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Dear Commissioners,

In early 2017, KPMG was engaged to develop and deliver a set of tools that TTC Board members could use to better exercise their oversight over TTC capital projects.

The TTC's 10-year base capital program, for which we are accountable for, includes over \$6.4 billion in approved non-expansion projects that require the Board's active stewardship. The base program is therefore roughly twice as large as any single expansion program and success in delivery is critically important to TTC and service we provide.

As noted in KPMG's attached Summary Report, from February through May 2017, they completed a number of actions relating to Board project governance, culminating in workshops with TTC Board members interacting in small groups.

Through the workshops, there was discussion and agreement on four main themes:

1. **Project Categorization.** The TTC's capital projects are each of varying degrees of risk and complexity. As the risk and complexity increase, the requirements of project governance and control change, as should the escalation of issues to the Board. Using a "Project Categorization" process will help ensure the appropriate governance and project management rigour is in place for each project, with an emphasis on the requirement to balance the Board's accountability with the ability of management to operate efficiently.
2. **Stage Gate Process.** As a project proceeds over time, it is important to set certain check points, where the project is assessed to ensure it is still meeting the intended objectives. These 'gates' within the new Stage Gate process are a way of ensuring regular and consistent touch points with the Board. This process will also bring increased rigour and visibility to the Board on the progress of individual projects.

KPMG recommended that for category 3 and 4 projects, the TTC's largest and most complex, there are default stage gates that the Board should be engaged to approve project deliverables (i.e. business cases, project governance structures, stage gate timelines, etc.).

3. **Project Delivery Model.** At a defined stage gate, there should be a determination of the way in which a project is delivered (i.e. the project delivery model). The recommended

delivery model should not be predetermined, but rather the outcome of a comprehensive risk-based decision process. Ultimately, every project is unique and all procurement options should be considered.

4. **Reporting Protocol.** It is important that the Board receives the right information at the right time to make the right decisions. Through the workshop discussion and provided reference material, Board members gained familiarity with what information to expect from management and which questions they might ask to exercise their accountability.

We as a Board should expect several benefits and outcomes from this work, including:

- Increased awareness among current and future Board members as to their role with respect to TTC's capital projects/programs;
- Improved understanding of how to exercise the Board's role, including: what types of concerns and questions should be raised by members throughout each of the relevant project stage gates; and
- Greater confidence in management through more detailed understanding of the TTC's new Project Management Framework.

To fully realize the potential of these efforts, I propose that we undertake the following:

1. Accept KPMG's attached Summary Report and utilize the toolkit to exercise our oversight accountabilities over the TTC's capital program;
2. Establish a Capital Projects and Procurement Working Group to provide TTC Board members and TTC management adequate time and focus to assess business cases and other stage gate deliverables and to report back to the TTC Board on its findings.
3. Establish the capital project workshop as requisite training for all new TTC Board members and pre-requisite training for any member of the Capital Projects and Procurement Working Group;
4. Request staff develop and propose a reporting protocol that establishes common expectations for the frequency and content of routine reporting and that sets thresholds for exception reporting; and
5. Forward this letter as well as KPMG's report and toolkit to the City Manager's Office for possible application more broadly across the City of Toronto.

Sincerely,



Councillor Josh Colle  
TTC Chair



*cutting through complexity*

# TTC Board Capital Project Governance

**Summary Report & Next Steps**

**Internal Management & External  
Board Governance, Roles,  
Responsibilities and Reporting**

July 2017  
kpmg.ca





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KPMG’s role was to outline certain matters that came to our attention during our work and to offer our comments and recommendations for the TTC’s consideration. These comments, by their nature, may be critical as they relate mainly to opportunities for change or enhancement and will not address the many strong features of the TTC’s current activities and undertakings.

Our procedures will consist solely of inquiry, observation, comparison and analysis of TTC-provided information. We relied on the completeness and accuracy of the information provided. Such work does not constitute an audit. Accordingly, we will express no opinion on financial results, internal control or other information.



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## Introduction

KPMG was engaged in early 2017 to provide support to the TTC Board and the TTC Executive in their understanding of the Board and TTC's roles and responsibilities with respect to governance of the TTC's capital portfolio. KPMG's engagement for a governance toolkit was in response to one of the Top 10 Priorities ("Develop Governance Toolkit") of the Project Management Maturity Plan ("PMM Plan") approved by the Board in December 2016 in response to KPMG's Capital Program Delivery Review ("Review").

As a part of this engagement, KPMG completed a number of actions relating to Board project governance, ultimately lead to the development of this report. Over the course of February through May, KPMG had meetings with the TTC Board Chair, TTC CEO and other members of the TTC Executive to gather input on the current state of Executive and Board involvement in the capital portfolio. After developing and distributing reference material on the principles of good project governance, both internal and external, and the content of the TTC's new Project Management Framework ("PMF"), KPMG conducted workshops with 9 of the 11 TTC Board members in interactive, small, group sessions. The workshop presentations and associated reference guides have been appended to this report, and form the Capital Projects Governance Toolkit. The content of these documents mimic the principles detailed in this report.

## Background

In fall of 2015, at the direction of Council, KPMG was engaged by the City Manager's office and the TTC to complete the Review. KPMG submitted our Final Report in September 2016, containing 41 recommendations to improve the project management maturity of the Toronto Transit Commission ("TTC"). Given the varying complexities of the projects and programs within the TTC's broad capital portfolio, the intention of the Review was to identify recommendations that could apply across the portfolio. The principles discussed in the Review are equally as important and applicable for short, low risk and complexity, routine projects, as they are for multi-year expansion programs. How the broad project management principles are applied across the portfolio will vary by internal ownership and complexity. As a part of the Review, KPMG also developed a potential Project Risk & Complexity Assessment framework, as a way of categorizing projects within the TTC's capital portfolio.

The categorization framework has evolved, and the resulting four-level framework has been included in the PMF with Category 1 being the smallest/simplest and Category 4 being the largest/most complex. Historically, the TTC has typically delivered Category 1-3 projects entirely within its internal organization. Category 4 projects however, typically have external funders such as other municipalities, the Province of Ontario or Metrolinx, which complicate the ownership and governance structure of these projects.



These Category 4 projects would include any large expansion project, such as the Toronto-York Spadina Subway Extension (“TYSSE”), Scarborough Subway Extension (“SSE”), Downtown Relief Line, Yonge Subway Extension (“YSE”), or the Eglinton Crosstown East and West extensions. These projects are very large in scale and scope, with a high level of risk and complexity, and they create a significant exposure (financial and reputation) for the asset owner(s).

As noted above, the project management principles outlined in the Review and adopted in the PMF are ones that KPMG believes should be applied from Category 1-3 projects. By accepting the recommendations of the Review in their report to the Board in September 2016, and through their current implementation planning, the TTC is committing to abiding by these principles on all projects within their purview, which generally will include all projects from Category 1-3. For consistency sake, any Category 4 project that has heavy involvement of the TTC, according to leading practice, the governance structures and principles would logically align with those of Category 1-3 projects.

Effective governance is central to the project management principles noted above. Subsequent to our Review, KPMG was asked to elaborate on leading practices for project governance, with a particular focus on the role of the TTC Board. This white paper discusses leading practices for the governance of capital projects, across all categories, and how they can apply in the TTC context.





# Project Governance

This section gives an introduction to the purpose and principles of project governance, how project governance adapts to project complexity, how governance structures must align to the complexity, and how all of these governance decisions are enshrined for the project.

## Stakeholder Objectives

As noted in the Project Management Institute's Project Management Body of Knowledge ("PMBOK"), the industry standard for project management, good governance ensures that a project is aligned with the major stakeholders' needs and objectives. Project governance sets the framework under which project leadership can be empowered to make decisions that meet the objectives of the major stakeholders and provides for ways to address circumstances where stakeholders may not be aligned. Although individual roles and responsibilities are important to the tactical execution of a project, it is premature to attempt to define them without first ensuring that the appropriate project governance is in place.

If governance relates to the management of stakeholder needs and objectives, it is useful to consider the stakeholders in terms of their functions on the project. For simplicity sake, the stakeholder functions can be broken into the following four categories:

- Shareholder/ funder – capital or operating contribution
- Regulator - planning, zoning, environmental, safety, etc.
- Project resources – communications, estimators, engineers, contractors, etc.
- External third party – BIAs, developers, local businesses, etc.

In reality, on many TTC projects, the major stakeholders, or component parts of them, can serve multiple functions/be in multiple categories throughout the project's life. Using TYSSE as an example, the City of Toronto acted as a funder contributing capital dollars, a regulator approving site plans and building permits, and a project resource when assisting with land acquisition.

The danger in a large and complex project with equally multi-faceted stakeholders is that the boundaries between these functions can become blurred without strong, clear project governance that defines the relationships between the functions, the decision making process, and the flow of accountability. Recommendation #7 (Authority of Project Team) of the Review emphasizes that the Project Manager should be the single point that the governing stakeholders hold accountable for their objectives for the project. It also emphasizes that all members of the project team below the project manager should be accountable throughout the project, for all project related business,



regardless of their functional home. How the project governance is structured above the Project Manager is determined by the project's categorization.

## **Principles of Good Governance**

Although the best approach to capital portfolio governance depends on the unique requirements of an organization, leading practice indicates a number of common principles can help ensure success.

First and foremost, it is necessary to set up the right project governance structure for the organization, which allows an entity such as the TTC Board to maintain control while ceding day-to-day responsibility to management. Whatever that structure is, it also needs to take a life-cycle approach, rather than just being in place for construction. Governance begins at the earliest planning phase of a project and continues through implementation and ultimately into operations. A life-cycle approach is necessary to ensure that project objectives and risks cover the life of the project, not just the implementation.

Any new endeavour should learn from the past, so those at the highest levels of governance should be aware of commonly-occurring issues. When setting project objectives, planning the scope, resourcing and dealing with stakeholders, these commonly-occurring issues should be front-of-mind, and governance entities like the TTC Board should probe management on them.

All decision makers up to and including the TTC Board must receive, and act upon, the right information on a consistent basis. Doing so will ensure predictable progress and informed decision-making, thereby increasing the certainty of project success. To get this information, a structured process ensures that the right information is received when it's needed. Regular reporting information should be brought forward in a standard format from the project team based upon the oversight requirements of a given project. It is the responsibility of all members of the project governance structure above the Project Manager to exercise their due diligence by challenging the project team.

## **Project Categorization**

TTC has various types of capital projects and with each project a different level of uncertainty and complexity, requiring a different level of project management effort, and oversight. The Project Categorization tool has been designed to help classify a project into one of four categories (1, 2, 3 or 4) that will then inform all project parties of the magnitude of uncertainty, and the extent of resources and effort required to ensure project success. The four project categories differentiate between the high number of routine, low risk / value /complexity projects that the TTC undertakes and those medium, or major projects that need to follow a more elaborate level of project control and governance.



The purpose of categorizing projects is to drive the required:

- levels of governance;
- project management competencies and rigour; and
- project oversight and compliance requirements

This ensures that there is a common approach with respect to how projects of a particular category are managed throughout the project lifecycle, based on the project's size, complexity and risk.

Table-1 below presents a summary of the four project categories – their typical characteristics, the requirements in terms of project management experience, skill and knowledge, and the level of project controls and governance arrangements that are appropriate for each category.

**Table 1 - Category Characteristics and PM Competencies**

	Category 1	Category 2	Category 3	Category 4
Typical characteristics	Small in size and scope, common understanding of outcomes, low risk and low complexity	Medium in size and scope, some uncertainty, medium level of risk and complexity	Large in size and scope, high uncertainty and risk, high level of complexity or new initiatives at the TTC	Expansion project, very high uncertainty and risk, high level of complexity, and will involve external stakeholders in governance roles



	Category 1	Category 2	Category 3	Category 4
Project Manager competencies	<p>Low to medium experience and understanding of project management</p> <p>Defined as Project Manager 1</p>	<p>Medium to high experience and understanding of project management</p> <p>Defined as Project Manager 2</p>	<p>High level of experience and understanding of project management with increasingly strategic management requirements</p> <p>Defined as Project Manager 3</p>	<p>Very high level of experience and understanding of project management with increasingly strategic management requirements and experience working closely with external stakeholders</p> <p>Defined as Chief Project Manager</p>

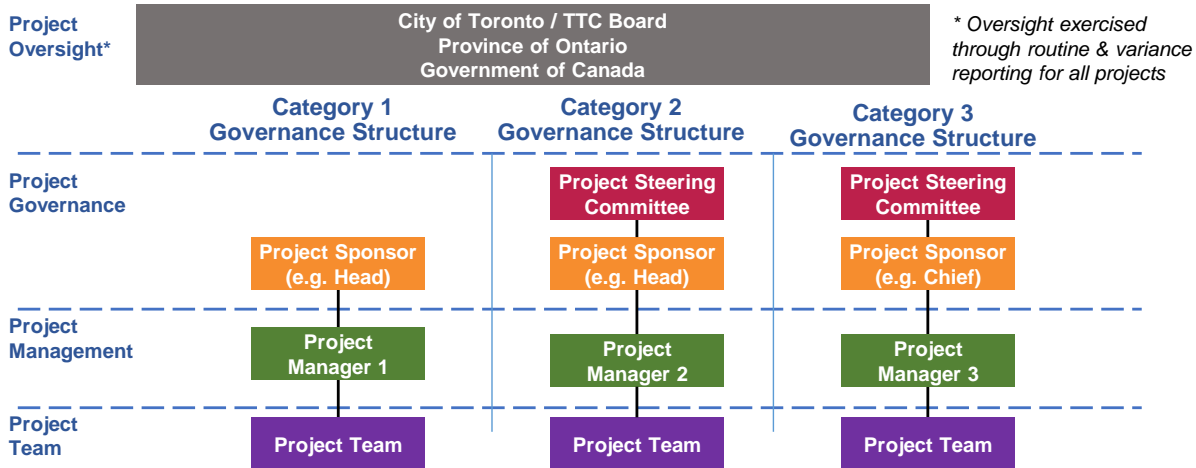
Projects of greater complexity and risk have an increased potential to impact the reputation of the organization. These projects may not necessarily be the ones with the largest capital budgets, though they are frequently related. Complex projects also tend to have greater external interfaces such as the public, other City departments, and multiple levels of government due to funding requirements of particularly large projects. Therefore, increased project controls and oversight is required as a project category increases.

This is also important to the Board because it impacts the nature of the information that the Board will receive, and the extent of delegated authority to management /Project Steering Committee.

### Governance Models

Project Categorization will drive, among other things, the governance models used for each Category. Figure-1 below outlines the default governance structures, which are to be evaluated project-by-project and documented in the Project Charter.

**Project Governance by Project Category** (Below are default governance structures, which are to be evaluated per project and documented in the Project Charter)



**Figure 1 - Project Governance by Category**

The categorization of a project determines the individuals and entities that should be responsible for certain roles. Projects of greater complexity have an increased potential to impact the reputation of the organization. Accordingly, increased rigour and oversight is required as a project category increases. For example, on Category 3 projects, a Project Manager 3 level of experience and understanding of project management with increasingly strategic management requirements is suggested. Figure-1 also highlights a useful distinction in project governance at the TTC – the difference between internal and external project governance. For the Category 1-3 projects shown below, internal governance, otherwise referred to as administrative governance, includes the Project Steering Committee and below, where all membership in the governance entities are contained within the TTC. There may be exceptions where administrative governance includes staff level representation from elsewhere with the City of Toronto, Province, etc. The entities listed above the Project Steering Committee, including the TTC Board, could be considered external project governance. In a Category 4 project (not shown), the external governance may also include the Project Steering Committee, if other shareholders (like York Region on the YSE) are included in that governance entity.

**Project Charter**

Once the stakeholders have been identified, the project has been characterized, and the governance structure determined, the Project Charter is the document that enshrines the governance of the project. A Project Charter serves four key purposes:

- Clearly defines and communicates the project’s fundamental objectives and characteristics, such as: need/justification, scope, project categorization, cost, schedule & major milestones, project team, stakeholders, risks, project sponsor sign-off etc.;



- Formally initiates and authorizes the project to start as defined;
- Serves as the permanent reference and basis for Project Management Planning, management and assessment of success in meeting project objectives; and
- Defines project objectives and the reporting system; clearly assigns decision-making roles and responsibilities; empowers the project team with delegated authority.



## Governance Roles

Given the principle of single-point accountability of project leadership discussed above, defining the roles and corresponding responsibilities within a governance structure, and the timing and order of filling such roles, is critical to the project/programs success. It will create and clearly identify the decision making process and flow of accountability. This section, in descending levels of authority, describes the following governance roles:

- Project Shareholders (City of Toronto, York Region, Metrolinx, etc.)
- TTC Board
- TTC Board, Capital Projects Working Group / Subcommittee
- Project Steering Committee
- Project Sponsor
- Project Manager
- Project Team

### Project Shareholders

The shareholders will vary from project to project, but generally would include the key stakeholders that act as the funders (or their delegated representative) and operators of the project. As an example, the major shareholders for the Scarborough Subway Extension would include the City as a funder and the TTC as an operator. Other projects may include the City and TTC as well as others like Metrolinx or York Region. Regardless of the number of key stakeholders, if they have major roles like funder or operator, they should have representation in the internal project governance structure.

### TTC Board

The Board's role is primarily to assess and provide oversight on the strategic objectives and overall direction of the TTC. The Board is composed of representatives of the primary shareholders of the TTC – the City and the public – with seven Councillors and four private citizens. The Board delegates responsibility for day-to-day operations to the CEO and the Chiefs, but maintains approval authority for any capital expenditures over \$5 million.

The Board is ultimately responsible for the success of the performance of the capital portfolio in realizing portfolio and delivery objectives, meaning the Board must have confidence that the projects it is approving are being managed in a prudent way that is in line with the organization's mission statement, values and long-term strategy.

The Board is responsible for establishing the appropriate project governance, delegated through the Project Categorization system and the resulting governance structures. The categorization allows for effective delegation of authority, depending upon the project's risk and complexity. Management is responsible for implementation within the controls



established by the governance structure, providing updates, assessments and action alternatives related to risk events for the Board as needed.

The governance structures detailed in the PMF ensure “line of sight” project information to the Board on a regular basis, and as required. In addition, the Board approves required deliverables required for projects to proceed through Stage Gates 1, 3 and 7. The Board also provides approvals as a part of the Project Change Request process, and the Procurement Authorization process according to authority limits.

## **TTC Board Capital Projects Working Group**

Due to the broad responsibilities of a board for the overall operations of an organization, many capital project intensive organizations will create a working group or subcommittee of their board to deal with the capital portfolio. Recognizing the limited time available in board meetings, a working group allows the necessary time and focus to be committed to decisions related to the capital portfolio.

