

Capital Coordination Protocol

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1. Introduction

1.1. Purpose

The purpose of this manual is to:

- 1) outline the tasks required to develop and maintain a five-year coordinated capital program;
- 2) identify participants and their roles, responsibilities and accountabilities through the capital coordination process; and
- 3) outline the metrics and reports used to monitor the effectiveness of the process.

It should be noted that some of the processes in the capital coordination process are evolving and improving as needed to address operational requirements and limitations with an end goal to adhere to the protocols as defined in this document.

1.2. Authority

In the March 2013 Program Review Final Report, PPF&A's recommendations, as they pertain to capital coordination, was that MCIC's mandate would include responsibilities for:

- managing the capital planning and coordination process;
- leading in all discussion concerning capital coordination involving the TTC, Metrolinx and the utility companies;
- developing detailed descriptions of roles and responsibilities to accompany process documentation;
- developing a conflict resolution process and escalation procedures to clearly articulate the decision making process in situations where the parties involved are unable to come to a mutual agreement; and
- developing capital coordination performance measures and benchmarks.

1.3. Governance of the Capital Coordination Process

Although lead and managed by the MCIC office, the Capital Coordination Process is overseen by two committees:

- 1) Capital Coordination Directors Committee; and
- 2) Capital Program Coordination Working Group

1.3.1. Capital Coordination Directors Committee

The Capital Coordination Directors Committee meets monthly with a mandate:

- a) To ensure that the Council mandate regarding the implementation for the capital works program is achieved;

- b) To facilitate communication amongst inter-divisional stakeholders for capital program coordination;
- c) To develop policy and framework to support the implementation and delivery of the City's capital work programs.

The CCDC is chaired by MCIC and its members include senior staff from the asset owners and delivery agents. Pending the agenda items, guests are often invited from PPFA, Legal and IT. For a full list of members, see Appendix C.

1.3.2. Capital Program Coordination Working Group

The Capital Program Coordination Working Group (CPCWG) meets monthly or as required with a mandate:

- a) To develop strategies for the coordination of the 5year capital work programs;
- b) To facilitate coordination of programs amongst internal stakeholders;
- c) To develop standards for he effective and efficient coordination of the City's capital work programs.

The CPCWG is chaired by MCIC and its members include the asset owners, delivery agents and includes representation from IT. For a list of members, see Appendix C.

1.4. Development of the Capital Coordination Process

The capital coordination process outlined within this manual has been developed through extensive consultation and collaboration with the CPCWG.

Any future changes to this manual will be introduced through the CPCWG.

1.5. Background

Annually, the City spends more than one billion dollars on capital projects within, or impacting, the municipal right-of-way including the renewal of over 250 km of roadway and 300 km of watermain and sewers. Over the next ten years, the City of Toronto's capital budgets are expected to exceed \$20 billion. That investment is amplified by the construction of new and expanded utilities and transit infrastructure by other organizations such as Metrolinx and the Toronto Transit Commission. Collectively, these investments impact roughly 4,000 locations and hundreds of kilometres of the City's roads and bridges each year. The City's existing infrastructure is aging, and the pace and value of new construction is increasing. All this requires proactive coordination to ensure that approved capital budgets are spent efficiently, capital projects are delivered effectively, conflicts are avoided, and disruption to the public is minimized. Although some coordination mechanisms had been in place, none were designed to support the large volumes and scale of the capital works construction that is expected in the next ten years.

Historically, in-year changes had been the primary cause of delays in construction completion. To address these systemic deficiencies, in 2007, City Council passed decision PW7.6, adopting a

plan to develop and implement a joint capital works program planning and coordination process. In 2008, Major Capital Infrastructure Coordination Office (MCIC) was established within the Office of the Deputy City Manager, Cluster B.

MCIC operates at a high level of autonomy and independence. Removed from the delivery of capital works project, MCIC serves as a facilitator and an arbitrator in conflict resolution for a variety of asset owners (see *Figure 1*).

MCIC's program coordination role begins five-years prior to the planned construction year for capital works projects. MCIC works with the asset owners and key stakeholders to review planned capital works programs well in advance of any construction with the focus being on scheduling capital projects in a logical and cost-effective sequence that reduces potential conflicts and maximizes opportunities. MCIC then monitors the progress of the coordinated program as it advances through the clearances, design, and construction phases in later years.

