAL

Construction of utility relocations is a step to ensure the project can commence unencumbered and on time. The construction of the utility relocations commences once all dependencies are in place. This section will outline the tasks and processes necessary to successfully execute, monitor and control the construction of the utility relocations. The UC is responsible for ensuring all tasks are tracked, all delay impacts communicated and all processes are adhered to.

6.2 UTILITY RELOCATION MEETINGS

Utility Relocation Pre-Construction Meeting

- The project UC arranges a preconstruction meeting with utility agency and York Region Corridor Control representatives before the start of utility relocation construction work. The meeting offers participants the opportunity to review, discuss and finalize the proposed Utility Co-ordination Plan outlining the sequence and timing of utility relocations, as well as to raise and resolve concerns about the overall construction plan. There also needs to be discussions on the status of the dependencies required to be in place to commence construction. Each impacted utility may have different dependencies. The process to handle scope changes to the utility relocation should be communicated at the meeting by the project UC. The project UC keeps a written record of decisions and action steps from the meeting. York Region and the utility agencies should exchange names of contacts that are available 24-hours-a-day in case of emergency. The project UC is responsible for managing changes to scope and schedule. See [Appendix V](#) for typical Utility Pre-construction Meeting agenda items.

Utility Construction Progress Meetings

- Utility Construction Progress meetings may be useful particularly on complex projects with significant utility involvement. The project UC or utility agency may call these meetings. The project UC and York Region design team may need to meet with one utility, with all utilities, or with a particular group of utilities, depending on project needs. The project may require one meeting or more, or a series of regular meetings. The project UC decides the best course of action based on the circumstances. See [Appendix V](#) for typical Utility Construction Progress Meetings agenda items.

6.3 UTILITY RELOCATION PRIOR TO PROJECT CONSTRUCTION

It is the intent of most projects to complete the utility relocations prior to the start of project construction. To meet this goal, it is imperative that a utility relocation co-ordination plan be developed and agreed to by the Road Authority and utility agencies. The Utility Co-ordination Plan should include, but not necessarily restricted to, the sequencing of the relocations and the duration of the utility relocations.

York Region Corridor Control representative monitors and updates the project UC on the field status of the utility relocations for the project. The utility agency shall notify the project UC once their relocation is completed so that the project UC can notify the next utility agency to commence their relocation in accordance with the Utility Co-ordination Plan.

A utility conflict is deemed mitigated once the proposed utility infrastructure has been installed, all service connections cutover and the existing infrastructure abandoned. One utility conflict mitigation that is often overlooked prior to road construction is existing illumination attachments on existing hydro poles. Determining a strategy on how to manage this conflict should be part of the Utility Co-ordination Plan. The permanent illumination installation typically forms part of the road contract and the existing lighting conditions must be maintained for vehicular and pedestrian safety. This scenario results in a continued conflict between the existing hydro poles and the proposed road construction until the existing illumination is removed from the poles.

It is the intention of the project to relocate all utilities to the permanent location. In some cases, the project requires a temporary installation, or one that will be in service for only a short time. Temporary facilities require the same care in co-ordination and construction as permanent facilities. Temporary relocation cost is 100% borne by the project owner.

6.4 UTILITY RELOCATION DURING AND POST PROJECT CONSTRUCTION

It has been the intent of the project to relocate all utilities prior to construction. This may not always be possible. In these situations, the utility may need to be relocated during the project's construction phase. The project's tender documents must reflect this situation, and allow for time or space for the utility relocation to occur during the project's construction schedule. The project UC is responsible for the co-ordination of these types of relocations. Communication between the road contractor, project UC and utility agency is essential to co-ordinate a successful and time sensitive utility relocation.

For some projects utility relocation needs to occur after the project construction phase has been completed. The project UC notifies the utility agency when the project construction is complete and the site is available for their relocation to commence.

6.5 OTHER UTILITY CO-ORDINATION DURING PROJECT CONSTRUCTION

Utility work required for road projects typically goes beyond the project's utility relocations. Utility works that typically occur during road construction are related to traffic signalization and / or road illumination. Both traffic signalization and illumination require co-ordination with the local hydro provider to obtain the following:

- New Electrical Service Connections
- Joint Use Permits
- Minimum Clearance Deviations from energized power lines (if necessary)

New Electrical Service Connection

The installation of new traffic signals and illumination will require new electrical service connections to energize the proposed new electrical systems. It is the responsibility of the design team to co-ordinate with the appropriate hydro company to obtain a new electrical service connection. The process to obtain a new electrical service connection varies from hydro company to hydro company. See Appendix S for Alectra's New Electrical Service Connection workflow process.

Joint Use Permit / Approval

When a traffic signal and / or illumination components are required to attach to a hydro pole a Joint Use Permit or approval must be obtained from the hydro pole owner. The requirements to obtain a Joint Use Permit / Approval varies among hydro companies. See Appendix U for Alectra's Joint Use Guideline.

Minimum Clearance Deviations from Energized Power Lines

The project design team may be confronted with a temporary scenario where traffic signal and / or illumination components enter within the safe limits of approach with an energized power line. Temporary signal installation is an example where the proposed temporary system may encroach within a power line's safe limit of approach. In such situations this minimum clearance issue can be mitigated in several ways.

- York Region's design team could investigate a re-design of the temporary traffic signals to obtain the required minimum clearance.
- If the minimum clearance issue is identified prior to the hydro pole relocation for the project, York Region's design team could co-ordinate with the hydro pole owners to install taller poles at the identified intersection as part of the project's utility relocation to obtain the required minimum clearance.
- York Region's design team can approach the hydro provider to obtain a temporary deviation from the minimum clearance. This option should only be utilized if all other options have been exhausted.

6.6 QUALITY ASSURANCE / QUALITY CONTROL

The quality assurance (QA) and quality control (QC) of a utility relocation is of utmost importance for a successful project especially on projects where there is a congestion of underground infrastructure. Both York Region and utility agencies should be responsible for QA / QC.

York Region, in conjunction with each utility agency, shall develop QA processes to ensure the quality of the utility relocation product. Examples of typical QA processes include:

- Documentation control for the utility relocation. (who, what, when, where, why and how)
- Installation tolerances and how they are to be monitored
- Types of and frequency of testing
- Installation / construction methodology (open trenching, boring, directional drilling, etc.)

All involved with utility relocation is responsible for QA. The project UC is responsible for documenting the QA processes and ensuring they are implemented.

Inspection, documentation and testing are the main QC activities for a utility relocation. Inspection and documentation of utility construction play an important role in successful utility relocation, in early resolution of issues, and in decisions about claims, and for reimbursement. The utility agency may assign an inspector to ensure safe and efficient installation. All quality issues discovered during inspection should be addressed immediately and resolved while construction is still in progress, whenever possible. The project UC is responsible for coordinating resolution meetings with the utility agency as required. The project UC is responsible for keeping written record of the resolutions agreed to at these meetings and for ensuring the resolutions are implemented.

Testing of materials used in the utility relocation is the responsibility of the utility agency. York Region may also perform testing to verify any concerns they may have with the quality of the utility relocation.

6.7 UNKNOWN FIELD CONFLICT RESOLUTION

Each utility agency will communicate any unknown conflicts encountered in the field to the York Region Corridor Control Utilities Technologist immediately. York Region Corridor Control Utilities Technologist, in consultation with the project UC and all impacted utility agencies, leads the implementation of the utility field conflict resolution process ([See Appendix O – York Region Utility Field Conflict Resolution Process](#)). The project UC is responsible for keeping written records of all decisions made during the resolution process. The project UC reviews and communicates to the PM any delays to the relocation schedule due to the unknown field conflict. Project UC and Corridor Control Utilities Technologist works with the utility agency to mitigate, if possible, the delay to the utility relocation schedule (i.e. additional crews, working overtime etc.).

6.8 SCOPE CHANGE PROCESS

The scope of the utility relocation can be altered by York Region (i.e. late project design changes), utility agencies (i.e. additional operational or capacity needs) or due to unknown site conditions (i.e. poor soil conditions, unknown conflicts). The project UC schedules scope change meetings with the utility agency as required. All scope changes to the utility relocation shall be agreed to in writing prior to the utility agency completing the additional work. The project UC is responsible for keeping written records of signed scope changes.

Significant scope changes may necessitate resubmission of the utility plans for approval. In other cases, submission of as-built plans may be sufficient depending on the York Region Corridor Control Section's requirements.

7. POST CONSTRUCTION PHASE

7.1 GENERAL

Agreements between York Region and the utility agencies as well as legislations detail the cost allocations for eligible utility relocation costs. This section highlights invoice and payment steps. York Region's PM oversees the tasks within this section.

The PM co-ordinates the processing of all invoices for all privately owned utilities and some municipally owned utilities, depending on the type of agreement.

7.2 INVOICING AND PAYMENTS

This section provides information about how invoicing and payments could be handled if the agreement and / or legislation between York Region and the utility agency involve reimbursement for the utility relocation work. If the utility is solely responsible for relocation, this section need not apply. The PM in consultation with the project UC reconciles all utility relocation invoices that are received from the utility agencies. The reconciliation of invoices may involve the following:

- **Additional Costs**

If the utility agency must perform additional work beyond the agreed upon scope, the utility agency must immediately notify the project UC in writing of the scope change and provide a cost estimate for the additional work before the work begins. The PM must grant approval for the additional work.

The project UC verifies that the utility agency's invoices fall within the parameters of the agreed to scope change.

- **Itemized Invoice**

The project requires utility agencies to submit itemized invoices for actual cost of the relocation. The invoice should be itemized in a way that is easily reviewed against the estimate. The items listed on the invoices should be within an agreed to variance of the items in the estimate. Justification documentation and / or explanation for invoices that exceed the upset limit of the P.O. must be submitted with the invoice.

All utility invoices and justification documentation, if required, to be forwarded to TRNUtility@york.ca

- **Processing Invoices**

The utility agency may submit periodic or final invoices based on the cost apportionment defined in the agreements and / or legislation. York Region's Utility Co-ordination Team reviews and makes recommendations to the PM to process partial / final invoices ensuring that the invoice is in adherence with the agreements and / or legislation. The York Region's Utility Co-ordination Team is responsible for reviewing and resolving billings that exceed the estimated costs and that were not part of an agreed to scope change prior to recommending payment. York Region's Utility Co-ordination Team makes a recommendation to the PM to pay the partial / final invoice or revised invoice, if the initial billing was inconsistent to the cost apportionments outlined in the agreements and / or legislation.

7.3 BETTERMENTS

Utility agencies may take the opportunity to upgrade its facility as part of the utility relocation. These betterments, identified during the Design phase of the project delivery, may or may not have been necessitated by the project. Typically, York Region pays their portion of a “like for like” relocation. The cost apportionment for betterments that are not required by the project would be the difference between the total cost of the relocation and the “like for like” estimated cost.

Some exceptions exist to the general betterment rule. The project may reimburse for the following types of betterment:

- Betterments required by the project, Provincial or Federal law or regulation
- Replacement devices or materials that are equivalent but not identical standards
- Replacement of devices or materials no longer regularly manufactured with next higher grade or size
- Betterments required by current design practices and offer direct benefit to the project

The project UC determines the overall scope of the betterment and verifies the utility agency’s calculation.

7.4 AS-BUILT PLANS

All utility agencies must prepare as-built plans of their relocated infrastructure. For additional guidance in preparing as-built plans see CSA S250-11, Mapping of Underground Utility Infrastructure. As-built plans are submitted to York Region Corridor Control Section. The project UC reviews and ensures the as-built plans meet the minimum requirements as specified in the York Region / utility agency agreements. Any discrepancies with as-built plans must be resolved between the project UC and the utility agency before acceptance of the plans. Acceptable as-built plans must be received by the project UC prior to payment of the final invoice.

7.5 FINAL PAYMENT

York Region’s PM makes final utility relocation payment when the project UC’s recommendation and “as-built” plans are received.

APPENDICES

APPENDIX A: GLOSSARY

As-Built Plan: a representation of the as-constructed situation showing the position and features of components as actually put in place

Base Plan: a topographical survey plan depicting the existing conditions (surface and subsurface) within the project limits.

Betterments: utility upgrades made to existing infrastructure constructed as part of the utility relocation for a project.

Composite Utility Plan (CUP): a plan which depicts existing utility locations, based on the SUE information, proposed utility relocation designs, existing topographic survey information and the current Project Design information.