The overall responsibility of this Capital Projects Working Group would include the following:

- Assist in facilitating a comprehensive capital portfolio with a more hands-on approach – the TTC has a multi-billion, multi-project capital portfolio that would dominate the time of the TTC Board meetings and involve the Board in project detail rather than strategic decision-making;
- Assist in developing Board expertise in capital projects – the Working Group could be populated by those Board members most familiar with capital delivery, and would develop expertise with the PMF and reporting systems. Many committees improve this expertise by including external technical experts as a part of the committee; and
- Assist in synthesizing reports to the Board – reports to the Board could be made by the Chair of the Committee or Working Group on a summary and issue-oriented basis, reflecting the advice of the Committee/Working Group as to the significance of an issue to the organization.

## **Project Steering Committee**

The Project Steering Committee is composed of appointed representatives of the key shareholders. These shareholders will vary from project to project, but generally would include the funders (or their delegated representative) and operators. On a Category 3 project, like the Leslie Barns, the Steering Committee would consist primarily of internal stakeholders like the users (streetcar), operators (maintenance) and constructors (Engineering, Construction & Expansion).

The Project Steering Committee’s function is to provide clear, concise, unified direction to the Project Manager. The Project Steering Committee will hold the Project Manager





accountable for completing the directions of the Board. Conflicting project interests between stakeholders are to be discussed and resolved at the Project Steering Committee level, with a single point direction flowing to the Project Manager. If there are disagreements between stakeholder representatives on strategic priorities, there must be a mechanism at the Project Steering Committee level to resolve them.

The success of a Project Steering Committee however, is dependent on both the stakeholders agreeing to delegate some (or all) of their project authority to their Project Steering Committee representatives, and the stakeholders having confidence that their interests are being served. In order for this to be successful, the appointment of the Project Steering Committee must be transparent and the mandate clear, particularly for Category 4 projects where multiple shareholders are represented. The Steering Committee and Project Manager must also ensure that timely reporting is provided to the higher levels of oversight. If for example, the TTC Board wanted a presentation on the status of the project, that presentation would be provided by the Project Manager and the Chair of Project Steering Committee, typically the Project Sponsor.

The concept of a Project Steering Committee is scalable depending on the number of key shareholders. As a smaller scale example, on Category 2 capital projects fully within the TTC's mandate, the TTC would create a Project Steering Committee chaired by the Project Sponsor. For existing larger projects, the City of Toronto and TTC have a joint City-TTC Transit Executive Committee ("CTTEC") that serves a role very similar to that of a Project Steering Committee. Additionally, for projects that include Metrolinx, there is a City-TTC-Metrolinx Transit Executive Coordination Committee ("TECC") that serves a similar purpose. As noted above however, the ability for any of these committees to serve as an effective Project Steering Committee requires their shareholders to be confident in their representatives' abilities to adequately represent their shareholder interests.

## **Project Sponsor**

Although the TTC Board is ultimately responsible for all projects, it is the Project Sponsor who is typically the highest single person responsible for the project's success and delivery within agreed parameters. The Project Sponsor provides resources and support for the project from inception to closure. Their role includes promoting the project's scope and benefits to higher management, being significantly involved in the development of and signing off on the Project Charter, and supporting ongoing project reviews.

The Project Sponsor is typically accountable to their Chief for the project's success within the prescribed project parameters such as scope, schedule, and budget. They ensure that the planned project outcome will meet the needs of all project stakeholders, and complies with department and environmental standards.

The Project Sponsor ensures that the project's definition addresses the TTC's needs, within target parameters and delegates most of the day-to-day management



responsibilities to the Project Manager. However, the Project Sponsor is ultimately accountable for the actual project outcomes and for performance against the target parameters such of cost, budget, and scope. Performance against target scope means the Project Sponsor is responsible for ensuring that any changes proposed within the Project Change Request (“PCR”) process are truly necessary for the realization of the project’s objectives as stated in the Project Charter

## Project Manager

The Project Manager is responsible for the day-to-day management of the project. The Project Manager ensures the project complies with organizational standards, and ensures that adequate resources are committed to the project.

The Project Manager is responsible for assembling and leading the project team, ensuring project stakeholders are represented, applying people management and organizational skills, and following organizational standards and project management practices throughout the planning and execution of the project.

The Project Manager is accountable to the Sponsor for delivering the project within the parameters determined within the Project Charter. Importantly, the Project Manager is intended to be the single point of continuous accountability through the entire project. Regardless of which functional area may lead individual tasks through the project’s life, the Project Manager must retain ultimate accountability for decisions. For Category 4 projects, in instances where there are only two key shareholders, a tension can arise when the Project Manager is chosen from one shareholder versus another. The internal project governance is in place to make it clear that regardless of a Project Manager’s originating organization, their accountability is first and foremost to the project, their strategic objectives are driven by the Project Steering Committee, and it is the Project Steering Committee that measures their performance. In instances where this governance structure is not enough to placate shareholders, Project Managers can be hired as contract employees or seconded from one shareholder to another, in whatever way is necessary to ensure the person with the right competencies is placed in the role.

As detailed in the PMF, the competencies/skill sets of the project leader may vary from a Category 1 project through a Category 4 project. At a Category 4 project, the Project Manager is a very senior, experienced individual that requires an appropriate mix of technical, administrative, resourcing, problem solving and communication skills. A comparison of Category with project management experience and level of the Project Manager can be seen in Table 2 below.

**Table 2 - PMF Categories and PM Experience**

<b>Risk &amp; Complexity Level</b>	<b>Project Management (“PM”) Experience</b>	<b>Suggested PM Level Required</b>
Category 1	Limited	Project Manager 1



Category 2	Intermediate	Project Manager 2
Category 3	Senior	Project Manager 3
Category 4	Executive	Chief Project Manager

For Category 4 transit expansion projects, the size and complexity often match or exceed the annual budgets of many City or TTC operating departments. As such, a Category 4 project really needs to be thought of as a capital program comprised of multiple projects that must almost function as its own organization.

## **Project Team**

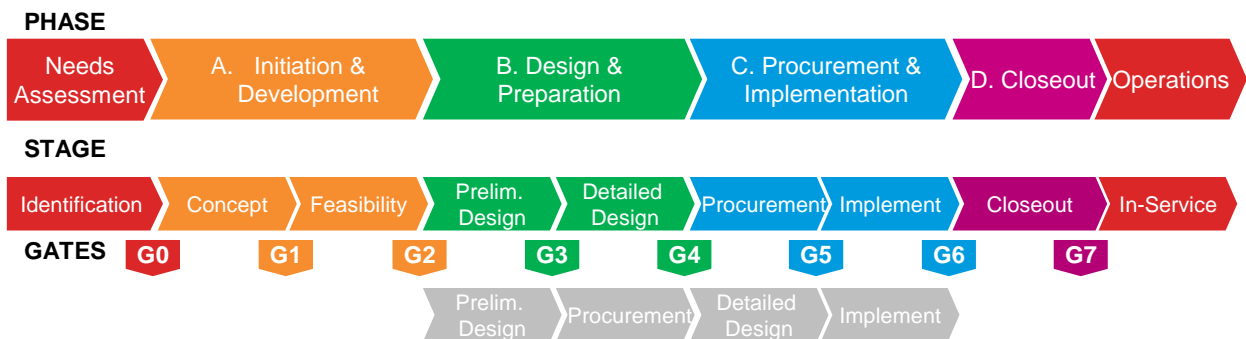
The Project Team is composed of the pool of resources that are required to successfully execute the project. The resources include technical and process experts overseeing functions such as property acquisition, environmental management, regulatory experts, financial management, communication, human resources, etc. The source of these resources could be internal to the shareholders, seconded from the shareholders, or contracted externally. The resources are the most competent people available, regardless of their employer.

As highlighted in Recommendation #7 of the Review, equally important to the Project Manager having singular authority over the project is the project team members are accountable to the project. What can often occur in a weak matrixed project structure (where any individual reports to both their functional leader and the project manager), is that the Project Manager cannot exert control over resources, particularly those that may not originate from their organization. It is imperative therefore, that whether it is a TTC or City staff member that is assigned into a transit expansion project team, their accountability related to the project is to the Project Manager first.

## Stage Gate Process

Once the internal project governance is clearly defined, its mandate can be overlaid on the stage gate process to better understand what decisions are being made, and by whom. The stage gate process provides a common understanding among stakeholders about when they should be having what type of input or decision-making throughout the project's life-cycle.

At the time of the Review, neither the City nor the TTC had a corporate stage gate process for their capital projects/programs, although departments of each followed their own versions either formally or informally. Since that time, the concept of a stage gate process has begun to permeate capital project discussions more broadly both at the TTC and the City. The example of a stage gating map currently being developed to satisfy the TTC's capital portfolio as a corporate standard can be seen in Figure 2 below.



**Figure 2 - Stage Gate Map for Capital Projects**

In Figure-2 above, there are six key lifecycle phases (**Needs Assessment**, **Initiation & Development**, **Design & Preparation**, **Procurement & Implementation**, **Closeout** and **Operations**) which can be sub-divided further into nine defined stages. According to leading practices, all of the gates are tied to *go-no-go* approval decisions, where key decision makers can elect to take an off-ramp, and halt the project if it doesn't appear it will be able to meet its initial objectives.

There is an important distinction to be made between what Stage Gates are intended to **do** and **not do**.

- Stage Gates **do** allow the governance bodies to ensure the project is still meeting its objectives and to provide authority to proceed to the next stage in the project lifecycle.
- Stage Gates **are not** intended for assessing project or progress against schedule and cost. This reporting is done in standard routine reporting through the governance structure as a part of day-to-day management of the project. Stage



Gates are also **not intended** to be an opportunity for stakeholders or shareholders to introduce project changes.

The number, timing, and sequence of Stage Gate Reviews on a project is decided in the Project Charter, following the Project Categorization.

Below is a high level description of how the stage gate process, internal project governance and external TTC Board governance aligns.

## Needs Assessment Phase

### Identification Stage



Purpose	Minimum Deliverables	Approvals	
The objective during this stage is to identify the project to be delivered based on requirements, alignment to strategic objectives, and endorsement by a sponsor. Ensuring the selection process is clear, transparent and defensible is important, as it will colour the perception of the project through delivery.	<ul style="list-style-type: none"> <li>Statement of Intent</li> </ul>	Sponsor	✓
		Steering Committee	N/A
		TTC Board	N/A

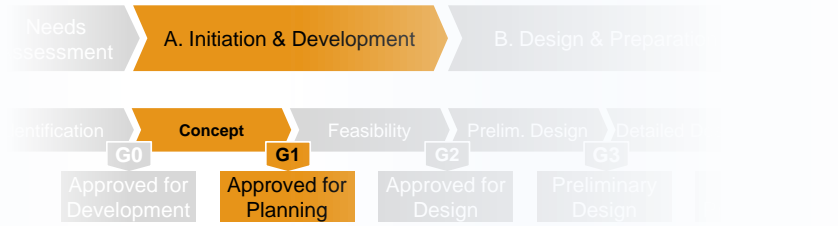
#### Primary considerations for the Board during this stage:

- Is the project consistent with the TTC’s Strategic Plan?
- Is there potential to fit the project within the TTC’s long term fiscal framework?



## A. Initiation & Development Phase

### Concept Stage

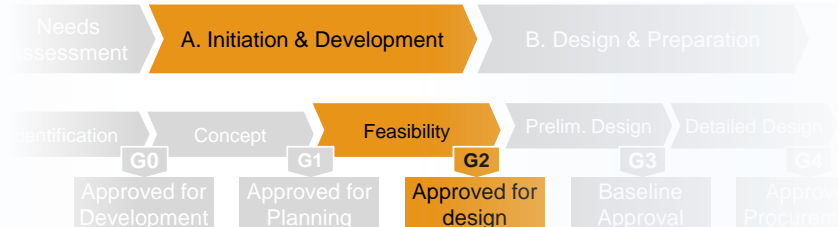


Purpose	Minimum Deliverables	Approvals	
The objectives of this stage are to establish preliminary baseline definition of project objectives identify key stakeholders and establish the project governance and form the project team.	<ul style="list-style-type: none"> <li>○ Preliminary Project Charter including stage gates.</li> <li>○ Preliminary Business Case</li> </ul>	Sponsor	✓
		Steering Committee	✓
		TTC Board	✓

#### Primary considerations for the Board during this stage:

- Has there been early response from stakeholders?
- What are the qualifications and contractual arrangements for senior members of the project team?

### Feasibility Study Stage



Purpose	Minimum Deliverables	Approvals	
The purpose of this stage is to establish a baseline definition for project scope, schedule, and cost. Determine the best delivery options (bundling, contracting, etc.).	<ul style="list-style-type: none"> <li>○ Update existing Preliminary Project Charter and Business Case</li> <li>○ Preliminary Project Management Plan (“PMP”)</li> <li>○ Class 4 Estimate, Level 2 Schedule</li> <li>○ Risk Register (preliminary)</li> </ul>	Sponsor	✓
		Steering Committee	✓
		TTC Board	N/A

#### Primary considerations for the Board during this stage:



- Is the recommended scope appropriate for the TTC Strategic Plan and long-term Fiscal Plan?
- Are there any compelling reasons to rule out an AFP approach (generally Category 4)?
- Does the project team have the necessary resources and expertise to undertake the Business Case?
- Are communications and stakeholder management actions required for the launch of the Business Case?

## B. Design & Preparation Phase

### Preliminary Design Stage



Purpose	Minimum Deliverables	Approvals	
The purpose of the Preliminary Design stage is to establish a performance baseline definition for project scope, schedule, and cost, determine the best delivery options (bundling, contracting, etc.), and formalize the project management approach. This stage may also include preparing for procurement if detailed design is bundled with execution.	<ul style="list-style-type: none"> <li>○ Final Project Charter, Business Case, updated Risk Register,</li> <li>○ Project Management Plan</li> <li>○ Class 3 Estimate, Level 3 Schedule – performance baselines</li> <li>○ Safety Certification Program Plan (as required)</li> <li>○ EA / TPAP, PSOS (as required)</li> </ul>	Sponsor	✓
		Steering Committee	✓
		TTC Board	✓

#### Primary considerations for the Board during this stage:

- What are the mitigation strategies for key retained risks?
- What is the approval process if all bids are over budget?
- Are we absolutely ready to move past this Gate?

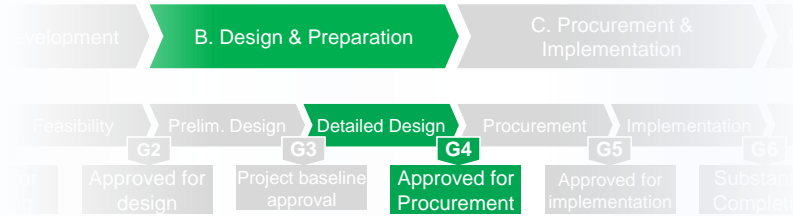
Depending on the procurement method chosen, there are a number of possible permutations to the stage gate process after the **Preliminary Design** phase. For the



subsequent discussion and stage gate permutation, this paper assumes the traditional (Design-Bid-Build) approach is taken.

**After Stage Gate 3, Board’s role changes from challenger to support and assurance.**

### Detailed Design Stage



Purpose	Minimum Deliverables	Approvals	
The purpose of the Detailed Design stage is to prepare a mature design package, and advance to a more detailed schedule and cost estimate.	<ul style="list-style-type: none"> <li>○ Update existing (Project Charter, Risk Register, Project Management Plan, Level 3 Schedule)</li> <li>○ Class 2 Estimate</li> <li>○ Project Change Log</li> <li>○ Design Specifications</li> <li>○ Request For Proposal, Information etc.(“ RFX”, as required)</li> </ul>	Sponsor	✓
		Steering Committee	✓
		TTC Board	N/A

**Primary considerations for the Board during this stage:**

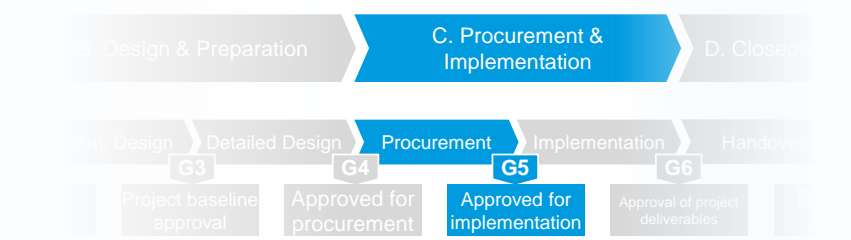
- Explain changes in cost estimate, if any, and seek alternatives to adjust scope in order to reduce budget as at the previous Stage Gate





## C. Procurement & Implementation Phase

### Procurement Stage



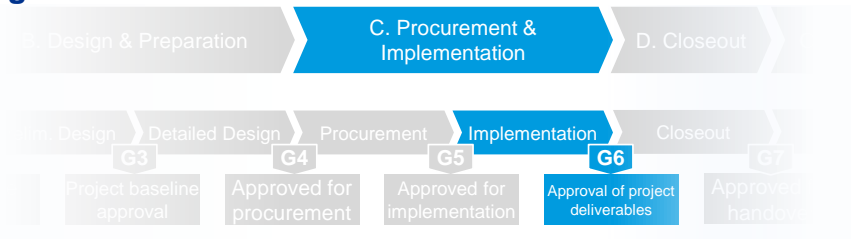
Purpose	Minimum Deliverables	Approvals	
The purpose of the Procurement stage is to complete the procurement process, get the project ready for implementation, and complete a final cost estimate.	<ul style="list-style-type: none"> <li>Update existing (Project Charter, Risk Register, Project Management Plan, Project Change Log)</li> <li>Class 1 Estimate</li> <li>Implementation Schedule(s)</li> <li>Procurement documents (as required)</li> </ul>	Sponsor	✓
		Steering Committee	✓
		TTC Board*	N/A

\*May provide approval for Procurement Authorization & Project Change Requests as required by Authority Limits, not linked to Gate.

#### Primary considerations for the Board during this stage:

- Qualification of Preferred Proponent and evaluation results.
- Any changes to budget or contractual agreements (including risk allocation) in comparison to Business Case?