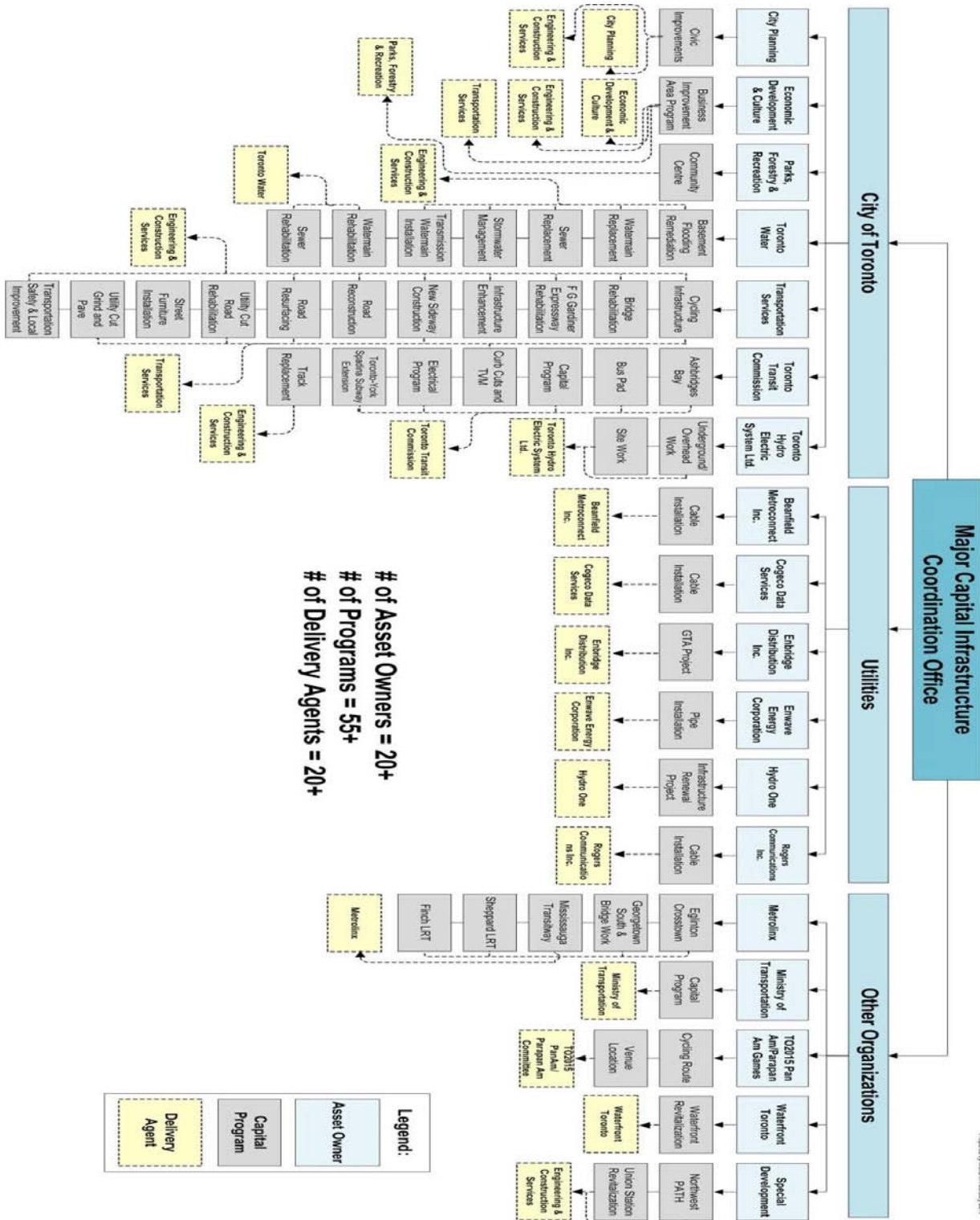


Figure 1: Complexity of Capital Coordinations

note: the programs coordinated through the coordination process may change based on divisional or budgetary structure.

1.6. Clarity of Terms (for a complete glossary, visit the MCIC webpage)

Capital projects vs. operational work – Capital projects are infrastructure replacements, rehabilitations or installations that are planned and coordinated through the coordinated capital program. Operational work is reactive with short turn-around time and is not coordinated through the capital coordination process.

Clearance – concurrence from an asset owner that they have reviewed their infrastructure needs against other's programs have identified all interests.

Coordination – is the review and adjustment of project requirements to take advantage of opportunities and/or resolve conflicts as it pertains to their delivery.

Program coordination – sets a framework for projects to be introduced and cleared into the rolling five-year capital program.

Project conflicts – projects whose uncoordinated delivery will result in negative impacts to neighborhoods, traffic disruption, and/or service delays (e.g. parallel roads done simultaneously; multiple projects in one neighborhood; multiple projects impacting a single transit route).

Project coordination – is the resolution of project specific requirements in order to deliver a project.

Project opportunities – bundling of work to take advantage of project overhead costs, eliminate the need to perform rework and minimize the need to disrupt the neighborhood in the near future (e.g. advance watermain to coincide with road reconstruction; defer road reconstruction to allow for completion of gas main replacement; deliver streetscape, sidewalk and cycling enhancements with roadwork).

Project Requirement: - All project details that asset owners use to define the project, including but not limited to:

- Location and Limits
- Work type
- Scope
- Budget
- Work year start
- Work year end

1.7. Participants and Accountability

	What are they?	Who are they?	Roles in coordination
Asset Owners	The units or agencies that represent funded programs that impact infrastructure within the City's right-of-way	<ul style="list-style-type: none"> Transportation Infrastructure Management, Water Infrastructure Management, Public Realm, Traffic Management Centre City Planning (Urban Design), City Planning, (Development) Economic Development & Culture (BIA office), Parks, Forestry & Recreation, TTC, Toronto Hydro, Rogers, Bell, and other 3rd party agencies 	Accountable to identify and update project limits, scope, budget, and delivery year throughout the life of projects. This includes clear other capital programs and reviewing projects for opportunities and conflicts
Stakeholders	The units, groups, or individuals that identify unfunded requirements for projects	<ul style="list-style-type: none"> Councillors, community groups, Business Improvement Areas (BIAs), Workzone Coordinators Operational units (TW ops, Road ops, Traffic ops, Traffic Safety unit, etc) 	Responsible to review programmed projects and propose project requirements to the asset owners
Coordination Facilitators	Facilitators of the outlined capital coordination process	<ul style="list-style-type: none"> MCIC supported by IT, asset owners and delivery agents 	Accountable to develop the framework for capital coordination to consolidate a five-year infrastructure plan, facilitate the development of the coordinated capital program, provide the necessary tools required for coordination and communication (ward lists), and report on the performance of the coordination process

Delivery Agents	The units or agencies that deliver the projects identified in the coordinated capital program	<ul style="list-style-type: none"> ▪ Engineering & Construction Services (ECS), Design and Construction, Development Engineering ▪ Asset owners (TW MCP, Road ops, etc), ▪ 3rd party agencies 	Responsible for in-year project coordination and to support asset owners in the programming of their infrastructure to ensure projects are deliverable as identified
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Note: Some organization may provide a single contact to represent their various roles (asset owners, stakeholders, and delivery agents).