Enabling Works: also known as Preparatory Activities or Early Works, Enabling Works are design and / or construction tasks that are completed prior to certain utility relocations commencing.

Enhance Design: a design milestone that has certain elements of the project design completed to facilitate an accelerated utility relocation. The design elements requiring completion varies from utility to utility and project to project

Mark-Up Drawings: a plan view drawing supplied by the utility owner reflecting the location of subsurface infrastructure within the requested limits.

Quality Assurance (QA): a program for the systematic monitoring and evaluation of the various aspects of a project, service, or facility to ensure standards of quality are being met.

Quality Control (QC): the activity of checking goods as they are produced to ensure the final products are good.

Right-of-way (ROW): the right to make a way over a piece of land, usually to and from another piece of land. A right of way is a type of easement granted or reserved over the land for transportation purposes. This can be for a highway, public footpath, railway and canal, as well as for electrical transmission lines, oil and gas pipelines.

Road Geometrics: engineering concerned with the positioning of physical roadway elements according to standards and constraints. The basic objectives in geometric design are to optimize efficiency and safety while minimizing cost and environmental damage.

Subsurface Utility Engineering (SUE): a branch of engineering practice involving classifying and reducing the uncertainty of the presence and location of underground utility infrastructure by delivering data about that infrastructure. For example reports and utility mapping at appropriate Utility Quality Levels, and using this data for purposes including utility co-ordination, utility relocation design and co-ordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design.

Utility Conflict Matrix: a document which describes the details of potential utility conflicts (type of utility, utility size, length of conflict, etc).

Utility Co-ordination Plan (UCP): is a drawing that depicts at a high level the locations of utility relocations and the timeline for when the relocation construction will occur. It prioritizes who and where and when utility relocation projects will occur within the project limits.

APPENDIX B: 30% DETAILED DESIGN CRITERIA

The following is the level of design required to be completed to meet a 30% Design criteria for the purposes of this manual:

- Base plan survey completed including property lines, easements etc.
- A composite utility drawing in accordance with ASCE 38-02 including the appropriate Quality Levels
- Required right-of-way widths and constraints identified
- Plan and profile views of existing storm sewers, watermains, sanitary sewers and new construction
- Road geometrics
- Excessive horizontal alignment and vertical grade changes identified
- Consult with potential new developments
- Road cross sections
- Retaining walls identified
- Initial Utility Conflict Matrix
- Identify SUE QL-A (test pit) locations
- Existing structures (bridges, culverts) condition survey
- Identify railway crossings and required permitting process
- Commence land attainment process
- Identify if Permission to Enter agreements are required
- Identify environmental conditions, permit requirements and associated timing restrictions
- Identify all partnerships and cost sharing agreements (e.g. streetscaping, municipal infrastructure improvements, illumination etc.)
- Initial constructability review
- Street Tree Inventory and Street Tree Preservation plan
- Initial streetscape plan

APPENDIX C: 60% DETAILED DESIGN CRITERIA

For the purpose of this manual, the following level of design is required to be completed to meet a 60% Detail Design criteria:

- Base plan survey completed including property lines, easements, etc.
- A composite utility drawing in accordance with ASCE 38-02 including the appropriate Quality Levels
- Required right-of-way widths and constraints finalized
- Plan and profile views of existing and proposed storm sewers, watermains, sanitary sewers and new construction
- Road geometrics finalized
- Horizontal alignment and vertical grade finalized
- New developments access locations and servicing finalized
- Road cross sections finalized
- Retaining walls design
- Updated Utility Conflict Matrix
- Identify further SUE QL-A (test pit) locations
- Existing and proposed structures (bridges, culverts) design
- Railway crossings and required permitting process
- Commence land procurement nearing completion (land required prior to the commencement of utility relocations)
- Permission to Enter agreements nearing completion
- Location of environmental conditions, permit requirements and associated known timing restrictions
- Partnerships and cost sharing agreements finalized (e.g. streetscaping, municipal infrastructure improvements, illumination, etc.)
- Temporary and proposed illumination and traffic signal designs
- Constructability review
- Street Tree Inventory and Street Tree Preservation plan
- Streetscape design

APPENDIX D: SUE QUALITY LEVELS

(EXCERPT FROM ASCE 38-02 STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA)

5.0 UTILITY QUALITY LEVEL ATTRIBUTES

5.1 Quality Level D

Typical tasks by the engineer leading to utility quality level D are:

5.1.1 Conduct utility records research to assist in identifying utility owners that may have facilities on or be affected by the project. Sources of information may include, but are not limited to (project- and scope-dependent):

- Utility section of the state Department of Transportation or other public agency
- One-call notification center
- Public Service Commission or similar organization
- County Clerk's office
- Landowner
- Internet or computer database search
- Visual site inspection
- Utility owners

5.1.2 Collect applicable utility owner records. Applicable records may include:

- Previous construction plans in area
- Conduit maps
- Direct-buried cable records
- Distribution maps
- Transmission maps
- Service record cards
- "As-builts" and record drawings
- Field notes
- County, city, utility owner or other geographic information system databases
- Circuit diagrams
- Oral histories

5.1.3 Review records for:

- Indications of additional available records
- Duplicate information and credibility of such duplicate information
- Need for clarifications by utility owners

5.1.4 Develop utility composite drawing or equivalent. The engineer should also make professional judgments regarding the validity and location of topographic features on records versus current topographic features (when available) and conflicting references of utilities. And the engineer should indicate quality levels; utility type and / or ownership; date of depiction; accuracy of depicted appurtenances (quality level C vs. quality level D); end points of any utility data; active, abandoned, or out-of-service status; size; condition; number of jointly buried cables; and encasement.

5.2 Quality Level C

Typical tasks by the engineer leading to utility quality level C are:

5.2.1 Perform tasks as described for quality level D. Quality level C and D tasks do not necessarily need to be performed in any prescriptive order.

5.2.2 Identify surface features on the topographic plan and ground surface that are surface appurtenances of existing subsurface utilities.

5.2.3 Survey such features if the features have not already surveyed by a registered professional. If previously surveyed, check survey accuracy and completeness for applicability with the existing project.

5.2.4 Correlate applicable utility records to these surveyed features, taking into account the geometries and indications on the records of these surface features.

5.2.5 Determine when records and features do not agree and resolve discrepancies. This may be accomplished by depiction of a utility line at quality level D, effectively bypassing or disregarding (but still depicting) a surveyed structure of unknown origin. Additional resolution may result from consultation with utility owners.

5.3 Quality Level B

Typical tasks by the engineer leading to utility quality level B are:

5.3.1 Perform tasks as described for quality level C. Quality level C and B tasks do not necessarily need to be performed in any prescriptive order. It may be more cost effective to perform some quality level B tasks before and / or in conjunction with quality level C or D tasks.

5.3.2 Select an appropriate suite of surface geophysical methods (see the Appendix for discussions of methods, relative merits, and relative costs) to search for utilities within the project limits or to perform a utility trace for a particular utility system.

5.3.3 Apply appropriate surface geophysics to search for utilities within the project limits, or trace a particular utility system if the scope of investigation is limited.

5.3.4 Interpret the surface geophysics. Depending on the methods, this may be performed in the field or in the office.

5.3.5 Mark the indications of utilities on the ground surface for subsequent survey. Local utility owners, agencies, and / or one-call statutes may dictate, or suggest, the markings' colors, sizes, and / or other labeling. Care should be taken to differentiate markings placed on the ground for design purposes from those placed on the ground for damage prevention purposes. (Note: If a particular surface geophysical method allows for field data collection or storage for future computer downloading and evaluation, if a utility search technique that allows for comprehensive area coverage is used, and if a survey grid or line is laid out that allows for future correlations of surface geophysical data to points depicted on a map, then ground markings may be unnecessary.)

5.3.6 Survey all markings that indicate the presence of a subsurface utility. This survey should be to the accuracies and precision dictated by the project's survey control.

5.3.7 Depict all designated utilities. These utility depictions may follow the general guideline as presented in Section 6.0. Depiction is usually accomplished via computer-aided design and drafting or manual plotting methods onto plan sheets, into geographic information systems databases, or onto other appropriate documents. Quality level B data should be reproducible by surface geophysics at any point of their depiction.

5.3.8 Correlate the designated utilities' depictions with utility records and / or surveyed appurtenances to identify utilities that may exist but were not able to be designated.

5.3.9 Resolve differences between designated utilities and utility records and surveyed appurtenances. This may take the form of additional surface geophysical searches or depiction of designated or nondesignated utilities at a lower quality level. It may take the form of an upgrade at appropriate points to quality level A information.

Situations require judgment that a designated utility and a utility of record are actually identical, even if not interpreted as geographically coincident.

5.3.10 Recommend to the project owner additional measures to resolve differences if they still exist. Such recommendations may include additional or different surface geophysical methods, exploratory excavation, or an upgrade to quality level A data.

5.4 Quality Level A

Typical tasks by the engineer leading to utility quality level A are:

5.4.1 Perform tasks as described for quality level B at the appropriate project location.

Quality level B, C, and D tasks do not necessarily need to be performed in any prescriptive order.

5.4.2 Select an appropriate method of gathering data that will achieve the accuracies and precision required by the project. These accuracies are currently typically set to 15- mm vertical and to applicable horizontal survey and mapping accuracy as defined by the project owner. Exposure and survey of the utility at each specific location where quality level A data are obtained are currently necessary.

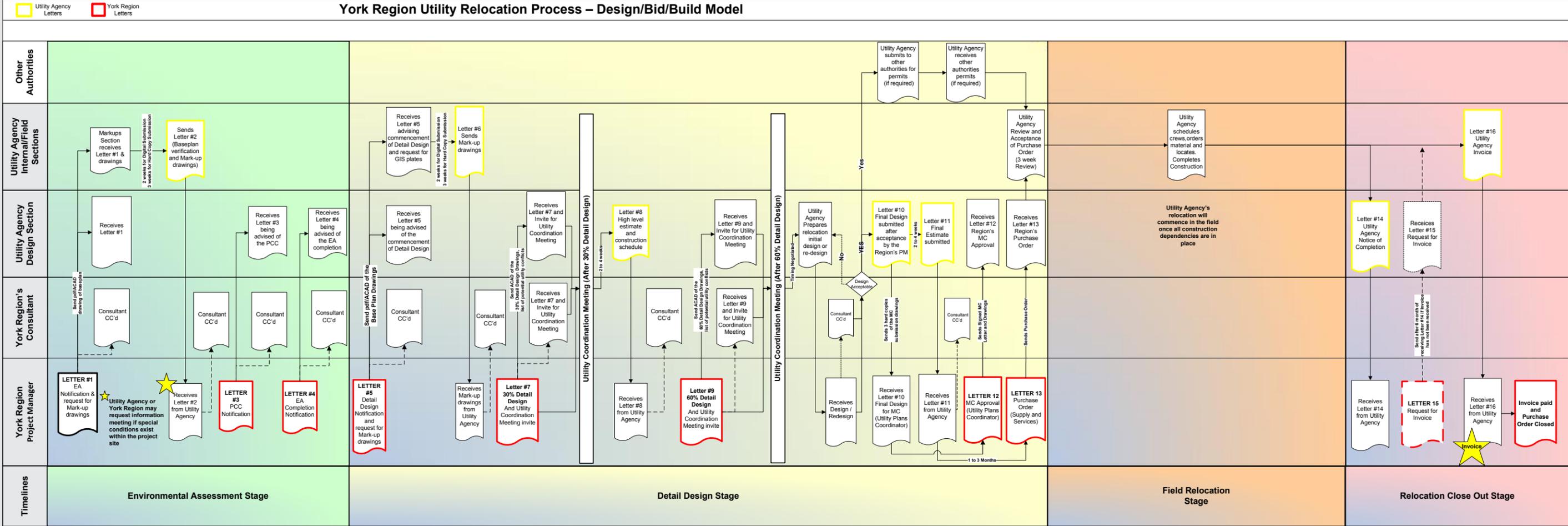
5.4.3 Excavate test holes exposing the utility to be measured in such a manner that protects the integrity of the utility to be measured. Exposure is typically performed via minimally intrusive excavation. In some cases, data gathering during utility construction may eliminate the need for excavation of the utility, as it is already exposed.

5.4.4 Comply with applicable utility damage prevention laws, permits, and specifications, and co-ordinate with utility and other inspectors, as required.