### Implementation Stage



Purpose	Minimum Deliverables	Approvals	
The purpose of the Implement stage is to undertake and complete all planned implementation work in accordance with contractual agreements. Minimize change orders to maintain budget and	<ul style="list-style-type: none"> <li>Risk Register and Project Change Log</li> <li>Project Records (e.g. as-built drawings, etc.)</li> <li>Deficiency List</li> <li>Safety Certification Approval (as required)</li> </ul>	Sponsor	✓
		Steering Committee	✓
		TTC Board*	N/A



schedule. Reach Substantial Completion of implementation.			
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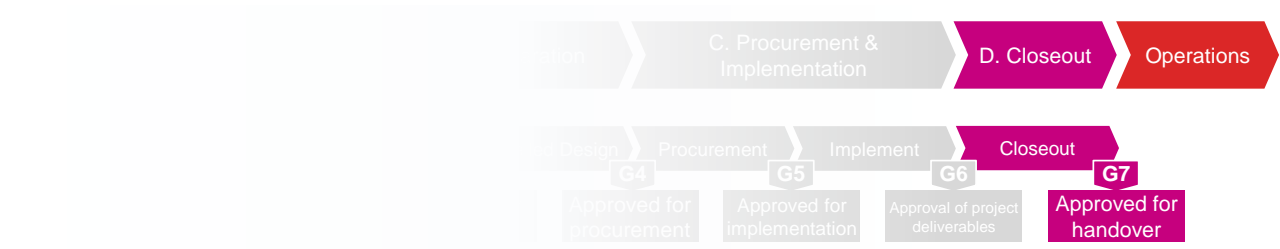
\*May provide approval for Procurement Authorization & Project Change Requests as required by Authority Limits, not linked to Gate.

**Primary considerations for the Board during this stage:**

- What is the status of results (cost, schedule) as compared to project delivery objectives?
- What is the status of results (operating performance) as compared to project performance objectives?



## Closeout Phase/Stage



Purpose	Minimum Deliverables	Approvals	
The purpose of the Closeout Stage is to share lessons learned, execute the benefits realization plan, close the project and disband the project team	<ul style="list-style-type: none"> <li>○ Project Closeout report including:               <ul style="list-style-type: none"> <li>▪ Lessons Learned Log</li> <li>▪ Variance Log</li> <li>▪ Benefits Realization Plan (as required)</li> </ul> </li> </ul>	Sponsor	✓
		Steering Committee	✓
		TTC Board	✓

### Primary considerations for the Board during this stage:

- What has been communicated as to the results of the project delivery process?
- What are the key lessons learned for future projects? How are these lessons being implemented?



# Reporting

Every role in the governance structure, from the Project Manager up to the TTC Board needs predictable and timely information in order to make the right decisions at the right time that bring certainty to achieving project objectives. The information reported must be regular, reliable and designed for decision-makers who have relatively less technical expertise and minimal day-to-day exposure to the project. The information provided must also be forward-looking, complete with recommended strategies risks and challenges.

While the TTC management’s reporting to the TTC Board on the status of the capital portfolio has generally improved since the creation of the Portfolio Management Office (“PfMO”), challenges remain around determining the optimal types of reporting, reporting frequency, and the group best suited to gather and analyze that information.

There are various types of reporting that can and should be performed for management. The items detailed below include reports that are created today and how they might be amplified or improved.

## Routine Reporting

These reports are provided on regular intervals and in a specified and consistent format that can be easily read. The information provided typically includes dashboards that are structured to allow the user to easily navigate the report, with “traffic lights” to provide an overall status of the portfolio or projects and highlight important issues. Projects whose overall status is not green (amber or red) can be further discussed in an exception report.

Currently, the TTC Board receives this type of dashboard reporting in the form of the Critical Projects Dashboard of the monthly CEO’s Report. Currently, this report summarizes only those projects deemed by management to be of a critical nature. With the implementation of the PMF and Project Categorization, this dashboard can evolve to highlight problematic projects according to set escalation triggers, for example those projects marked red. Improvements may include trending information on the various Key Performance Measures (e.g. ↓, -, or ↑ for budget performance).

**Critical Projects Dashboard** Current as of March 2017 | Next Update in May 2017 CEO Report

The dashboard below provides a quarterly snapshot in time of the health status for major programs and projects that comprise the TTC project portfolio. The programs and projects, referred to hereafter as 'projects', have been included in the dashboard due to their magnitude and/or strategic significance. Collectively, the dashboard comprises 52% of the base capital program and 100% of the fully funded expansion projects.

Dashboard data will be refreshed quarterly. The CEO Reports for March, May, August, and November will include a dashboard update as well as one-page project performance updates (see Section 4 of this CEO Report) for each of the projects listed in the dashboard. Major changes necessitating an immediate update will be discussed in Section 2 – CEO Commentary.

Project	Strategic Objective	Cost (millions)				Schedule		Outlook to Completion				
		Budget	Actual	Projected	%	Start Date	End Date	Approved	Revised	On Track	At Risk	
<b>Bus Fleet &amp; Facilities</b>												
Vehicles: Purchase of Buses **	Assets	\$466	\$252	54%	\$465	99%	Ongoing	Q4 2019				
Facilities: Motocool Bus Garage	Growth	\$181	\$9	5%	\$181	100%	Q4 2012	Q4 2019	Q2 2020			
Management Systems: VISION (CAD/AVL)	Customer	\$116	\$10	9%	\$116	100%	Q1 2014	Q4 2020	Q1 2020			
<b>Structural Fleet &amp; Facilities</b>												
Vehicles: Purchase of New Streetcars	Assets	\$1,167	\$353	47%	\$1,167	100%	Q2 2009	Q4 2019				
Facilities: Leach Bams	Growth	\$216	\$482	223%	\$233	101%	2008	Q4 2015	Q4 2017			
Track: Outpost Track *	Assets	\$580	\$253	44%	\$580	101%	Ongoing	Q4 2018	Q4 2019			
<b>Subway Fleet &amp; Infrastructure</b>												
Vehicles: Purchase of Subway Cars	Assets	\$1,167	\$1,119	96%	\$1,167	100%	Q2 2011	Q4 2016	Q1 2017			
Stations: Easter Access III	Assets	\$455	\$252	40%	\$774	118%	2008	Q4 2025				
Facilities: TR 111 Rail Yard Accommodation **	Assets	\$385	\$168	44%	\$385	100%	2010	Post 2020				
Track & Tunnels: Subway Track **	Assets	\$408	\$147	36%	\$407	81%	Ongoing	Q2 2018	Q1 2017			
Signals: Automatic Train Control (ATC Line 1-YUS)	Assets	\$263	\$256	47%	\$263	100%	Q2 2009	Q4 2019				
<b>Expansion</b>												
Toronto-York Spadina Subway Extension (TYSSE)	Growth	\$3,184	\$2,583	81%	\$3,184	100%	Q2 2008	Q4 2017				
Scarborough Subway Extension	Growth	\$3,309	\$30	1%	\$3,309	100%	Q4 2013	Q4 2023	Q4 2025			
<b>Management Systems</b>												
PRESTO	Customer	\$47	\$29	62%	\$47	100%	Q4 2012	Q4 2017				
Loop	Customer	\$53	\$24	37%	\$53	100%	Q1 2014	Q2 2019				

\*These projects are ongoing in nature. The performance data presented reflects the 10-year funding envelope only.  
 \*\*A portion of required scope for this project is currently not in the approved budget. The projected cost and the end date reflect the total scope.

**Figure 3 - Critical Project Dashboard (CEO's Report)**



If the Critical Projects Dashboard were to evolve into a summary of only non-green projects, another helpful dashboard would give the status of the rest of the capital program. Broken down by Category (1-4), this dashboard may include the number of projects that are rated green, yellow or red; the number of projects in each Stage of their lifecycle; or the number of projects nearing Stage Gates 1, 3 or 7 within the next fiscal quarter.

## Exception Reporting

This report focuses on the projects that are projecting towards not meeting their specific project objectives. This purpose of the report is to provide a more in-depth report on the project including schedule, cost, scope, health and safety, environmental and so on while honing in on the problem areas and discussing the issues being encountered.

This report should also include the potential solutions or mitigating actions that can be taken and the resulting consequences of taking and not taking action.

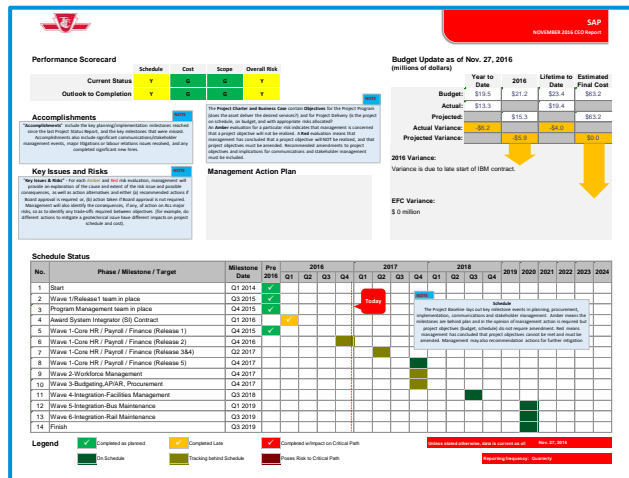
Currently, the TTC Board receives this type of project reporting in the form of the Project Progress Update (“PPU”) that is appended to the CEO’s Report. Currently these updates are only provided on a quarterly basis for the projects contained in the Critical Projects Dashboard. If the Critical Projects Dashboard is changed to include any projects that are deemed ‘red’, the PPU could become the exception report that accompanies any ‘red’ project, with emphasis on the actions management will be taking to improve the project’s status to ‘yellow’ or ‘green’.

## Other Reports

Beyond the routine and exception reporting, the TTC Board sees third party reports, reporting to the City, and approves significant spending items above the CEO’s authority limits. All of these reports, as described below, should in some way be summarily reported at a portfolio level within the routine reporting above.

## Capital Variance Report for City Finance

This report presents the TTC’s financial results to-date including amount spent to date compared to the approved Capital Budget as well as the projections for year end. The



**Figure 4 - Project Performance Update (CEO's Report)**



report also discusses the TTC's spending rates, provides some additional context and information on variances to the budget, as well as any budget reallocations within programs.

### **Procurement Authorizations**

The purpose of this report is to obtain authorization for the award/procurement of contracts (above the CEO's authority limit of \$5M). The report provides an issue summary, financials as well as any other relevant issues or comments and finally a recommendation for the Board to authorize the procurement.

### **Project Change Requests**

The purpose of this report is to obtain authorization for the approval of changes to Project Baselines that are either outside of the contingency allowance or above the CEO's authority limit of \$5M. The report provides issue summary, alternatives explored, as well as any other relevant issues or comments and finally a recommendation for the Board to authorize the change to Baselines.

### **Third Party Reports**

The TTC Board and management can gain further assurance through a focused independent audit or a more comprehensive Independent Project Assurance Audit and/or project Health Checks. These could be performed on a scheduled basis according to an annual portfolio audit plan, or on an as-needed basis. Typically these types of reports would be coordinated between the PfMO and Internal Audit, and using third party consultant or auditor.



## Next Steps

With the Board's endorsement of the PMF at its June 2017 meeting, the TTC is moving ahead with the foundational concepts of project categorization, project governance structures and the stage gate process. In discussions with both TTC management and the TTC Board members who attended the capital project governance workshops, the following items would be the logical next steps to facilitate improved Board-level governance of the TTC's capital portfolio in line with leading practices:

1. Implement a TTC Board Capital Projects Working Group, to receive reporting from TTC management and advise the broader Board on issues related to the TTC's capital portfolio. Strongly consider adding external capital projects technical experts to supplement the Commissioners and TTC staff representatives.
2. Task TTC management with developing a reporting protocol that defines the frequency and content of capital project reporting to the Board (and its Capital Projects Working Group). The reporting should be a combination of regular portfolio-level dashboards that summarize the overall health of the capital portfolio, and more detailed exception reporting of individual projects based on thresholds of escalation. The thresholds that trigger different levels of reporting should balance the need for the Board to provide effective oversight with the need for the TTC to efficiently self-manage the projects. Lastly, the Board should receive regular reporting on the status of the TTC's projects within their stage gate process, so that the Board has good foresight on the important stage gates that will trigger major decision-making, such as baseline approval or major procurement authorizations.
3. Provide an annual Board training session similar in scope to the recently completed capital project governance workshops. The TTC's adoption of their 4-year Project Management Maturity Plan will mean that the project management frameworks, processes and procedures will be continuously evolving, which will necessitate refreshers for the TTC Board. This annual session should be optional for all Commissioners, but mandatory in two instances:
  - For new Commissioners, as a part of their on-boarding process
  - As a mandatory requirement of membership on the Capital Projects Working Group



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# TTC Capital Project Governance

## Workshop for the TTC Board

May 2017  
Reference Guide



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2. Key Elements of Success in Governance
3. Stage Gates and the Role of the Board
4. Getting the Right Information
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### **Discussion / Questions**

### **Reference Material**

### **Additional Information:**

Procurement Models

Glossary of Terms



# MAIN THEMES

# FOUR MAIN THEMES

## **Four main themes for the Board to consider throughout:**

1. Project Categorization and how it relates to projects and the Board; ensuring the appropriate level and structure of governance as it relates to each project (requirement to balance the Boards accountability with Managements efficiency)
2. The PMF and Board 'Touch Points' or Stage Gates; ensuring the appropriate governance by determining/dictating the timing and depth of the Board's involvement in the large, new project management structure (PMF; project management framework) being implemented to better manage the capital portfolio.
3. Procurement Options; ensuring a comprehensive consideration of all procurement model alternatives. Every project is unique and all procurement options should be considered by management and the Board.
4. Reporting and Information; ensuring that the Board receives the right information at the right time. Ensuring the Board members gain comfort on the types of probes that should be asked, and when, and that management should be presenting recommended solutions to project issues/problems as they occur.



# PART 1

## TTC - Background



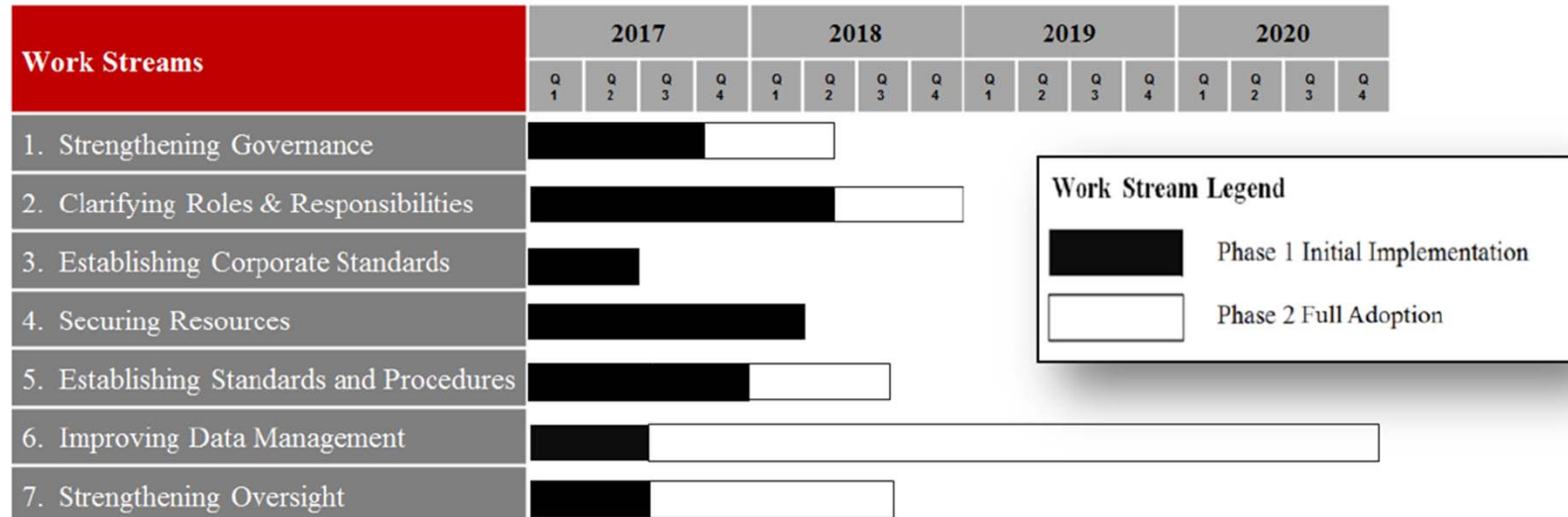
# 1. Board Direction to Date

# December 2016 TTC Board

- On December 20, 2016, the TTC Board approved the following recommendations:

- Approve the preliminary Project Management Maturity Plan as outlined in the body of this report;
- Request staff report back on a semi-annual basis beginning in **June 2017** to provide an updated Project Management Maturity Plan along with the status of progress made against the plan;
- Request staff transmit an annual third-party report to track progress against the Project Management Maturity Plan beginning in December 2017; and
- Direct staff to forward this item to the City Clerk for consideration at the January 19, 2017 meeting of the Executive Committee on Item EX18.26: Toronto Transit Commission Capital Program Delivery Review.

- The TTC also committed to the following preliminary implementation timeline:



# PMM Plan Recommendations

- Of the 41 recommendations in KPMG’s report, 10 were identified as priorities (at right)
- A commitment was made to make progress on all of these recommendations within 6 months.
- KPMG has been engaged to help progress all of these top recommendations under **two workstreams:**

1	Setting a Maturity Target of ‘Monitored’ (Rec# 16)	6	Improving Stakeholder Management protocols (Rec #12)
2	Establishing a Stage Gate Process (Rec# 10)	7	Establishing a Delivery Options process (Rec #27)
3	Developing Governance Toolkits (Rec #5)	8	Establishing a Commercial Management process (Rec #30)
4	Establishing a Corporate Project Management Framework (Rec# 6)	9	Ensuring Holistic Scope Definition (Rec #22)
5	Clarifying Roles & Responsibilities (Rec# 11)	10	Establishing Centralized Project Monitoring (Rec #41)

- **Workstream 1** - All of these (except **Box #3**) will be addressed within a **Project Management Framework Document (Box #4)**
- **Workstream 2** – Capital Projects **Governance Toolkit (Box #3)**, targeted to the TTC Board.