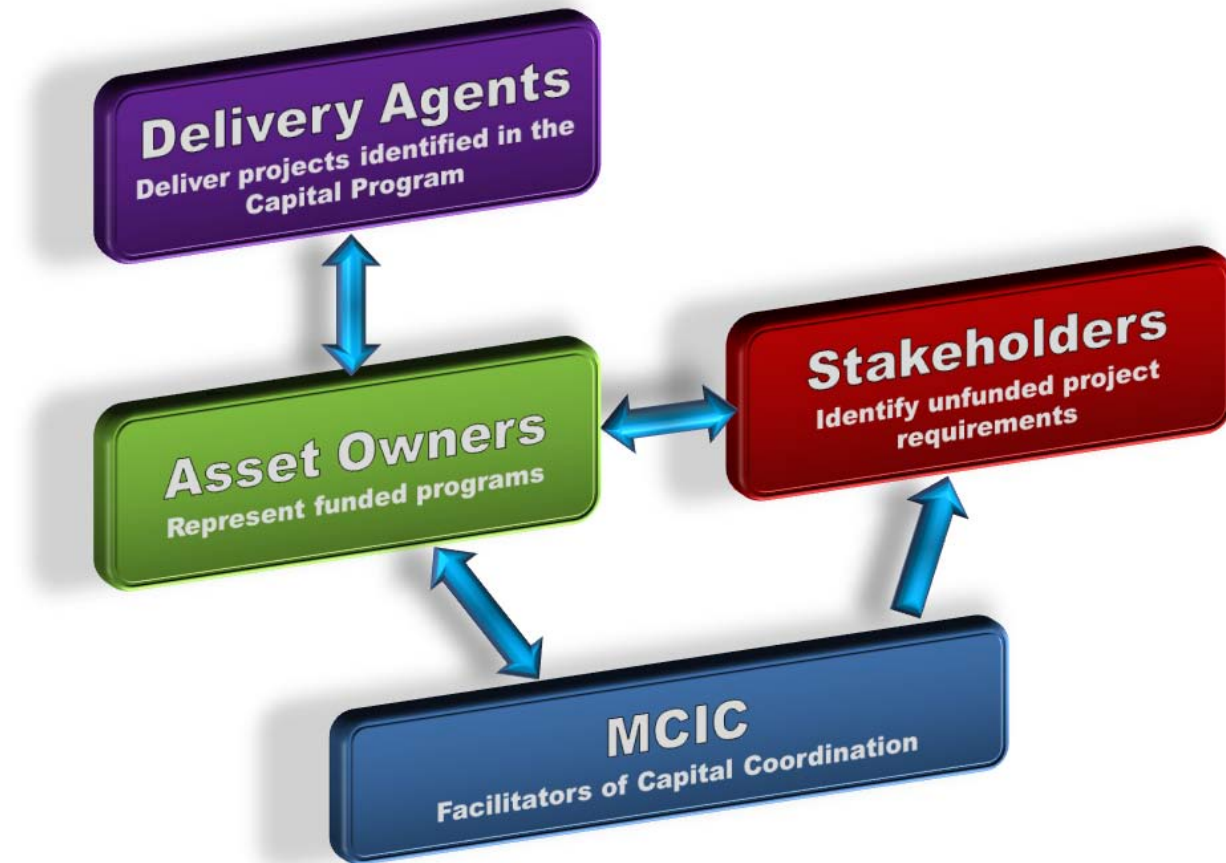


Figure 2 Participant Interaction

2. Capital Coordination Process

The development of a coordinated capital program requires an iterative process that continuously refines the program as it progresses through the six phases of its life cycle.

2.1. Phases of the Capital Delivery

Capital Delivery consists of six distinct phases. Due to the size of the programs being proposed and the complexity of coordinating and delivering the projects, five years are allotted to complete the process. This five-year process allows an adequate planning horizon for the capital works programs. With the phases in place, the participating City divisions and external stakeholders have to start planning their programs five years in advance of the anticipated construction year and finalize the coordinated programs two years prior to the construction year.

Coordination occurs throughout each phase of delivery. At key milestones in each phase, MCIC runs a conflict detection algorithm which assesses and identifies opportunities and conflicts within the planned programs.

Although five years are needed to adequately plan, coordinate and deliver all the projects in the capital programs, if needed, individual projects may be able to navigate through the phases in a shorter timeframe while following the Program Change Management process outlined in *Section 6 – Change Management*.

The six phases are (also refer to *Figure 3*):

1. **Assessment of needs:** applicable to projects proposed for construction in year+5 (i.e. 2019 projects are going through this phase in 2014).
 - As a lead into the capital coordination process, in this phase, the asset owners evaluate and prioritize their infrastructure needs.
2. **Intra-divisional clearances or Intra-organizational clearance:** applicable to projects proposed for construction in year+4 (i.e. 2018 projects are going through this phase in 2014).
 - The asset owners share and review the needs lists within their Division or organization and assess the condition of all their assets in locations where construction is proposed. Importantly, the City divisions ensure that all their sections and units are engaged and have an opportunity to contribute to the formation of a complete divisional program.
3. **Inter-divisional clearance or inter-organizational clearance:** applicable to projects proposed for construction in year+3 (i.e. 2017 projects are going through this phase in 2014).
 - At this point, the asset owners exchange their complete programs and review all their assets in locations where construction is proposed by others. This is the opportunity for asset owners to advance their work to coincide with the proposed work.
4. **Pre-design:** applicable to projects proposed for construction in year+2 (i.e. 2016 projects are going through this phase in 2014).

- By this point, the scope of individual projects has been fully defined and clearances have been obtained from the asset owners. Delivery agents begin Pre-design of projects.
5. **Detailed design:** applicable to projects proposed for construction in year+1 (i.e. 2015 projects are going through this phase in 2014).
 - Detailed design of projects is undertaken by the delivery agents.
 6. **Construction:** initiated in the delivery year.
 - Work is tendered out to a contractor by the delivery agents.
 - The contractor undertakes construction.