5.4.5 Determine (a) the horizontal and vertical location of the top and / or bottom of the utility referenced to the project survey datum; (b) the elevation of the existing grade over the utility at a test hole referenced to the project survey datum; (c) the outside diameter of the utility and configuration of non-encased, multiconduit systems; (d) the utility structure material composition, when reasonably ascertainable; (e) the benchmarks and / or project survey datum used to determine elevations; (f) the paving thickness and type, where applicable; (g) the general soil type and site conditions; and (h) such other pertinent information as is reasonably ascertainable from each test hole site.

5.4.6 Resolve differences between depicted quality level A data and other quality levels. This may take the form of additional surface geophysical searches or a depiction of adjacent or nearby data points at a lower quality level. It may require that utilities already depicted at quality level B, C, or D should be re-depicted to coincide with the more accurate quality level A data. It may take the form of additional upgrades at appropriate points to quality level A information.

APPENDIX E: YORK REGION UTILITY CO-ORDINATION FLOW CHART



APPENDIX F: SAMPLE UTILITY CONFLICT MATRIX

Utility Conflict Matrix

York Region Project # -

Updated:
Status:

	conflict resolved
	tentative TH (requires designating first)
	confirmed conflict
	engineering review required

conflict #	Utility Information	~ Ex. Location (Sta Start)	~ Ex. Location (Sta End)	Conflict Distance (m)	~ Proposed Grade Change (m)	Location	Assessment of Effects	Investigation Required	Relocation Required	Resolved	Updated
Bell											
1	Bell Conduit (6PVC1) - ABND	9+700	10+100	-	-	Bathurst - within NB lanes	Existing Bell structure confirmed abandoned by Bell - remove as required.	No	No	Yes	
2											
3											
4											
5											
6											
7											
8											
9											
10											
Enbridge Gas											
1	Enbridge Gas - 150mm ST IP	9+870	10+200	330	-	West Blvd	No proposed work over gas main alignment - no conflict. Confirmed alignment through QL-B.	No	No	Yes	
2											
3											
4											
5											
6											
7											
8											
9											
10											
Alectra											
1	Primary pole - Rogers attachment	9+870	-	-	-	West Blvd	Pole beyond grading limits, no conflict	No	No	Yes	
2											
3											
4											
5											
6											
7											
8											
9											
10											
Rogers											
1	Rogers - aerial	9+870	11+535	1665		West Blvd	Rogers fiber and coax attached to Alectra poles which are to be relocated. Rogers to transfer to new Alectra pole locations assuming slack is available.	No	Yes	No	
2											
3											
4											
5											
6											
7											
8											
9											
10											

APPENDIX G: SAMPLE UTILITY RELOCATION MATRIX

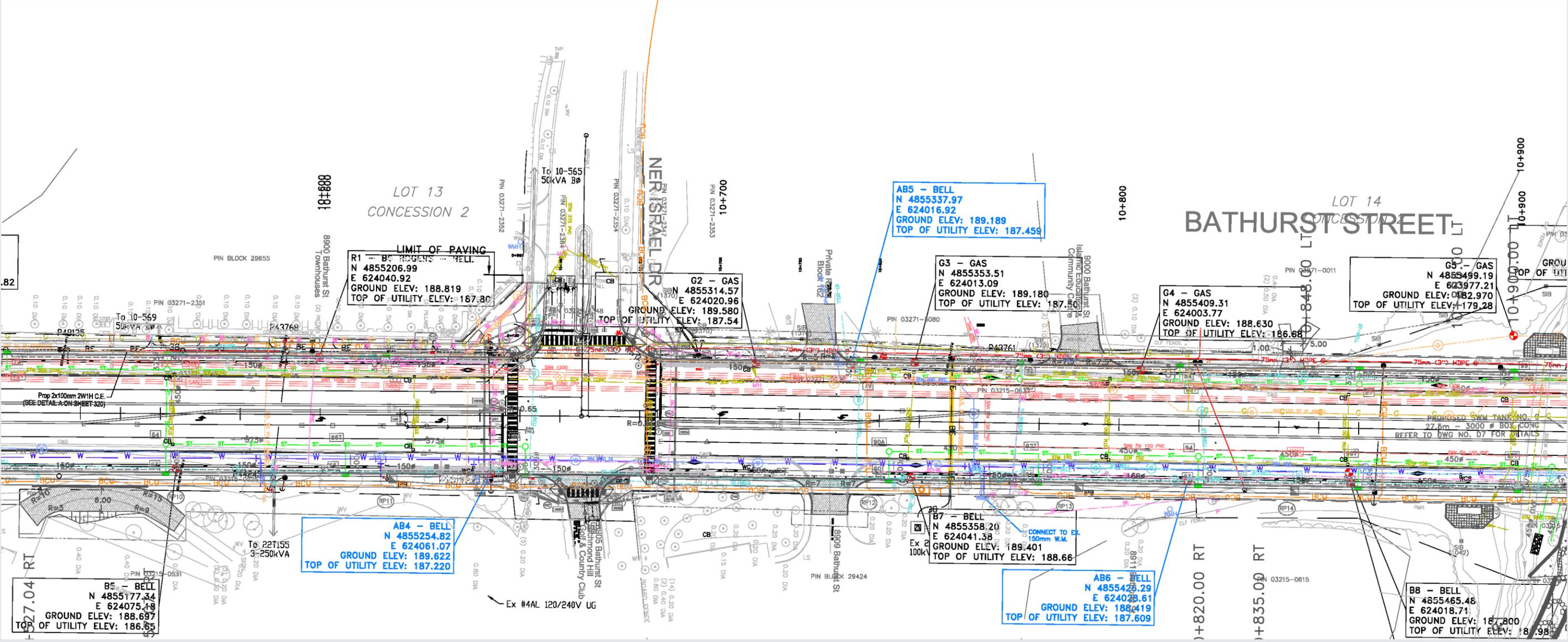
Utility Relocation Matrix

York Region Project # -

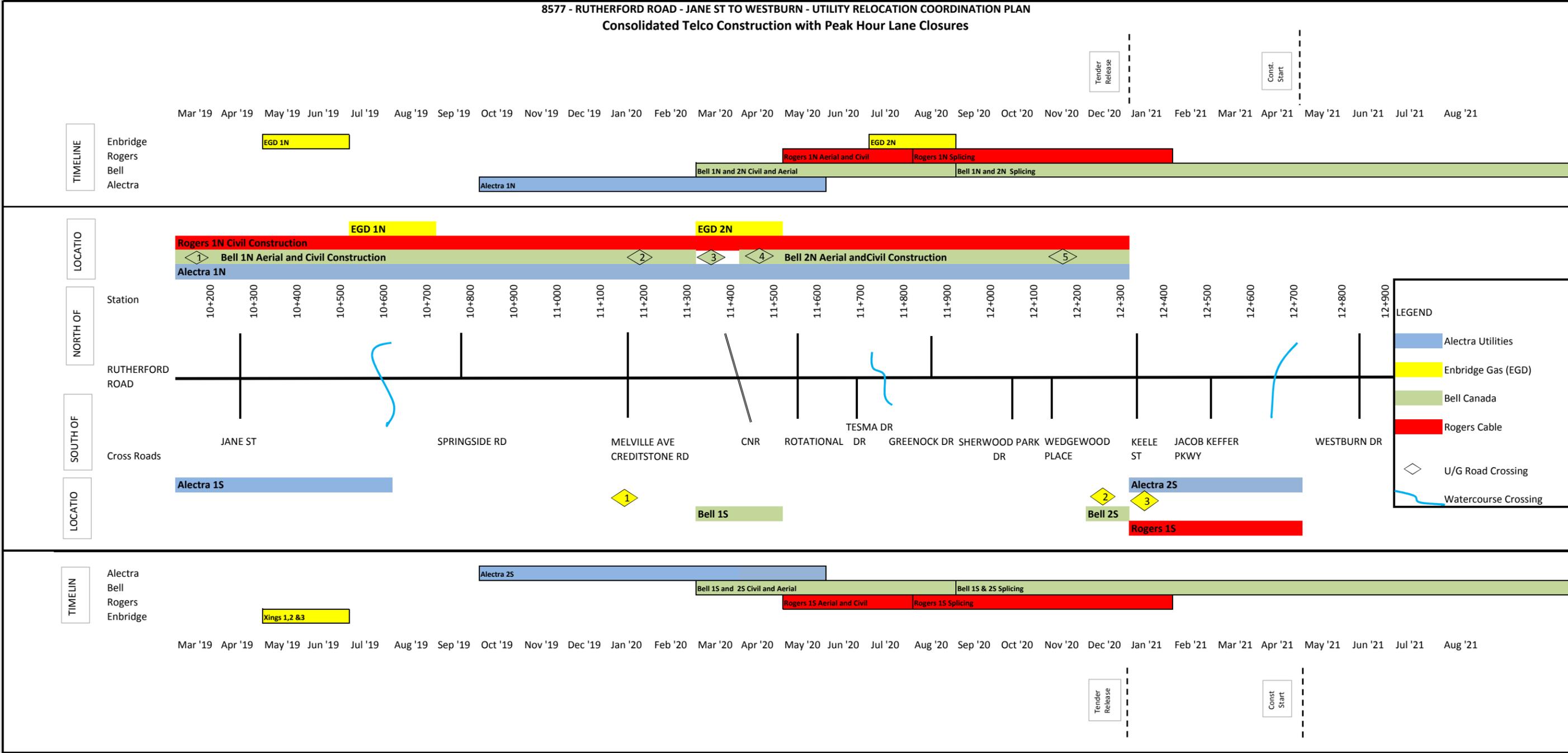
Updated:

Conflict						Pre-Requisites																								
Conflict #	Utility	Utility Type / Details	Geographical Area (closest intersection)	Existing Location (STA)	Relocation Strategy / Notes	Utility Contact	Drawing Name / Number(s)	Municipal Consent #	Other Utility Relocations	Early Works Tree / Fence Removal	Other Permitting	Land Acquisition	Utility Design Start Date	Utility Design Finish Date	YR Design Review Complete Date	MC Submission Rec'd	YR Team MC Review Comments Completed	MC Resubmission Required** (Y/N)	MC Issuance Date by YR	Other Permit Appl. Date(s)	Other Permit Rec'd Date(s)	Cost Est. Rec'd (Date)	P.O. Issued (Date)	Const. Start Date	Const. Finish Date	Insp. By	Inspection Notes	As-Constructed Dwg Rec'd		
Alectra																														
Enbridge																														
Bell Canada																														
Rogers																														
Other Telcos																														

APPENDIX H: SAMPLE COMPOSITE UTILITY PLAN



APPENDIX J: SAMPLE UTILITY CO-ORDINATION PLAN



APPENDIX K: UTILITY RELOCATION COST SHARING SUMMARY

UTILITY TYPE	LEGISLATION / AGREEMENT	YORK REGION'S COST SHARE
Hydro Companies	Public Service Works on Highways Act (PSWHA)	50% Labour and Labour Saving Devices
Enbridge Gas	Gas Franchise Agreement	35% of Total Relocation Cost
Telecommunications	Municipal Access Agreements (MAA)	In accordance with PSWHA or applicable MAA

- All cost are based on “Like for Like” relocation
- All Betterments caused by the project – 100% York Region
- All Betterments for the utility agency’s purpose – 0% York Region

APPENDIX L: UTILITY RELOCATION PROCESS LETTERS

LETTER (1) - Consultant Notification – Environmental Assessment Phase



Transportation Services Department
Capital Planning & Delivery Branch

Date

Utility Agency Name
Street Name
Town, Province
Postal Code

Attn: Utility Contact Name

RE: Project Name & York Region Project No.

The Region of York is planning to carry out road improvements on **XX Road** between **XX Road** and **XX Road in the Town/City of XX**, pending Environmental Assessment (EA) approval. One alternative may include widening the existing road to a **XX** lane urban cross-section with additional auxiliary lanes at key intersections, where warranted.

It is anticipated that a portion of **Utility Agency's Name** existing utility plant will need to be adjusted and / or relocated prior to **Month/Year** construction tender.

Attached is a digital AutoCAD copy of our engineering baseplan.

A Public Consultation Centre (PCC) for the project is currently planned for **XX** date to discuss the project, current problems and possible solution opportunities with the public and other key stakeholders. In order for us to prepare for the PCC we require that you verify your plant locations as shown on our plans, identify any missing, abandoned or incorrect information and forward your mark-up drawings. The project liaison person, complete with contact information would also be helpful.