## 2. TTC's Capital Program

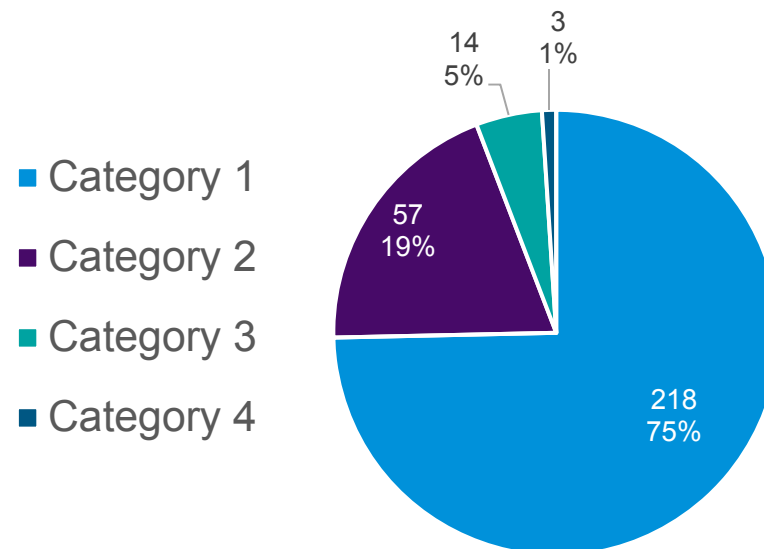
# TTC's Capital Program

- **TTC has a very significant capital program (portfolio)**
  - The approved 2017-2026 Base Capital Budget requirement is **\$9.4 Billion**
    - Expansion projects account for an additional \$4.1 Billion (\$0.6 Billion for the TYSSE and ~\$3.5 Billion for the SSE)
  - Success in delivering the capital program will have a very significant impact on the success of the TTC organization
  - 75% of the TTC's typical projects fall into Category 1 Projects at a total value of \$2.7 billion, followed by 20% in Category 2 Projects.
- **Many of the capital projects have many critical risk factors to be managed/mitigated:**
  - The age of the system;
  - Continued expansion and ridership increases;
  - Significant stakeholder impacts;
  - Direct interface with a large segment of the population.

# TTC's Capital Program

- **TTC's Capital program currently comprises 292 projects. Categorizing by budget alone:**
  - 75% of projects are in Category 1 (less than \$50M);
  - 19% of projects are in Category 2 (\$50M – \$500M);
  - 5% of projects are in Category 3 (over \$500M); and
  - the remaining 1% are in Category 4 – Mega projects/Transit Expansion projects.

**TTC's Capital Program by # of Projects**



# TTC's Capital Program

- **Categorizing by budget alone, Category 1 - 3 projects account for a significant portion of the Capital Program, approximately 2/3rds of the total dollar value**
  - A total of **\$22.6B** of capital is still to be managed outside of the mega projects.
  - The category 1 – 3 Projects form the core of the work and are extremely important to maintaining service and achieving TTC's long term strategic plan.

	Total Value (\$B)	Total Value (%)
Category 1 (75% of the projects)	\$2.7	8%
Category 2 (20% of the projects)	\$8.4	25%
Category 3 (5% of the projects)	\$11.5	34%
Category 4 (1% of the projects)	\$11.3	33%
<b>TTC's Capital Program</b>	<b>\$33.9</b>	<b>100%</b>



# Project Categorization

**Project Categorization ensures that the levels of governance, project management competencies and rigour applied is appropriate for the scale and risks anticipated on a particular project.**

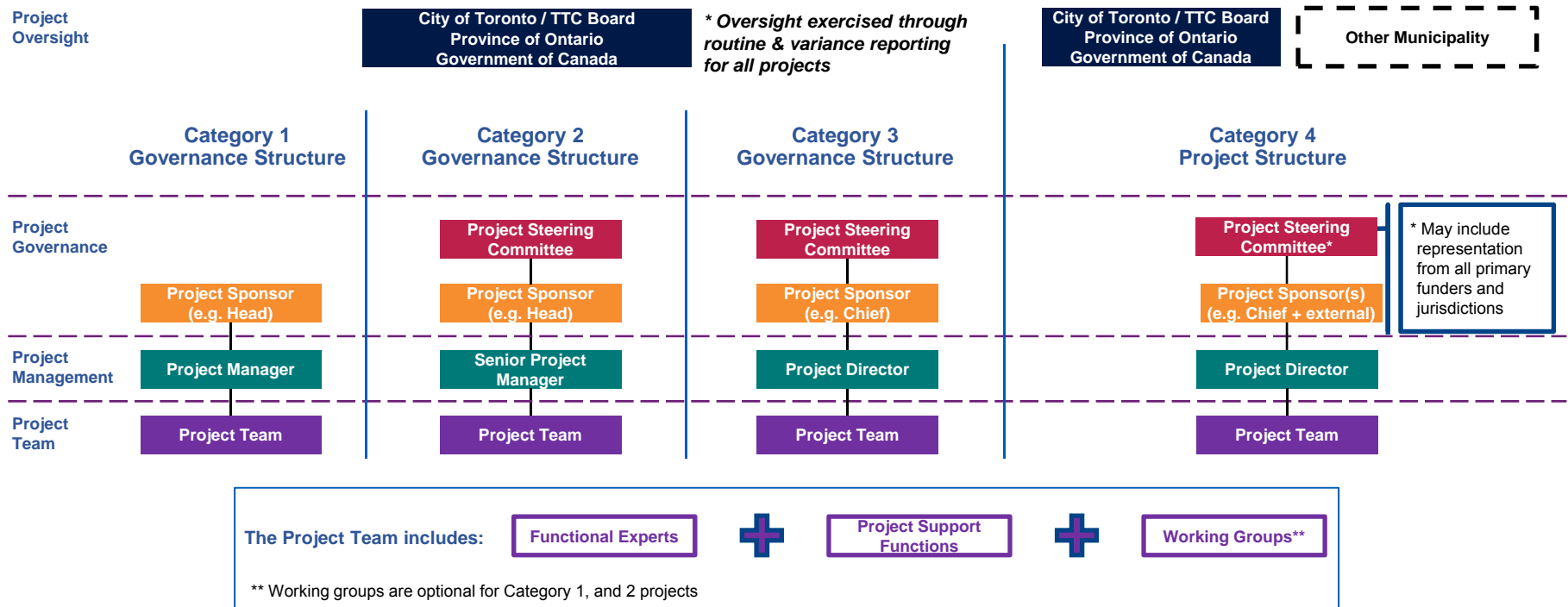
- Projects will be classified by Categories 1, 2, 3 and 4.
- The Categorization of a project will be determined based on a defined set of criteria that reflects the project's size, complexity and risk.

Criteria	Budget (Initial Filter)	Institutional Knowledge (Modifier #1)	Internal / External Interdependencies (Modifier #2)	Contractual Complexity (Modifier #3)
	Estimated total project cost	How frequently this type of project been undertaken at the TTC (scope, delivery model?)	Interdependencies with other projects and/or operations	Complexity of contract interfaces
Category	1 Less than \$50 million	Routine / Annual	<u>Low</u> • Simple internal interfaces • Minimal impact to service or public realm	<u>Low</u> • Few contracts • Minimal overlaps • Flexible sequencing
	2 \$50 million - \$500 million	Every 2 – 10yrs.	<u>Medium</u> • Complex internal interfaces • Medium impact to service or public realm	<u>Medium</u> • Few contracts with some overlap • Many contracts with minimal overlap • Partly flexible sequencing
	3 \$Over 500 million	Every 10+ yrs. or new initiative	<u>High</u> • Complex internal & external interfaces • High impact to service or public realm	<u>High</u> • Few contracts with extensive overlap • Many contracts with some overlap • Rigid sequencing
4	Transit Expansion Projects (i.e. Subway Expansion, Streetcar Network Expansion , and Bus Rapid Transit (BRT))			

**This is important to the Board because it impacts the nature of the information that the Board will receive, and the extent of delegated authority to management /Project Steering Committee.**

# Project Categorization- Governance Models

**Project Categorization will drive, among other things, the governance models used for each Category. Below are the default governance structures, which is to be evaluated project-by-project and documented in the Project Charter.**



Principles of project governance are detailed more in Part 2 of the Workshop.



# 4. Project Management Framework ("PMF")



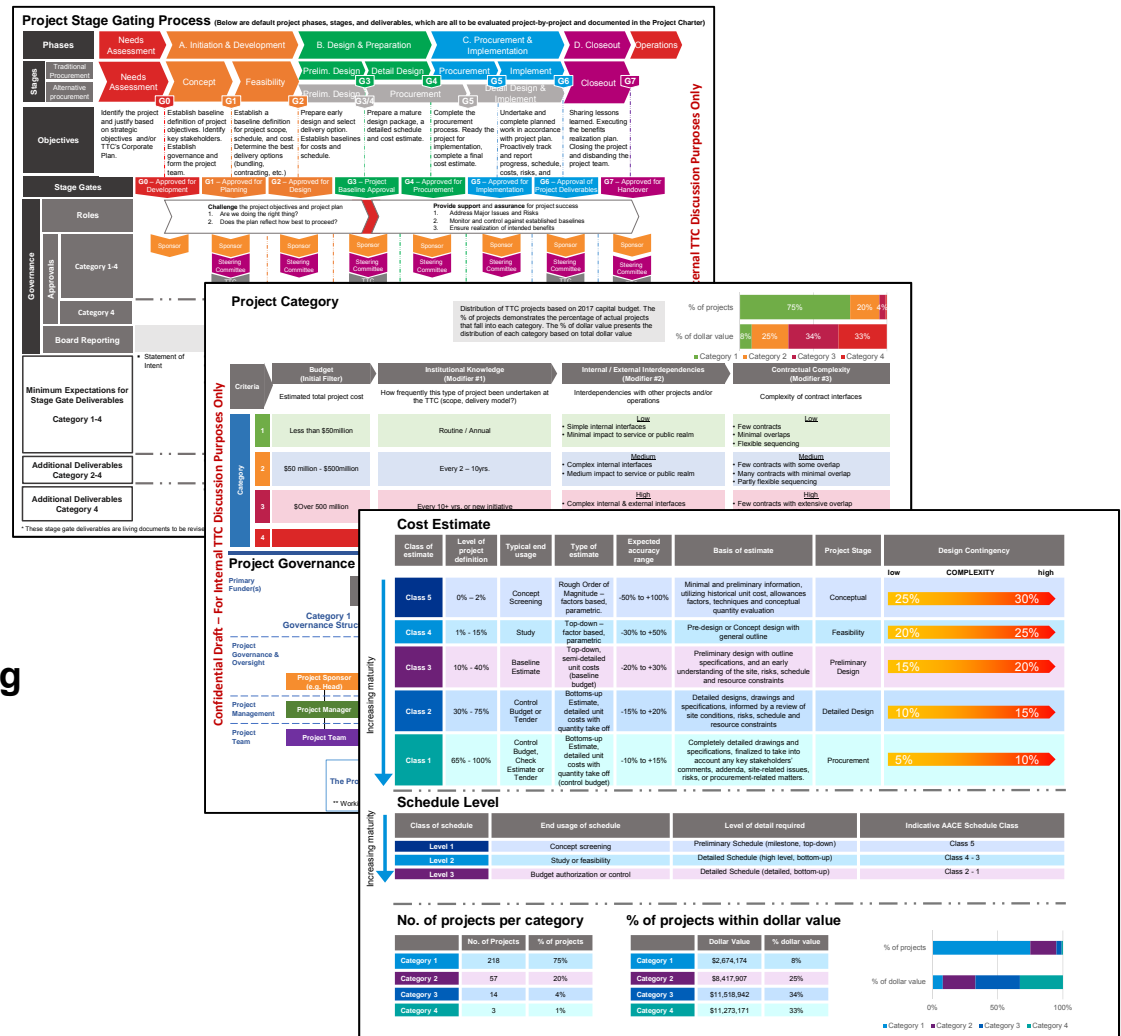
# Project Management Framework ("PMF")

## PMF

- Introduction
- Project Categorization
- Project Governance
- Project Oversight
- Stage Gate Process

## Standards

- Commercial Management
- Project Risk Management
- Stakeholder Management
- Project Justification
- Project Charter
- Scope Definition
- Project Monitoring & Reporting
- Cost Estimating
- Budgeting
- Delivery Options Analysis
- Procurement Management
- Scheduling
- Project Change Control
- Safety Certification



# Project Management Framework

**What is a PMF and why does the board “need to know about it” ?**

- **The Project Management Framework (PMF) includes sections that are the “elements of success” for good Board governance that are also contained in the Governance Toolkit:**
  - Project Categorization and Governance for each project category
  - Portfolio Approach to Capital
  - Clear Project Objectives
  - Project Preparation
  - Stage Gates and the Role of the Board
  - Competitive Selection Process
  - Receive and Act Upon the Right Information

# Portfolio Approach to Capital

- **The initial release of the PMF will be classified as PMF 1.0. The intention of the PMF is to be revised on a continuous basis as deemed necessary. The current version speaks specifically to projects, where as later versions of the PMF may include discussion on program and portfolio level.**
- **For TTC, each project is a component of a larger on-going, capital portfolio**
  - The impact of each project must be integrated within the overall capital portfolio
  - Governance must consider long term resource strategies and mechanisms to ensure that best practices are developed and “lessons learned” are retained for the future projects
- **In a Portfolio Approach, governance extends to the long-term fiscal impacts of all the projects within the portfolio**
  - Project approval implies long term budget and balance sheet impacts
  - Budget impacts include debt-service, operating and maintenance expenditures
  - Long-term balance sheet impacts can effect the credit rating outlook
  - Public works and AFPs may have different impacts (refer to cash flow figure)



# 5. Summary Review of Part 1

# Summary Review of Part 1

## **Important takeaways from Part 1:**

- 1. The TTC capital program (portfolio) is very large, with very significant project risks**
- 2. Managing and/or mitigating these project risks requires new initiatives by the Board**
  - A comprehensive system of project governance balancing Board accountability with Management efficiency
  - A Project Management Framework
  - Consideration of alternative procurement models such as public private partnerships
  - Consideration of the use of allocated Contingencies and Management Reserves
- 3. The appropriate governance model may vary according to the nature of the project (that is, by Project Categorization)**



# PART 2

# Board Governance



# 1. Governance

# Roles and Responsibilities of the Board

- **The Board is ultimately responsible for the success of the performance of the capital portfolio in realizing overall portfolio and delivery objectives**
- **The Board is responsible for establishing the appropriate governance**
  - Delegated through the Project Categorization system and the resulting governance structures
  - Identifying mandates and missions for all participants
  - Allowing effective delegation of authority, depending upon the project Categorization
- **The Board is ultimately responsible for the TTC Capital Portfolio and Project performance on an ongoing basis**
  - Ensuring “line of sight” project information on a regular basis, and as required
  - Providing, at minimum, approval to proceed through Stage gates 1,3 and 7
  - Providing approvals as a part of the Project Change Request process
  - Approving Procurement Authorizations according to authority limits
  - Receiving management updates, assessments and action alternatives related to risk events
- **Management is responsible for implementation within the controls established by the governance structure**



# Principals of Good Governance

- **Set Up the Right Governance Structure for each Project:**
  - To maintain control while ceding day-to-day responsibility
- **Take a life-cycle approach:**
  - Governance extends from the planning phase and continues through implementation and ultimately into operations;
  - To ensure that objectives and risks cover the life of the project, not just the implementation
- **Be aware of commonly-occurring issues:**
  - When setting objectives, planning, resourcing and dealing with stakeholders
- **Receive, and act upon, the right information on a consistent basis:**
  - To ensure **predictable** progress and informed decision-making, thus increasing the **certainty** of project success
  - Ensure appropriate pressure is on Management to **inform**
- **A structured process ensures that the right information is received:**
  - Regular information in a standard format from the project team based upon oversight
  - Due diligence challenges to the project team by outside experts, with reports to the Board

# Setting up the Right Governance Structure

- **Governance is formalized in a Project Management Framework (PMF)**
  - Governance is allocated to various levels of responsibility
  - The Board receives the right information at the right time
- **Project Charter as per the PMF**
  - Defines project objectives and the reporting system; clearly assigns decision-making roles and responsibilities; empowers the project team with delegated authority;
  - Defines contingency reserves and who has authority for their use.
- **Stage Gates (Board “Touch-Points”)**
  - Capital projects are categorized according to the organization’s exposure to their success
  - Approval (“stage”) gates ensure that project components move forward on a critical path
  - The role of the Board at each Stage Gate depends upon the categorization of the project
  - Understanding that Gate 3 is a critical gate in terms of project influence and change, and that it sets the performance baselines
- **Board Sub-Committee or Working Group**
  - A qualified group that examines monthly performance and reports to the Board;
  - The Board Sub-Committee may have some delegated authority
- **Lead/Sponsor**
  - A designated senior executive to integrate the project into the corporate organization

# The Importance of Confidentiality

- **Confidentiality is very beneficial in certain areas of Board responsibility**
  - “Commercial sensitivity” should be protected by Freedom of Information legislation
- **Commercially-sensitive issues**
  - The benefits of risk allocation in the business plan
  - Strategies and options recommended by management for dealing with actual or potential risk events
  - Status of actual or possible litigation issues with private partners/other governments
  - HR issues with the project team
- **Alternative approaches**
  - Board Capital Working-Group with confidentiality ability
  - Regular In-Camera sessions
  - Cost Estimates remain confidential until Stage Gate 3 (performance baseline established); or widespread introduction and use (and understanding by others) of Estimate Classes



## 2. Key Elements of Success in Governance

# Key Elements of Success

- 1. Portfolio Approach to Capital**
- 2. Clear Project Objectives**
- 3. Project Preparation**
- 4. Business Case**
  - Pre-feasibility
  - Feasibility/Business Case
- 5. Pre-Approvals and Land Acquisitions**
- 6. Stakeholder Management Plans**
- 7. Partnering and Supply Chain Management**
- 8. Contracting and Competitive Selection**

# 1. Portfolio Approach to Capital

**Discussed in Part 1; Critical to review as a Key Element of Success for Project Governance for the Board.**

- **For TTC, each project is a component of a larger on-going, capital portfolio**
  - The impact of each project must be integrated within the overall Portfolio
  - Governance must consider long term resource strategies and mechanisms to ensure that best practices are developed and “lessons learned” are retained for the future projects
- **In a Portfolio Approach, governance extends to the long-term fiscal impacts of all the projects within the Portfolio**
  - Project approval implies long term budget and balance sheet impacts
  - Budget impacts include debt-service, operating and maintenance expenditures
  - Long-term balance sheet impacts can effect the credit rating outlook
  - Public works and AFPs may have different impacts

## 2. Clear Project Objectives

- **Project Objectives should be clear, with measurable success factors**
  - Objectives and Measures should be set out in the Project Charter
  - Capital projects have SERVICE objectives and DELIVERY objectives
- **Service Objectives include the performance standards for the services to be delivered by the asset**
  - Service Objectives are set before project delivery commences
  - The scope of the project is determined by the Service Objectives
  - Transit examples:
    - Maximum passenger capacity of a transit system
    - Noise volume from trains on tracks
    - Maximum expected service outages
    - Maximum Operations, Maintenance and Rehabilitation expenses
- **Delivery Objectives include standards for procurement and construction**
  - Transit examples:
    - Total expected project cost, construction cost, schedule
    - An important DELIVERY objective is that SERVICE objectives are met