The assessment of needs, intra-divisional clearances, and inter-divisional clearances years (or year+5, year+4, and year+3) make up the regular planning and programming window where a project's scope and schedule have not been finalized and are subject to change pending needs assessments and program clearances. The pre-design, detailed design, and construction phases (or year+2, year+1, and year) are closed for changes. Any changes in those years are by exception and must follow the Program Change Management process outline in *section 6* of this document.

Capital Coordination Process

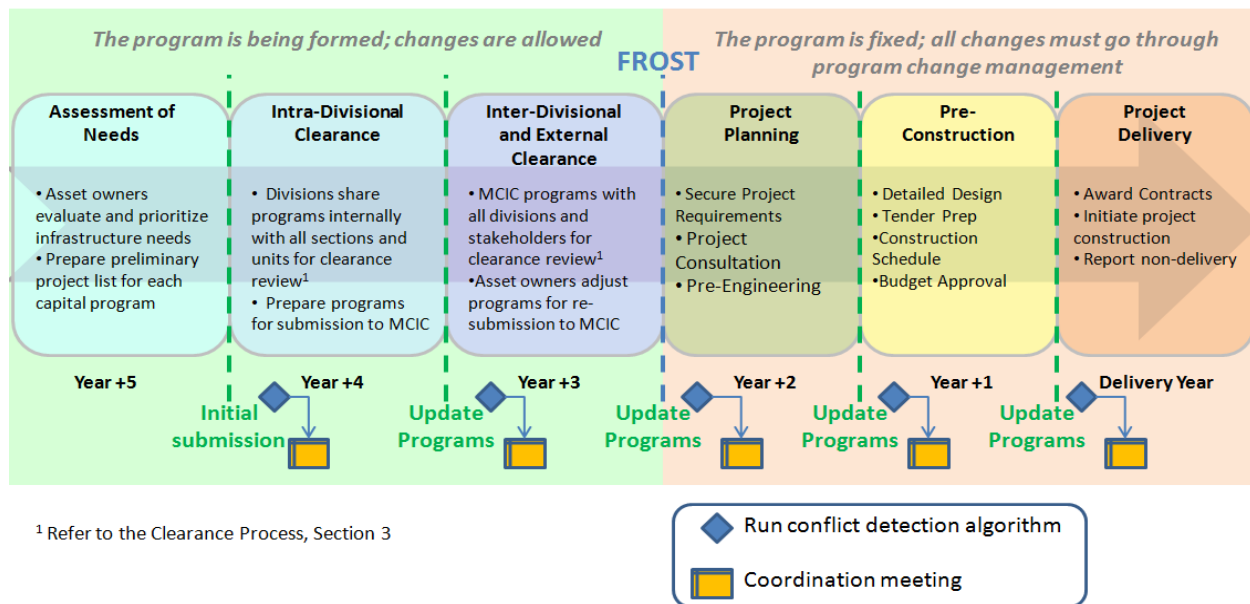


Figure 3

2.2. Timelines and tasks

MCIC will set a series of meetings and submission deadlines as outlined in *Figure 1*, to ensure that a rolling five year plan is continually evolving (see Appendix A).

2.2.1. Initial Submission

In the year(s) leading up to the initial submission, asset owners will assess their infrastructure needs and assemble a preliminary project list (also referred to as a "**needs list**") for each capital program. The programs will then be posted by the asset owners in advance of the prescribed deadline using the tools outlined in *Section 7 – Coordination Tools* of this document.

2.2.2. Resubmission

To keep the programs updated and all participants aware of changes, at each prescribed deadline, asset owners will ensure all programs are up to date with all: new projects added to the capital program, any changes to projects already in the coordinated program (please see *Section 6 – Change Management*) and confirmation of the clearance of projects proposed by other asset owners.

2.2.3. Intra-Divisional Clearance

Once the initial submissions have been posted, each division will circulate their own needs list within their divisions to ensure projects are reviewed by all relevant units and complete divisional requirements are provided for each project. All project comments will be updated and included for the next program resubmission.

2.2.4. Inter-Divisional and External Clearance

Following the intra-divisional clearances, the programs will be reviewed by all other divisions participating in the coordination process, other internal stakeholders and external agencies such as utility companies. All reviewers will follow the clearance process outline in *Section 3 – Clearance Process* of this document.

2.2.5. Opportunity and Conflict Detection

Following the deadlines for program updates and preceding each coordination meeting, MCIC will conduct a coordination analysis to identify opportunities for bundling work and conflicts that may exist between planned projects. An opportunity/conflict list will be circulated prior to the coordination meetings, giving adequate time for resolution of projects. Any projects still requiring resolution will be discussed at the next coordination meeting.

Details on conflict detection can be found in *Section 4 – Coordination and Conflict Resolution*.

2.2.6. Coordination Meetings

Coordination meetings will be scheduled, as required by MCIC, to keep the development of the rolling five-year capital program on schedule. The purpose of the coordination meetings is to:

- 1) address any unresolved project coordination issues, and

- 2) review the yearly programs and resolve work-zone conflicts that may be identified.

Participants that are required to attend include:

- 1) all **asset owners** with the authority to reprogram projects and have available details regarding the project work type, duration, schedule and impact;
- 2) **Transportation Services – Work-zone Coordinators** with the authority to accept/reject traffic restriction proposals,
- 3) **delivery agents** who will support the asset owners in providing project delivery details and related advise to ensure appropriate adjustments to work year, scope, etc, are made to the projects in the proposed capital program that will lead to the successful delivery of the coordinated program,
- 4) **3rd party delivery agencies** (Metrolinx, Waterfront, etc) that can participate in resolving coordination issues with their projects and the coordinated capital program, and
- 5) **MCIC** with the purpose to facilitated discussions.

2.3. Transition to Five-Year Rolling Program

As mentioned previously, the coordination and delivery process is proposed to take five years for each proposed program. As a result, **Figure 4** is a representative transition plan to get to a five-year rolling plan by the fourth quarter of 2015. The actual milestone dates are being update by MCIC through feedback from the CPCWG (see Appendix A).