As the EA evolves and the project's design scope is more defined, the Region will require further input from **Utility Agency's Name** as it relates to relocation costs, special operational constraints, constructability issues and timing requirements.

If you have any questions, do not hesitate to call the undersigned.

Regards,

York Region's Project Manager (Capital Planning and Delivery)

c.c. **York Region's EA Consultant**
York Region's Project Manager Capital Planning & Delivery – Roads
York Region's Utility Plans Coordinator
Utility Agency's Mark Up Contact

Attachments: Digital ACAD Baseplan Drawing

LETTER (3) – Notice of Environmental Assessment Public Consultation Centre



Transportation Services Department
Capital Planning & Delivery Branch

Date

Utility Agency Name
Street Name
Town, Province
Postal Code

Attn: Utility Contact Name

RE: Project Name & York Region Project No

York Region has scheduled a Public Consultation Centre (PCC) to present the preferred solution for the above noted project as part of the Environmental Assessment process.

Should you wish to attend the PCC details are as follows:

Date:

Time:

Location:

Regards,

York Region's Project Manager (Capital Planning and Delivery)

c.c. **York Region's EA Consultant**
York Region's Project Manager Capital Delivery – Roads
York Region's Utility Plans Coordinator

LETTER (4) – Notice of Environmental Assessment Completion



Transportation Services Department
Capital Planning & Delivery Branch

Date

Utility Agency Name
Street Name
Town, Province
Postal Code

Attn: Utility Contact Name

RE: Project Name & York Region Project No.

York Region has completed the Environmental Assessment for the above noted project.

This information has been forwarded to you in order to source sufficient budget and scheduling/resource requirements as result of our work.

More specific utility impacts will be confirmed during detail design and addressed under separate cover.

Regards,

York Region's Project Manager (Capital Planning and Delivery)

c.c. **York Region's EA Consultant**
York Region's Project Manager Capital Delivery - Roads
York Region's Utility Plans Coordinator

LETTER (5) – Notice of Detailed Design Commencement



Transportation Services Department
Capital Planning & Delivery Branch

Utility Agency Name
Street Name
Town, Province
Postal Code

Attn: Utility Contact Name

RE: Project Name & York Region Project No.

Attached is a digital AutoCAD copy of our engineering baseplan, complete with all currently known utility information.

In order for us to commence detail design we require that you verify your plant locations, identify any missing, abandoned or incorrect information and forward Mark Up drawings. The project liaison person, complete with contact information would also be helpful.

A utility co-ordination meeting will be set up in the near future for all of the affected utilities.

If you have any questions, do not hesitate to call the undersigned.

Regards,

York Region's Project Manager (Capital Planning and Delivery)

c.c. **York Region's Detail Design Consultant**
York Region's Utility Plans Coordinator
Utility Agency's Mark Up Contact

Attachment: autoCAD Baseplan

LETTER (7) – Notice of Utility Coordination Meeting –Post 30% Detail Design



Transportation Services Department
Capital Planning & Delivery Branch

Date

Utility Agency Name
Street Name
Town, Province
Postal Code

Attn: Utility Contact Name

RE: Project Name & York Region Project No.

Attached is an AutoCAD copy of our 30% Detail Design engineering plan and a list identifying the preliminary utility conflicts with our proposed road design.

A Utility Coordination meeting invite will be forwarded to you in the near future. At this meeting we will be discussing but not limited to the following topics:

- Accuracy of the utility plant on the 30% detail design drawings
- Potential utility conflicts and their mitigation
- Possible early utility design tasks that can be completed at this stage
- Betterments to the existing utility infrastructure (preliminary)
- Illumination/Traffic Signal attachments to hydro poles
- Future test pitting requirements
- Land acquisition issues
- Other authority permits required for the relocation
- High level cost estimates and scheduling requirements (It may be premature for some utility agencies to provide a high-level estimate and schedule at the 30% DD milestone)
- Material ordering requirements
- Relocation cost sharing
- Design team and utility agencies contacts for the project

In order for the Region to proceed with the detail design of this project we require, in writing, a high-level cost estimate and the approximate length of time to complete the relocation work (not including material ordering and obtaining locates). The Region anticipates receiving this information within a 2 to 4 week time period after the 30% Detail Design Utility Coordination meeting. This information will be useful to the Region for budgeting and scheduling purposes.

If you have any questions, do not hesitate to call the undersigned.

Regards,

LETTER (9) – Notice of Utility Coordination Meeting – Post 60% Detail Design



Transportation Services Department
Capital Planning & Delivery Branch

Date

Utility Agency Name
Street Name
Town, Province
Postal Code

Attn: Utility Contact Name

RE: Project Name & York Region Project No.

Attached are a digital AutoCAD copy of our 60% Detail Design engineering plans and a list of the potential utility conflicts with the proposed road design.

A Utility Coordination meeting invite will be forwarded to you in the near future. At this meeting we will be discussing but not limited to the following topics:

- Utility conflicts and mitigations (utilize CUP to facilitate discussions)
- Additional cross section/profile/ cut and fill requirements for utility relocation design
- Betterments to the existing utility infrastructure (finalize)
- Illumination/Traffic Signal attachment to hydro pole requirements (if necessary)
- Initial relocation design submission timeline
- Final cost estimate submission timeline for procurement of a Purchase Order
- Other authority permits required for the relocation
- Utility relocation construction dependencies
- Land acquisition completion
- Utility relocation construction scheduling
- Material ordering
- Relocation cost sharing
- Test hole requirements for utility relocation design. This should be completed shortly after the 60% civil design since utilities may require the test pitting information to start utility relocation design
- Discuss constructability issues associated with working around utilities.
- Opportunities for York Region to embed utility works into the project's tender

For the Region to proceed with the utility relocation for this project we require that **(utility agency)** submit their initial design drawings to the Region within the time period negotiated at the 60% Detail Design Utility Coordination meeting. The final cost estimate is to be submitted to the Region within 2 to 4 weeks after receiving acceptance of the relocation design by the Region's project manager.

If you have any questions, do not hesitate to call the undersigned.

Regards,

03-Feb-2012

Ms. Barbara Adams
Coordinator Distribution Records
Enbridge Gas Distribution
500 Consumers Road
Suite No 4th Floor Post B7
North York ON
M3J 1P8

Dear Ms. Adams,

**Re: Proposed Insulation for Existing Road Crossing Gas Main
Rutherford Road (Y.R. 73) and Bathurst Street
City of Vaughan
RIN # 73-22 to 73-22
Applicant file no. 8094909
Region file no. W052012045
Capital Project no. 85580**

I am returning one (1) copy of your drawing 1 of 1 to construct and maintain the Proposed Insulation for Existing Road Crossing Gas Main , approved on behalf of the Regional Municipality of York, "as noted in red", subject to the following:

Special Conditions :

1. **Prior to obtaining a Road Occupancy Permit a traffic control plan must be submitted to the Region's Roads Maintenance section for review and acceptance.**
2. **It is our understanding that the utility owner is aware that the construction of Rutherford Road is tentatively scheduled to be reconstructed in 2017. It may be necessary to relocate portions of your facilities to accommodate this work. These relocations shall be at no cost to the Regional Municipality of York. For further information regarding the proposed timing of this project, contact Mr.Lloyd Fernandes (extension 5941) at this office.**

Drawings :

3. As Constructed drawings shall be forwarded to this office upon completion of the proposed works, as per Regional Council directive dated July 10, 1997.
4. The applicant shall be responsible for ensuring that the Region's redlined comments are transferred to the proposal drawings prior to issuing drawings for construction by his Contractor or his own forces The applicant shall submit the revised proposal drawings to the Region within 10 days of

LETTER (13) – Region’s Purchase Order



CONTRACT

9420

Regional Municipality of York
17250 Yonge Street
Newmarket ON L3Y 6Z1 Canada

Vendor ID: 1000518
Enbridge Consumers Gas
500 Consumers Road
North York ON M2J 1P8 Canada

Contract ID B8200	Page 1
Description: 9th L. Hwy 407 to Markham B-P	Contract Maximum \$1,512,380.00
Ship To:	Transportation & Works Dept. Regional Municipality of York 17250 Yonge Street Newmarket ON L3Y 6Z1 Canada
Bill To:	Regional Municipality of York 17250 Yonge Street Newmarket ON L3Y 6Z1 Canada

Term of Contract: Mar 02, 04 to Dec 31, 08
Last Updated: Nov 19, 07
Vendor/Req/Doc#: A010857

Attention: Robinson, Grant 9058304444 x5946
Purchasing Analyst: Hope, Susan 9058304444 x1695
Internal Contract Ref:

Line	Description
------	-------------

1 9th L. Hwy 407 to Markham B-P

Revised: November 19, 2007 - Extended the term of contract from December 31, 2007 to December 31, 2008.
Revised: August 8, 2007 - Term of contract: extended from June 30, 2007 to December 31, 2007.
Revised: May 29, 2006
Contract end date has been extended to June 30, 2007

For the relocation of existing gas facilities to accommodate proposed widening of Ninth Line, Hwy. 407 to Markham By-Pass, as per quotation dated February 26, 2004.

Total Contract not to exceed \$1,512,380.00 excluding applicable taxes, without the prior approval of York Region's Supplies and Services Branch.

The Region of York does not guarantee that this total amount will be spent during this time period.

This Blanket Purchase Order Number must appear on all invoices to ensure prompt payment.

The Region reserves the right to cancel all or any part of this contract at anytime. Any changes to this Blanket Purchase Order contract must be authorized by the Supplies and Services Branch.

Authorized Signature

c.c. **York Region’s Utility Plans Coordinator**

LETTER (15) – Request for Final Invoice



Transportation Services Department
Capital Planning & Delivery Branch

Date

Utility Agency Name
Street Name
Town, Province
Postal Code

Attn: Utility Contact Name

RE: Project Name & York Region Project No.

This is a request for the final utility relocation invoice for the above noted work under York Region Purchase Order # **(insert P.O .number)**. Please forward this final invoice within 30 days in order for the Region to process payment and close the Purchase Order.

If you have any questions please do not hesitate to call the undersigned.

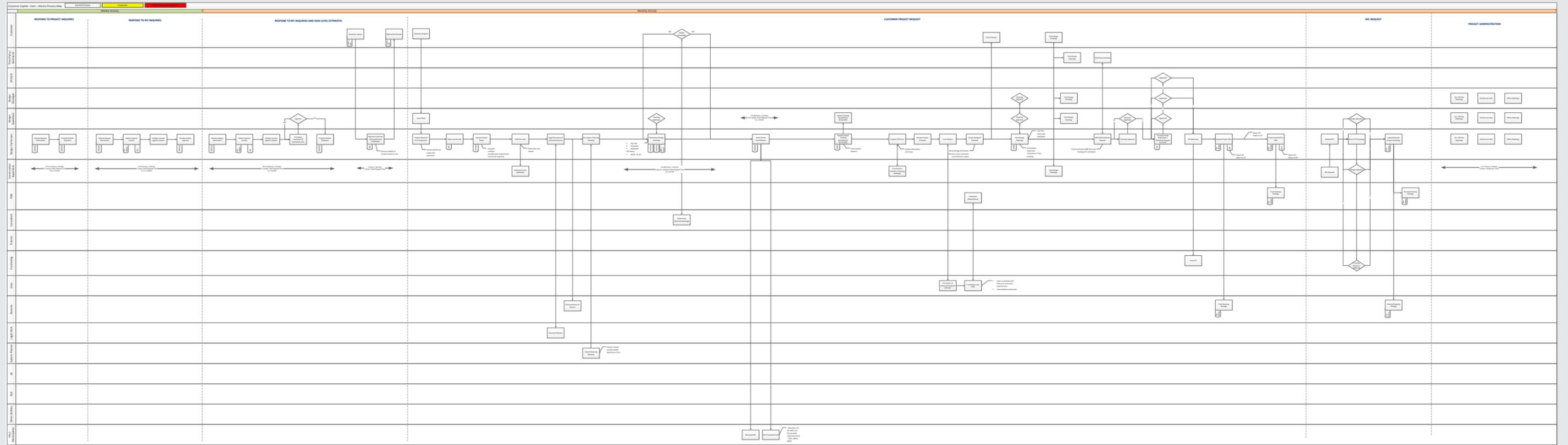
Regards,

York Region's Project Manager (Capital Planning and Delivery)

