KPMG

cutting through complexity

Toronto Transit Commission

Project Management Maturity Plan

2017 Maturity Assessment

December 2017

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Contents

1 Executive Summary

1.1 Introduction

In 2015, the City of Toronto's City Manager and the Toronto Transit Commission ("TTC") CEO engaged KPMG to conduct the TTC Capital Program Delivery Review ("CPDR"). The KPMG report (endorsed by the TTC Board and accepted by TTC management) provided 41 recommendations.

TTC's management committed to developing an implementation plan to move the organizational project management maturity from a "Standardized" to a "Monitored" state by ensuring all projects across the organization are applying the same core project management standards and by measuring both compliance to and performance of those standards. This maturity transformation was planned out though the work of the TTC's Program Advisory Group ("PAG"), which established a 4-year Project Management Maturity Plan ("PMM" Plan). This plan, which includes seven work streams (see Figure-1 below), was subsequently approved in December 2016 by the TTC Board, as was an initiative to develop Board-level governance toolkits.
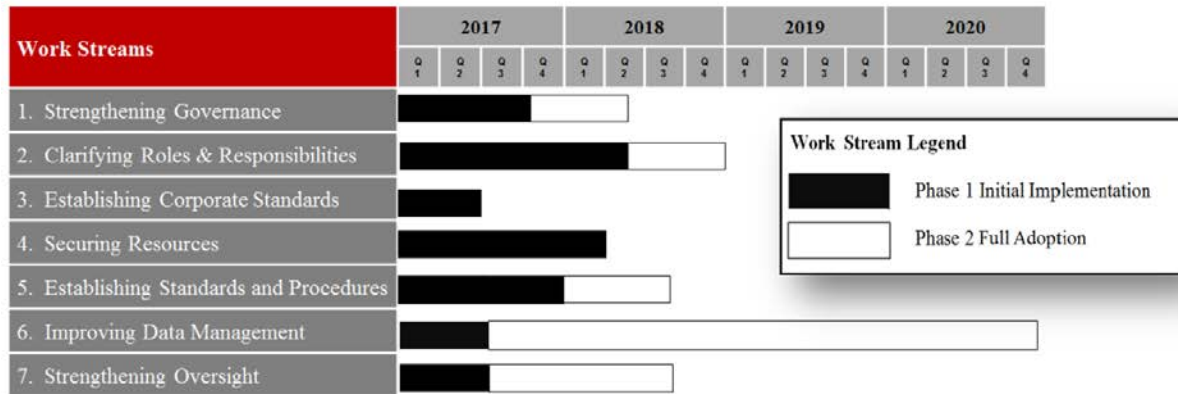
Figure 1: PMM Plan Work Streams

In developing this report, KPMG reviewed commitments in the PMM Plan and priorities of the Portfolio Management Office's ("PfMO"), assessed progress on these commitments in 2017, mapped the progress to the maturity knowledge areas in the CPDR, and assessed whether the TTC's maturity advancement is on track with recommended next steps to ensure success.

When the PMM Plan was developed, it placed an emphasis on improving maturity in the first year at the corporate Portfolio Management Office ("PfMO") level by focusing on governance first, closely followed by corporate process and procedure. As such, the advancement of maturity assessed in this report is at the corporate level only and does not address improvement at the group level.

To continue maturity advancement at the department level, group-level PMM Plans are currently being developed and are scheduled to be finalized by January 2018. These plans will help separate the work required at the group-level from the work that can be leveraged at the

corporate level, and will form the baseline for group-level maturity assessments to be completed in December 2018.

1.2   Key findings

In 2017, the TTC has progressed work addressing 29 of the 41 recommendations. The PMM Plan grouped the recommendations into seven work streams to be implemented over four years. Through 2017, three of the work streams met their 'Phase 1 targets', while four were delayed. Overall, the Phase 1 work stream timeline proved too ambitious given the scope of change being contemplated in the 41 recommendations. This became clear early in 2017, resulting in the PAG and PMM Plan Steering Committee approving a slower, phased implementation plan.

Despite the slowdown, as shown in Figure 2 below, corporately the TTC has moved from having limited corporate project management support to a corporate maturity that can be characterized as in the ''**Low-Standardized'** range, somewhat below the equivalent maturity of the ITS department at the time of original CPDR. Although significant documentation around governance and standards has been created, the rationale behind the degree of maturity is a result of the relatively narrow rollout of the documentation to a handful of pilot projects.
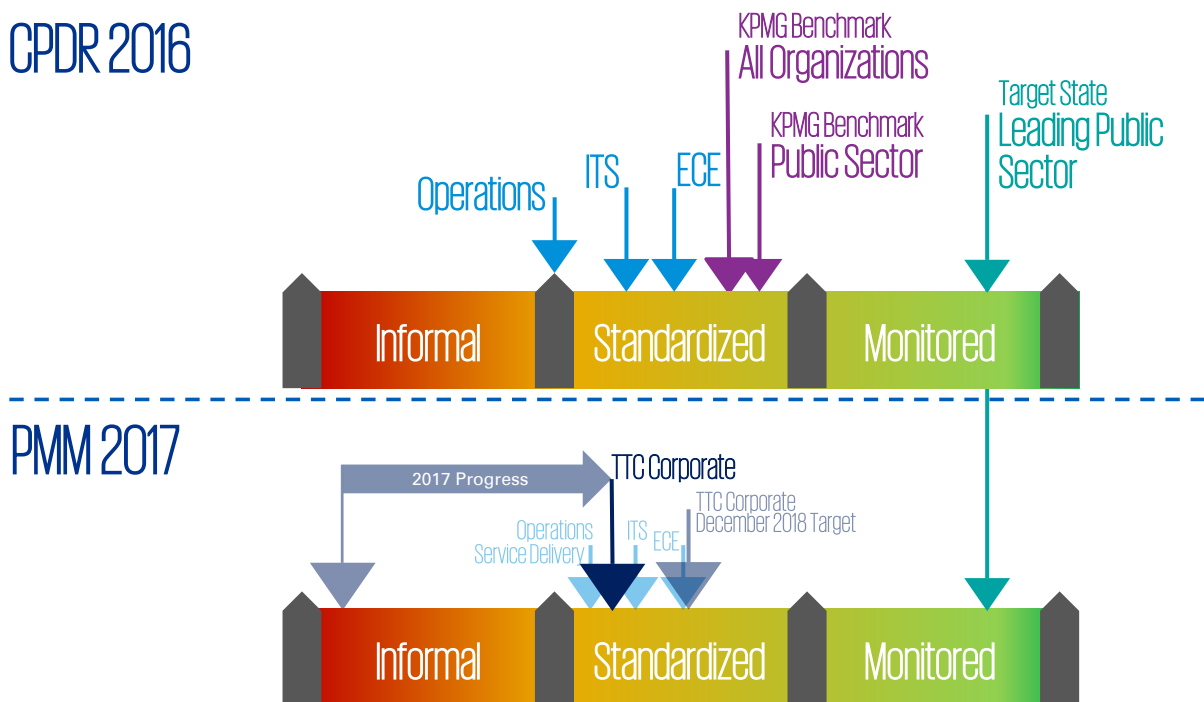
Figure 2: Project Management Maturity - 2017 Assessment Update

The TTC's progress in 2017 was centered on formalizing governance and developing corporate minimum standards for core project management activities like cost estimating, scheduling and

stakeholder management, among others. Much of this progress took the full year to achieve, rather than the six months envisioned in the Phase 1 of the works streams in the PMM Plan. The slowed pace was a deliberate decision recommended by the PAG group members and approved by the PMM Steering Committee, driven by phasing the rollout of the framework and subsequent standards, and by following a pilot-driven rollout strategy, limiting initial adoption of new practices to 10 critical projects, to be followed by a broader implementation.

Both of these decisions were appropriate given the importance of solidifying the foundational governance and standards before rolling it out to the organization. As such, the maturity advancement in Year 1 is limited because although the foundational items are now in place, they have yet to be rolled out across the organization. KPMG believes that the TTC is still on track for achieving its objectives by the end of Year 4, given that we anticipate major advances in maturity will come with the rollout of the new governance and standards first through the pilot and then to the broader capital portfolio. Visually this progress can be shown using a common project management tool, the S-curve, where the steepness of the curve correlates to how quickly the project is progressing. Figure 3 shows the S-curve representing how project management maturity is expected to increase over the four years of the PMM Plan (curve and left axis) and relates that to the proportion of the organization that will be contributing to that increase (bars and right axis).
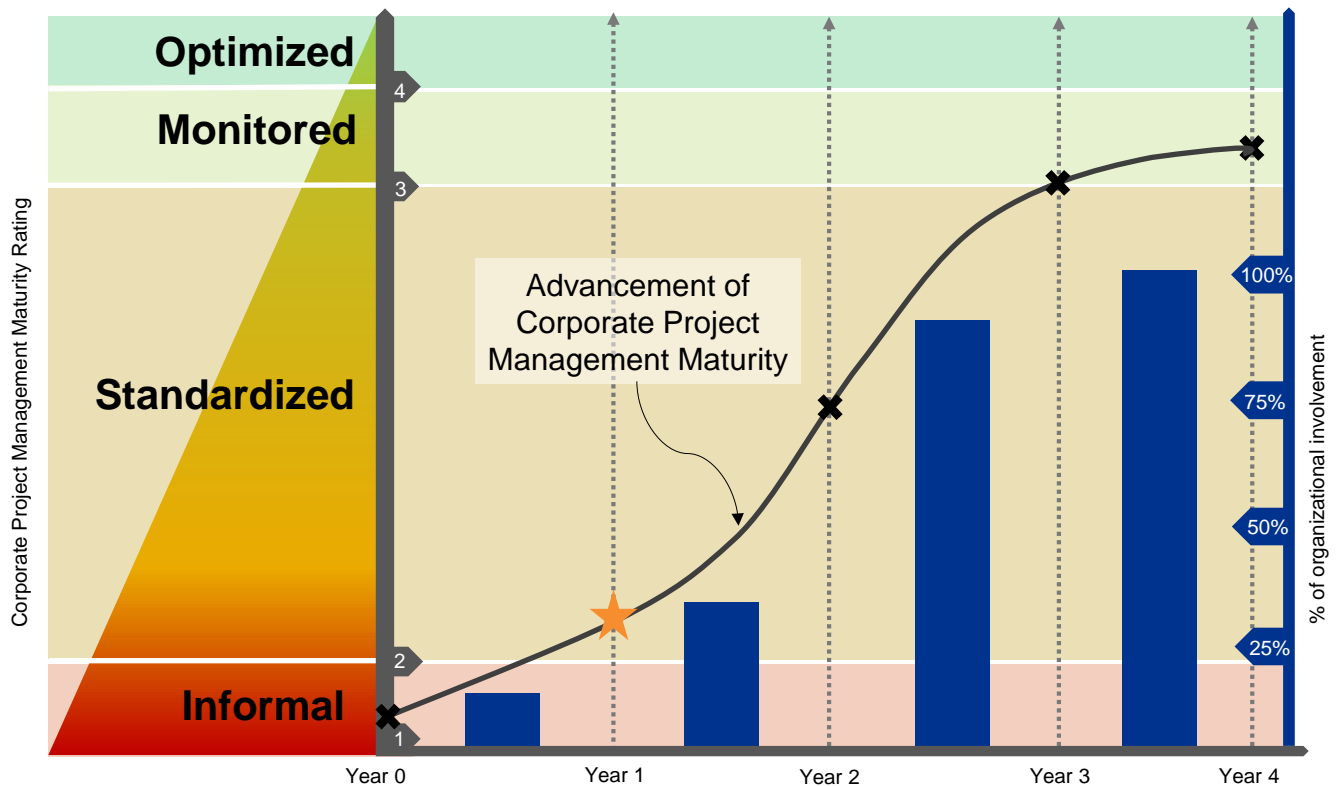
Figure 3 – PMM Plan Progress Curve and Organizational Involvement

A significant early indicator of how well the organization will be able to handle the accelerated pace of change expected in 2018 and 2019 compared to 2017 will be the success of PMF implementation on the pilot projects and the ability to ramp up the additional internal resources coming onboard in 2018. It will be important for the PfMO to critically review implementation status in mid-2018 to make appropriate adjustments to the PMM Plan as required.