Figure 4



3. Clearance Process

All asset owners must participate in the clearance process in order to minimize disruption to the public, unnecessary rework and to realize cost efficiencies. The clearance process is intended to communicate to asset owners all relevant work that is being planned in the upcoming years, allowing them to assess their own infrastructure needs and those locations and take advantage of efficiencies attained through the bundling of projects.

The clearance process is two-fold: intra-divisional and inter-divisional.

3.1. Intra-divisional Clearance:

Before project are proposed into the capital program for coordination, all divisions are required to have an internal process to ensure the project scope of work represents that of their entire division.

3.2. Inter-divisional and External Clearances

As projects are proposed into the capital program, other asset owners must complete a condition assessment of their existing assets at each proposed location and to identify if any opportunities exist to bundle additional works into the project (see Appendix B).

A project is identified as cleared if the participants' asset condition assessments indicate that:

- a) no additional work is required, or
- b) no work needs to be advanced or deferred within the five year program, or
- c) no new assets are required.

4. Coordination & Conflict Resolution

Prior to the coordination meetings at a pre-determined program submission date, asset owners enter and/or amend their programs by using the Project Tracking Portal (PTP), shapefiles or Enterprise Geospatial Environment (EGE) applications. The systems are automatically synchronized and updated through the scheduled feed (*Section 7 – Coordination Tools*). Subsequently, the coordination algorithm is run geo-spatially based on the set of business rules and logic. The application identifies the status of the associated projects by assigning the **coordination categories** which are listed below. As a result, a report is generated and circulated by MCIC that displays the coordination categories for each project. The asset owners are responsible for coordinating opportunities to sequence the work or resolving conflicts between the projects.

Following the circulation of the report, MCIC will host coordination meetings at which any unresolved conflicts will be identified and addressed.

Coordination category includes the following statuses and descriptions:

1. **Conflict – Existing Moratorium:**

- A project is assigned the status "conflict – existing moratorium" when the existing moratorium expiration year is later than the start year of a project. Asset owners are required to postpone their projects after the moratorium expiration year. If a moratorium is violated, asset owners may be required to complete an enhanced restoration (pay a premium fee) as outlined in the *Municipal Consent Requirement*.

2. **Conflict – Future Moratorium:**

- A project is assigned the status "conflict – future moratorium" when the project is planned after a road work. Asset owners are encouraged to plan their work prior to a road project so that the integrity of a freshly paved road is preserved.

3. **Conflict – Project Density:**

- Projects are assigned the status "conflict – project density" when an area exceeds users' defined maximum construction density. Asset owners are expected to reassess the amount of planned projects in the area.

4. **Conflict – Traffic Flow:**

- Projects are assigned the status "conflict – traffic flow" when multiple projects are planned on parallel arterial road segments. Asset owners are required to contact one another to sequence the delivery of the projects.

5. **Conflict:**

- Projects are considered as in "conflict" when the projects have the same delivery year but different delivery agents. Asset owners are required to contact one another to resolve conflicts.

6. Coordinated – In-year:

- Projects are assigned the status "coordinated–in-year" after asset owners were able to coordinate and resolve conflicts. The delivery agents will coordinate in-year projects on behalf of the asset owners and advise them of any conflicts that may arise.

7. Coordinated – Bundled:

- Projects are identified as "coordinated – bundled" when the projects are delivered in the same year and by the same delivery agent.

8. Coordinated – Sequential – Opportunity:

- Projects are assigned the status "coordinated – sequential – opportunity" when projects are separated by one or more years. Asset owners are required to review and consider either advancing or deferring projects to better sequence the projects in the same year or in two year timelines.

9. Coordinated – Sequential:

- Projects are identified as "coordinated – sequential" when projects are planned in sequential years. The asset owners are encouraged to review and consider the feasibility of a same year.

10. Stand Alone:

- A project is identified as "stand alone" when no other projects are planned on the same segment of a street.

11. For Information

- Projects are identified as "for information" when projects are planned in designated areas of interest (i.e. archaeological or landfill sites) or study areas. Asset owners assess and contact the appropriate authority.

5. FROST

Impacts of changes to the coordinated capital program increase considerably as projects progress along their life cycle. For this reason the coordination process allows for and encourages project comments to be considered and program changes to be submitted early in the project lifecycle. To stabilize the coordinated program and increase its reliability of delivery, a deadline is set for the **Final Review of Scope and Timing (FROST)**. Any changes after the FROST deadline will have to follow the Change Management process outlined in *Section 6 – Change Management*.

Asset owners and their divisions will be providing their project comments and requirements through the intra-divisional and inter-divisional clearances. For stakeholders that do not manage capital programs, yet provide project requirements for asset owners to consider for inclusion in their projects; a project list based on the most current capital programs available will be circulated to solicit stakeholder comments. The comments will be reviewed by the asset owners who will address them and update their projects accordingly by the next program submission deadline.

5.1. Project Lists

The project lists made available during the FROST process for a specific delivery year include those projects in the capital program that can accommodate additional scope. The lists are compiled in a format that permits non-technical users to understand the nature and location of planned construction. Projects that are planned at the same location are grouped together for convenience. The information is presented as a list of projects that will occur and is sorted by ward.

5.2. FROST Process

MCIC will set the FROST deadline in consultation with the Capital Program Coordination Working Group to coincide with the coordination process timelines.

The Project lists sorted by wards and a city-wide program list will be posted on the MCIC website.

The Director of MCIC will circulate the following emails:

- 1) to asset owners – indicating that the FROST deadline is the final opportunity to refine scope before the delivery agents are assigned the projects.
- 2) to Councillors and other stakeholders – a description of FROST along with a link to the project lists. The email will also notify of the deadline for comments and the process for submitting them.
- 3) As an interim measure, until all divisions set up thorough internal clearance processes, MCIC will send to the operational units a description of FROST along with a link to the project lists. The email will also indicate that comments should be sent directly to their

divisional representatives (asset owners) and will notify them of the deadline for comments.