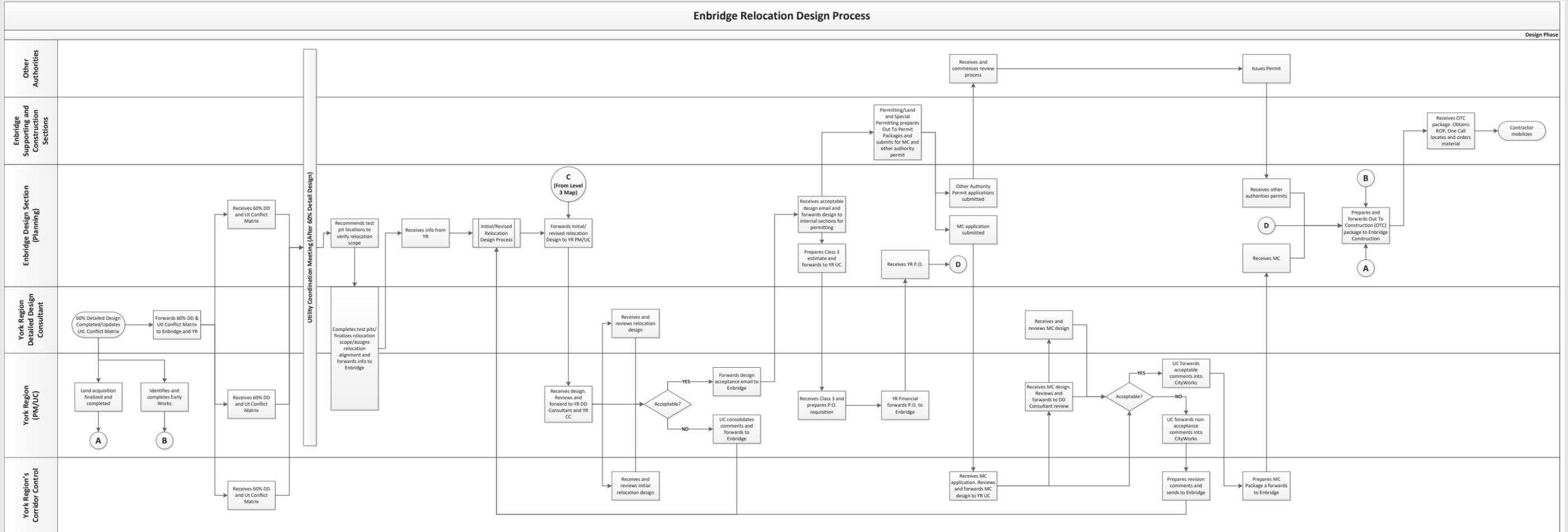
c.c. **York Region's Detail Design Consultant**
York Region's Utility Plans Coordinator

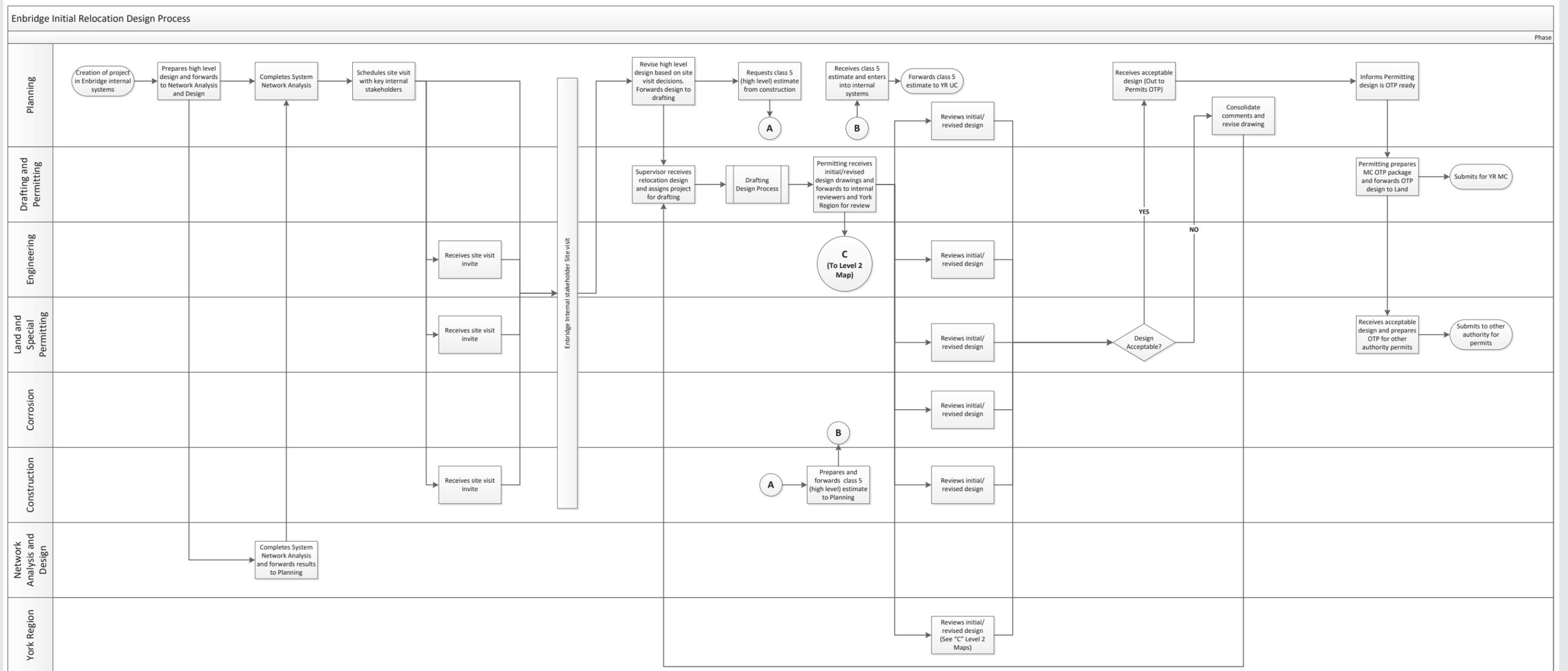
APPENDIX M: UTILITY AGENCY RELOCATION DESIGN PROCESS

ALECTRA UTILITIES

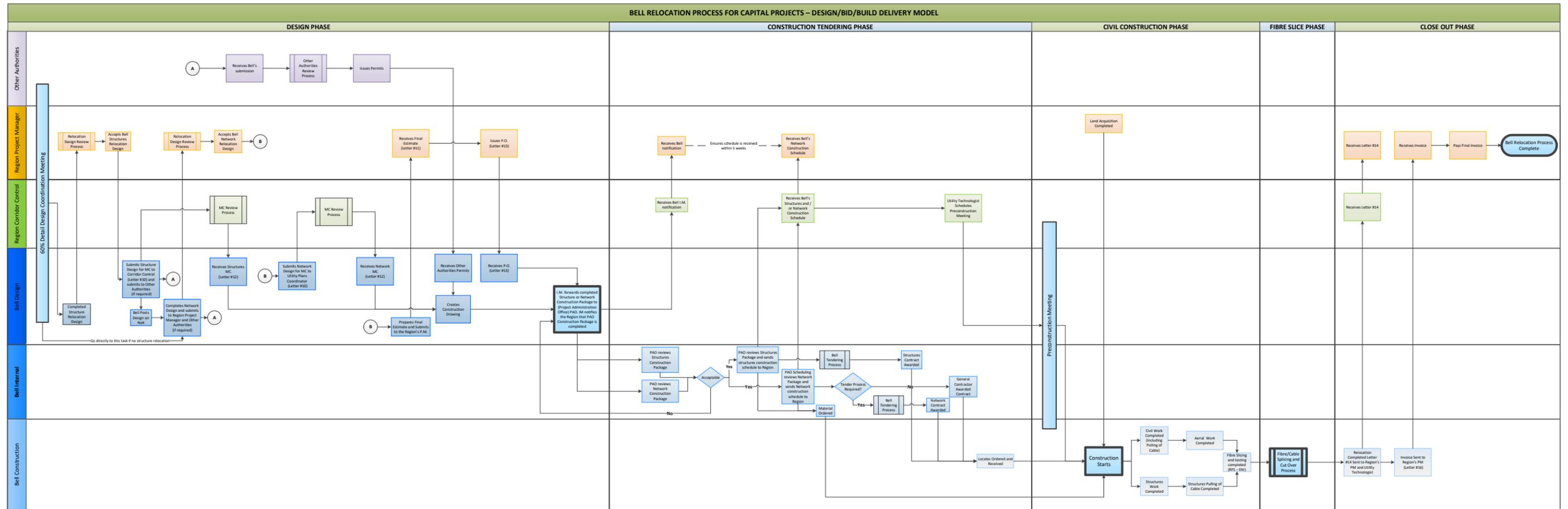


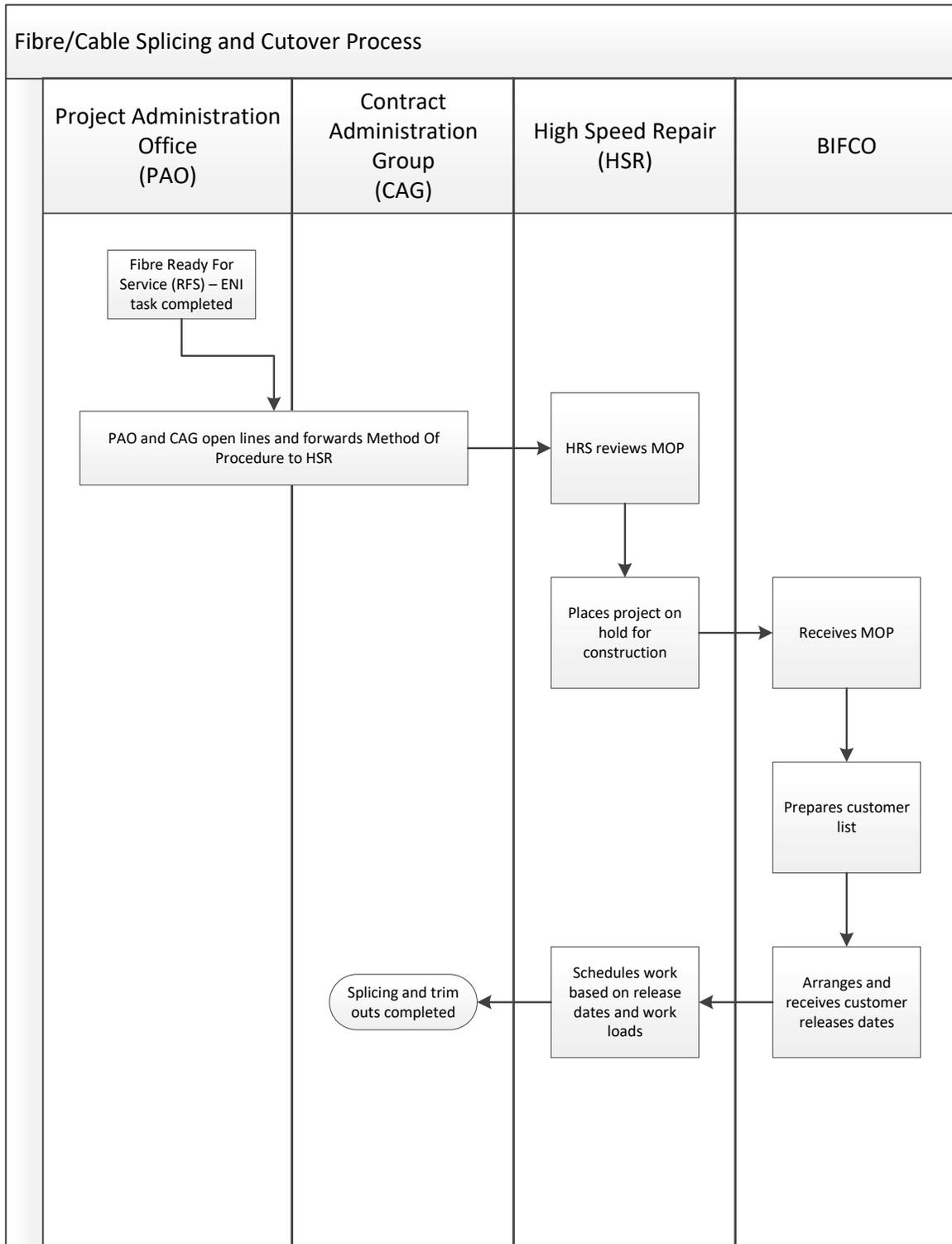
Enbridge Relocation Design Process

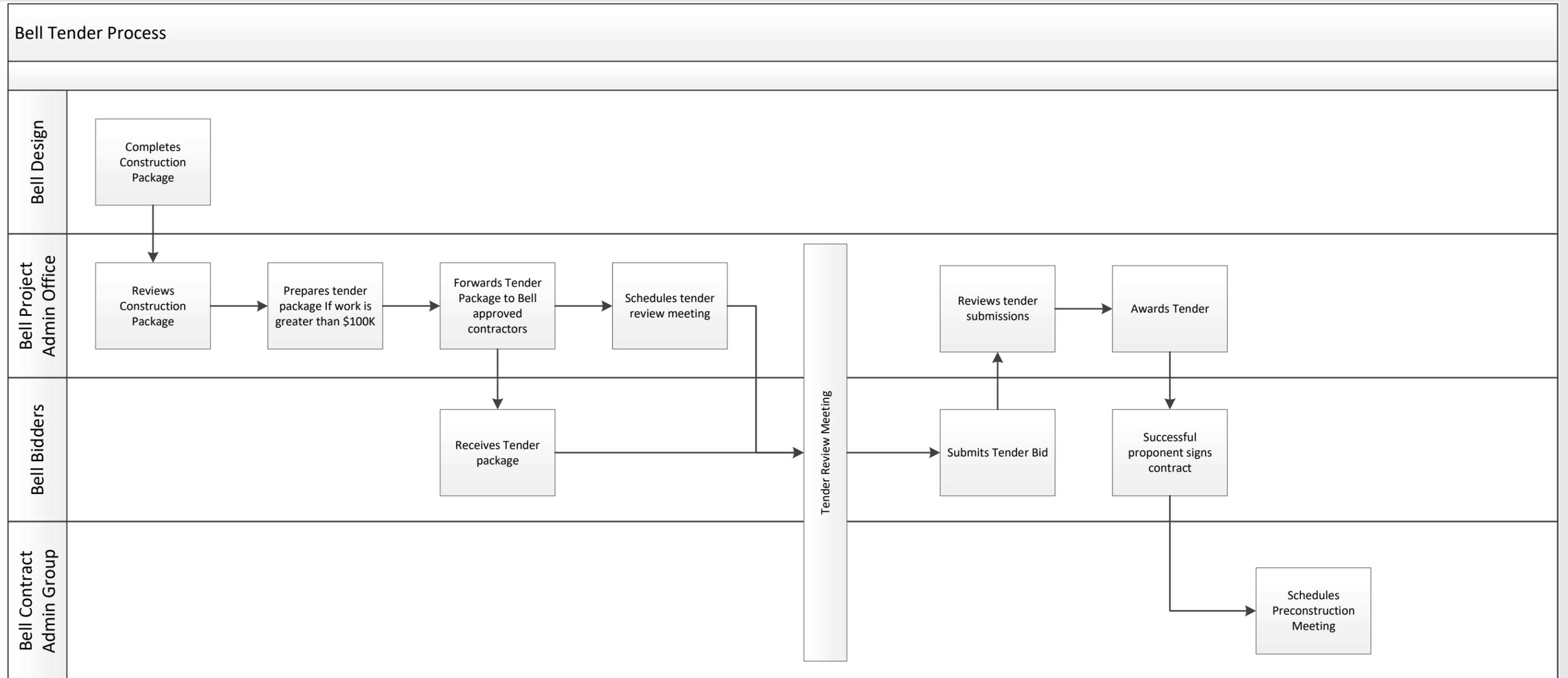


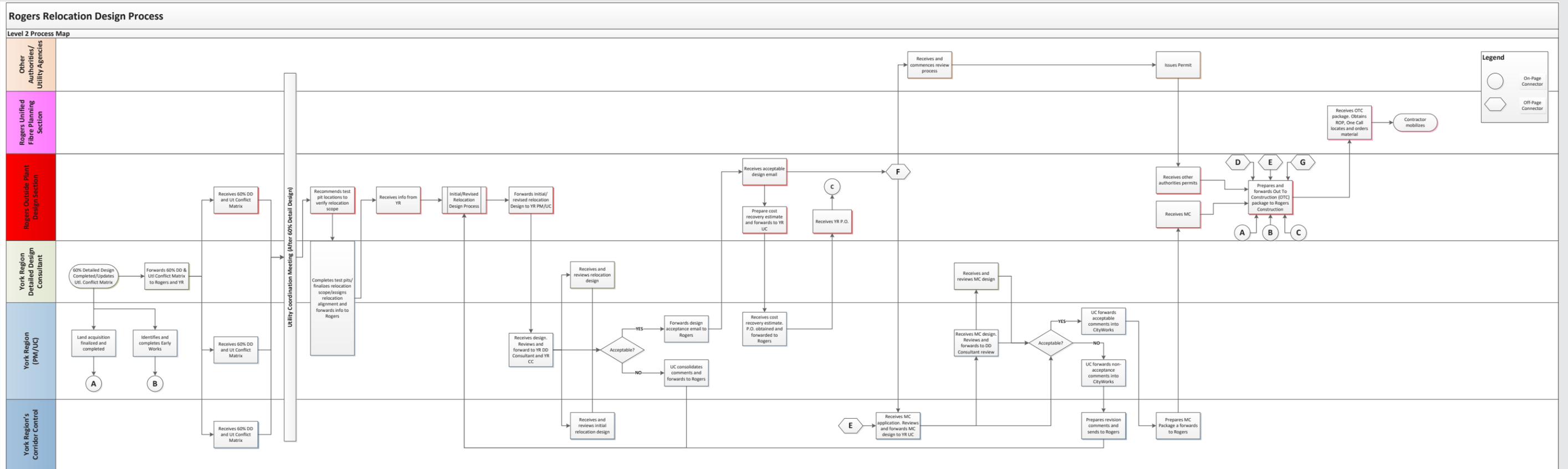


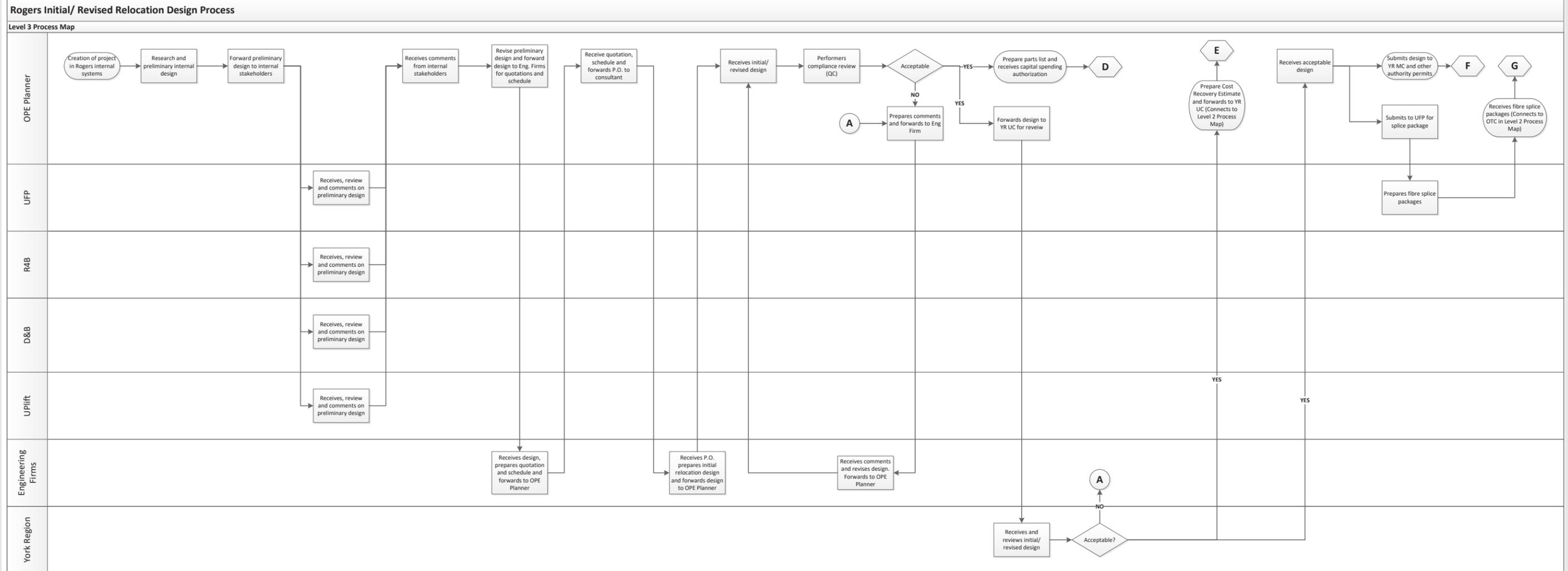
BELL RELOCATION PROCESS FOR CAPITAL PROJECTS – DESIGN/BID/BUILD DELIVERY MODEL



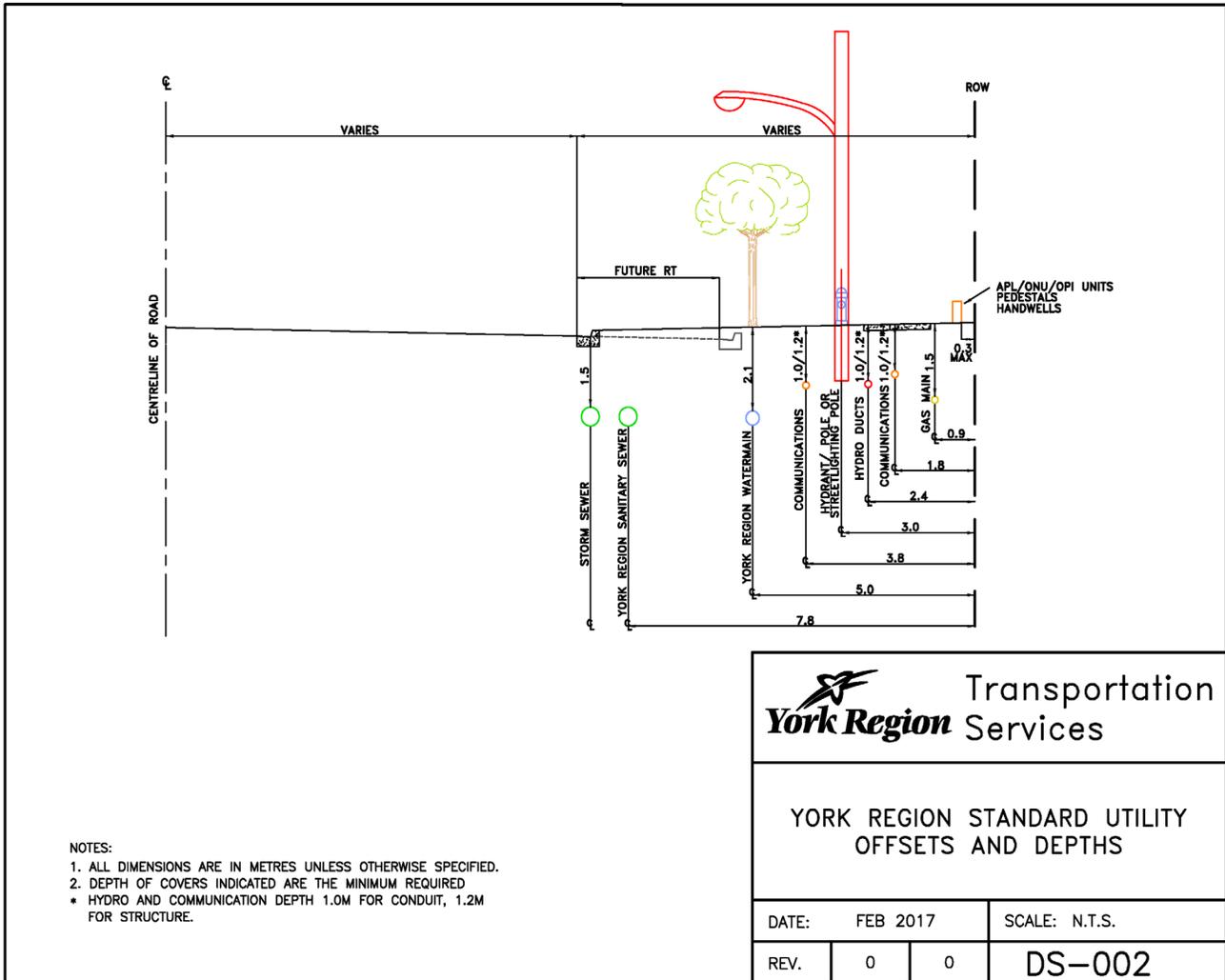








APPENDIX N: YORK REGION STANDARD UTILITY CORRIDOR DRAWING



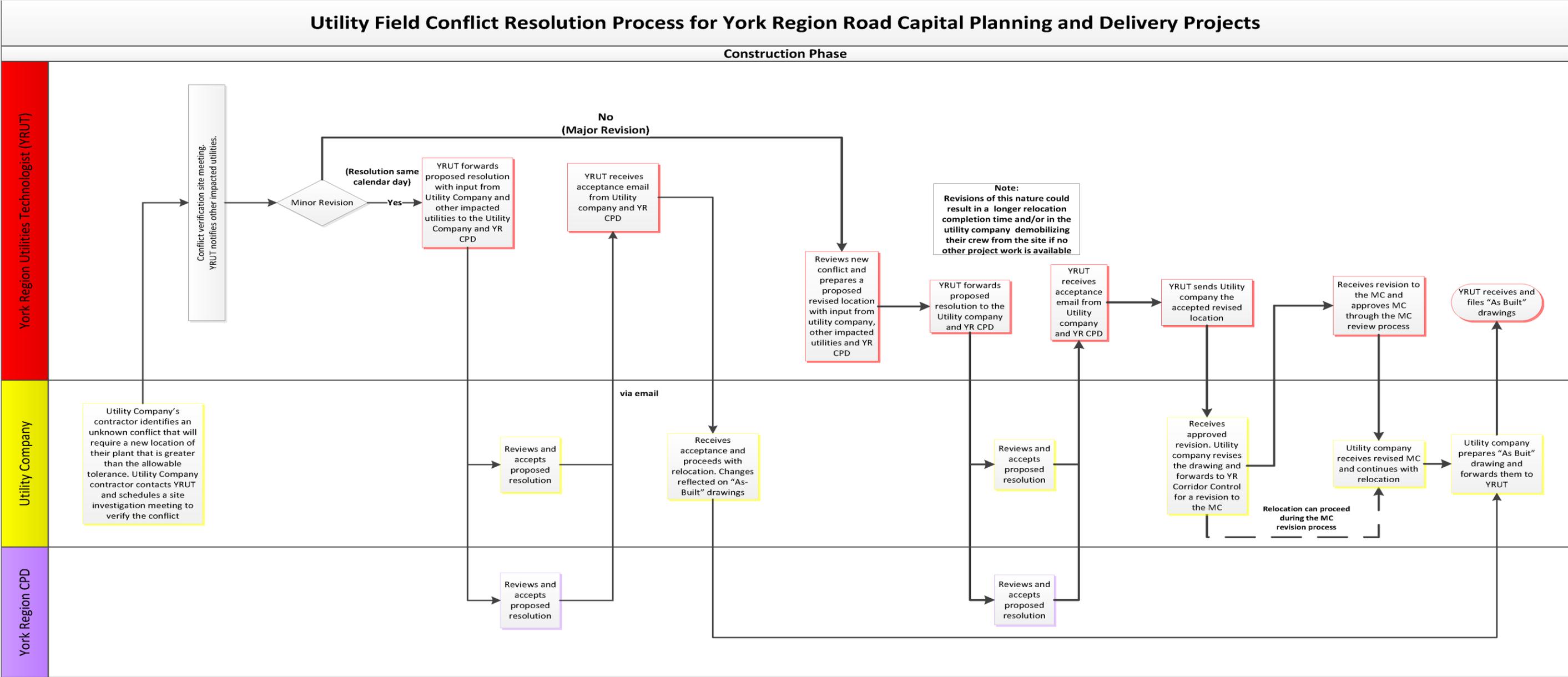
NOTES:
 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 2. DEPTH OF COVERS INDICATED ARE THE MINIMUM REQUIRED
 * HYDRO AND COMMUNICATION DEPTH 1.0M FOR CONDUIT, 1.2M FOR STRUCTURE.



YORK REGION STANDARD UTILITY OFFSETS AND DEPTHS

DATE:	FEB 2017	SCALE:	N.T.S.
REV.	0	0	DS-002

APPENDIX O: YORK REGION UTILITY FIELD CONFLICT RESOLUTION PROCESS



APPENDIX P: YORK REGION MINIMUM CLEARANCE

Vertical and Horizontal Clearance Guidelines

All Dimensions in Millimetres (mm)	Preferred Minimum Vertical Clearance	Preferred Minimum Horizontal Clearance
Gas		
Gas Main less than NPS 12 (300 mm) - Open Trench	300	600
Gas Main less than NPS 12 (300 mm) - Directional Drilling/Boring	500	1000
Gas Main NPS 12 and greater - Open Trench	600	600
NEB Regulated Pipelines and Vital Mains - Open Trench	600	1000
All mains - Directional Drilling/Boring	500	1000
Regulator Stations		1000
Cover - Under roadways/road crossings	1500	
Cover - Under ditchline	1000	
Cover - Under boulevard	1500	
Telecommunications		
Direct Buried Cable or Conduit - Open Trench	300	600*
Cover - Under roadways/road crossings	1500	
Cover - Under ditchline	900	
Cover - Under boulevard	1000	
Concrete Encased Ductbank - Open Trench	300	600*
Cover - Under roadways/road crossings	1500	
Cover - Under ditchline	900	
Cover - Under boulevard	1200	
All infrastructure - Directional Drilling/Boring	500	1000
Manhole Chambers		600
Clearance from Pedestals/GLBs to sidewalks		300
*Horizontal Clearance between telecom companies is minimum 300mm		
Hydro		
Poles		600
Direct Buried Cable or Conduit - Open Trench	300	600
Cover - Under roadways/road crossings	1500	
Cover - Under ditchline	900	
Cover - Under boulevard	1200	
Concrete Encased Ductbank - Open Trench	300	600
Cover - Under roadways/road crossings	1500	
Cover - Under ditchline	900	
Cover - Under boulevard	1200	
All infrastructure - Directional Drilling/Boring	500	1000
Transformer		1000
Switchgear		1000
Clearance from face of pole to edge of sidewalk		300
Clearance from face of pole to back of curb		1000
For all aerial clearances, please refer to OPSD 217.030 and for Fire Route Accesses, please refer to Ontario Building Code 2012 s. 3.2.5.6		

Vertical and Horizontal Clearance Guidelines