1.3   2018 Next Steps

During the course of this assessment, we identified areas of focus that will help the PfMO ensure successful implementation of the PMM Plan. These next steps are grouped below according to the seven PMM Plan work streams, and reference the 41 recommendations from the CPDR. If the TTC successfully ramps up its resources and per Figure 1, successfully completes the rollout of the PMF into the pilot projects, and executes on the 15 next steps detailed below, the TTC should be in a position to successfully reach a maturity of mid-Standardized by the end of 2018. Doing so will position the TTC to progress towards a high-Standardized rating by the end of 2019, and a mid-Monitored state by the end of 2020, as shown in Figure 3.

Work Stream 1 – Strengthening Governance

1. Assess the early effectiveness of PMF implementation in the pilot projects. [Rec. #3 & 4]

2. Upon release of the updated Five Year Corporate Plan, update the corporate strategic objectives and develop a corporate standard for Benefits Realisation Management. [Rec. #8]

3. Develop a stage gate process specifically for Finite Programs (classified as 'projects' under the City budget definitions) and Ongoing Programs (i.e. State of Good Repair). [Rec. #10]

4. Prioritize finalizing governance structures for in-flight Category 4 projects by working with external stakeholders. Although agreement on governance structures, roles, titles and individuals may be challenging, the public nature of these projects means they will draw more attention and scrutiny than the rest of the TTC's capital portfolio. Even though Category 4 projects will to varying degrees be outside of the TTC's control, the success of their governance will impact perception of the success of the PMM Plan at the TTC. [Rec. #3]

Work Stream 2 – Clarifying Roles and Responsibilities

5. In the June 2018 PMM Plan status update to the TTC Board, report on the hiring status of project functions and its impact on the PMM Plan. [Rec. #9]

6. In collaboration with Human Resources, prioritize completion of the role profiles and minimum competencies of the four levels of Project Manager as introduced in the PMF. [Rec. #15]

Work Stream 3 – Establishing Corporate Standards

7. Release PMF version 2.0 with additional core content, including risk and commercial management, as well as any other continuous improvement feedback captured since June 2017. [Rec. #6]

8. Develop a Program Management Framework (addressing both finite and ongoing programs). [Rec. #6]

9. Develop a Portfolio Management Framework. [Rec. #6]

10. Measure how well the organization is making the transition from a functionally-weighted to a project-weighted matrix management model by soliciting feedback from Project Managers on their Project Teams' accountability, and Project Sponsors on the leadership of their Project Managers. [Rec. #7]

Work Stream 4 – Securing Resources

11. Review requirements for additional dedicated (internal or consultant) Change Management resources to help with continued and broader rollout of the PMM Plan. [Rec. #13]

12. Review functional expertise requirements of the PMF pilot projects in order to successfully complete upcoming stage gate deliverables (e.g. estimating expertise for a Gate 3, Class 3 estimate), [Rec. #9]

Work Stream 5 – Establishing Standards and Procedures

13. Incorporate Risk Management and Commercial Management into the core PMF document. [Rec. 19 & 30]

Work Stream 6 – Data, Analysis, Tools & Technology

14. Accelerate the development of a project management data strategy to be delivered in 2018. [Rec. #32]

Work Stream 7 – Strengthening Oversight

15. Complete PSR revisions and rollout across all projects. [Rec. #34]

2 Introduction

2.1 Context

In September 2016, the Toronto Transit Commission ("TTC") Board endorsed KPMG's final report and 41 recommendations in the Capital Program Delivery Review ("CPDR"). TTC management accepted all recommendations and committed to developing an implementation plan in order to advance the TTC's organizational project management maturity from a 'Standardized' current state to a 'Monitored' target state. A core component of the review was a maturity assessment of individual groups, and a comparison to industry benchmarks. The resulting maturity assessment detailed the status of the Engineering, Construction & Expansion Group ("ECE"), Information Technology Services ("ITS") and Operations Group, which at the time included what is now the Service Delivery Group.

Shortly thereafter, the TTC struck a working group to develop the implementation plan. The working group was composed of key stakeholders from across the organization including the following areas: CEO's Office; Finance; Enterprise Risk; Human Resources; IT Services ("ITS"), Engineering, Construction & Expansion Group ("ECE"), Operations Group, Service Delivery Group, Materials & Procurement ("M&P"), and Internal Audit. Through a series of workshops, the working group helped deliver the organization's 4-year Project Management Maturity Plan ("PMM Plan"), which was subsequently endorsed by the TTC Board in December 2016.

The PMM Plan included a detailed schedule, resource assignments, and budget estimates for how key TTC processes would be improved to target-state maturity, standardized across the organization, and put into a cycle of continuous improvement. As shown in Figure 4 below, the PMM Plan was broken into seven work streams, with initial implementation indicated in the black bars.

Work Streams	2017				2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Strengthening Governance																
2. Clarifying Roles & Responsibilities																
3. Establishing Corporate Standards																
4. Securing Resources																
5. Establishing Standards and Procedures																
6. Improving Data Management																
7. Strengthening Oversight																
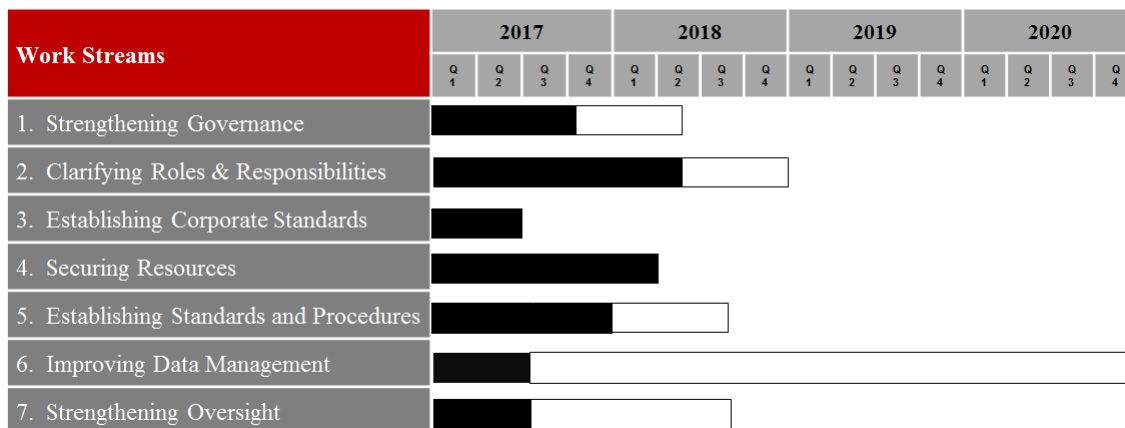
Figure 3 - TTC PMM Plan by work stream

In addition to laying out the timelines for all seven work streams (a more detailed version can be found in Appendix 2), the PMM Plan committed the TTC to completing a grouping of Top 10 Priorities for 2017, as shown in Figure 5.

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)

Figure 4 - PMM Plan - 2017 Top 10 Priorities

KPMG was engaged to assist the TTC develop priorities 3 and 4 through the first six months of 2017. In June 2017, the TTC engaged four firms for the next 2 years (KPMG and three others), to provide supporting Project Management Services for the implementation of the PMM Plan.

At its December 2016 meeting, the TTC Board endorsed the staff recommendation of an annual third-party report to the TTC Board to track progress against the PMM Plan. For 2017, KPMG was engaged under the Project Management Services contract to carry out this assessment.

2.2   Scope & Approach

The 41 recommendations were grouped in the CPDR into six themes as follows: Governance, Processes & Procedures, Relationships & People, Implementation & Monitoring, Tools & Technology, and Data & Analysis.

The CPDR also noted that there was a logical progression to the implementation of the six themes:

"The highest level of effort to be considered in the first year should be Governance. Clarifying objectives, roles and responsibilities throughout the organization will set a clear backdrop for the rest of the implementation. Both governance documentation and toolkits for decision-making bodies can be clear and concise. Clearly defining roles and responsibilities may be more time consuming to communicated and document. The new business case and project charter templates can be used to link clarified corporate governance with project governance.

"The advancement of Processes & Procedures must follow the foundation created by the clarification of governance. Much of the effort can be made in parallel to work on

governance, but rollout should not occur until the governance has been finalized. Within this theme, focus should first be on developing corporate standards, which can then be combined with new or revised group-specific standards. (CPDR, section 5)

Following this logic, the PMM Plan that was developed placed its first-year emphasis on improving maturity at the corporate level, by focusing on governance, followed by corporate process and procedure.

As a result, this first PMM Plan Maturity Plan focuses on advancement of maturity at the corporate (PfMO) level only, and does not detail improvement at the group level (ECE, ITS, Operations and Service Delivery).

At the time of writing, group-level PMM Plans are being developed to map out how they will flow down the work done in 2017 at the PfMO. These group PMM Plans are intended to inform each group Project Management Office ("PMO") of their own project management maturity activities for 2018. In December 2018, when the second annual PMM Plan assessment is completed, that report will not only review progress at the corporate level as does this one, but will also examine progress at the group level.

The approach for this corporate-level assessment can be broken down into six main steps.

1. Review commitments made to the TTC Board in the *December 2016 PMM Plan* and the *June 2017 PMM Plan Update* Board Reports.

2. Review the Program Advisory Group's ("PAG") PMM Plan priorities lists, which included the 2017 Top 10 Priorities stemming from the 41 recommendations, as well as other internally-driven priorities.

3. Assess what has been accomplished with respect to steps 1 and 2. The guiding questions for this step include:

    — Do documents exist?

    — Are they draft or approved?

    — Have they been communicated?

    — Has there been associated training?

4. Map accomplishments to the project management maturity knowledge areas assessed in the CPDR.

5. Assess whether maturity advancement is on-track with the PMM Plan's goals.

6. Propose 2018 Next Steps to help ensure the PMM Plan remains on track.

3   Maturity Baseline

This section of the report provides a summary of the Project Management Maturity Assessment detailed in Section 3.3 and Appendix 1 of the CPDR that was used as a baseline for this assessment.

As noted above, the CPDR assessed only three of the TTC's functional groups: ECE, ITS, and Operations. In the absence of any corporate practices, the practices of each functional group were separately examined and scored as part of the project management maturity analysis.

The project management maturity assessment used a globally standardized KPMG framework aligned with the *Project Management Institute'*s ("PMI") *Project Management Body of Knowledge ("PMBOK")*, consisting of the following high-level project control elements:

- Program strategy, organization and administration;
- Cost & financial management;
- Procurement management;
- Project controls and risk management; and
- Schedule management.

These high-level elements are disaggregated into 31 sub-elements, which themselves are further disaggregated into 119 knowledge areas, as shown in 6 below.
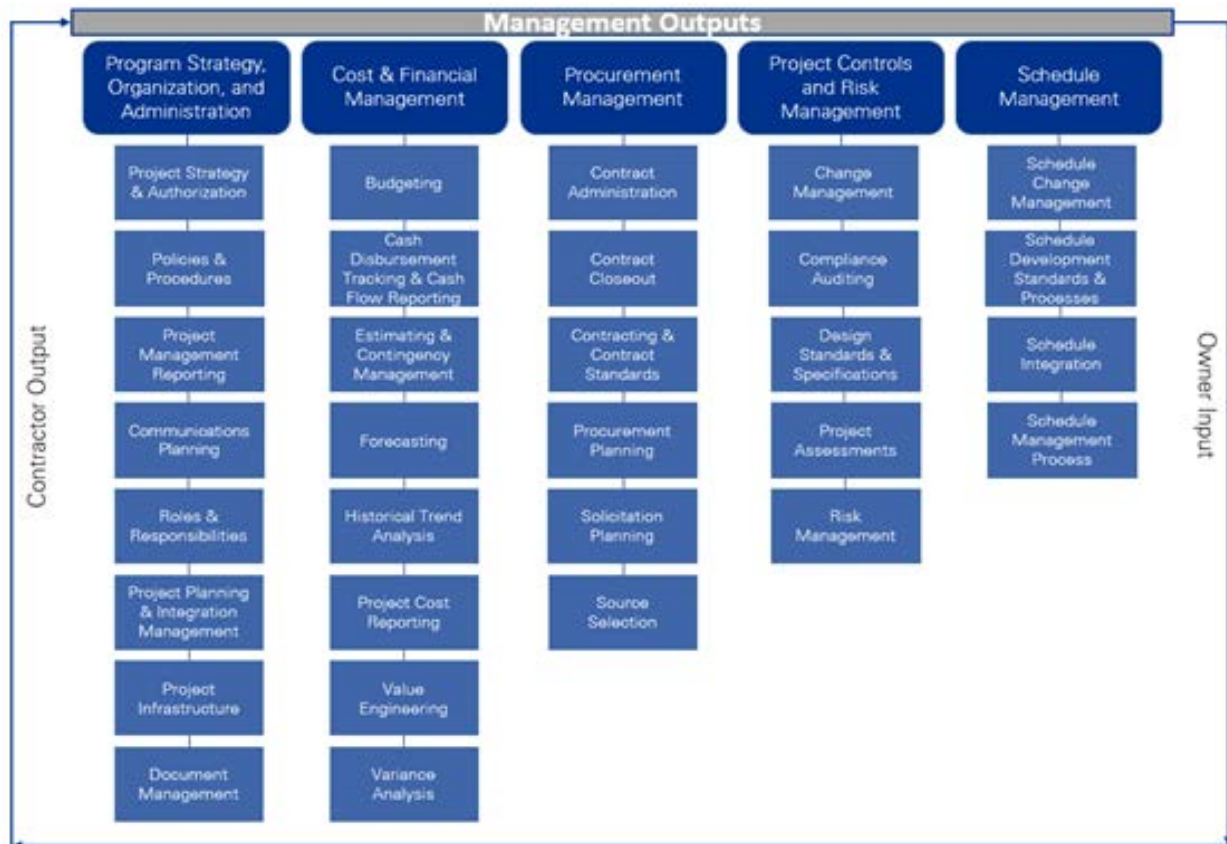
Figure 5 - Five Major Project Control Elements and Sub-Elements

These sub-categories were individually scored according to the following scale:

Informal	Standardized	Monitored	Optimized
process/control is not fully developed, where little or no documentation or formalized procedure exists, where the project manager may be creating process/documentation in the absence of corporate direction.	process/control has been designed and appears adequately documented but appears to function at or below peer level, without a monitor/control loop.	process/control appears adequately documented for standardized use across the organization and appears to function appropriately when compared to peers, complete with an monitoring/performance management process (i.e. reporting on KPIs).	process/control appears well documented for standardized use across the organization, appears to outperform peers, activity is continuously monitored in a way that may be automated (IT system) with live data, process has a continuous improvement feedback loop.
Informal	**Standardized**	**Monitored**	**Optimized**

Figure 6 - Maturity Scale

An important consideration of the maturity assessment and rating scale is the level of effort required for an organization to advance from one rating level to another. Although the maturity is graded across four part scale, the effort within each is not equal. As shown in Figure 8 below, the greatest investment is required to achieve a 'standardized' maturity rating, as there is significant investment required to develop organization-wide standard policies, processes, procedures, tools and templates that require significant consultation with stakeholders. This development also typically requires the assistance of external consultants to aid in areas of expertise that are not central to the organization.
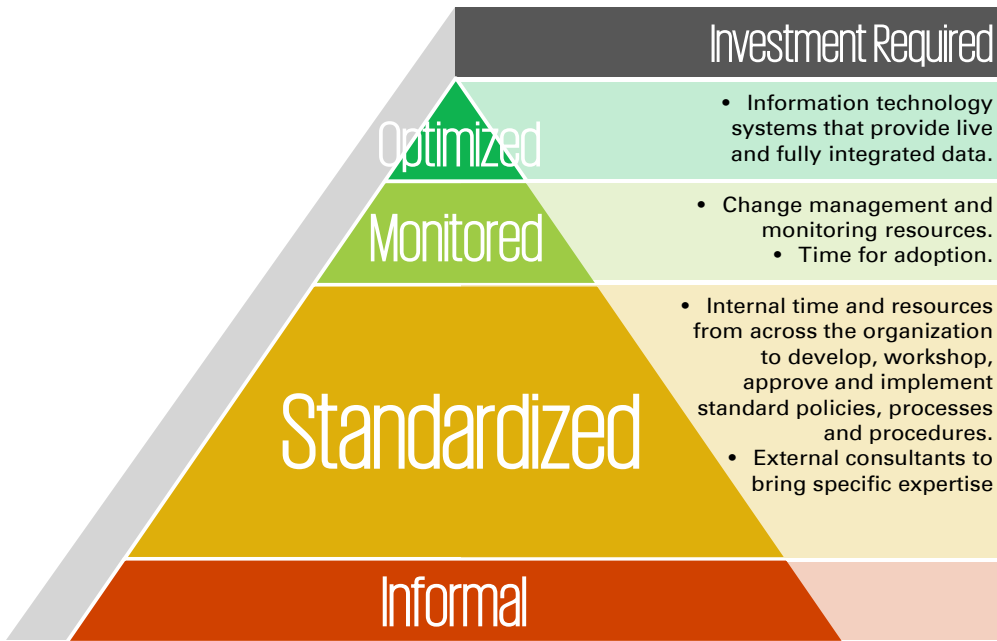
Comparatively, the growth from a 'standardized' to a 'monitored' maturity has more to do with the organizational uptake of standardized policy, process,

Figure 7: Maturity Investment Requirements

procedure, tools and templates. Investment of resources is typically limited to cultural change management and an implementation team that would evolve into a monitoring function. Lastly, the growth from a 'monitored' to an 'optimized' maturity is heavily dependent on the harmonization of data through integrated IT tools that can give live access to a variety of project data. The investment required to achieve an 'optimized' maturity can therefore be expensive and require alignment of almost all corporate IT systems. For this reason, it is rare that a public sector organization would even consider targeting an overall maturity of 'optimized' due to a low return on investment. Typically only heavily regulated industries such as utilities may achieve an 'optimized' maturity in areas of project management. As a result, the CPDR recommended a target maturity level of 'monitored' for the organization.

According to the CPDR, in mid-2016 the TTC was operating at an overall average near the mid-point of the "standardized" rating as seen in Figure 9 below, but with little to no corporate infrastructure in place. That rating indicated that the organization's performance was slightly below the benchmark of comparable public sector and transit organizations, although still within the same "standardized" range. Corporately, there was no documentation or project management infrastructure in place. At the group level:

- The Operations group operated at an 'Informal' level, with a reliance on project leadership to develop processes and procedures in the absence of formalized practices.

- The ITS group operated at a lower 'Standardized' level, with a formalized PMO and a selection of standardized processes and procedures in some core areas.

- The ECE group operated at a mid-'Standardized' level, with a project support focused Capital Programing group, a number of processes and procedures and some evidence of continuous monitoring.
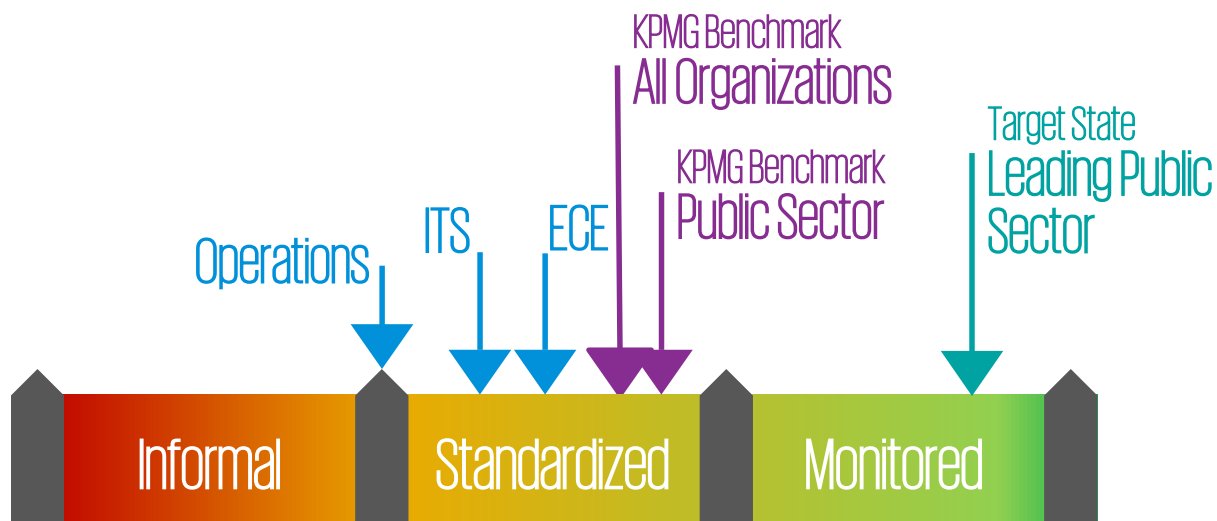
Figure 8 – TTC Group-level Project Management Maturity (CPDR, 2016)
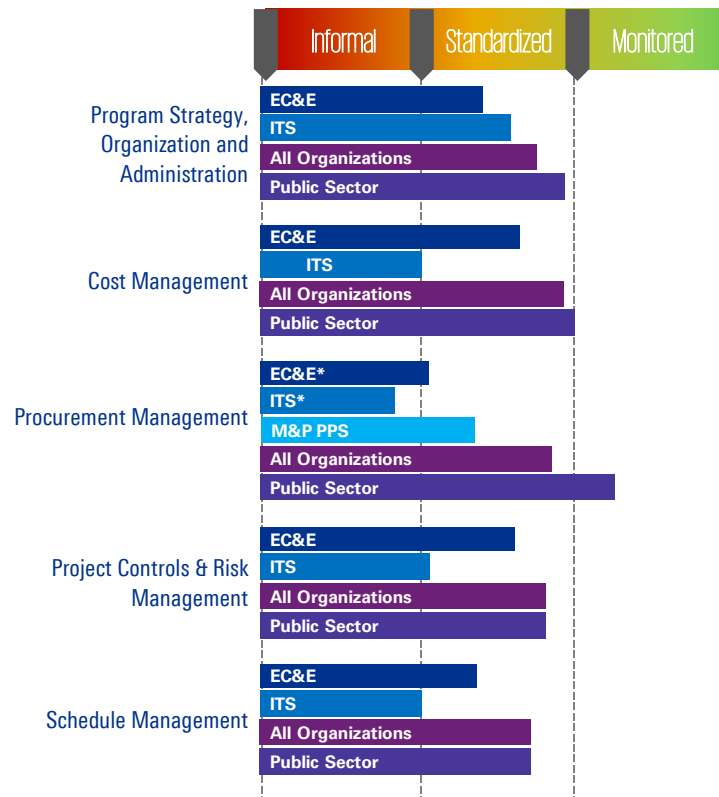
Figure 9: TTC Detailed Group-level Project Management Maturity Rating
ECE and ITS internal treatment of procurement

An added element to the maturity assessment revolved around where the organization's structure and governance lay along the project control spectrum, shown in Figure 11. At one extreme of the project control spectrum lies the fully decentralized model whereby each functional business unit of the organization takes responsibility for delivery of their own capital project requirements, employing project managers and largely using their own processes and procedures. At the other extreme, the centralized model of project control would typically involve
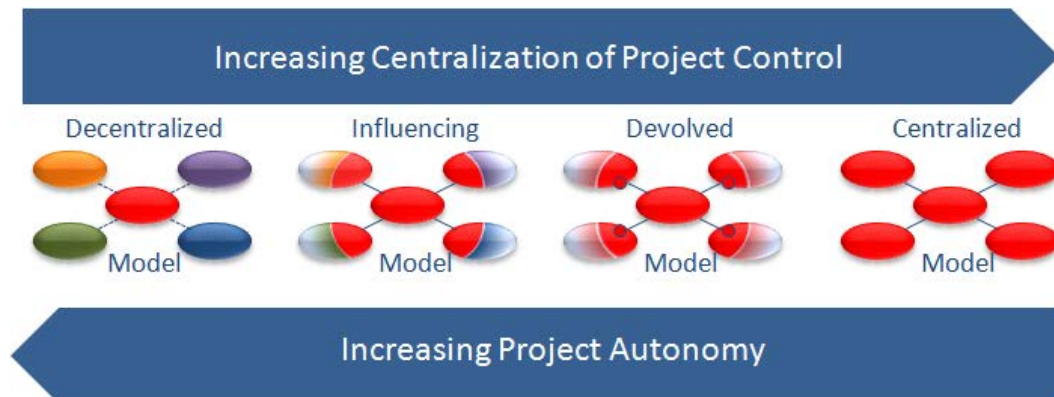
Figure 10: Spectrum of Project Control

a dedicated corporate service department taking direct control of the management of all major capital projects on behalf of internal client business units.

From a portfolio perspective, the TTC was operating at what can be described as a **decentralized** model of project control, whereby responsibility for how capital projects were delivered is delegated to a number of separate and largely independent groups.

The effect of this decentralization of project control was that the management of each group responsible for delivering capital projects had a great deal of individual discretion in terms of the methodologies that they implemented and the oversight arrangements that they employed. The absence of both corporate support for project delivery and a focal point for reporting and performance management is a defining feature of the decentralized model of project control, and one which was deemed to significantly impact the maturity of project delivery at the TTC from a portfolio level.

The size and complexity of the TTC is such that within some of the aforementioned groups, primarily ECE and ITS, there was a delegated project control model within each group that is more akin to an **influencing** or **devolved** model, with a centralized project management capability that controls performance through the provision of expert support and standardized corporate process and procedure, often combined with a performance management, monitoring and reporting role. In some cases, these group-level offices also assign staff to projects. At the time, only two such offices existed: ECE's Capital Programing team, and the ITS PMO.

As noted previously, it is unrealistic for most public sector organizations to target an 'optimized' maturity rating, due to the low return on investment of improvements. As a minimum, all organizations with an ongoing capital program should target a **standardized** maturity rating. Any organization should support its project managers with standardized policy, process, procedure, tools and templates to manage their projects and achieve consistent project success.

Although a 'standardized' rating is viewed as a minimum standard, to align with the TTC's goal of becoming a class-leading organization as articulated in its Five-Year Plan, the CDPR recommended the TTC should target functioning at a **monitored** level, with some key processes **optimized** as needed to meet corporate objectives (i.e. risk or contingency management).

It followed then, that a path to a 'monitored' state would require a shift at the portfolio level from a **decentralized** to an **influencing** project control model, where a strengthened PfMO would provide greater support across the capital program.

4   Findings

The findings of this maturity assessment are presented according to the 7 work streams of the PMM Plan. The specific deliverables of each of those work streams were also mapped to the project control elements and sub-elements detailed in the Project Management Maturity Assessment of the CPDR.

In 2017, the TTC has progressed work addressing 29 of the 41 recommendations. Overall, the planned 'Phase 1 Initial Implementation', denoted by the black bars in Figure 12 below, was optimistic. Of the 7 work streams, the 3 met their 'Phase 1 targets', while 4 were delayed.
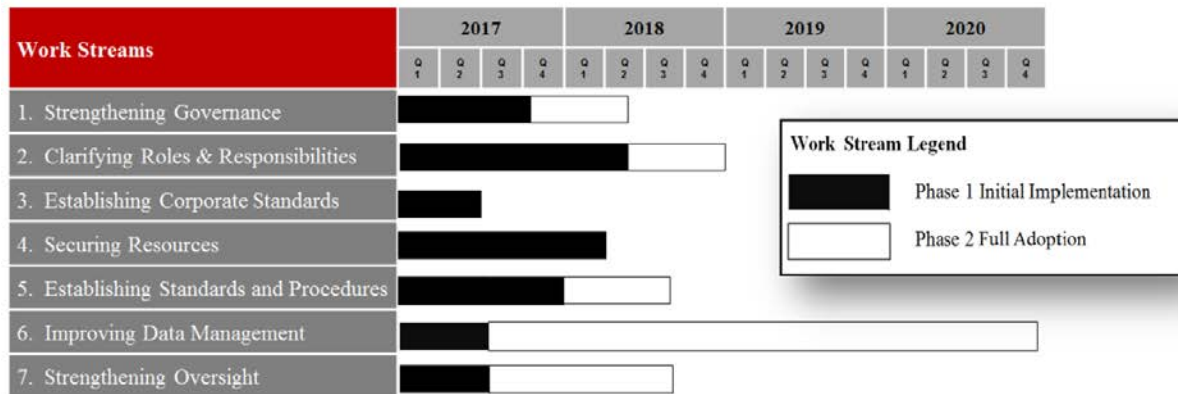
Figure 11: PMM Plan work Stream - Phase 1 plan

The TTC's progress in 2017 was centered on formalizing governance and developing corporate minimum standards for core project management activities like cost estimating, scheduling and stakeholder management, among others. Much of this progress took the full year to achieve, rather than the six months envisioned in the Phase 1 of the works streams in the PMM Plan. The slowed pace was a deliberate decision recommended by the PAG group members and approved by the PMM Steering Committee, driven by phasing the rollout of the framework and subsequent standards, and by following a pilot-driven rollout strategy, limiting initial adoption of new practices to 10 critical projects, to be followed by a broader implementation.

Both of these decisions were appropriate given the importance of solidifying the foundational governance and standards before rolling it out to the organization. As such, the maturity advancement in Year 1 is limited because although the foundational items are now in place, they have yet to be rolled out across the organization. KPMG believes that the TTC is still on track for achieving its objectives by the end of Year 4, given that we anticipate major advances in maturity will come with the rollout of the new governance and standards first through the pilot and then to the broader capital portfolio. Visually this progress can be shown using a common project management tool, the S-curve, where the steepness of the curve correlates to how quickly the project is progressing. Figure 13 shows the S-curve representing how project management maturity is expected to increase over the four years of the PMM Plan (curve and left axis) and relates that to the proportion of the organization that will be contributing to that increase (bars and right axis).
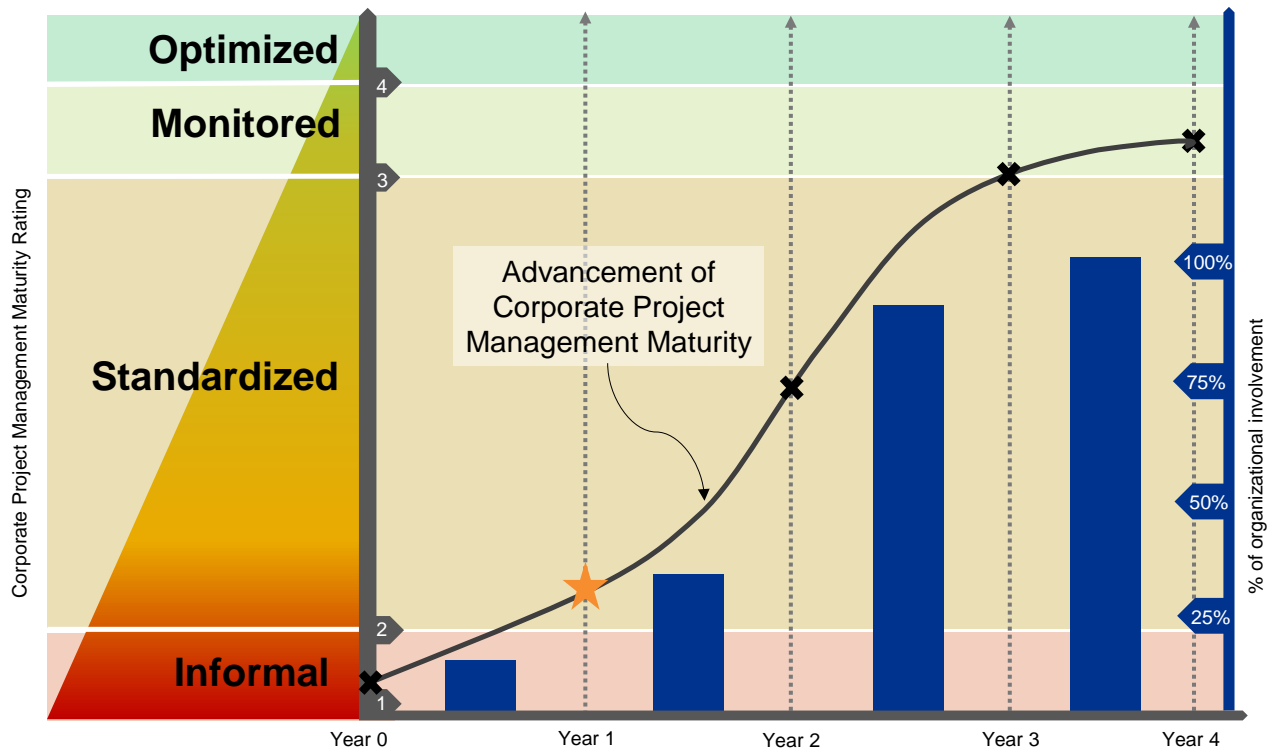
Figure 13 – PMM Plan Progress Curve and Organizational Involvement

PMM Plan progress to date and progress required moving forward can be broken down as follows:

▪ Year 1: Maturity advanced, as would be expected, at the slowest pace of the full plan, owing to the fact that a small, core group was involved in developing a common corporate understanding of governance, project lifecycle, categories of project risk and complexity, and minimum project management standards. The original plan for advancement in year one was more aggressive than what was achieved, but the realities of the scale of rollout mean actual progress was reasonable.

▪ Year 2: Maturity should accelerate given the rollout of process and standards across the pilot projects in early 2018, and into other Category 3 and 4 projects towards the end of 2018. The accelerated increase is dependent upon two things: 1) enough resources at the PfMO to support the broader rollout, and 2) successful rollout and employee take-up on the pilot projects. At the same time, the foundation must be laid to support the step-change in organizational involvement expected in Year 3, including the development of a training strategy for the broader organization.

▪ Year 3: Maturity will accelerate the fastest at this time, as rollout spreads across the remainder of the capital portfolio to all Category 1 and 2 projects. This acceleration is accompanied by a step-change in the number of individuals using the new processes and standards. Success here is dependent on the ability of the PfMO to train and support the broader organization.

- Year 4: Maturity will accelerate at a much slower pace, as the focus shifts from rolling out process and procedure to executing on and monitoring the use of new process and procedure. From this standpoint, there are relatively few people that are newly involved beyond Internal Audit in a monitoring support function. Instead, the emphasis will be on the PfMO and project governance entities executing on their ongoing monitoring and continuous improvement responsibilities.

A significant early indicator of how well the organization will be able to handle the accelerated pace of change expected in 2018 and 2019 compared to 2017 will be the success of PMF implementation on the pilot projects and the ability to ramp up the additional internal resources coming onboard in 2018. It will be important for the PfMO to critically review implementation status in mid-2018 to make appropriate adjustments to the PMM Plan as required.

As shown in Figures 13 and 14, the TTC has moved from having limited corporate project management support to a corporate/ PfMO maturity that can now be characterized as in the '**Low-Standardized'** range, somewhat below the equivalent maturity of the ITS department at the time of CPDR. Although the documentation that is in place now and will be in place by the end of the year may on its own reflect a higher degree of maturity, the relatively narrow rollout to a selection of pilot projects prevents a higher maturity rating.   For comparison, ECE's 'Standardized' rating was higher because although it may have covered a narrower band of project control areas, the standards were almost universally used within their group.
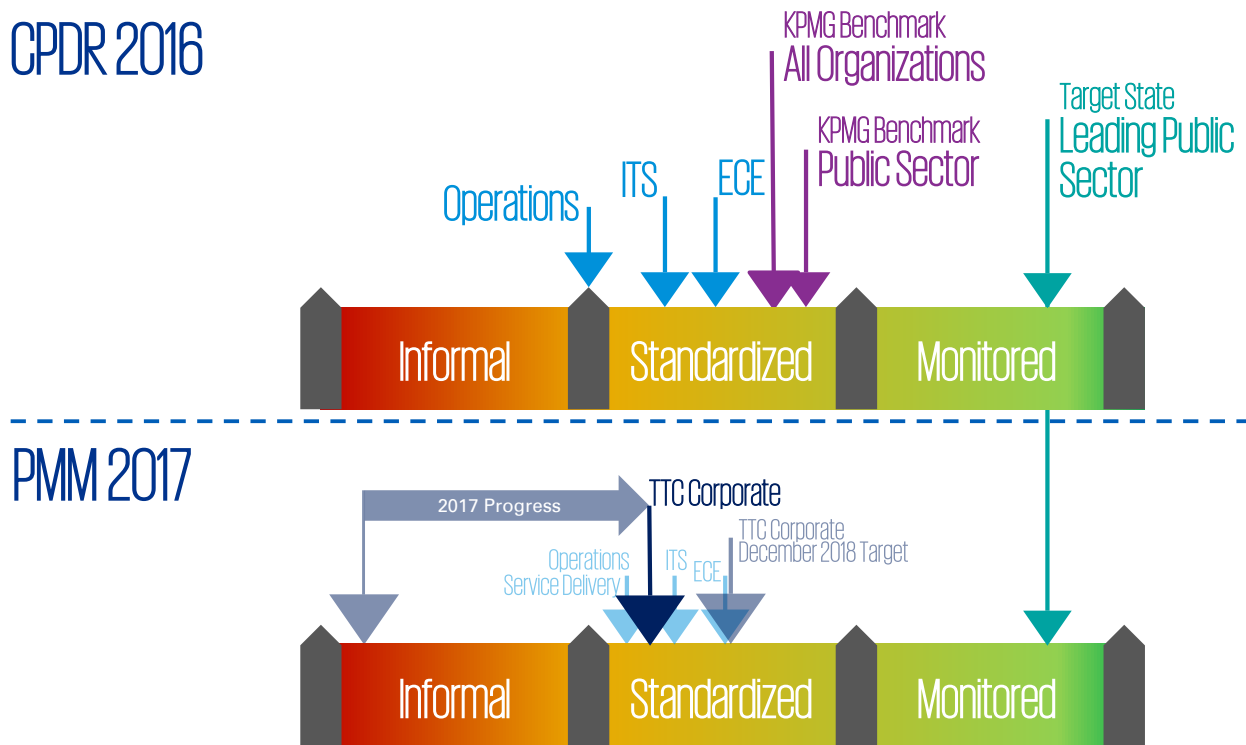
Figure 12: Project Management Maturity - 2017 Assessment Update

Although this assessment did not review the maturity advancement of individual groups, the implementation of corporate standards moves both Operations and Service Delivery slightly into the 'Standardized' band by creating high-level guidelines where before there were none. Furthermore, the creation of PMOs for Service Delivery and Operations, and the development of PMM Plans for all PMOs lays the infrastructure for those groups to advance their individual maturities in 2018.

A more detailed mapping of the progress of each of the seven work streams and their impact on the project control sub-elements of the maturity assessment can be found in the sections that follow.

4.1 Work Stream 1 – Strengthening Governance

Work steam 1 has progressed according to the December 2017 PMM Plan. As noted in the CPDR, strengthening governance was a priority critical to the implementation of the rest of the recommendations. The PMM Plan reflected this priority, targeting substantial completion of governance efforts in the first 6 months of 2017.

4.1.1 Status of Recommendations / Priorities

Work stream 1 includes 2 of the '2017 Top 10 Priorities', and 7 of the recommendations overall.

- *PfMO Mandate (Rec. #1)* – The PfMO's mandate has been captured in the Project Management Framework (June 2017) and the upcoming Project Management Policy (December 2017).

- *Capital Program Strategic Objectives (Rec. #2)* – The strategic objectives have been incorporated into the draft Project Management Policy (December 2017) and the templates used for project justification documents, including the Statement of Intent and Business Case. With the imminent release of the TTC's next Five-Year Corporate Plan, the policy and other documents will need to be updated to reflect the new strategic objectives.

- *Governance Mandates (Rec. #3)* – Mandates and Terms of Reference ("ToR") were developed or revised for the Project Review Board, Program Advisory Group, and TTC Board Capital Projects and Procurement Working Group ("CPPWG"). As a part of the governance standards, a reference ToR for Steering Committees was also developed. Although the PMF has clearly defined governance structures for Category 1-3 projects, the governance structures of Category 4 projects remain unresolved largely due to the presence of multiple shareholders (i.e. funding stakeholders).

- *Empower Oversight Bodies (Rec. #4)* – Although mandates have been approved on paper, it is too early to assess whether oversight bodies are properly exercising their responsibilities. Additionally, governance workshops were carried out with the TTC Board, TTC executives and pilot project Sponsors.

- *Develop Governance Toolkits (Rec. #5)* – The TTC Board capital project workshops were delivered in May 2017, with the Board Toolkit approved at the July 2017 TTC Board meeting.

The toolkit was subsequently adapted for the use of Steering Committees and Project Sponsors and delivered in PMF pilot project training in Q4 2017.

- *Performance Metrics of Strategic Objectives (Rec. #8)* – Although Strategic Objectives are incorporated into the project justification documents, there is not a performance management framework for the capital program that measures success relative to the organization's strategic objectives. This recommendation was planned to be complete in June 2017, but will likely be developed as a part of a Benefits Realisation Management ("BRM") standard later in 2018. As defined by the PMI, BRM provides the organization a way to measure how projects and programs add value to the enterprise.

- *Stage Gate Process (Rec. #10)* – The Stage Gate process for projects was incorporated in the PMF (June 2017). The process remains tailored to finite projects in a design-bid-build/implement context. Rather than ending in December 2017 as initially planned, rollout of the Stage Gate process will continue through late 2018 after the PMF pilot project rollout in early 2018. A primary focus of the Program Management Framework planned for Q1-Q2 2018 will be translating the stage gate process to finite and ongoing programs.

4.1.2   Maturity Impact

Project Control Sub-Elements		
▪ **Project Strategy & Authorization**		
▪ **Project Planning & Integration**		
▪ **Roles & Responsibilities**		
Organizational Level	**Prior Rating**	**Current Rating**
Corporate / PfMO	-	Standardized (low)

Project strategy includes the project formulation process, approval process, how the project's strategy is translated into an authorized project, and how the successful strategy achievement is monitored. The PMF has clarified governance structures, has identified the entities responsible for key authorizations, their roles and responsibilities, and has introduced the stage gate process to define how those authorizations occur through the project lifecycle. Project strategic drivers have been successfully aligned to the corporate strategic objectives, but staff level understanding is still developing.

Governance is codified in the Project Charter, which also captures project planning (scoping, organization, business objectives, delivery strategy, schedule, preliminary budgets and schedules) and the integration of the project into the broader portfolio plan.

Corporate maturity in these sub-elements was non-existent. The current rating of 'Standardized' (low) reflects the fact that although the majority of the recommendations and priorities have been addressed on paper, rollout is in its infancy and thus far confined only to pilot projects.

4.1.3   Next Steps

<div style="border:1px solid">

1. Assess the early effectiveness of PMF implementation in the pilot projects. [Rec. # 3 & 4]

2. Upon release of the updated Five Year Corporate Plan, update the corporate strategic objectives and develop a corporate standard for Benefits Realisation Management. [Rec. #8]

3.   Develop a stage gate process specifically for Finite Programs (classified as 'projects' under the City budget definitions) and Ongoing Programs (i.e. State of Good Repair). [Rec. #10]

4. Prioritize finalizing governance structures for in-flight Category 4 projects by working with external stakeholders. Although agreement on governance structures, roles, titles and individuals may be challenging, the public nature of these projects means they will draw more attention and scrutiny than the rest of the TTC's capital portfolio. Even though Category 4 projects will to varying degrees be outside of the TTC's control, the success of their governance will impact perception of the success of the PMM Plan at the TTC. [Rec. #3]

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4.2   Work Stream 2 – Clarifying Roles and Responsibilities

Work stream 2 is closely related to work stream 1, with the governance providing the structure on which everyone's roles and responsibilities can be defined. This structure includes both their level in the project hierarchy and the point in time of the project in its lifecycle. Only one of the recommendations / priorities was intended to be completed in Phase 1, and the others remain on track for completion according to the PMM Plan.

4.2.1   Status of Recommendations / Priorities

This work stream centred around three internal priorities, and an additional one of the CPDR recommendations.

- ▪ *Project Management Functions* – A key component of the approved PMM Plan was a pledge of resources, both headcount and consultant budget, to assist in delivery of the plan. In mid-2017, four consultant firms were awarded a two-year contract for 'Organizational Project Management Services'. In the latter half of 2017, these consultants have been used to provide strategic advice to the PfMO and new PMOs, to assist with the development of Standards under the direction of TTC content leads, and provide supplemental staff for specific project support. Headcount requests, if filled in 2018, will give additional support to both the PfMO and functional practices (i.e. risk or scheduling) to enable them to more broadly serve the organization. In the interim, consultants are providing these services as needed.

- *Project Risk and Complexity Tool (CPDR Appendix B)* – The sample tool delivered as a part of the CPDR was simplified into the project categorization process contained in the PMF (June 2017). The PMF also makes the linkage between categorization and both the level of project manager competency and the appropriate governance structures. Tools and templates related to project categorization will be released in early 2018.

- *Minimum Project Manager Competencies (Rec. #15)* – Although the PMF's categorization process identified a four levels of Project Managers, rollout is dependent on job description redesign currently being undertaken by the Human Resources team. Role definitions for the consolidated project manager positions have not yet been created and have been flagged as a priority in Q1 2018 to allow minimum competencies to be developed.

- *Project Charter* – The Project Charter is the project document that captures the roles and key responsibilities of the project governance entities (e.g. sponsor, steering committee), project manager and project team. The development of the Project Charter template predated the development of the PMM Plan, and the template has been rolled out for PMF pilot projects in Q4 of 2017 according to plan. All Category 3 and 4 projects are intended to have Project Charters in place in 2018, with broader rollout following through 2018 as per the PMM Plan.

4.2.2 Maturity Impact

Project Control Sub-Elements		
▪ **Project Planning & Integration**		
▪ **Roles & Responsibilities**		
Organizational Level	**Prior Rating**	**Current Rating**
Corporate / PfMO	-	Standardized (low)
As noted previously, project planning is largely captured in the Project Charter (scoping, organization, business objectives, delivery strategy, schedule, preliminary budgets and schedules), as it integrates = the project into the broader portfolio plan. The Project Management Functions will allow the PfMO to better support project planning. Corporate maturity in these sub-elements was non-existent. The current rating of 'Standardized' (low) reflects the fact that Project Charter rollout is in its infancy and thus far confined only to pilot projects. Additionally, although project manager levels have been tied to project categorization, the associated competencies have not yet been formalized at a corporate level.		

4.2.3 Next Steps

<table>
<tr><td colspan="2" style="background-color:#1f3864"></td></tr>
<tr><td>5.</td><td>In the June 2018 PMM Plan status update to the TTC Board, report on the hiring status of project functions and its impact on the PMM Plan. [Rec. #9]</td></tr>
<tr><td>6.</td><td>In collaboration with Human Resources, prioritize completion of the role profiles and minimum competencies of the four levels of Project Manager as introduced in the PMF. [Rec. #15]</td></tr>
</table>

4.3 Work Stream 3 – Establishing Corporate Standards

Work stream 3 had the most aggressive timeline of the PMM Plan, and although its Phase 1 progress was not fully accomplished by June 2017 as intended, it will be largely complete by December 2017. The delay should not have a negative overall impact to the implementation timeline of the PMF within pilot projects.

4.3.1 Status of Recommendations / Priorities

This work stream centered around four CPDR recommendations that rolled up within one, the Project Management Framework.

- *Corporate Project Management Framework (Rec. #6)* – The PMF was released as intended in June 2017. As detailed further in work stream 5 below, a number of the standards and procedures were de-scoped from the PMF document itself and turned into stand-alone documents. The first release of the PMF instead narrowed its focus on the foundational governance issues as recommended in the CPDR, including project categorization, standard governance structures, and the stage gate process. Although not initially considered as in-scope, it became clear through the development and socializing of the PMF that additional Program- and Portfolio-level Frameworks would be required. For programs, consideration is required for how the PMF's core concepts can be adapted to the differing requirements of both ongoing and finite programs. Additionally, issues like project and budget prioritization require strategic guidance from a Portfolio-level viewpoint. Both of these additional Frameworks are now planned for development in 2018.

- *Authority of the Project Team (Rec. #7)* – The PMF sets the expectation that the Project Manager will have a strengthened role within a project that spans the entire project lifecycle. In the TTC's matrix structure (projects teams and functional line management), the PMF reinforces that project accountability of all project team members, regardless of functional department, shall travel up through the project governance chain, rather than through functional line management. Although this authority is now formalized in the PMF, its success will have to be closely monitored within the PMF pilot projects in 2018.

- *Roles & Responsibilities (Rec. #11)* – The PMF, at a high level, defines the roles and responsibilities of all governance entities, project sponsorship and leadership, and the project team and working groups. The PMF also identifies the Project Charter as the document where project-specific roles and responsibilities are defined. Project Charters are currently being developed for the PMF pilot projects, with some groups mandating early adoption of Project Charters across all of their Category 3 and higher projects.

- *Organizational Structure (Rec. #14)* – The Project Management Policy, set for release in December 2017 identifies the PfMO as the project management champion across the organization, while the mandate of the PfMO has been captured in the PMF. With existing PMOs in place within ECE and ITS, it was initially intended that new PMOs for Operations and Service Delivery would be in place by June 2017. Leads for those PMOs have since been identified, and each PMO is developing their own PMM Plan that is intended to inform their final structure. Mandates for the new PMOs have yet to be developed.

4.3.2   Maturity Impact

Project Control Sub-Elements
▪ **Project Strategy & Authorization**
▪ **Project Planning & Integration**
▪ **Roles & Responsibilities**
▪ **Policies and Procedures**
▪ **Project Management Reporting**

Organizational Level	Prior Rating	Current Rating
Corporate / PfMO	-	Standardized (low)

The PMF provides a structure for managing a project both depending on its risk and complexity (categorization) and its place in the project lifecycle (stage gating). These foundational elements allow a common understanding of how each key individual's authority, role and responsibility changes throughout the lifecycle and changes depending on the type of project. A standard lifecycle also gives stakeholders a common understanding of when and by whom they should be informed of both regular progress and major decisions.

Corporate maturity in these sub-elements was non-existent. The current rating of 'Standardized' (low) reflects the fact that the PMF rollout is in its infancy and thus far confined only to pilot projects. Additionally, although Project Managers have been given stronger accountability, it is yet to be seen how easy the cultural change will be.

4.3.3 Next Steps

7. Release PMF version 2.0 with additional core content, including risk and commercial management, as well as any other continuous improvement feedback captured since June 2017. [Rec. #6]
8. Develop a Program Management Framework (addressing both finite and ongoing programs). [Rec. #6]
9. Develop a Portfolio Management Framework. [Rec. #6]
10. Measure how well the organization is making the transition from a functionally-weighted to a project-weighted matrix management model by soliciting feedback from Project Managers on their Project Teams' accountability, and Project Sponsors on the leadership of their Project Managers. [Rec. #7]

4.4 Work Stream 4 – Securing Resources

Work stream 4 has generally progressed according to the December 2016 PMM Plan but will likely extend past Q1 2018 into Q3 2018.

4.4.1 Status of Recommendations / Priorities

This work stream centred around two CPDR recommendations and one additional internal priority.

- *Portfolio Management Resources (Rec. #9)* – The PMM Plan initially proposed the addition of 40 headcount to support the advancement of project management maturity across the organization. In the June 2017 status update to the Board, the TTC adjusted that impact down to 26, with approximately 12 going directly to the PfMO. The balance of needs being filled with consultants charged directly back to the projects. The headcount additions, identified in nine key knowledge areas, were submitted as a part of the 2018-2027 budget, with the intention of staffing up in 2018. The Organizational Project Management Services roster was awarded to four consultant teams in June 2017 to provide 2 years of support services to the PfMO, be it for the PfMO itself, other PMOs or for individual projects. The consultants are providing bridge resources, among other services, until planned headcount increases are on boarded.

- *Change Management Resource (Rec. #13)* – A dedicated Change Management resource within the PfMO was in place from the outset of PMM Plan activities in 2017, with supplemental support and guidance from the Director, Change Management. The resource was instrumental in the development of document templates and training material that was used to roll out the PMF to project managers, project sponsors and steering committees involved in the PMF pilot projects. The volume of training required in 2018 and beyond

however, will severely strain a single resource. Training requirements will follow the rolling wave of documentation that is created at the corporate level: PMF, first wave of standards, updated PMF, second wave of standards. In addition to growing content, the span of training will go beyond the PMF pilot projects, to include all Category 3 and 4 projects, to then all projects in the capital portfolio.

- *Enterprise Resource Plan* – The PfMO identified a portfolio-level need to better understand the sharing of or competition for project management resources across the capital portfolio. This priority was intended to start in mid-2017, but has been delayed into 2018 as an effort to understand the project management functions required of each of the PMF pilot projects to successfully complete the project deliverables required for their next stage gate (e.g. estimating resources to achieve develop a Class 3 schedule prior to Stage Gate 3).

4.4.2   Maturity Impact

Project Control Sub-Elements			
▪ **Project Infrastructure**		▪ **Trend Analysis**	
▪ **Project Management Reporting**		▪ **Policies & Procedures**	
▪ **Forecasting**		▪ **Project Assessments**	
▪ **Variance Analysis**		▪ **Compliance Auditing**	

Organizational Level	Prior Rating	Current Rating
Corporate / PfMO	-	-

The availability of resources at the PfMO will have a direct impact on its ability to execute on its mandate. For the Project Control sub-elements above, the presence of resources will not on their own result in a higher maturity rating (hence no ratings above).

Their presence does contribute to better project infrastructure, which includes the reporting systems and tools for project functions like accounting, procurement, change management and scheduling that facilitate the information exchange necessary for project management.

Additionally, adequate portfolio resources can improve overall maturity by developing policies and procedures, and improve cost management maturity by carrying out forecast, variance and trend analysis as a part of their reporting duties.

Lastly, a properly resourced PfMO can support ongoing monitoring and oversight by carrying out compliance audits and delivering management review style project assessments.

4.4.3 Next Steps

11. Review requirements for additional dedicated (internal or consultant) Change Management resources to help with continued and broader rollout of the PMM Plan. [Rec. #13]
12. Review functional expertise requirements of the PMF pilot projects in order to successfully complete upcoming stage gate deliverables (e.g. estimating expertise for a Gate 3, Class 3 estimate). [Rec. #9]

4.5 Work Stream 5 – Establishing Standards and Procedures

Work stream 5 planned for significant progress to be made by June 2017, with a number of recommendations and priorities targeted for Phase 2 completion by December 2017. By Q2 2017, it was apparent to the PAG that the planned pace of change would need to be slowed. This was achieved in two ways: by de-scoping the standards from the release of the PMF, and by changing to a pilot-led implementation model. Of the 18 recommendations and priorities detailed in this work stream, the majority will meet their 2017 expectations, albeit by December 2017 rather than June 2017.

4.5.1 Status of Recommendations / Priorities

This work stream centred around 15 CPDR recommendations and 3 additional internal priorities.

- *Implement Project Management Resources* – Project Management Services consultant resources began in mid-2017, according to plan.

- *Corporate Minimum Standards (Rec. #17)* – The first wave of corporate minimum standards documentation will be completed by December 2017, but implementation will not occur until early 2018, with rollout to the PMF pilot, followed by a broader rollout into 2019. These corporate standards address scope management, governance, project justification (e.g. Statement of Intent, Business Case), scheduling, Project Charters, project change control, as well as the following standards specifically highlighted in the CPDR recommendations:

  - *Stakeholder Management (Rec. #12)*

  - *Procurement Management (Rec. #28-29) – ensure project manager participation in procurement and expand M&P's strategic role*

  - *Risk Management (Rec. #19)*

  - *Estimating (Rec. #20-26)*

- *Group Specific Standards (Rec. #18)* – Group-level standards will follow the release of Corporate standards. This recommendation was initially planned for completion in December 2018, but it will not start until Q1 2018 to lag the rollout of the corporate minimum standards. PMOs are currently drafting their own PMM Plans and are identifying whether the new corporate standards require one of the following: revised group standards that align, new

group standards that provide more group-specific detail, or no supplemental standard (i.e. corporate standards can be used as-is). Group standards rollout will therefore start in 2018 for the core PMF content, and continue through 2019 according to each group's own PMM Plan.

▪ *Delivery Options Process (Rec. #27)* – Work on this process began in 2017 as intended, but to a lesser extent than was initially planned. Although it was listed as a 2017 Top 10 priority, detailed work on the process was delayed to await lessons learned and feedback from the Gardiner Expressway and Scarborough Subway Extension procurement options analysis processes. The PAG noted that the next project of a scale requiring a delivery options analysis would not be in a position to require that process until late 2018 at the earliest. It was therefore prudently decided to slow work on the process to ensure relevant feedback has been incorporated.

▪ *Commercial Management (Rec. #30)* – Work on this process began in 2017 as intended, but to a lesser extent than was initially planned. Headcount to build this function was included in the 2018-2027 PMM Plan budget request, with the expectation the positions can be filled in 2018. Being listed as a 2017 Top 10 priority, detailed work on the process began in 2017, but was paused when the decision was made to incorporate it as foundational content in the next revision of the PMF, which should occur in early 2018.

▪ *Corporate Capital Budget Service Established* – Work on this internal priority did not start as planned in 2017. A change in leadership within Finance, coupled with strained internal resources during the 2018-2027 budget submission cycle meant that PfMO-led support for Statement of Intents, Business Cases and PCRs during the compressed budget submission cycle in Q3 was limited to cursory review of documentation by outside consultants for completeness and compliance to existing templates. Work is scheduled in early 2018 with Finance to develop an optimized capital budget submission process that can be implemented in for the 2020-2029 budget submission cycle.

4.5.2   Maturity Impact

Project Control Sub-Elements	
▪ **Project Strategy & Authorization**	▪ **Procurement Management**
▪ **Project Infrastructure**	o Procurement Planning
▪ **Budgeting**	o Contracting & Contract Standards
▪ **Stakeholder & Communications Planning**	o Contract Administration
	o Contract Closeout
▪ **Schedule Management**	▪ **Estimating & Contingency Management**
o Schedule Development Standards	▪ **Risk Management**
o Schedule Change Management	▪ **Policies & Procedures**
o Schedule Management Process	▪ **Project Management Reporting**

Organizational Level	Prior Rating	Current Rating
Corporate / PfMO	-	Standardized (Low)

Overall, the development of corporate policies and procedures supports project infrastructure, which includes the reporting systems and tools for project functions like accounting, procurement, change management and scheduling that facilitate the information exchange necessary for project management.

Although the 13 standards developed in 2018 are to be delivered in December 2017 rather than June 2017, they have covered a significant number of the project control sub-elements that were reviewed as a part of the original maturity assessment. These standards all align with the PMF and stage gate process, and each include procedures, process maps, minimum expectations and tools and templates.

Corporate maturity in these sub-elements was non-existent. The current rating of 'Standardized' (low) reflects the fact that standards rollout is in its infancy and will only roll out to pilot projects starting in Q1 2018, with broader rollout stretching well into 2019.

4.5.3 Next Steps

Recommendations for Consideration
13. Incorporate Risk Management and Commercial Management into the core PMF document. [Rec. #19 & 30]

4.6 Work Stream 6 – Data, Analysis, Tools & Technology

Work Stream 6 was initially planned to start in 2017, and to continue throughout the four year PMM Plan. As noted in the CPDR, tools and technology should be a means to achieving corporate objectives, rather than the driving force for business process change. It was therefore important that foundational governance and corporate minimum standards be in place before addressing issues around data, tools and reporting.

4.6.1 Status of Recommendations / Priorities

This work stream centred around 9 CPDR recommendations. For all of the recommendations below, although little work was undertaken in 2017, the work stream was intended to last 4 years. As a result, it will be important to make significant advancement on these recommendation in 2018 to make up for no progress in 2017.

- *Data Source Identification (Rec. #31)* – no progress
- *Capital Program Data Strategy (Rec. #32)* – no progress

- *Performance Metrics Reporting (Rec. #33)* – no progress

- *Consolidated Reporting (Rec. #34)* – Work began in Q3 2017 on a Board reporting protocol that outlines modifications and additions to the capital program reporting seen by the TTC Board (e.g. the CEO's Report on Capital Projects and the Critical Project Dashboard). The proposed reporting protocol will be discussed in the February Capital Projects and Procurement Working Group meeting and will be subsequently approved by the Board in late Q1 or early Q2 2018. As currently structured however, this reporting protocol will still require manual transcription of PSR data.

- *Needs Driven PMIS Planning (Rec. #35)* – no progress

- *Integrated Project Management Tool (Rec. #36)* - no progress

- *Procurement System Risk Assessment (Rec. #37)* – no progress

- *Leveraging System Add-ons (Rec. #38)* – no progress

- *Tools & Technology Change Management (Rec. #39)* – no progress

4.6.2   Maturity Impact

Project Control Sub-Elements		

▪ **Project Infrastructure**
▪ **Project Management Reporting**
▪ **Project Cost & Cash Flow Reporting**
		▪ **Procurement Management**
		  o Procurement Planning
		▪ **Schedule Management**
		  o Schedule Development Standards

Organizational Level	**Prior Rating**	**Current Rating**
Corporate / PfMO	-	-

A strong data, analysis, tools and technology strategy will have a direct impact on a Project Manger's ability to get the right information at the right time to make the right decisions. For the project control sub-elements above, the presence of data, analysis, tools and technology will not on their own result in a higher maturity rating. Although those sub-elements have matured on the basis of other PMM Plan work stream, the lack of progress on this work stream results in no current rating above.

4.6.3   Next Steps

14. Accelerate the development of a project management data strategy to be delivered in 2018. [Rec. #32]

4.7 Work Stream 7 – Strengthening Oversight

Work stream 7 is progressing according to the timelines set out in the PMM Plan. Additionally, the formalization and strengthening of governance in work stream 1 provides the foundation for those governance entities to exercise their oversight responsibilities.

4.7.1 Status of Recommendations / Priorities

This work stream centred around 1 CPDR recommendation and 1 internal priority.

- *Project Status Report Revision* – Changes to the PSR are being proposed in conjunction with the Board reporting protocol. Proposed changes include the addition of forward-looking trending. The PMF and subsequent training to PMF pilot project teams has emphasized the role of the PSR as a tool that Project Managers and Sponsors should be using to actively monitor their projects, rather than simply as a tool for reporting out historical information to Finance. PSR revisions are planned for Q2 2018.

- *Centralized Project Monitoring (Rec. #41)* – The PfMO's role in project monitoring has historically been limited to consolidating PSR information for inclusion in the CEO's Report and Critical Projects dashboard. Through 2017, the PfMO has facilitated project presentations to the Project Review Board and will lead the new Board reporting protocol. The new protocol will provide a centralized, standardized, focal point for project reporting.

4.7.2 Maturity Impact

Project Control Sub-Elements		
▪ Project Infrastructure	▪ Trend Analysis	
▪ Project Management Reporting	▪ Forecasting	
▪ Project Cost & Cash Flow Reporting	▪ Variance Analysis	
Organizational Level	**Prior Rating**	**Current Rating**
Corporate / PfMO	-	-

The Board Reporting Protocol as well as proposed changes to the PSR will greatly impact project reporting throughout the organization up to the Board. The intention is to make the PSR more useful as a continuous monitoring tool, with value-added trend analysis and forecasting.

Although these changes could have a significant impact to maturity of the project control sub-elements above, the current rating in absent because these changes are only at the earliest stages of planning, with no completed documentation.

4.7.3 Next Steps

15. Complete PSR revisions and rollout across all projects. [Rec. #34]

5 Conclusion

Two significant early indicators of how well the TTC will be able to handle the accelerated change expected in 2018-2019 compared to 2017 will be the success of PMF implementation on the pilot projects, and the ability to ramp up the additional internal resources coming onboard in 2018. As a result, it will be important for the PfMO to critically review implementation status in mid-2018 to make appropriate adjustments to the PMM Plan as required.

If the TTC follows their existing PMM Plan, achieves the acceleration in resources and rollout as required through 2018, and implements the 15 Next Steps highlighted above, KPMG anticipates the TTC will be able to advance their corporate maturity to a mid-Standardized level by the end of 2018.

Appendix 1 – CPDR Recommendations

The recommendations for improvement in the CPDR were grouped together into six key themes that largely related to how and to whom the recommendations could be actioned. The broad themes were and detailed recommendations were as follows:

Governance	Strong governance aligns leadership, mandate, and strategic objectives with corporate goals. Every decision-maker throughout the TTC should understand their role, responsibilities, who's relying on them, and the objectives that should be driving their decisions.

Summary

Value driven performance – Use the organization's corporate vision, mission and strategic objectives as more than just project justification. Make strategic objectives drive decision making throughout both the project lifecycle and within the organization and incorporate it as a core component of portfolio, program, and project performance management. Measure success not just on cost and schedule, but what value is being created by achieving these objectives.

Clarity and empowerment – Ensure that mandates, roles, and responsibilities related to the capital program are clearly documented and understood throughout the organization. This applies to job profiles, project teams, functional groups, oversight boards, committees, TTC management, the TTC Board and the various levels of the City that are involved in a project. Empowerment drives accountability and transparency.

Provide tools for success – Give the governance that exists the ability to succeed in its role by introducing capital projects guidelines for Board members, a corporate project management framework that details the entire project lifecycle, and a Stage Gate approval process that can ensure that all stakeholders' issues are aligned at key decision points.

Recommendations

1. Expand the PfMO mandate to include development of the capital program delivery's vision, mission, and strategic objectives, and these should be clearly communicated and enforced throughout the organization.

2. Utilize the capital program delivery vision, mission and strategic objectives to guide project decision-making throughout the project lifecycle.

3. Develop and document applicable mandates and policies supporting the various entities with capital project oversight responsibilities.

4. Empower the existing governance structure with clear mandates, responsibilities, and accountabilities, and ensure these are effectively communicated throughout the organization.

5 Provide tools to adequately support each governance entity in the execution of their mandate (from the Board level down to the project team).

6 Develop a corporate project management framework that references applicable project management processes, procedures, and tools for use by the project team and other parties throughout the project lifecycle.

7 Alter the authority of project leadership to have ultimate accountability for the project, and its team, throughout the project lifecycle. At the same time, ensure that the project team members feel responsible for and are held accountable for project success.

8 Develop a new performance management framework for the capital program that measures success relative to the organization's strategic objectives. The framework should assess the real value to project customers and stakeholders gained throughout the project lifecycle.

9 Considering the ultimate mandate of the PfMO, develop a growth plan to estimate the investment required to meet the PfMO's stated goals. The plan should include funding source(s) for the work to be undertaken, and in assessing alternatives, strong consideration should be given to a direct charge to the projects.

10 Develop a corporate stage gate process to govern gated approval steps to cover the entire project lifecycle. The stage gate process should be aligned with project governance that is appropriate for a project's complexity.

| **People & Relationships** | Success is dependent on the ability to engage and manage people's competencies, as well as internal and external stakeholder relationships. |

Summary

Structure for success – Make matrixed project teams 'strong' matrixed teams, giving authority to the projects and enabling a project team mentality to take hold. Enable these teams to be successful by giving central support with a stronger and broader PfMO. The success of a capital program depends on the success of each project.

Manage the interfaces Breakdown internal silos, continue to develop staff-level partnerships with the City, engage with industry and share best practices whenever possible. Complex projects involve multiple internal and external stakeholders that need to be managed.

Strengthen engagement Build on the positive attitude towards the new management direction by clarifying competencies, providing opportunities for training and supporting organizational transformation with sound change management.

Recommendations

11 Create clear definitions of individual roles and responsibilities in terms of project roles, as well as functional job descriptions, which are aligned with the corporate project management framework.

12 Develop a corporate reporting standard for stakeholder management that addresses both internal and external stakeholders and reporting to them.

13 Given the extent to which the PfMO's strategic changes will impact the organization, make supporting the PfMO in its efforts a priority for the new change management function.

14 When the TTC management determines the long-term location for the PfMO, it should consider the PfMO's future relationship with the existing ITS PMO and the ECE Capital Programming team (e.g., merging with one or both).

15 Establish minimum project management competencies in the near-term, and develop training requirements to support sponsors, program.

Processes & Procedures	Detailed processes and procedures creates a project management infrastructure that allows project managers and their teams to focus their attention on proactively managing the project.

Summary

Build upon strengths – Use the knowledge, policies, processes and procedures from the high functioning pockets of the organization to create corporate standards that can be adopted in a scalable fashion organization-wide. Leverage certain department level strengths in estimating, scheduling, risk management, master project plans, contract management, and change management.

Customize where necessary – Develop functional group, specific policies, processes and procedures using corporate standards, where before there were none and strengthen those that are inadequate.

Develop new competencies – Develop formal policies, processes and procedures around areas that are currently lacking, such as capital planning, earned value management, commercial management, and stakeholder management.

One size does not fit all – Adapt corporate minimum and functional group standards to be scalable across projects of varying scale and complexity that are applicable to various delivery options.

Recommendations

16   Set a capital program management maturity rating target of 'monitored', with optimization reserved for select areas of significant corporate risk.

17   Develop corporate standards that leverage the existing efforts of the PfMO, and ITS and ECE groups.

18   Develop corporate standards to fill gaps where it is not possible to leverage the existing efforts of the PfMO, and ITS and ECE groups.

Risk Management

19   Develop the Risk Management function into a broader practice that covers the entire capital program. Incorporate capital program risks into the Enterprise Risk Management system. Increase resources to support first the implementation of the current risk management plan within ECE, and then more broadly.

Budgeting & Estimating

20   Develop a corporate standard for capital project estimating, based on the ECE process, and suitable for the range of project complexities and delivery models.

21   Set budgets based on assumed scope and a risk-adjusted estimate that includes appropriate allowances to deal with unknowns the project teams manage and those driven by external influences that are appropriate for the stage of the project development.

22   Develop estimating guidelines that ensure all estimates are holistic, including both internally owned scope and scope affected or improved by other parties, regardless of funding responsibility, and including lifecycle costs when required.

23   Stage project approvals to follow key points in the maturing of a project estimate.

24   Create processes and procedures around the communication of project estimates as they mature.

Contingency Management

25   Develop risk-based contingency for all capital projects from the start, with discrete risks applying to different parts of the project lifecycle. Develop contingency management policy, process and procedure to govern development, definition and management of a project's contingency.

26   Create a separate budget allocation for Management Reserve to capture project scope adjustments that are outside of the scope of the project team.

Procurement Management

27 Implement procedures that help ensure that the best delivery model is adopted and appropriately managed, and that will best accommodate the stakeholder, risk and operating environment of the project.

28 Consider making the procurement of both services and construction a direct responsibility of the project leadership.

29 Expand the strategic role of procurement in the capital program delivery process by highlighting the importance of broad stakeholder engagement.

Commercial Management

30 Create a commercial management function within the organization. The adaptation of the process across project classifications may range from dedicated roles on highly complex projects, to project manager or contract administrator competencies on routine projects.

<table>
<tr><td>**Data & Analysis**</td><td>Equipping a project team to make the right decisions requires access to a streamlined focused reporting process that accesses the right information at the right time.</td></tr>
</table>

Summary

Know what you need and when – Gain an understanding of the information needs of the organization, where that data comes from, how timely it is, how it's collected and distributed and who it's used by and when.

Clear Assumptions – Understand and clearly communicate the assumptions of any data-driven decision-making, particularly during project development. When estimating, be clear on uncertainties and scope from all stakeholders inside and outside of the TTC. When developing contingency, make it risk-based and manage it accordingly.

Originating Data – Base reports on originating data wherever possible. Finding ways of having reports based on originating data, whether generated internally, by external team members or contracting parties is key to accurate and timely reporting as it minimizes human intervention.

Report on what you need – Measure performance with Key Performance Indicators ("KPIs") tied to the strategic objectives. For the decisions that must be made today, project managers need forward-looking information, not past.

Recommendations

31 Identify all data sources that are critical to the TTC's capital program decision making in the project management framework.

32 Develop a capital program data strategy that identifies capital program data requirements, and aims to collect the data at the source to minimize the needs for reprocessing of data. These requirements should be used to guide the development of an IT strategy to capitalize on the greater use of technology and tools.

33 Improve the forward looking information contained within the project reporting and add key performance indicators related to broader project objectives.

34 Consider streamlining organizational reporting by leveraging existing project level reporting tools.

<table>
<tr><td>**Tools & Technology**</td><td>Integrated tools and technology with appropriately standardized processes and procedures, allows project managers to focus on leading projects instead of acting as administrators.</td></tr>
</table>

Summary

Develop from within – Develop tools from within, with active engagement of end users, because it is key to the successful take-up of organizational transformation. Ensure that the PfMO tool development process is transparent and consultative.

Start small – Ensure that simple tools supplementing existing processes are in place before more extensive transformation. Creating smart spreadsheets for risk registers, leveraging existing online form-based reporting, or developing an integrated project management tool spreadsheet that consolidates reporting, risk registers and logs can both improve efficiency in the near-term and prime the organization for change in the long-term.

An ecosystem of solutions – Ensure that medium to long term IT solutions can integrate with or supplant existing systems. Leverage add-on capabilities of existing IT systems like Oracle Primavera (scheduling), Sage (estimating) and SAP (finance & HR) for additional Project Management Information Systems ("PMIS") capabilities.

Recommendations

35 Define and understand the functional requirements and complete a needs assessment and benefit analysis before implementing a technology or tool-based solution to aid in project management.

36 Consider implementing an Excel-based integrated project management tool prior to a PMIS solution. This would centralize project information at the project manager and partially automate reporting.

37 Complete a risk assessment of the current materials & procurement IT system and determine options for maintenance or replacement that align with corporate system implementations planned in the near future.

38 Leverage add-on capabilities of existing scheduling systems to automate and facilitate streamlining of the portfolio level schedule reporting.

39 Develop a corporate tool development process for transformative implementation initiatives within the capital program.

Implementation & Monitoring	Effective implementation of the previous five themes is vital. A strong central PfMO is required in order to implement, independently monitor the effectiveness, adoption and improvement of the project policies, processes and controls.

Summary

Strengthen the PfMO – Centralize design, implementation and training of new policies, processes, and procedures supporting revised governance to allow the management of expectations and allaying of uncertainties throughout the organization. The development of this relationship can evolve into monitoring and continuous improvement.

Recommendations

40 Develop a PfMO-level policy that defines the process for continuously improving corporate standards.

41 Expand the PfMO's mandate to include compliance monitoring of project management policies, processes, and procedures for groups delivering the capital program.

Appendix 2 – PMM Plan Work Stream Breakdown

Work Streams (Recommendation)	2017				2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Strengthening Governance	██	██	▢	▢												
1. PfMO Mandate	▮															
2. Capital Program Strategic Objectives	██	██														
3. Governance Mandates	██	░░														
4. Empower Oversight Bodies			██	░												
5. Develop Governance Toolkits			██	░	░											
8. Performance Metrics of Strategic Objectives	██	██														
10. Stage Gate Process	▮	░░	░													
2. Clarifying Roles & Responsibilities	██	██	██	██	▢	▢										
Project Management Functions	██	██	░													
Project risk and complexity tool	██	██														
15. Minimum Competencies	██	██	░░	░░	░											
Project Charter			██	██	░░	░										
3. Establishing Corporate Standards	██	██														
6. Corporate Project Management Framework	██	██														
7. Authority of Project Team	██	██														
11. Roles & Responsibilities	██	██														
14. Organizational Structure	██	██														
4. Securing Resources	██	██	██	██												
9. Portfolio Management Resources	██	██														
13. Change Management Resource	▮															
Enterprise Portfolio Resource Plan			██	██												
5. Establishing Standards and Procedures	██	██	▢	▢	▢											
Implement Project Management Resources			░░	░░	░											
12. Stakeholder Management	▮	░░	░													
28. Project Manager Ownership of Procurement	▮	░░	░													
29. Expand Strategic Role of Procurement	░░	░░	░													
27. Delivery Options Process	██	██	░░	░												
17. Corporate Minimum Standards	▮	░░	░													
18. Group Specific Standards	██	██	░													
Establish Standardized Scheduling Process	██	██	░░	░												
19. Portfolio-level Risk Management	██	██	░													
30. Commercial Management	▮	░░	░													
20-26. Estimating Process	▮	░░	░													
Corporate Capital Budget Service Established	██	██	░░	░												
6. Improving Data Management	██	▢	▢	▢	▢	▢	▢	▢	▢	▢	▢	▢	▢	▢	▢	▢
31-39. Data & Analysis/Tools & Technology	██	░░	░░	░░	░░	░░	░░	░░	░░	░░	░░	░░	░░	░░	░░	░░
7. Strengthening Oversight	██	▢	▢	▢	▢											
Project Status Report (PSR) Revision	██	░░	░													
41. Centralized Project Monitoring	██	██	░░	░												