Any Comments from FROST stakeholders submitted directly to MCIC will then be assessed to identify the appropriate asset owners and forward to them for their appropriate action.

6. Program Change Management

In order to have a stable and reliable capital works programs, the projects must be finalized and coordinated two years prior to the delivery year. This milestone is designated by the FROST deadline (refer to *Section 5 – FROST*). Any new projects or changes to coordinated projects introduced after the FROST deadline must be processed through the Program Change Management process.

As illustrated in **Figure 5**, to control change requests and ensure adequate participation in the programs early development, any change requests must be escalated within the requesting division to the appropriate authority (manager, director or general manager).

Projects with changes to the following core information are considered "**candidate for change**":

- 1) location;
- 2) extent (limits);
- 3) work type (program name);
- 4) work year start; and/or
- 5) work year end.

Other changes (e.g. in budget or delivery agent) may not impact the coordinated capital works program as a whole and, therefore, do not need to follow the change management process. In those cases, the asset owner must notify the delivery agent directly. *Note: Carry-over projects are projects whose "work year end" has changed and thus must follow the program change management process.*

Capital Coordination Process Change Management

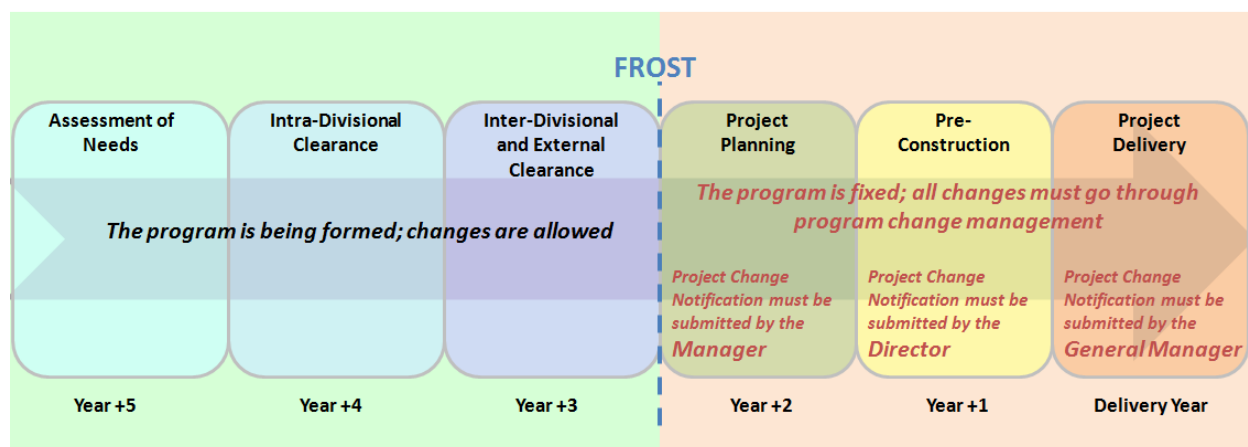


Figure 5

6.1. Program Change Management Process

The Program Change Management process essentially runs each change requests through the six phases of the process outlined in *Section 2 – Capital Coordination Process*. This ensures the project is:

- 1) clearly defined,
- 2) cleared intra-divisionally by the requesting division,
- 3) cleared inter-divisionally and externally; and
- 4) the project plan is deliverable;
- 5) adequate timing and information is available for pre-construction tasks; and
- 6) project delivery is realistic and free of coordination conflicts.

6.1.1. Changes Initiated by Delivery Agents

If a delivery agent anticipates any changes to a project's location, extent, work type, and/or work year(s), the delivery agent must notify the asset owner as soon as possible. The asset owner will then assess the delivery agent's recommendation and agree/decline it. If the asset owner agrees with the recommendation, they must follow the Program Change Management process outlined in *Section 6.1.2 – Changes Initiated by Asset Owners*.

Importantly, only the asset owners have administrative rights over the project information in PTP/EGE and are able to change projects' core information. Therefore, changes in a project's core information can only be made by the asset owner's.

Any changes initiated on projects assigned for delivery by the delivery agent, the delivery agent will:

- 1) Manage the resolution of all issues as a result of the change as they pertain to all clients and stakeholders on the project (ie. Bundled or sequenced projects)
- 2) Review and recommend resolution of issues to the asset owners (change of scope/budget/work year/etc)

6.1.2. Changes Initiated by Asset Owners

Before approaching MCIC with a candidate for change, the asset owner is accountable to ensure:

- 1) the project will be included as part of a **funded program**;
- 2) agreement of request from affected **operational authority** (ie. Road ops, Traffic ops);
- 3) feasibility and acceptance of **delivery** of the proposed work by a delivery agent;
- 4) review and resolution of any foreseeable **conflicts** and work-zone issues that may come as a consequence of incorporating the proposed work into the coordinated program; and
- 5) resolution of all issues that may emerge when the candidate for change is part of a **bundled** or a **sequenced project**. Note: only one change request form is required for all clients of bundled projects.

Once the asset owner has validation of all five items above, the following process must be initiated:

- 1) The asset owner fills out a Program Change Request form¹ and submits it to MCIC.
- 2) MCIC then reviews the candidate for change against the coordinated capital program to assess coordination impacts. If impacts are deemed to be not acceptable, the asset owner will be notified that the request is denied.
- 3) If MCIC finds that the impact will not negatively impact the coordinated program, a formal Program Change Notification will be circulated for comments following the criteria outlined in *Section 6.1.3 – Program Change Notification*.
- 4) Pending the comments from the change notification, MCIC will notify the asset owner if the request has been approved or denied.
- 5) The asset owner will notify the delivery group if the work is to proceed.

If the candidate for change is approved, MCIC signals the asset owner to make adjustments to its program in the **Geospatial Project Area (GPA)** or the **Project Tracking Portal (PTP)**. The asset owner is required to provide the reason for change (refer to *Section 7 – Coordination Tools* for instructions). From this point on, the candidate for change becomes part of the regular coordinated capital works program landscape.