All Dimensions in Millimetres (mm)	Preferred Minimum Vertical Clearance	Preferred Minimum Horizontal Clearance
Watermain		
Clearance from Storm/Sanitary Sewers	500	2500
Clearance from dry utilities - Open Trench	300	1000
Clearance from dry utilities - Directional Drilling/Boring	500	1000
Valve Chamber		600
Storm Sewer		
Clearance from Watermains	500	2500
Clearance from Sanitary Sewers - Open Trench	300	600
Clearance from Sanitary Sewers - Directional Drilling/Boring	500	1000
Clearance from dry utilities - Open Trench	300	600
Clearance from dry utilities - Directional Drilling/Boring	500	1000
Maintenance Hole		600
Sanitary Sewer		
Clearance from Watermains	500	2500
Clearance from Storm Sewers - Open Trench	300	600
Clearance from Storm Sewers - Directional Drilling/Boring	500	1000
Clearance from dry utilities - Open Trench	300	600
Clearance from dry utilities - Directional Drilling/Boring	500	1000
Maintenance Hole		600
Traffic Signals		
Traffic signal duct	300	600
Above-ground plant clearance from Traffic Signal Poles		500

*Preferred clearances may be reduced with written permission of the affected plant owner(s)

**All Regional Roads are classified as Fire Access Routes

***Clearances between watermains and sewers are requirements of the MOECC

APPENDIX Q: YORK REGION STANDARD UTILITY RELOCATION ESTIMATE FORM



Standard Utility Relocation Estimate Form

Project Info	Project Number	_____
	Road Number and Name	_____
	Project Manager	_____

Utility Info	Utility Name	_____
	Utility Address	_____
	Utility Contact	_____
	Phone Number	_____
	Email Address	_____

Description of Work	<i>i.e.</i> <i>Number of poles, guys, anchors and transformers</i> <i>Conduit/gas main length, material and diameter</i> <i>Structure size and length</i> <i>Number of GLBs, pedestals, vaults, cabinets and MHs</i>
---------------------	--

- (Check the appropriate box)
- PSWHA Cost Sharing (50% Labour and Equipment)
- Sliding Scale Cost Sharing
- Gas Franchise Cost Sharing

<u>Labour and Equipment</u>	<u>Total</u>	<u>Region's Share</u>
Construction Labour and Equipment	_____	_____
<u>Materials and Supply</u>		
Material Cost	_____	_____
<u>Other</u>		
Easement Acquisition Expenses	_____	_____
Tree Trimming/Clearing	_____	_____
Additional Pole Height/ # of poles to accommodate streetlighting	_____	_____
<u>Less Betterment</u>		
Betterment- Labour	_____	_____
Betterment- Materials	_____	_____
<u>Net Cost to Region</u>		_____

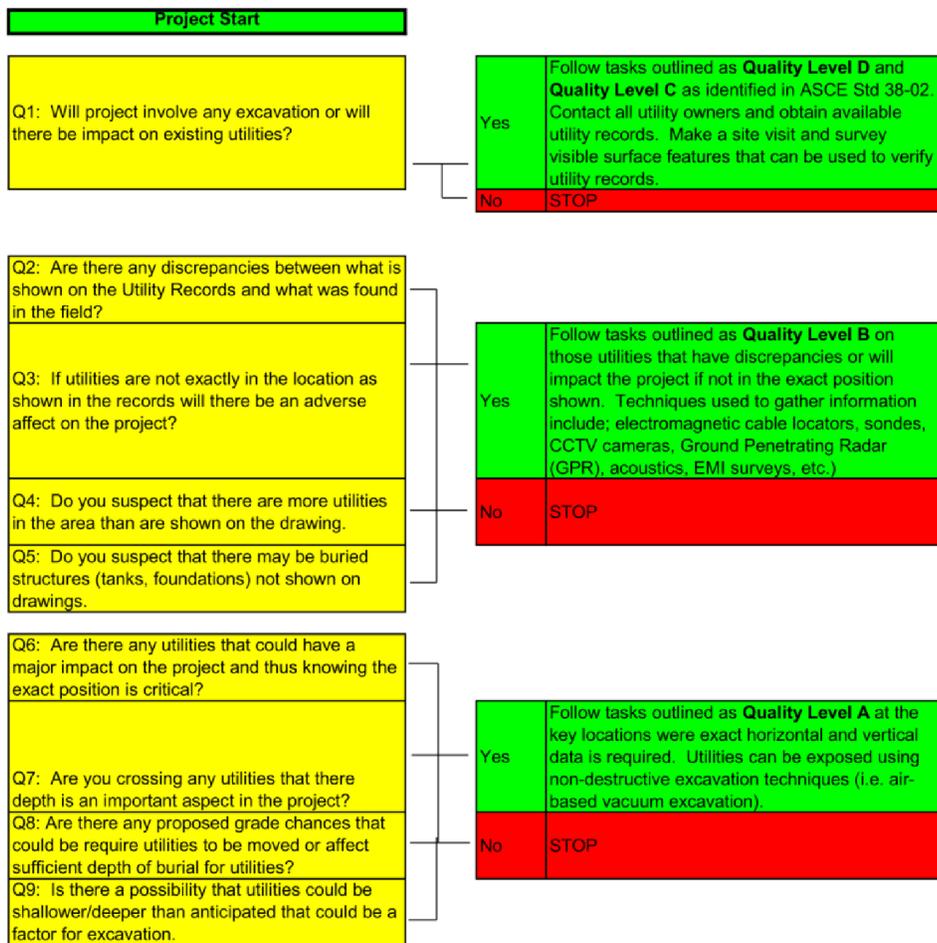
APPENDIX R: SUE – DECISION MAKING PROCESS

A.2 SUE - Decision Making Process

The decision making process with respect to Subsurface Utility Investigations and the best Quality Level Choice for a particular project is covered in Section 3.4 - Investigation Methodology. Where any ambiguity remains with regard to which Quality Level is the best choice for a particular project, the use of the chart below is critical.

Subsurface Utility Engineering Investigations

Questions that should be asked to help determine what Quality Level of Information is required.

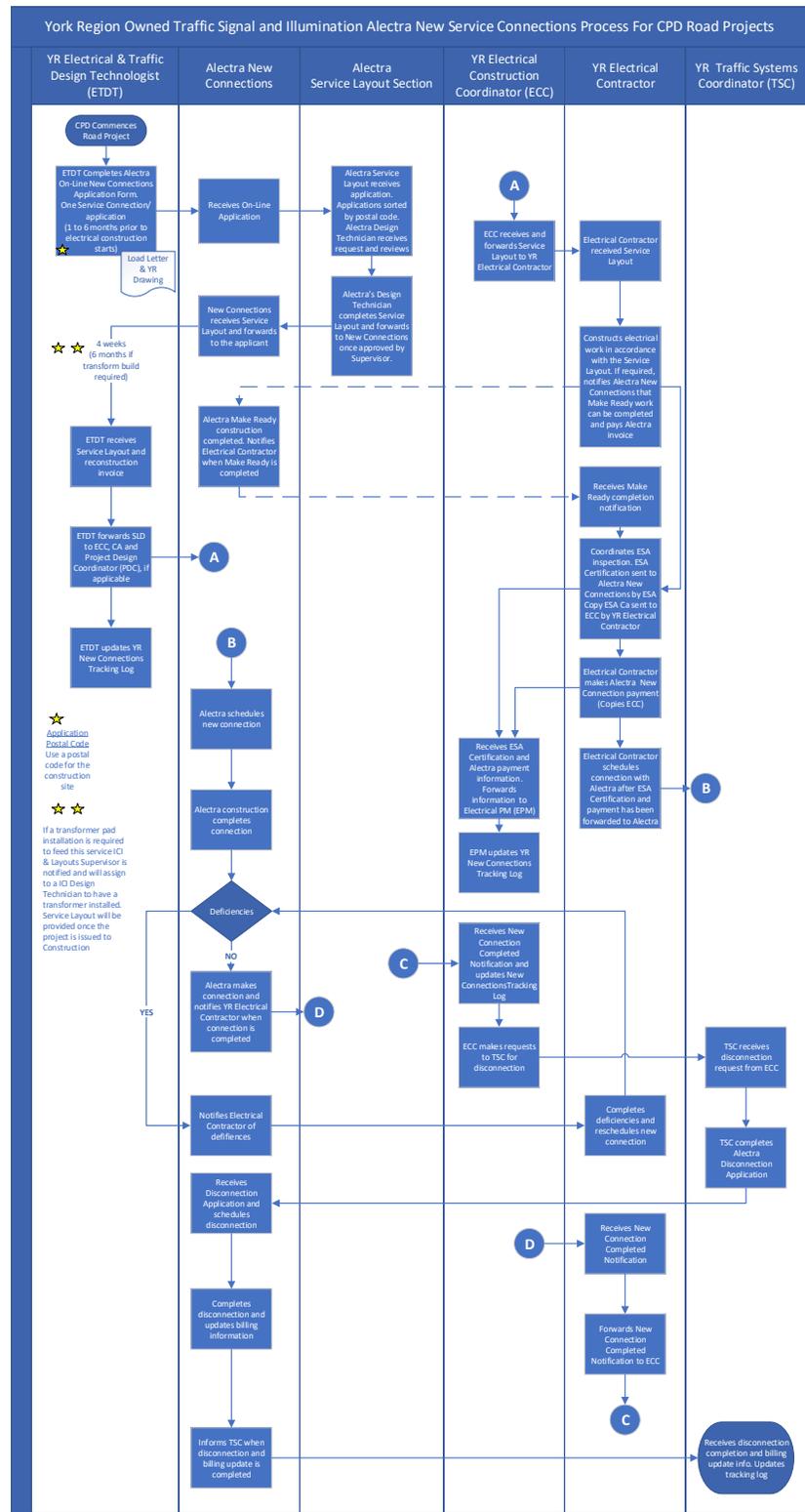


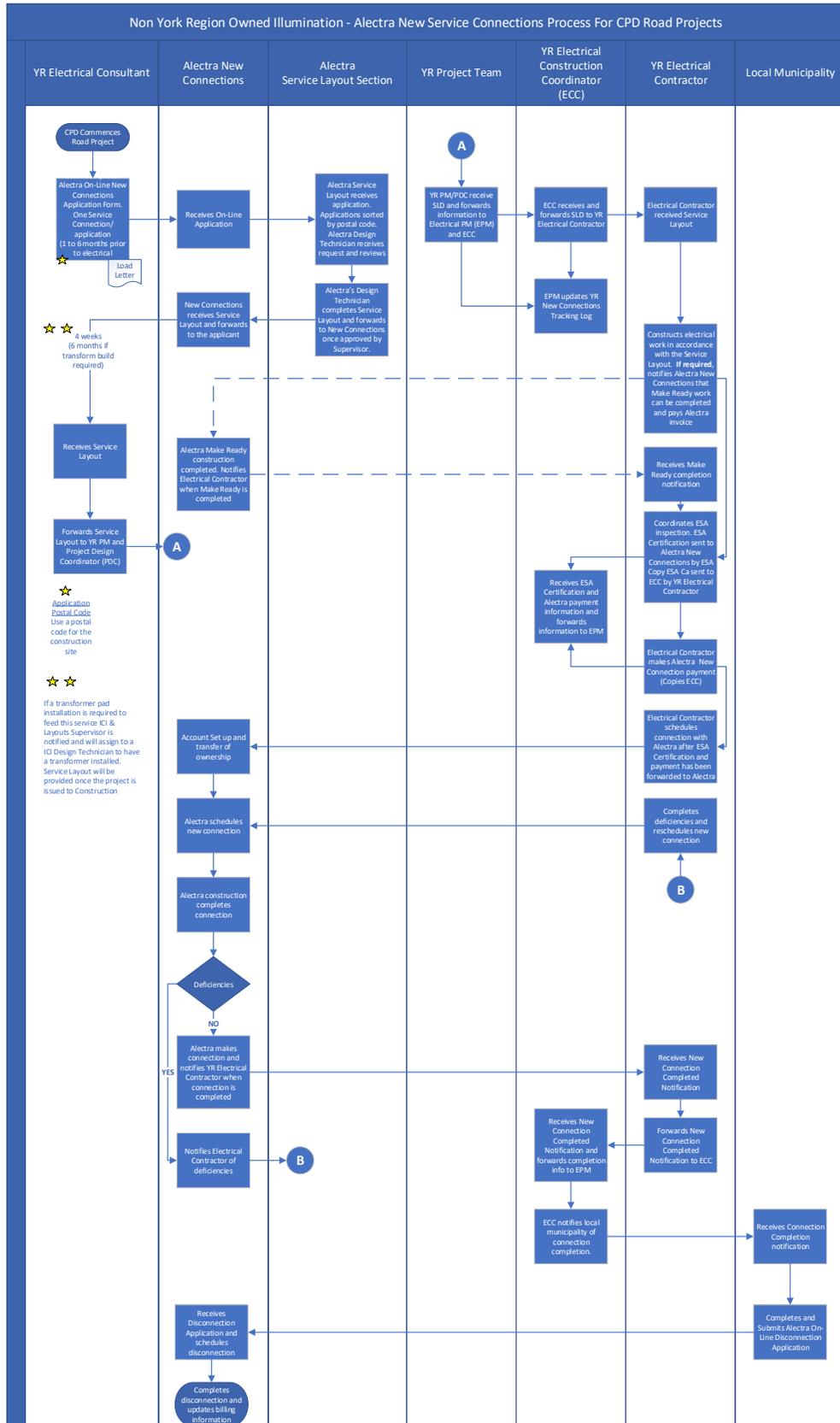
Additional Questions to Consider

- What is the overall dollar value of project? - Balancing cost for investigation vs. overall cost of project.
- What is the overall importance of project? - How will running into utility problems which increase costs, and delay project completion be perceived.
- What is the potential safety risks involved with the project? - What type of utilities are present?

APPENDIX S: ALECTRA NEW CONNECTIONS PROCESS

(York Region Owned)





APPENDIX T: SAMPLE UTILITY RISK ASSESSMENT MATRIX

Project No.:	
Project Name:	
Client:	
Project Manager:	

Utility Risk Register

RISK IDENTIFICATION							QUALITATIVE ANALYSIS			RESPONSE PLANNING			
Risk ID	Date	Risk Description	Impact Description	Stakeholders	Category	Project Phase	Probability (1-3)	Severity (1-3)	Risk Rating		Risk Management Strategy	Response Strategy/Resolution	Risk Owner
1							1	1	1	Low			
2													
3													
4													
5													
6													
7													
8													

Risk Matrix				
Probability of Occurrence	High (3) > 50%	Medium	High	High
	Medium (2) 10% - 50%	Low	Medium	High
	Low (1) < 10%	Low	Low	Medium
		Low (1) < \$25k	Medium (2) \$25k to \$100k	High (3) > \$100k
	Low (1) < 4 Weeks	Medium (2) 4-12 Weeks	High (3) > \$100k	
Severity (Magnitude of Financial/Schedule impact)				

Legend	
Categories	Project Phases
1) Schedule	0) All
2) Funding	1) EA Initiation
3) Technical	2) EA Execution
4) Resource	3) EA Filing
5) Regulatory	4) Detailed Design
6) Communication	5) Construction

Legend
Strategies
1) Avoid
2) Transfer
3) Mitigate/Enhance
4) Accept

APPENDIX U: ALECTRA JOINT USE GUIDELINE

Alectra Joint Use Pole Attachment Guidelines

[CLICK HERE TO VIEW ATTACHMENT](#)

December, 2020

APPENDIX V: UTILITY CO-ORDINATION MEETINGS AGENDA ITEMS

30% DETAILED DESIGN (DD) UTILITY CO-ORDINATION MEETING AGENDA

TYPICAL AGENDA ITEMS FOR 30% DD UTILITY CO-ORDINATION MEETING

- The accuracy of the utility plant on the 30% detail design drawings
- The potential utility conflicts and their mitigation
- Possible early utility design tasks that can be completed at this stage
- Betterments to the existing utility infrastructure (preliminary)
- Illumination / Traffic Signal attachments to hydro poles
- Future test pitting requirements
- Land acquisition issues
- Other authority permits required for the relocation
- High level cost estimates and scheduling requirements (It may be premature for some utility agencies to provide and high-level estimate and schedule at the 30% DD milestone)
- Material ordering requirements
- Relocation cost sharing
- Design team and utility agencies contacts for the project

TYPICAL AGENDA ITEMS FOR 60% DD UTILITY CO-ORDINATION MEETING

- Utility conflicts and mitigations (utilize CUP to facilitate discussions)
- Additional cross section / profile / cut and fill requirements for utility relocation design
- Betterments to the existing utility infrastructure (finalize)
- Illumination / Traffic Signal attachment to hydro pole requirements (if necessary)
- Initial relocation design submission timeline
- Final cost estimate submission timeline for procurement of a Purchase Order
- Other authority permits required for the relocation
- Utility relocation construction dependencies
- Land acquisition completion
- Utility relocation construction scheduling
- Material ordering
- Relocation cost sharing
- Test hole requirements for utility relocation design. This should be completed shortly after the 60% civil design since utilities may require the test pitting information to start utility relocation design
- Discuss constructability issues associated with working around utilities.
- Opportunities for York Region to embed utility works into the project's tender

TYPICAL AGENDA ITEMS FOR UTILITY PRECONSTRUCTION AND UTILITY CONSTRUCTION PROGRESS MEETINGS

- Health and Safety
- Communication protocols and complaints received
- Utility construction dependencies status
 - » Land
 - » Municipal Consents
 - » Permits
 - » Other utility's construction
- Utility construction schedule review
 - » Overall schedule
 - » 2- or 3-Week Work Plan
- Scope and / or Municipal Consent (Alignment) Changes
- New Business