# Setting Clear Project Objectives

- **Objectives should be aligned with the corporation's Strategic Vision and Business Goals**
  - Example: If a strategic priority is to minimize whole-life cycle capital cost, the company may wish to invest in higher quality capital assets. Alternatively the priority could be to minimize near-term balance sheet impact, and the company may wish to invest in lower quality assets and expect higher long term maintenance and rehabilitation expenses.
  - Example: The Strategic Vision may identify the need for long-term flexibility of capital assets (to accommodate major changes in user demand or technology or competition). Outsourcing may imply insufficient flexibility to fundamentally change or liquidate the asset if risk events occur, and the costs of unwind may be prohibitive.
- **Priorities should not be in conflict with each other and trade-offs between objectives should be considered in advance**
  - Particularly between cost and schedule
- **Part of setting objectives is to identify and monitor the associated Key Risks**
  - This will help spot early warning signs
  - Example: Failure to secure the right human resources, or labour disputes, can cause construction delays
- **Timely decision making**



# Clear Project Objectives

<p><b>Substantial Completion Objectives</b></p>	<ol style="list-style-type: none"> <li>1 Asset meets specifications.</li> <li>2 Asset meets performance specifications.</li> </ol>
<p><b>Service Objectives</b></p>	<ol style="list-style-type: none"> <li>1 Project is functioning as planned and specified.</li> <li>2 Project is providing expected services (i.e. capacity, volume requirements, etc.)</li> <li>3 Project is functioning as per specified variances (i.e.. noise, timing, etc.)</li> <li>4 Warranty, maintenance, outages are occurring as per the specification/plans.</li> </ol>
<p><b>Delivery Objectives</b></p>	<ol style="list-style-type: none"> <li>1 Project implementation is on schedule.</li> <li>2 Project is on budget (or below).</li> <li>3 Risks are allocated/transferred and managed as part of project baseline.</li> <li>4 Environmental and Safety Goals and Requirements are meet or exceeded.</li> <li>5 Stakeholder Expectations are met or exceeded; relations maintained.</li> <li>6 Customer Service expectations are met or exceeded.</li> </ol>

# 3. Project Preparation

- **Successful project delivery requires appropriate preparation, focused on a critical path through project components**
  - Business Planning
  - Pre-Approvals and Land Acquisition
  - Stakeholder Management
  - Procurement and Competitive Selection
  - Construction and Operations
- **By organizing project delivery into Stage Gates, Boards can ensure that projects have the appropriate preparation at the appropriate time**
- **Lack of project preparation leads to a high probability that there can be problems**
  - Inappropriate selection of the procurement model and lack of response by private sector proponents
  - Claims and liquidated damages to be paid as a result of delays
  - Requests from private sector proponents to renegotiate partnership arrangements due to changed circumstances
  - Expensive scope change requests from the public sector/others

# 4. Business Case

- **The Project Business Case presents key information for consideration by the Board**
  - A clear statement of Project Requirements and Service Delivery Alternatives
  - Project and Delivery objectives and measures of success, and any trade-offs between objectives
  - Financial modelling and Value-for-Money assessment of procurement alternatives (partnership models versus public works, as required )
  - Financial Statement consequences (expenditures, balance sheet) of the recommended procurement alternative
  - Stakeholder analysis
  - Project Governance recommendation, Work Plan, and Implementation Budget if the project is approved. The Governance recommendation is included in the Project Charter and delegated authorities.
- **The Business Case is supported by a Risk Register**
  - The Risk Register reflects a line-by-line assessment a key approval, commercial and technical risks
  - Each assessment includes the probability of the risk occurring and the consequences, and the estimated cost of transferring the risk to a business partner as opposed to retaining it as an “Owner’s risk”
  - The effective allocation of transferred and retained risks is the essence of value-for-money in partnership arrangements

# Business Case

## Risk Allocation

Category 1, 2, 3 projects will typically fall within these two options

Risk	AFP		EPC/DB		DBB	
	Owner	Private Partner	Owner	Contractor	Owner	Contractor
Approvals & Property Acquisition	✓		✓		✓	
Design & Constructability		✓		✓	✓	
Construction Schedule		✓		✓		✓
Geotechnical Risk	✓	✓	✓	✓	✓	
Utilities	✓	✓	✓	✓	✓	
Multi-Contractor Integration		✓		✓	✓	
Construction Costs		✓		✓	✓	
Proof of Performance						
• Commissioning		✓		✓		✓
• On-Going		✓	✓		✓	
Operations & Maintenance & Rehabilitation Costs		✓	✓		✓	
Compensation Events	✓		✓		✓	
Force Majeure (Relief Events)	✓	✓	✓	✓	✓	✓

# Business Case

## Examples of Canadian Rapid Transit AFP Projects

#	Risk Allocation	Method/Formula
1	Transferred	Private partner assumed geotechnical risks for a price adjustment
2	Transferred	Geotechnical risks identified as a bid item in exchange for price adjustment
3	Shared	Geotechnical risks transferred subject to baseline reports
4	Retained	All geotechnical risks retained by public owner

# Business Case

- **The preparation of the Business Case should involve Operations personnel**
  - These individuals should be consulted frequently during the preparation of the Business Case, to align capital planning with operations (and the capital budget with the operating budget)
- **Incorporate market feedback from potential project proponents and contractors**
- **The financial modelling should include an analysis of financing alternatives**
  - Project finance can be compared with “blended project and public” finance and with the use of parental guarantees, bonding and letters of credit
- **In the Charter/Project Management Plan, the capital project is organized by Stage Gates**
  - Each Stage Gate identifies requirements for action and approvals
  - Each Stage Gate identifies the role, if any, of the Board in the required action and approval

# 5. Pre-Approvals & Land Acquisitions

- **The Project Delivery process must be focused on a “critical path”**
  - External, “showstopper” events that could delay or cancel procurement or construction should be identified and possibly mitigated
  - Showstopper events that are the fault of the Owner can also lead to liquidated damages events and further cost to the Owner
- **The Critical Path before procurement commences includes many Owner-related risks**
  - Owner funding from all sources is committed and available
  - Project financing is structured and viable
  - Land and alignment is acquired or acquirable
  - Permits and external approvals are in place
- **Some “external” critical path risks can be shared with the private partner during construction**
  - Managing issues with utilities within the alignment (water, wastewater, electric, gas)
  - Unanticipated “force majeure” events
    - Fires, Flooding, Strikes

# 6. Stakeholder Management Plan

- **Project success is greatly enhanced by the acceptance and support of influential stakeholders**
  - Stakeholders include Owners, contributors, users, public interest groups, employees, unions
- **Identify all relevant stakeholders**
  - Determine specific needs, hold consultations, gain approval and agree upon benefits to be shared
- **Articulate a strategy**
  - Engage and meet the needs of each stakeholder, mitigate any challenges
- **Include both macro and micro communications plans**
  - Macro plans develop social license to deliver and operate the project, and inform the public as to how the project benefits the public interest
  - Micro plans enable an effective correspondence with individual stakeholder groups



# 7. Partnering and Supply Chain Management

- **Any outsourcing partners must be carefully vetted, and joined through robust contracts with aligned objective**
  - After entering into a partnership arrangement, the Owner's resulting risk/return balance should remain consistent with the corporate business strategy
  - The combined team should be strengthened
- **A decision to enter into a partnership with the private sector (as opposed to self-perform or public works) is critical**
  - Through Delivery Options Analysis, a partnership must strongly suggest value-for money in comparison to procurement alternatives such as public works.
  - In-house expertise must be retained, particularly for an ongoing capital program
- **Risk allocation drives value-for-money**
  - Risks should be allocated to (or shared with) the partner best able to manage/mitigate the risk
- **Including local suppliers can strengthen the partnership**
  - Local suppliers typically complement the abilities of international partners and, at the same time, strengthen stakeholder acceptance

# 8. Contracting and Competitive Selection

- **Effective contracting arrangements with the private sector are usually associated with competitive, manageable, selection processes that attract strong and motivated partners**
- **An effective process will be characterized by:**
  - A clear contracting process where bidders understand the project and the Owner's objectives, and an objective, pass/fail evaluation process with incentives for innovative responses
  - Discipline, where the Owner avoids scope changes and maintains the critical path schedule
  - Fairness and transparency, with a Fairness Monitor
  - Collaboration between Owners and bidders to achieve mutually-beneficial adjustments to the contracts and the selection process
  - Contracts that focus on performance specifications aligned with Owner's objectives, rather than the more traditional input specifications
  - Payments under contracts are based upon supplier performance



# 3. Stage Gates and the Role of the Board

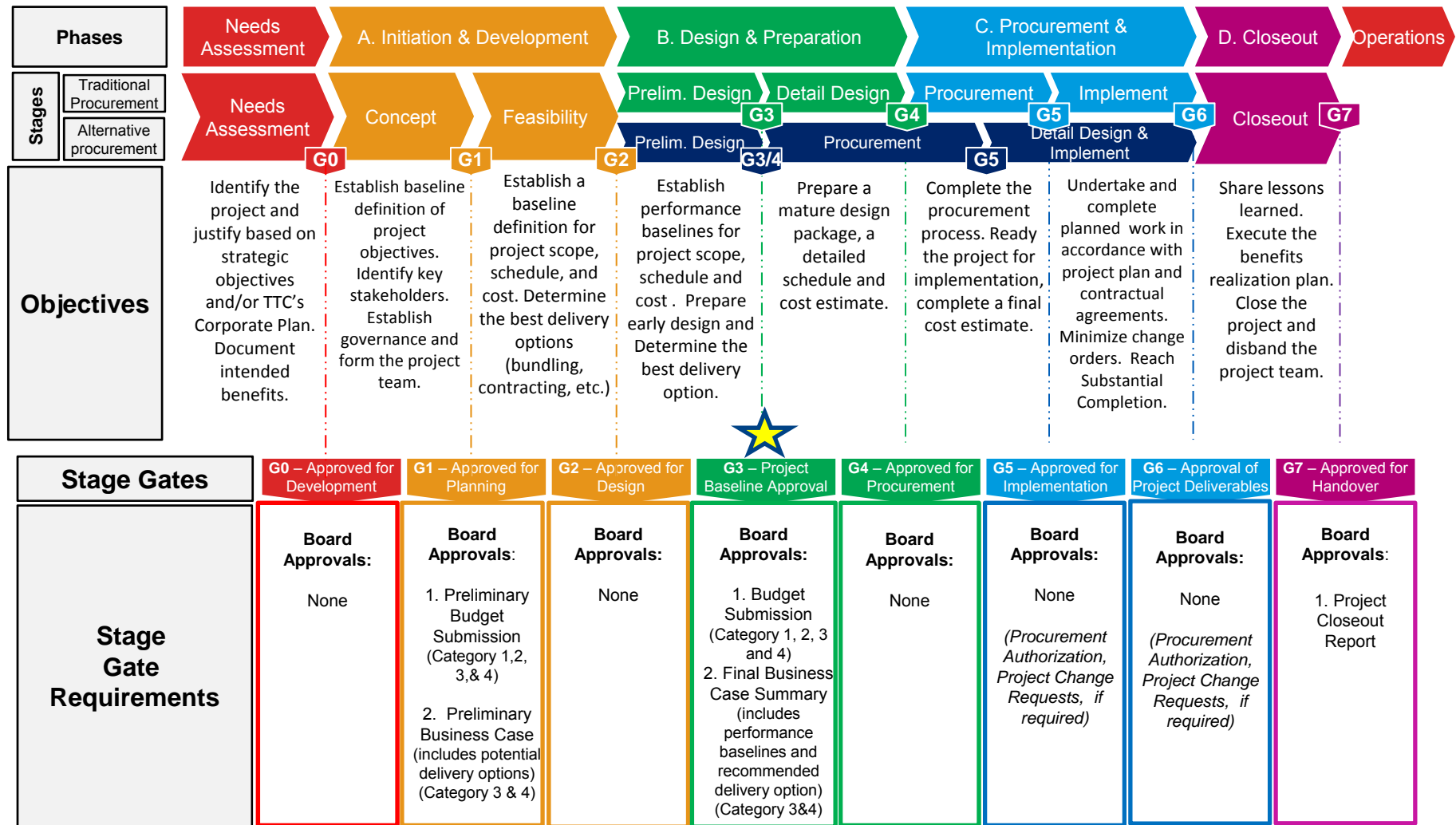
# The Role of the Board at Stage Gates

- **At each Stage Gate, there is a role for the Board, which may be one of:**
  - Formal approval of Stage Gate deliverables (“Approval Gate”)
  - Project Performance Update (reporting) to the Board if certain performance measures are not met, with action taken by Management/Project Board, within delegated authority
  - Project Performance Update (reporting) to the Board if certain performance measures are not met, with options and recommendations presented by Management/Project Board, and approval by the Board
- **For Group 1 and 2 Projects**
  - Board governance relies more upon delegated authority to Management
  - Most Stage Gate approvals are delegated, with Project Performance Updates (including major variation reporting to the Board as required
- **For Group 3 and 4 Projects**
  - Board governance relies on a balance of Stage Gate approvals and delegated authority
  - Heavy reliance on Project Performance Updates (including major variation reporting) with recommendations presented by Management, as required
- **Timing: Stage Gate touch-points and Reporting are not on the same schedule:**
  - Stage Gates do not follow a ‘calendar’ schedule; Reporting does follow a schedule.

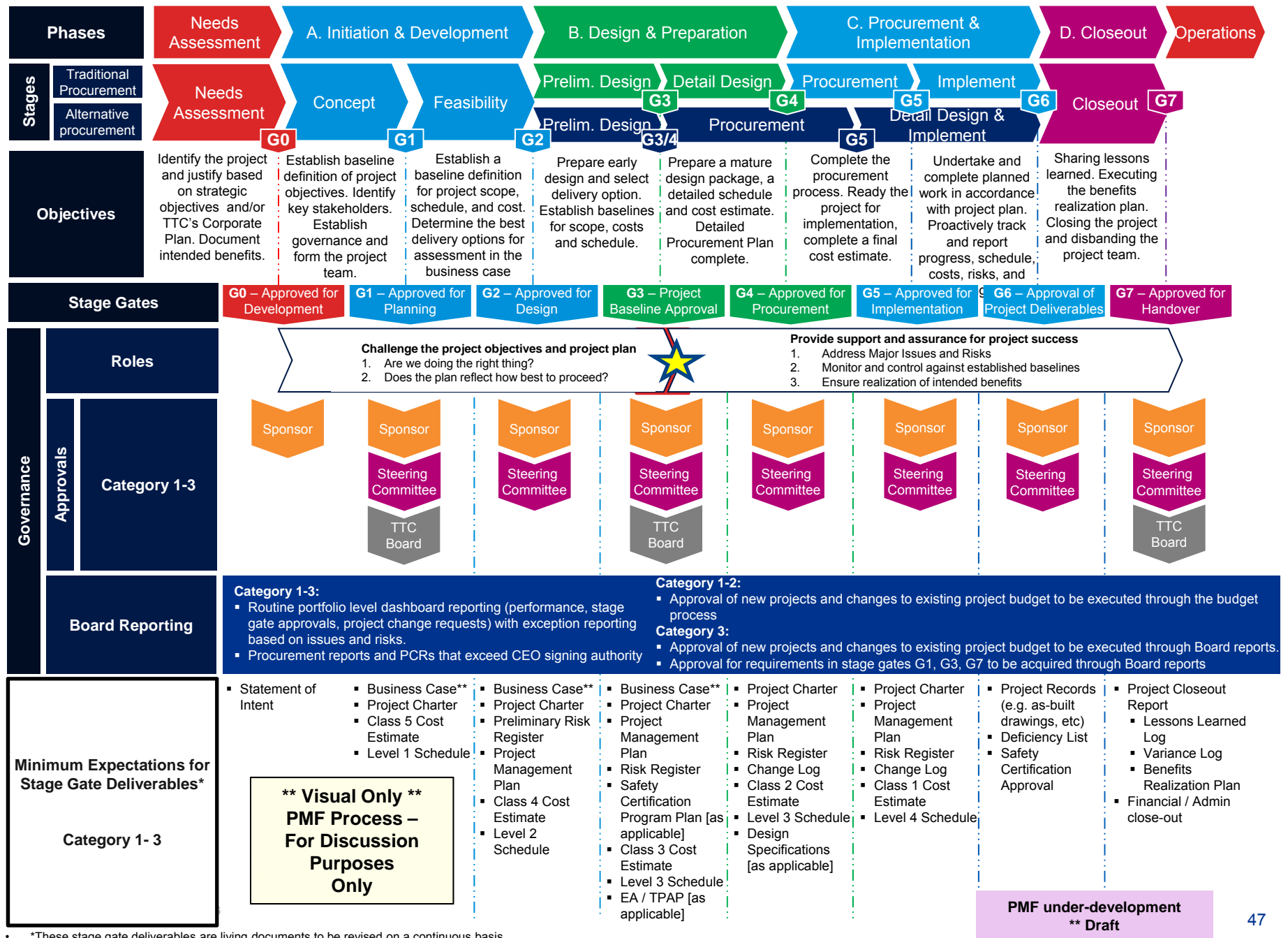
# Stage Gates and Project Governance

- **Stage Gates are placed at important milestones or “junctions” in the capital project delivery and operations process.**
  - From needs identification through to project operations
- **A Stage Gate status update and 6-month look ahead for the capital portfolio could be included in the Capital Program/Portfolio section of the monthly CEO’s Report**
- **Board members will also receive information and consider alternative recommendations from management on an “as required” basis**
  - As required whenever there are significant variations from the project plan
- **The objective is to involve the Board only for required Stage Gate approvals and when and if there are major variations from plan**
  - There is a comprehensive, robust project management process occurring with Management and their team that should not be interfered with except when necessary
  - At Stage Gates and when there are major variations, the onus will be on Management to provide alternatives and recommendations

# Summary of the Stage Gates and Board Touch Points



# Project Stage Gating Process (Below are default project phases, stages, and deliverables, which are all to be evaluated project-by-project and documented in the Project Charter)



\*These stage gate deliverables are living documents to be revised on a continuous basis  
 \*\*Business Cases are required for all projects above \$5M

# Gate 0: Approved for Development

Needs  
Assessment

Needs  
Assessment

App  
Dev

**Objective:** Identify the project and justify based on strategic objectives and/or TTC's Corporate Plan.

**Progress During Stage:**

- Identification of opportunity by Sponsor
- Board definition of the capital project
- Assessment as to consistency with TTC Strategic Plan

**Minimum Deliverables:**

- Statement of Intent

**Questions to Ask:**

1. Is the project consistent with the TTC's Strategic Plan?
2. Is there potential to fit the project within the TTC's long term fiscal framework?

**Board Approvals:**

None



# Gate 1: Approved for Planning



**Objective:** Establish preliminary baseline definition of project objectives. Identify key stakeholders. Establish governance and form the project team.

## Progress During Stage:

- Establish Governance structure and Project Steering Committee
- Establish baseline project objectives.
- Identify key stakeholders.
- Form Project Team (for preliminary activities)
- 0% to 2% scope definition

## Minimum Deliverables:

- Preliminary Business Case
- Preliminary Project Charter including stage gates

## Questions to Ask:

1. Has there been early response from stakeholders?
2. What are the qualifications and contractual arrangements for senior members of the project team?

## Board Approvals:

Budget Submission (All Categories)  
Preliminary Business Case Summary\*  
(Categories 3-4)

\*under development

# Gate 2: Feasibility



**Objective:** Establish a baseline definition for project scope, schedule, and cost. Determine the best delivery options (bundling, contracting, etc.).

## Progress During Stage:

- Preliminary definition of scope and scope alternatives
- Conceptual plan, including preliminary budget and risk register, and preliminary screen for AFP eligibility
- Work Plan (ToR, schedule, budget) for Business Case
- 1% to 15% scope definition

## Minimum Deliverables:

- Update existing Preliminary Project Charter and Business Case
- Preliminary Project Management Plan (“PMP”)
- Class 4 Estimate, Level 2 Schedule
- Risk Register (preliminary)

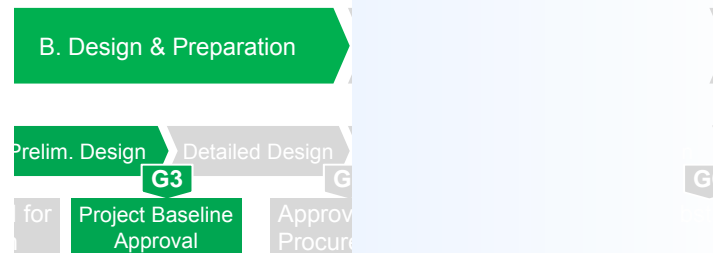
## Questions to Ask:

1. Is the recommended scope appropriate for the TTC Strategic Plan and long-term Fiscal Plan?
2. Are there any compelling reasons to rule out a AFP approach (generally Category 4)?
3. Does the project team have the necessary resources and expertise to undertake the Business Case?
4. Are communications and stakeholder management actions required for the launch of the Business Case?

## Board Approvals:

None

# Gate 3: Project Baseline Approval



After Stage Gate 3, Board's role changes from **challenger** to **support and assurance**

**Objective:** Establish a performance baseline definition for project scope, schedule, and cost. Determine the best delivery options (bundling, contracting, etc.)

## Progress During Stage:

- Complete the Business Case including: functional program; risk register and procurement options analysis; market sounding; communications and stakeholder management plan
- 10% to 40% scope definition

## Minimum Deliverables:

- Final Project Charter, Business Case, updated Risk Register, Project Management Plan
- Class 3 Estimate, Level 3 Schedule – performance baselines
- Safety Certification Program Plan (*as req'd*)
- EA / TPAP, PSOS (*as req'd*)

## Questions to Ask:

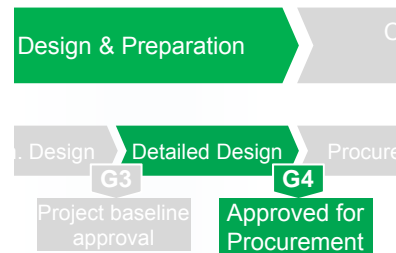
1. What are the mitigation strategies for key retained risks?
2. What is the approval process if all bids are over budget?
3. Are we absolutely ready to move past this Gate?

## Board Approvals:

Budget Submission (All Categories)  
Business Case Summary\* (Categories 3-4)

\*under development

# Gate 4: Approved for Procurement



**Objective ('traditional' procurement only):** Prepare a mature design package, a detailed schedule and cost estimate.

**Progress During Stage:**

- Detailed design and procurement strategy for 'traditional' procurement
- 30% to 75% scope definition

**Minimum Deliverables:**

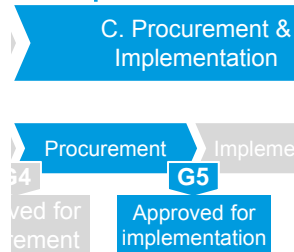
- Update existing (Project Charter, Risk Register, Project Management Plan, Level 3 Schedule)
- Class 2 Estimate
- Project Change Log
- Design Specifications
- Request For Proposal, Information etc. (" RFX", as req'd)

**Questions to Ask:**

1. Explain changes in cost estimate, if any, and seek alternatives to adjust scope in order to reduce budget as at the previous Stage Gate.

**Board Approvals:**  
None

# Gate 5: Approved for Implementation



**Objective:** Complete the procurement process. Ready the project for implementation, complete a final cost estimate.

## Progress During Stage:

- Competitive selection process and selection of preferred proponent.
- Successful negotiation of contractual arrangement
- 65% to 100% scope definition

## Minimum Deliverables:

- Update existing (Project Charter, Risk Register, Project Management Plan, Project Change Log)
- Class 1 Estimate
- Implementation Schedule(s)
- Procurement documents (as req'd)

## Questions to Ask:

1. Qualification of Preferred Proponent and evaluation results.
2. Any changes to budget or contractual agreements (including risk allocation) in comparison to Business case?

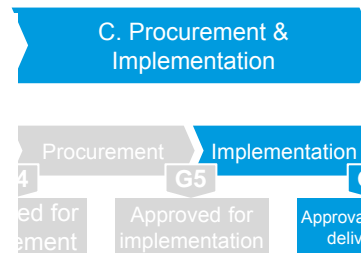
**Board Approvals:**  
None

**\*\*May require approval for:**  
Procurement Authorization  
Project Change Requests

\*\*

*for both, as required by Authority Limits,  
not linked to Gate*

# Gate 6: Implement



**Objective:** Undertake and complete all planned implementation work in accordance with contractual agreements. Minimize change orders to maintain budget and schedule. Reach Substantial Completion of implementation.

## Progress During Stage:

- Commence and conclude implementation (e.g. construction)
- Realize Substantial Completion, indicating that the project has been delivered and meets contractual specifications.

## Minimum Deliverables:

- Risk Register and Project Change Log
- Project Records (e.g. as-built drawings, etc.)
- Deficiency List
- Safety Certification Approval (*as req'd*)

## Questions to Ask:

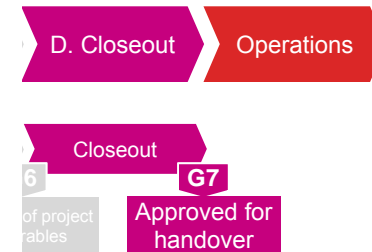
1. What is the status of results (cost, schedule) as compared to project delivery objectives?
2. What is the status of results (operating performance) as compared to project performance objectives?

**Board Approvals:**  
None

**\*\*May require approval for:**  
Procurement Authorization  
Project Change Requests

*\*\*for both, as required by Authority Limits, not linked to Gate*

# Gate 7: Close Out



**Objective:** Share lessons learned. Execute the benefits realization plan. Close the project and disband the project team.

## Progress During Stage:

- Prepare Project Closeout Report
- Completion of any outstanding contractual issues with suppliers, work force, etc.
- Financial, administrative and accounting closeout of project

## Minimum Deliverables:

- Project Closeout report
  - Lessons Learned Log
  - Variance Log
  - Benefits Realization Plan

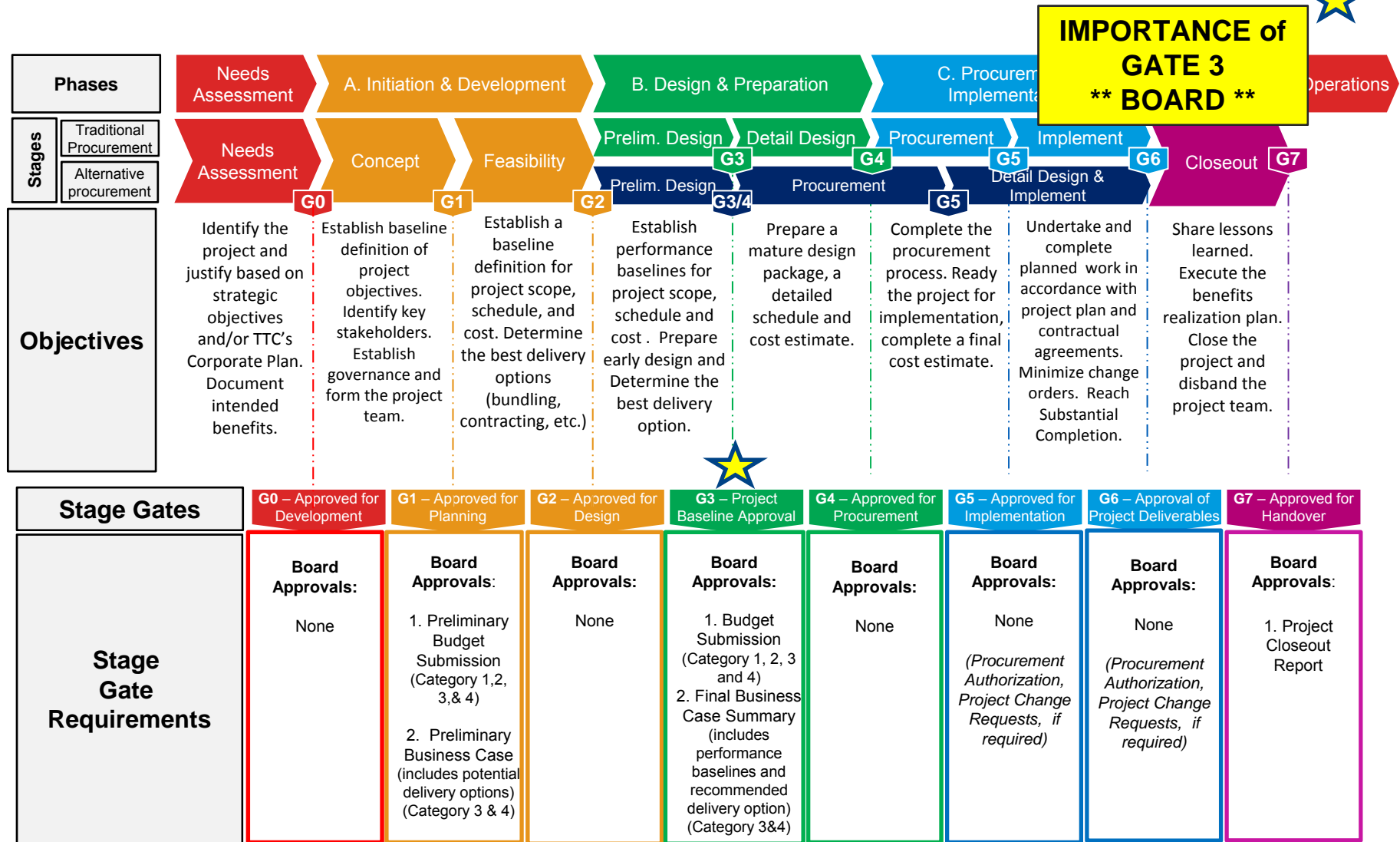
## Questions to Ask:

1. What has been communicated as to the results of the project delivery process?
2. What are the key lessons learned for future projects? How are these lessons being implemented?

**Board Approvals:**  
Project Closeout Report\*

\*under development

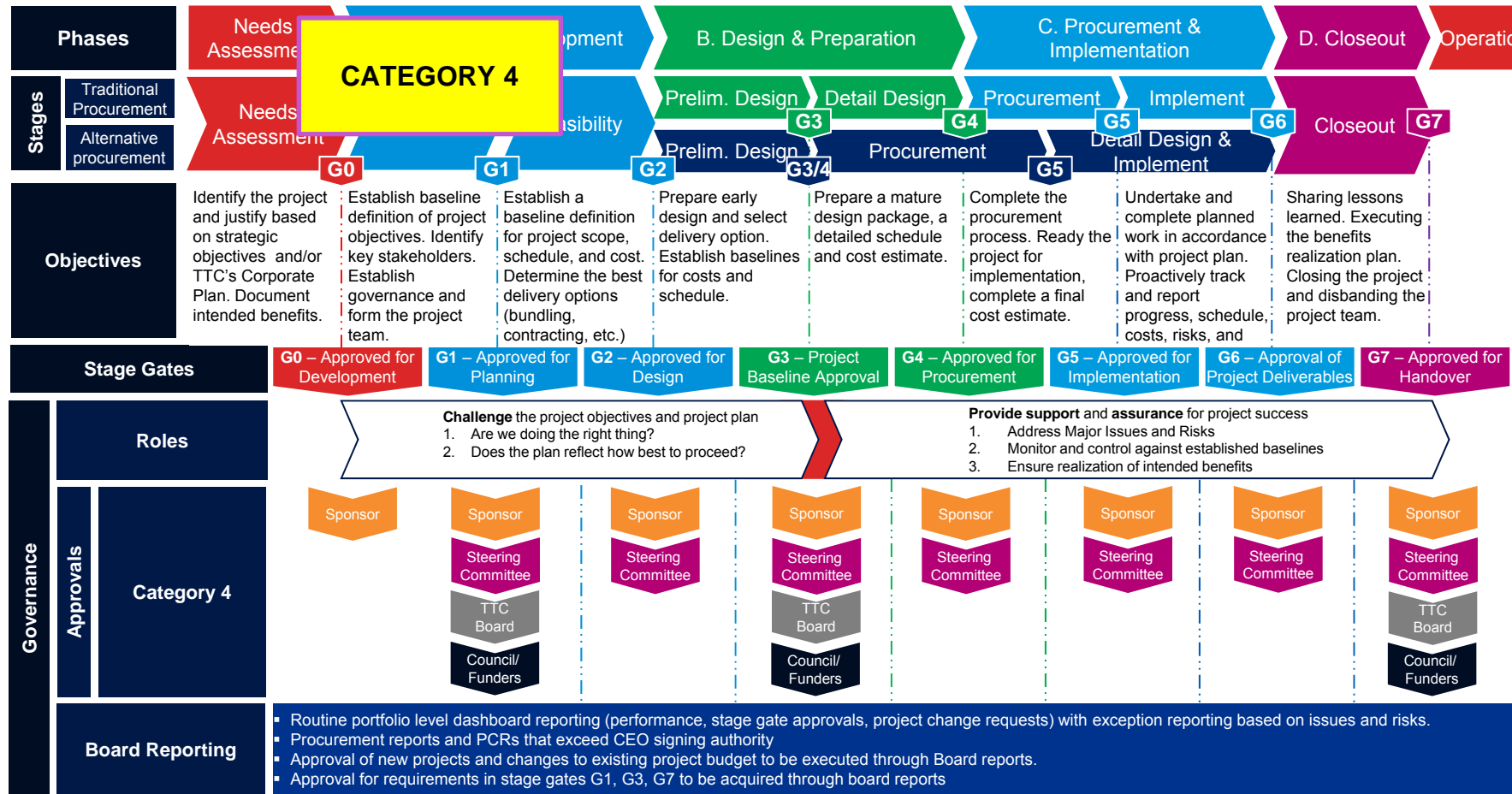
# Summary of the Stage Gates and Board Touch Points



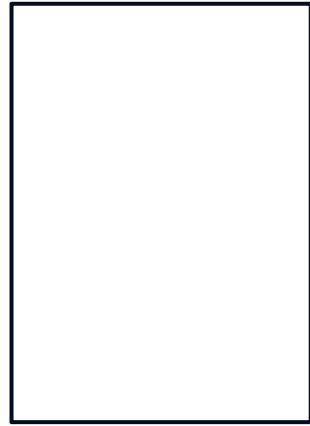
**IMPORTANCE of GATE 3**  
**\*\* BOARD \*\***



# Project Stage Gating Process (Below are default project phases, stages, and deliverables, which are all to be evaluated project-by-project and documented in the Project Charter)



Confidential Draft – For Internal TTC Discussion Purposes Only



▪ Cost-Share Term ▪ PSOS (bid) doc

\* These stage gate deliverables are living documents to be revised on a continuous basis Sheet

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# 4. Getting the Right Information

# Receiving and Acting Upon the Right Information

- **Boards need PREDICTABLE and TIMELY information in order to make good, TIMELY decisions that bring CERTAINTY of reaching project objectives**
  - The information must be regular, reliable and designed for decision-makers who have relatively less technical expertise and minimal day-to-day exposure to the project.
- **Predictability comes from effective monitoring and reporting systems**
  - The information must be forward-looking, complete with recommended strategies risks and challenges
- **Certainty is achieved when decision-makers can narrow the range of possible outcomes**

# Sources of Information

- **Dashboard Reports and Project Reports**
  - Dashboard Reports (status of projects and portfolio )
  - Project Reports (exceptions)
  - The purpose of these Reports is to provide early warnings and to challenge Management to provide “early day” options and recommendations
  - Reports are provided on a strict schedule, in a specified and consistent format that cannot be revised without Board approval
  - All reporting; purpose, content and frequency are currently under review by TTC Management
- **An early warning system is required to alert the Board to any possible need to utilize contingency funds (and/or management reserves)**
  - Project Budgets should carry contingencies to cover estimating errors and for retained risk events
  - When relatively minor contingency approvals have been delegated to Management or to the project team, the Board should be made aware of any draws upon these funds
  - When relatively major contingency approvals remain the responsibility of the Board, a special Board meeting is typically required to approve any draws on contingencies, and to approve any further actions required as a result of the circumstances that led to the draws.
- **Periodically, Boards should request independent assurance that good practices are being followed**
  - Assurance can be provided either by focused independent audit, or through more comprehensive Independent Project Assurance and/or Health Checks.

# Effective Project Reports

- **Effective Project Status Reports to the Board require:**
  - **FOCUS:** information is structured to allow the user to easily navigate, with “traffic lights” to highlight important issues
  - **TAILOR-MADE:** the report is suited to the project context and to the user
  - **RELIABLE:** the Reports are produced on an immutable schedule, and any changes in format are pre-approved by the Board
  - **TRANSPARENT:** information clearly links to the program and/or delivery objectives of the organization
  - **QUANTITATIVE:** measures of performance against objectives are quantified
  - **PRIORITY:** the user clearly understands the magnitude of issues
  - **FORWARD-LOOKING:** the Report makes projections in addition to explaining past performance
  - **SOLUTION-ORIENTED:** red and amber lights are required to be accompanied by comments by management/project team as to potential consequences and options, and recommended option going forward

# Current CEO's Report

- **Critical Projects Dashboard**
- **CEO Commentary and Current Issues**
- **Financial Summary**
- **Major Variance Reporting**

**Critical Projects Dashboard** Current as of March 2017 | Next Update in May 2017 CEO Report

The dashboard below provides a quarterly snapshot in time of the health status for major programs and projects that comprise the TTC project portfolio. The programs and projects, referred to hereafter as 'projects', have been included in the dashboard due to their magnitude and/or strategic significance. Collectively, the dashboard comprises 52% of the base capital program and 100% of the fully funded expansion projects.

Dashboard data will be refreshed quarterly. The CEO Reports for March, May, August, and November will include a dashboard update as well as one-page project performance updates (see Section 4 of this CEO Report) for each of the projects listed in the dashboard. Major changes necessitating an immediate update will be discussed in Section 2 – CEO Commentary.

Project	Strategic Objective	Budget	Cost Containment		Start Date	Key Milestones		Status to Completion			
			Actual	%		Planned	Completed	On Track	At Risk	Delayed	
<b>Site Work &amp; Facilities</b>											
Vehicle Purchase of Buses *	Acquire	\$408	\$232	57%	\$400	100%	Ongoing	Q4 2015	Q4 2016	Q2 2017	Q4 2017
Facilities Vehicle Fleet Change	Change	\$181	\$1	1%	\$181	100%	Q4 2015	Q4 2015	Q2 2016	Q4 2016	Q4 2016
Management Systems VISION (CADASIL)	Change	\$115	\$10	9%	\$115	100%	Q2 2014	Q4 2015	Q1 2016	Q1 2016	Q1 2016
<b>Structural Work &amp; Facilities</b>											
Facilities Purchase of New Streetcars	Acquire	\$1,197	\$553	47%	\$1,197	100%	Q2 2016	Q4 2016	Q4 2016	Q4 2016	Q4 2016
Facilities Lease Buses	Change	\$516	\$495	96%	\$516	100%	Ongoing	Q4 2015	Q4 2015	Q4 2015	Q4 2015
Track Surface Work *	Acquire	\$382	\$253	66%	\$382	100%	Ongoing	Q4 2015	Q4 2015	Q4 2015	Q4 2015

**CEO Commentary and Current Issues**

**General Overview**

This month's report includes data to the end of January 2017.

In response to Commissioners' feedback for greater visibility of major projects, the project dashboard has been moved to the front of this report to sit just behind the performance scorecard.

The dashboard shows sustained progress across our mega projects and also provides a visual indication of just how much the TTC is delivering concurrently, as we drive to the finish line of our first five year plan. I have said before that the TTC is doing in five years what many would take twice that time to achieve: a complete modernization of its infrastructure, processes and culture – all delivered by the Corporate Plan that we developed back in 2012.

As we approach the end of Quarter 1, 2017, we are well placed to achieve the overriding objectives that I have set for this year, namely delivery of our mega projects and a year-end scorecard that shows each measure above or at target - or at the very least, on an improving trend.

**Financials**

This section provides detailed information about the TTC and Wheel-Trans Operating Budgets and the TTC Capital Program.

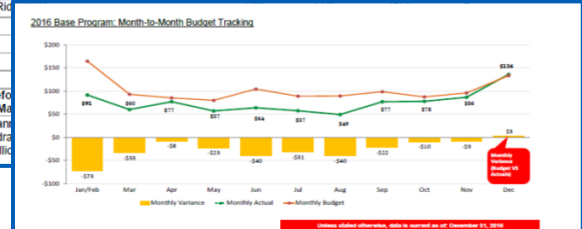
**TTC Operating Budget**

**2016 Year-End Results**

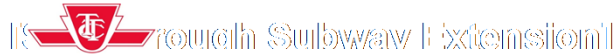
The revenue, expense, and subsidy amounts shown in the following table are preliminary and subject to audit. The final 2016 audited financial statements are scheduled to be presented to the TTC Audit and Risk Management Committee on May 29, 2017.

(millions)	Projection	Budget	Variance
2016 TTC Operating Budget			
Customer Journeys (Ridership)			
Revenue			
Expenses			
Subsidy Required			
Subsidy Available*			
<b>Subtotal: Surplus before and refurbishment (M)</b>			

\*Budget included a plan for the City of Toronto. This draft budget includes a \$1 million variance.



# Sample Project Performance Update ("PPU")



## Performance Scorecard

	Schedule	Cost	Scope	Overall Risk
Current Status	Y	G	G	Y
Outlook to Completion	Y	G	G	Y

### Accomplishments

"Accomplishments" include the key planning/implementation milestones reached since the last Project Status Report, and the key milestones that were missed. Accomplishments also include significant communications/stakeholder management events, major litigations or labour relations issues resolved, and any completed significant new hires.

### Key Issues and Risks

"Key Issues & Risks" - For each Amber and Red risk evaluation, management will provide an explanation of the cause and extent of the risk issue and possible consequences, as well as action alternatives and either (a) recommended actions if Board approval is required or, (b) action taken if Board approval is not required. Management will also identify the consequences, if any, of action on ALL major risks, so as to identify any trade-offs required between objectives (for example, do different actions to mitigate a geotechnical issue have different impacts on project schedule and cost).

The Project Charter and Business Case contain Objectives for the Project Program (does the asset deliver the desired services?) and for Project Delivery (is the project on schedule, on budget, and with appropriate risks allocated?) An Amber evaluation for a particular risk indicates that management is concerned that a project objective will not be realized. A Red evaluation means that management has concluded that a project objective will NOT be realized, and that project objectives must be amended. Recommended amendments to project objectives and implications for communications and stakeholder management must be included.

### Management Action Plan

**TTC Management and Board REPORTING PROCESS CURRENTLY UNDER REVIEW**

*SAMPLE*

## Budget Update as of Nov. 27, 2016 (millions of dollars)

	Year to Date	2016	Lifetime to Date	Estimated Final Cost
Budget:	\$19.5	\$21.2	\$23.4	\$63.2
Actual:	\$13.3		\$19.4	
Projected:		\$15.3		\$63.2
Actual Variance:	-\$6.2		-\$4.0	
Projected Variance:		-\$5.9		\$0.0

2016 Variance:  
Variance is due to late start of IBM contract.

EFC Variance:  
\$ 0 million

## Schedule Status

No.	Phase / Milestone / Target	Milestone Date	Pre 2016	2016				2017				2018				2019	2020	2021	2022	2023	2024
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
1	Start	Q1 2014	✓																		
2	Wave 1/Release 1 team in place	Q3 2015	✓																		
3	Program Management team in place	Q4 2015	✓																		
4	Award System Integrator (SI) Contract	Q1 2016		✓																	
5	Wave 1-Core HR / Payroll / Finance (Release 1)	Q4 2015	✓																		
6	Wave 1-Core HR / Payroll / Finance (Release 2)	Q4 2016																			
7	Wave 1-Core HR / Payroll / Finance (Release 3&4)	Q2 2017																			
8	Wave 1-Core HR / Payroll / Finance (Release 5)	Q4 2017																			
9	Wave 2-Workforce Management	Q4 2017																			
10	Wave 3-Budgeting, AP/AR, Procurement	Q4 2017																			
11	Wave 4-Integration-Facilities Management	Q3 2018																			
12	Wave 5-Integration-Bus Maintenance	Q1 2019																			
13	Wave 6-Integration-Rail Maintenance	Q3 2019																			
14	Finish	Q3 2019																			

**Legend**

✓ Completed as planned	✓ Completed Late	✓ Completed w/Impact on Critical Path
■ On Schedule	■ Tracking behind Schedule	■ Poses Risk to Critical Path

Unless stated otherwise, data is current as of: Nov. 27, 2016

Reporting frequency: Quarterly



# Sample Performance Scorecard Criteria

## SCORECARD EVALUATION

### EVALUATION OF CURRENT YEAR STATUS

	Green	Yellow	Red
<b>Overall Status</b>	Project is generally within approved Scope, Schedule, and Budget metrics defined below. Project stakeholders are generally satisfied.	The project has missed one or more of the Scope, Schedule, or Budget metrics defined below.	The project has missed one or more (for 2 consecutive months) of the Scope, Schedule, or Budget metrics defined below.
<b>Schedule</b>	Project will meet current years deliverables as per the current approved schedule.	Project will miss some deliverables but they are not on the critical path and will not jeopardize the current schedule.	Project has missed one or more major milestones requiring rebaselining the schedule.
<b>Scope</b>	The solution / end objectives are achievable as conceptualized by the project sponsors and stakeholders.	The solution / end objectives may not align with the sponsor or stakeholder expectations.	Scope change request has been submitted.
<b>Budget</b>	Project's projected actual for current year is within +/- 10% of the budget.	Project's projected actual for current year is +/- 10% to 20% of the budget.	Project's projected actual for current year is > +/- 20% of the budget.
<b>Burn Rate Ratio</b>	Project's projected burn rate ratio is less than 2. Burn Rate Ratio = (Period average year to date/Required average to year end)	Project's projected burn rate ratio is between 2 and 3.	Project's projected burn rate ratio is greater than 3.

*TTC Management  
and Board  
REPORTING PROCESS  
CURRENTLY UNDER  
REVIEW*  
  
**SAMPLE**

### EVALUATION OF RISK TO SUCCESSFUL COMPLETION

	Green	Yellow	Red
<b>Overall Status</b>	Project is currently on track and expected to complete within scope, schedule and budget.	The project is at risk of missing one or either Scope, Schedule, Budget or target benefits.	The project is at risk of missing more than one of the Scope, Schedule, Budget or target benefits.
<b>Schedule</b>	Project is on track for completion below 90% of current schedule baseline.	Project is on track for completion between 90 to 95% of current schedule baseline.	Project is on track for completion is higher than 95% of current schedule baseline.
<b>Scope</b>	Project is on track to achieve its scope expected by the project sponsors and stakeholders.	Project may be at risk of failing to meet scope.	Scope change request has been submitted.
<b>Budget</b>	Project is on track for completion below 90% of current budget.	Project is on track for completion between 90 to 95% of current budget.	Project is on track for completion higher than 95% of current budget.





# 6. Summary Review of Part 2

# Summary Review of Part 2

## Important Takeaways from Part 2:

1. The Board is ultimately accountable for all aspects of a Project
2. The key to successful governance is to balance Board accountability with Management efficiency– timeliness of decisions will have significant cost and schedule implications
3. Management efficiency requires appropriate delegation; Board accountability requires effective project monitoring
4. The Board requires the right information at the right time – with a clear line of sight to project performance objectives
5. Information to the Board must be accompanied by recommended action alternatives from Management
6. The Board must make timely decisions.



# Discussion & Questions

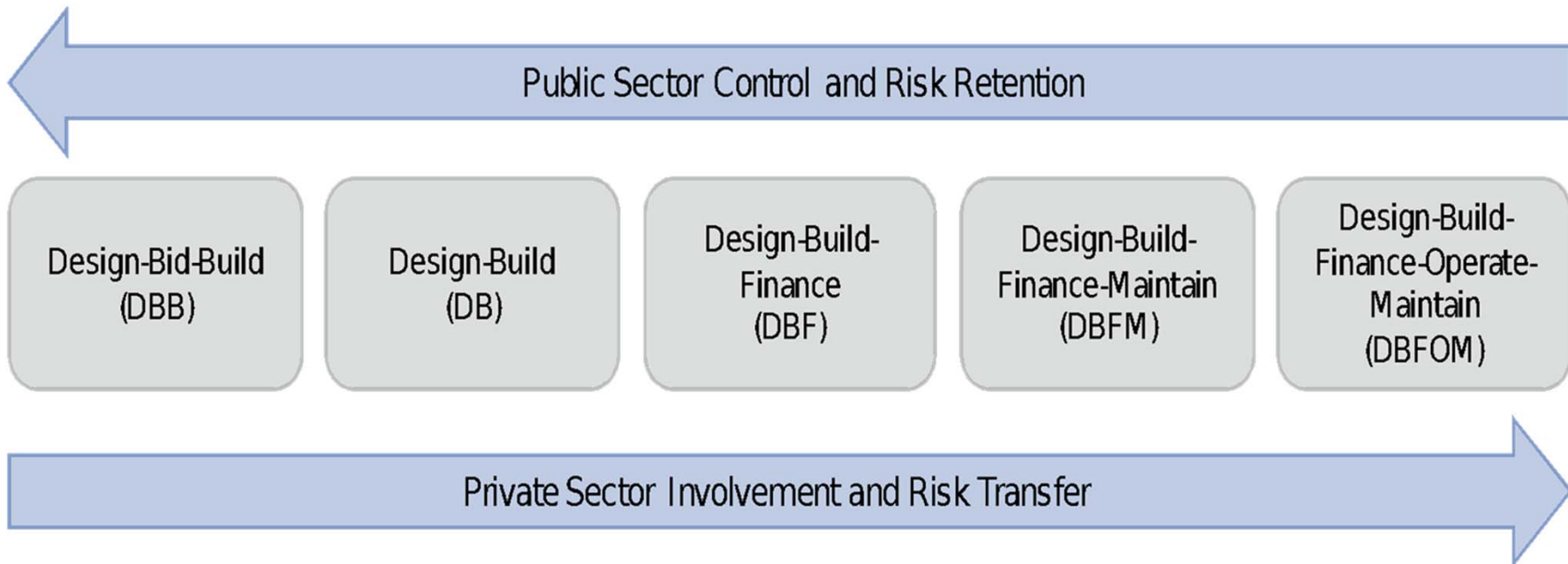


# Reference Material



# Procurement Models

# Procurement Models

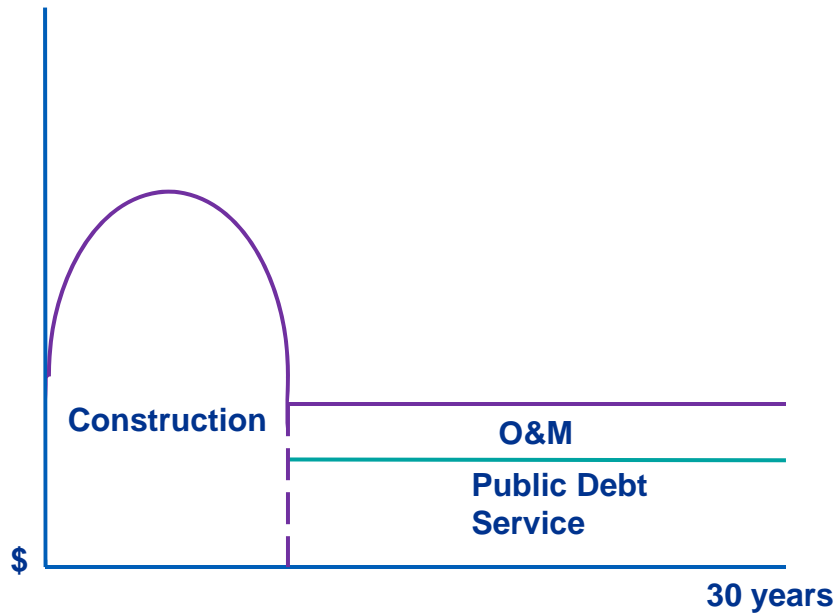


## Factors for moving left to right on the continuum:

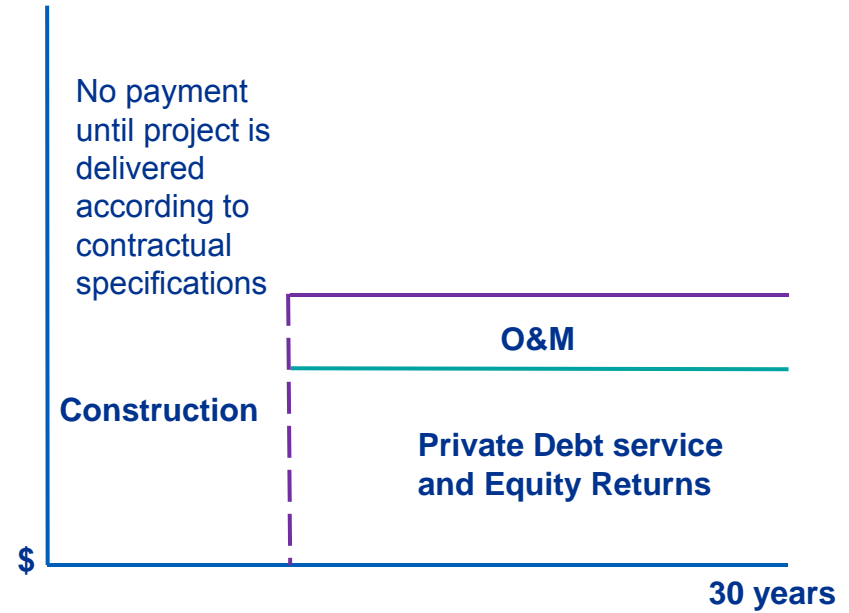
- Increased risk transfer for owner
- Lifecycle, whole life costing strategy
- Performance incentivized by private financing
- Synergies from integration of design, construction, and maintenance

*( note - There are other models and names of similar models as well)*

# Traditional and AFP Cash Flows

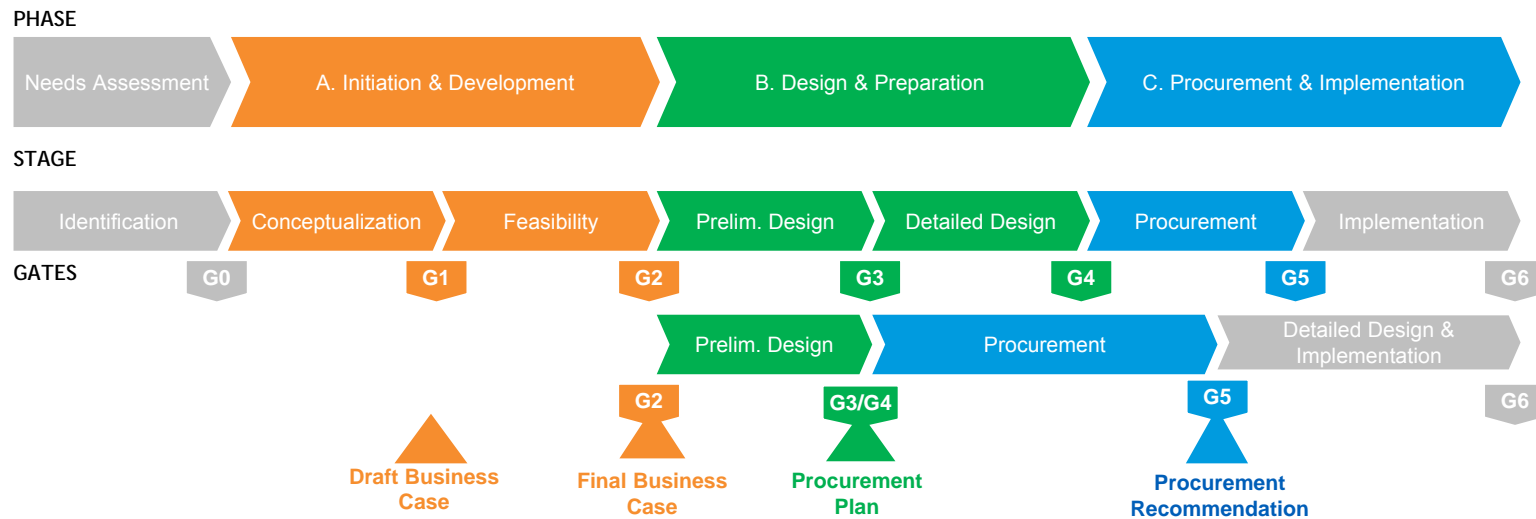


**Traditional Procurement**



**AFP**

# Procurement Models



- When a project has been identified and a high-level project feasibility analysis has been conducted, further analysis is to take place regarding the delivery and alternate delivery models. This ensures that the model that best satisfies the qualitative and quantitative criteria is chosen as the preferred delivery model.
- Common procurement models that are typically used in the market for major capital projects include: 1) Design-Bid-Build (DBB); 2) Design-Build (DB)/ Engineering, Procurement & Construction (EPC); 3) Design-Build-Finance (DBF); 4) Design-Build-Finance-Maintain (DBFM); and 5) Design-Build-Finance-Operate-Maintain (DBFOM).
- An alternate delivery model typically has a longer procurement phase, but a much shorter implementation phase.



# Accounting Framework for AFPs

**Description of accounting treatment will depend upon TTCs accounting practices.**

Typical balance sheet treatment in Canada:

- TTC debt during construction is accumulated capital expenditure,
- TTC debt after construction is present cost of future capital service obligations

Typical income statement treatment in Canada (although it highly varies):

- Budgetary expenditures for O&M expenditures and debt service portion of capital payments are as incurred under the contracts



# Glossary of Terms

<b>Program</b>	A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside of the scope of discrete projects in the program.
<b>Project</b>	A temporary endeavor undertaken to create a unique product, service or result. A project is a unique process consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements including the constraints of time, cost and resources.
<b>Portfolio</b>	A collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives. The projects or programs of the portfolio may not necessarily be interdependent or directly related.
<b>Project Management</b>	Is the discipline of initiating, planning, executing, controlling, and closing the work of a team to achieve Management specific goals and meet specific success criteria. The primary challenge of project management is to achieve all of the project goals within the given constraints.
<b>Contingency</b>	A special monetary provision in the project budget to cover uncertainties or unforeseeable elements of time/cost in the estimate associated with the normal execution of a project, for example, labour rates and design development.
<b>Management Reserve</b>	An amount of the total budget withheld for management (or executive/Board) control purposes, rather Reserve than being designated for the accomplishment of a specific task or set of tasks.
<b>Project Charter</b>	A project charter (PC) is a document that states a project exists and provides the project manager with Charter written authority to begin work. A Project Charter refers to a statement of objectives in a project. This statement also sets out detailed project goals, roles and responsibilities, identifies the main stakeholders, and the level of authority of a project manager.
<b>Performance Baseline</b>	In project management there are three baselines – schedule baseline, cost baseline and scope baseline. The combination of all three baselines is referred to as the performance measurement baseline. A baseline is a fixed schedule, which represents the standard that is used to measure the performance of the project.



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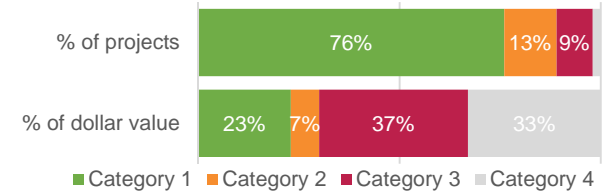
The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.



# Category 1-3

# Project Category 1-3

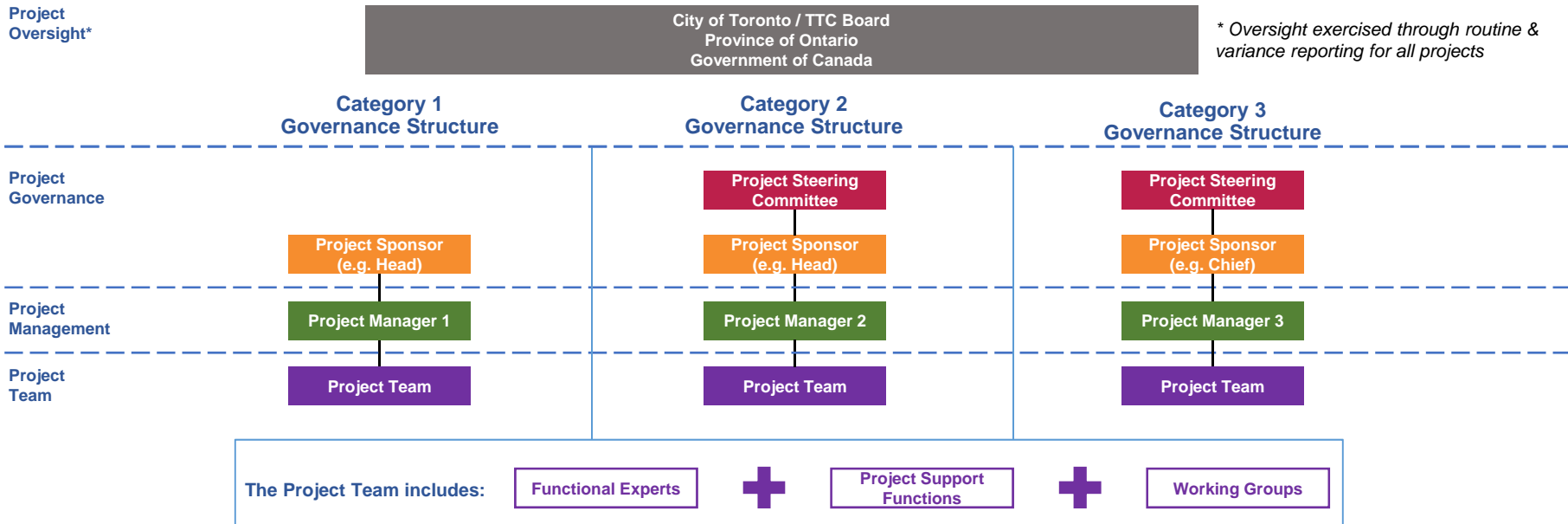
Distribution of TTC projects based on 2017-2026 capital budget. The % of projects demonstrates the percentage of actual projects that fall into each category. The % of dollar value presents the distribution of each category based on total dollar value



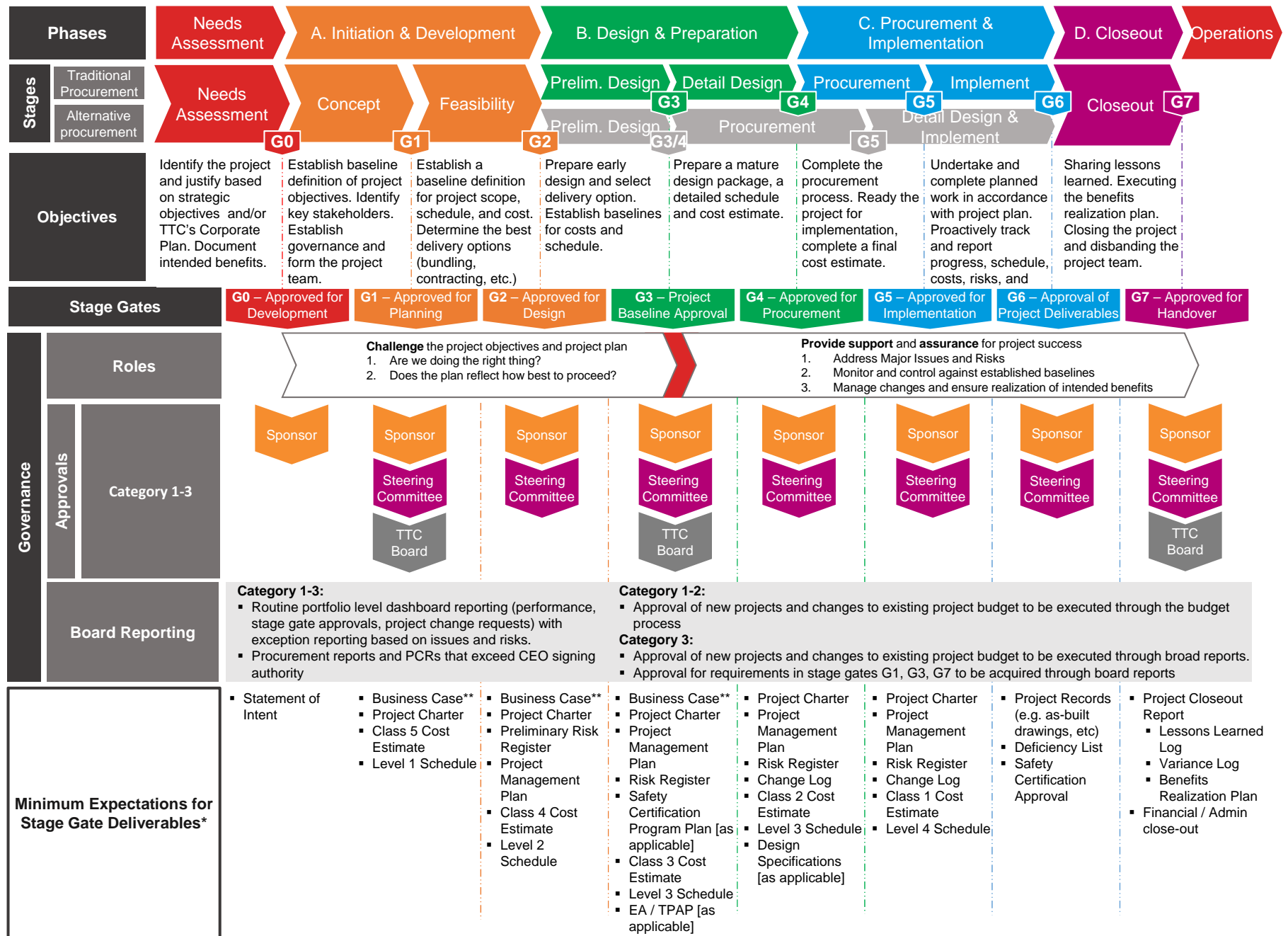
Confidential Draft – For Internal TTC Discussion Purposes Only

Criteria	Budget (Initial Filter)	Institutional Knowledge (Modifier #1)	Internal / External Interdependencies (Modifier #2)	Contractual Complexity (Modifier #3)
	Estimated total project cost	How frequently this type of project been undertaken at the TTC (scope, delivery model?)	Interdependencies with other projects and/or operations	Complexity of contract interfaces
Category	1 Less than \$50million	Routine / Annual	<p><b>Low</b></p> <ul style="list-style-type: none"> <li>Simple internal interfaces</li> <li>Minimal impact to service or public realm</li> </ul>	<p><b>Low</b></p> <ul style="list-style-type: none"> <li>Few contracts</li> <li>Minimal overlaps</li> <li>Flexible sequencing</li> </ul>
	2 \$50 million - \$500million	Every 2 – 10yrs.	<p><b>Medium</b></p> <ul style="list-style-type: none"> <li>Complex internal interfaces</li> <li>Medium impact to service or public realm</li> </ul>	<p><b>Medium</b></p> <ul style="list-style-type: none"> <li>Few contracts with some overlap</li> <li>Many contracts with minimal overlap</li> <li>Partly flexible sequencing</li> </ul>
	3 \$Over 500 million	Every 10+ yrs. or new initiative	<p><b>High</b></p> <ul style="list-style-type: none"> <li>Complex internal &amp; external interfaces</li> <li>High impact to service or public realm</li> </ul>	<p><b>High</b></p> <ul style="list-style-type: none"> <li>Few contracts with extensive overlap</li> <li>Many contracts with some overlap</li> <li>Rigid sequencing</li> </ul>
4	Transit Expansion Projects (i.e. Subway Expansion, Streetcar Network Expansion , and Bus Rapid Transit (BRT))			

## Project Governance by Project Category (Below are default governance structures, which are to be evaluated per project and documented in the Project Charter)



# Project Stage Gating Process (Below are default project phases, stages, and deliverables, which are all to be evaluated project-by-project and documented in the Project Charter)



\*These stage gate deliverables are living documents to be revised on a continuous basis  
 \*\*Business Cases are required for all projects above \$5M

# TTC Board Capital Project Governance Stage Gate Guide

May 2017





# Stage Gate 0: Approved for Development

**Objective:** Identify the project and justify based on strategic objectives and/or TTC's Corporate Plan.

## **Progress during Stage:**

- Identification of opportunity by Sponsor
- Board definition of the capital project
- Assessment as to consistency with TTC Strategic Plan

## **Minimum Deliverables:**

- Statement of Intent

**Board Approvals:** None

## **Questions to Ask:**

1. Is the project consistent with the TTC's Strategic Plan?
2. Is there potential to fit the project within the TTC's long term fiscal framework?

# Stage Gate 1: Approved for Planning

**Objective:** Establish preliminary baseline definition of project objectives. Identify key stakeholders. Establish governance and form the project team.

## Progress during Stage:

- Establish Governance structure and Project Steering Committee
- Establish baseline project objectives
- Identify key stakeholders
- Form Project Team (for preliminary activities)
- 0% to 2% scope definition

## Minimum Deliverables:

- Preliminary Business Case
- Preliminary Project Charter including stage gates

## Board Approvals:

- Budget Submission (All Categories)
- Preliminary Business Case Summary (Categories 3-4)

## Questions to Ask:

1. Has there been early response from stakeholders?
2. What are the qualifications and contractual arrangements for senior members of the project team?

# Stage Gate 2: Approved for Design

**Objective:** Establish a baseline definition for project scope, schedule, and cost. Determine the best delivery options (bundling, contracting, etc.).

## Progress during Stage:

- Preliminary definition of scope and alternatives considered
- Conceptual plan, including preliminary budget and risk register, and preliminary screen for AFP eligibility
- Work Plan (ToR, schedule, budget) for Business Case
- 1% to 15% scope definition

## Minimum Deliverables

- Update existing Preliminary Project Charter and Business Case
- Preliminary Project Management Plan (“PMP”)
- Class 4 Estimate, Level 2 Schedule
- Risk Register (preliminary)

**Board Approvals:** None

## Questions to Ask:

1. Is the recommended scope appropriate for the TTC Strategic Plan and long-term Fiscal Plan?
2. Are there any compelling reasons to rule out a AFP approach (generally Category 4)? Does the project team have the necessary resources and expertise to undertake the Business Case?
3. Are communications and stakeholder management actions required for the launch of the Business Case?
4. Are communications and stakeholder management actions required for the launch of the Business Case?

# Stage Gate 3: Project Baseline Approval



**Objective:** Establish a performance baseline definition for project scope, schedule, and cost. Determine the best delivery options (bundling, contracting, etc.)

## Progress during Stage:

- Complete the Business Case including: functional program; risk register and procurement options analysis; market sounding; communications and stakeholder management plan
- 10% to 40% scope definition

## Minimum Deliverables:

- Final Project Charter, Business Case, updated Risk Register, Project Management Plan
- Class 3 Estimate, Level 3 Schedule – performance baselines
- Safety Certification Program Plan (*as req'd*)
- EA / TPAP, PSOS (*as req'd*)

## Board Approvals:

- Budget Submission (All Categories)
- Business Case Summary\* (Categories 3-4)

## Questions to Ask:

1. What are the mitigation strategies for key retained risks?
2. What is the approval process if all bids are over budget?
3. Are we absolutely ready to move past this Gate?

# Stage Gate 4: Approved for Procurement

**Objective ('traditional' procurement only):** Prepare a mature design package, a detailed schedule and cost estimate.

## **Progress during Stage:**

- Detailed design and procurement strategy for 'traditional' procurement
- 30% to 75% scope definition

## **Minimum Deliverables:**

- Update existing (Project Charter, Risk Register, Project Management Plan, Level 3 Schedule)
- Class 2 Estimate
- Project Change Log
- Design Specifications
- Request For Proposal, Information etc. (" RFX", *as req'd*)

## **Board Approvals:**

- None

## **Questions to Ask:**

1. Explain changes in cost estimate, if any, and seek alternatives to adjust scope in order to reduce budget as at the previous Stage Gate.

# Stage Gate 5: Approved for Implementation

**Objective:** Complete the procurement process. Ready the project for implementation, complete a final cost estimate.

## **Progress during Stage:**

- Competitive selection process and selection of preferred proponent.
- Successful negotiation of contractual arrangement
- 65% to 100% scope definition

## **Minimum Deliverables:**

- Update existing (Project Charter, Risk Register, Project Management Plan, Project Change Log)
- Class 1 Estimate
- Implementation Schedule(s)
- Procurement documents (*as req'd*)

## **Board Approvals:**

- May require approval for: Procurement Authorization, Project Change Requests

## **Questions to Ask:**

1. Qualification of Preferred Proponent and evaluations results
2. Any changes to the budget or contractual agreements (including risk allocation) in comparison to business case?

# Stage Gate 6: Approval of Project Deliverables

**Objective:** Undertaking and completing all planned implementation work in accordance with contractual agreements. Minimize change orders to maintain budget and schedule. Reach Substantial Completion of implementation.

## Progress during Stage:

- Commence and conclude implementation (e.g. construction)
- Realize Substantial Completion, indicating that the project has been delivered and meets contractual specifications.

## Minimum Deliverables:

- Risk Register and Project Change Log
- Project Records (e.g. as-built drawings, etc.)
- Deficiency List
- Safety Certification Approval (*as req'd*)

## Board Approvals:

- May require approval for: Procurement Authorization, Project Change Requests

## Questions to Ask:

1. What is the status of results (cost, schedule) as compared to project delivery objectives?
2. What is the status of results (operating performance) as compared to project performance objectives?

# Stage Gate 7: Approved for Handover

**Objective:** Sharing lessons learned.  
Executing the benefits realization plan.  
Closing the project and disbanding the project team.

## Progress during Stage:

- Prepare Project Closeout Report, including Lessons Learned Log, Project Variances, and Benefits Realization
- Completion of any outstanding contractual issues with suppliers, work force, etc.
- Financial, administrative and accounting closeout of project

## Minimum Deliverables:

- Project Closeout report
  - Lessons Learned Log
  - Variance Log
  - Benefits Realization Plan

## Board Approvals:

- Project Closeout Report

## Questions to Ask:

1. What has been communicated as to the results of the project delivery process?
2. What are the key lessons learned for future projects? How are these lessons being implemented?





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