If MCIC denies the candidate for change, the capital works program remains unchanged and no further actions are required from the asset owner unless the asset owner appeals the denial with MCIC. If a denial is appealed, MCIC will assist by facilitating discussions to address the asset owners concerns.

6.1.3. Program Change Notification

In order to preserve the cohesion of the City's five-year capital works plan and validate that no asset owner wants to alter its program in the light of the approved program change, MCIC circulates the Program Change Notification to all participants involved in MCIC's coordination process.

Not all Program Change Requests are circulated as notices. MCIC circulates only those Program Change Notifications that – due to the gravity of work type, the immediacy of construction, and/or the extension of construction limits – may prompt other participants' interest and result in the additional of scope to the project. More specifically, MCIC broadcasts changes that occur to only those projects where work has the potential to be bundled and/or may have to be sequenced to allow for completion of other projects.

For the qualifying work types, Program Change Notifications go out for all **(1)** advancements or deferrals that occur within the post-FROST bucket and **(2)** advancements from the pre-FROST bucket into the post-FROST bucket.

MCIC does not send out Program Change Notifications for **(1)** any cancellations/on-hold, **(2)** advancements or deferrals within the pre-FROST bucket, and **(3)** deferrals into the pre-FROST bucket. Once a project had passed the FROST deadline, it is the responsibility of the delivery

¹ The form can be found on the MCIC website.

agent's project manager to ensure all participating project clients/asset owners and stakeholders are notified of any delivery changes.

Should any asset owner express interest in amending its capital program in response to the already-processed change, the asset owner is subjected to the same criteria and must go through the same Program Change Management procedure as described above.

7. Coordination Tools

7.1.1. Project Tracking Portal (PTP)

PTP is a web-enabled system that serves as a single window to City capital projects. PTP allows the asset owners to enter, maintain and coordinate their programs through a secure interface in one central database.

PTP enables the users to generate two types of reports based on the submitted capital works data: the Program Change report and the Program List report.

Both the City divisions and external parties are maintaining data in PTP. The City divisions managing data in PTP are:

- City Planning (except for development applications),
- Economic Development & Culture, and
- Transportation Services (bridge rehabilitation program only).

The external parties using PTP are:

- Beanfield Metroconnect Inc.,
- Bell Canada,
- Cogeco Data,
- Enbridge Gas Distribution Inc.,
- GO Transit,
- Enwave Energy Corporation,
- Hydro One,
- Metrolinx,
- Toronto Hydro Electric System Ltd.,
- Rogers Communications Inc.,
- Toronto Transit Commission, and
- Waterfront Toronto.

7.1.2. Enterprise Geospatial Environment (EGE)

EGE is the repository for the City's geospatial information. EGE allows the asset owners to create and maintain their programs in the Geospatial Project Area (GPA) by using a Geospatial Information System (GIS).

City divisions that manage data in EGE are:

- City Planning (development applications only),
- Toronto Water, and
- Transportation Services (except for the bridge rehabilitation program).

PTP and EGE are fully integrated. The system interface between EGE and PTP allows for the programs that are entered in EGE to be accessed in PTP, and vice versa (please see **Figure 6**).

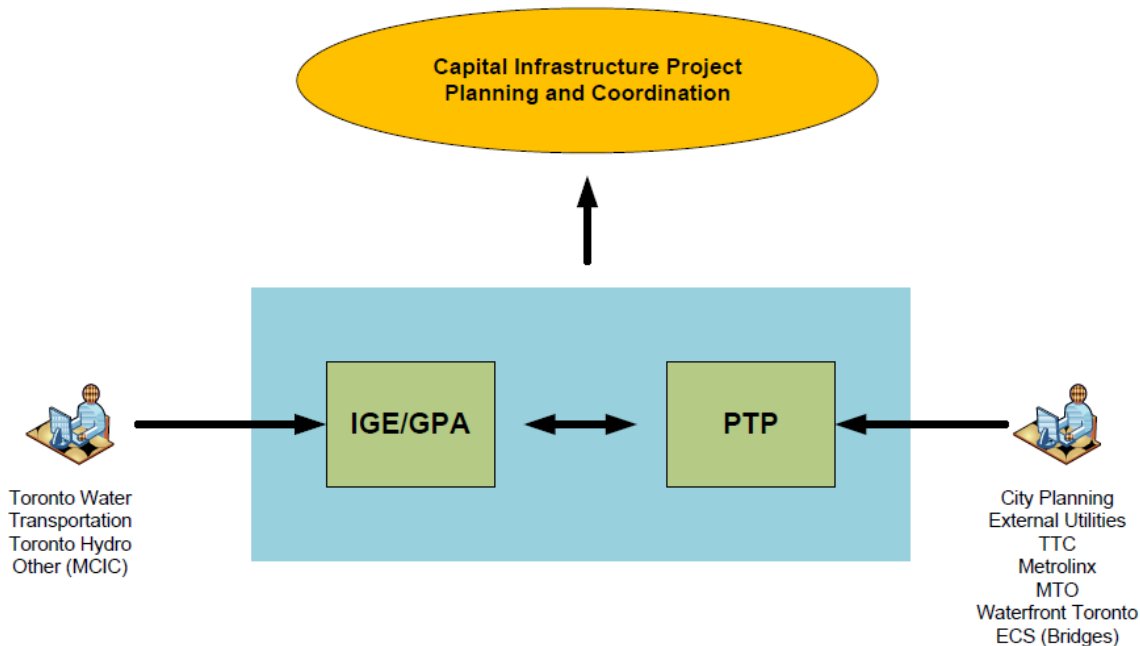


Figure 6: The input of data into PTP and EGE.

7.1.3. T.O. INview:

Short for Toronto Infrastructure Viewer, T.O. INview is a mapping system that identifies capital construction projects planned in the current and proposed in upcoming years. Viewers can use the map-based system to learn about projects that the City, utilities, telecoms and transit, plan to construct.

In addition to the location of projects, City staff and the public may find other important details of construction projects; namely, work type, duration of construction, and contact details of the project manager leading the project.

T.O. INview shows planned capital work, but not emergency or short-term in-year work.

T.O. INview is maintained jointly by MCIC and Geospatial Competency Centre (GCC).

T.O. INview is available on the MCIC's external website². On the City's internal website³, Councillors, asset owners and other city staff may use T.O. INview to see projects in the being planned for delivery for the next 5 years.

² www.toronto.ca/mcic

³ <http://insideto.toronto.ca/mcic/index.htm>

PTP, EGE, and T.O. INview have a full system integration through regularly scheduled submissions (please see **Figure 7**). The data entered in PTP and EGE is exchanged between the two systems and transferred for display in T.O. INview. The three tools are integrated and form one transparent application known as the Capital Planning and Coordination Automation (CPCA).

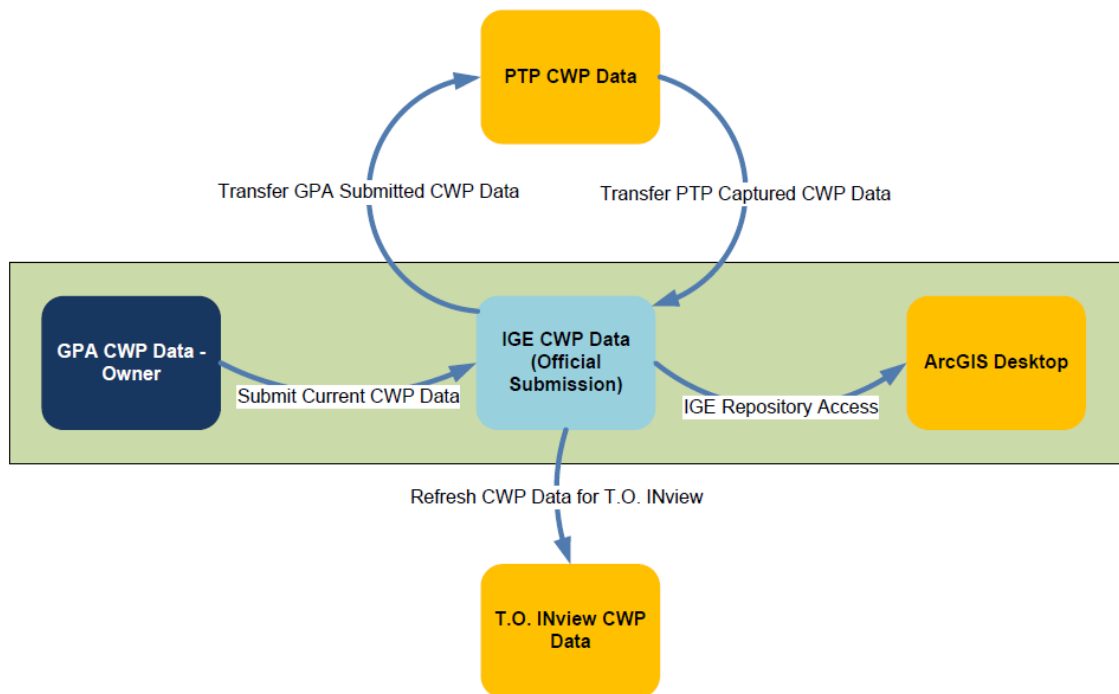


Figure 7: The integration of PTP, EGE, and T.O. INview into CPCA.

7.2. Data Management

Table 2 identifies which data are managed by which system and who is accountable for the information.

Table 1

Data	System	Accountability
Project details (locations, budget, delivery year, work type, scope, delivery agent)	<p>Asset owners manage their programs within their asset management systems.</p> <p>The information is then loaded into either EGE or PTP-CPCA (see <i>Sections 7.1.1</i> and <i>7.1.2</i>)</p>	Asset owners

Coordination status (conflict, coordinated – sequential, etc.)	PTP	MCIC
Project delivery details (estimates, delivery milestones, expenditures, project manager, etc)	PTP	Delivery agents

8. Monitoring

Monitoring, quantifying, and reporting on Program Changes is an effective measure of the quality of the Coordinated Capital Program. Once the changes are identified, classified, and reported, an assessment can be conducted to identify areas of improvement in the Coordination Process from Programming to Construction.

The following is being proposed:

- Changes in the Program defined as any change to core data, such as project limits, work type, delivery year, and budget, when compared to the baseline program that was submitted at the start of the calendar year.
- For each submission, there will be a count of records submitted for each program area compared to the number of segments that have experienced a change.
- For each submission, the program size will be summed up for each program area, where available (City-owned programs) and compared to the baseline program.
- All changes identified will be grouped into appropriate categories that identify the reason for the change. The proposed categories are:
 - 1) **Coordination Conflicts – Non-foreseeable** (i.e. emergency work),
 - 2) **Coordination Conflicts – Foreseeable** (i.e. need better participation from operators and coordinators),
 - 3) **Programming Changes – Non-foreseeable** (i.e. emergency, change in policy, etc),
 - 4) **Programming Changes – Foreseeable** (i.e. need to better plan programs, plan earlier, review others proposed work, etc.),
 - 5) **Delivery Issues – Non-foreseeable** (i.e. unexpected technical difficulties, contractual issues with contractors/consultants, bad weather),
 - 6) **Delivery Issues – Foreseeable** (i.e. inadequate resources to deliver work, poor project planning, etc).

As change reports are completed and the data are available, a review will be conducted to assess if additional indicators can be provided.

Appendix A: 2015 Critical Path and Work Plan



2015 Capital
Coordination Critical F

Appendix B: Clearance Matrix



Clearance Matrix
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Appendix C: Committee memberships and Meeting invitees



MCIC recurring
meetings & TOR - Fin: