

Chapter 3

Section 3.05

Infrastructure Ontario— Alternative Financing and Procurement

Background

Alternative Financing and Procurement

Alternative Financing and Procurement (AFP) is the name given to the form of public-private partnerships (P3s) frequently used in Ontario. Contractual agreements between the government and the private sector define AFP arrangements. Under these agreements, private-sector businesses deliver large infrastructure projects and provide other services, and the various partners share the responsibilities and business risks.

P3s began appearing on the provincial landscape in 2001, when the then Minister of Finance announced that public-private partnerships would have to be seriously considered before the Ontario government would commit any funding for new hospitals that were needed at that time. In November 2001, the government approved the development of two new hospitals (in Brampton and Ottawa) using the P3 approach.

Under the AFP model, project sponsors in the public sector (provincial ministries, agencies or broader-public-sector entities such as hospitals and colleges) establish the scope and purpose of the project, while construction of the project is financed and carried out by the private sector.

Payments for most projects are made only when the projects are substantially completed. In some cases, the private sector will also be responsible for the maintenance and/or operation of a project for 30 years after its completion.

Infrastructure Ontario

The government's 2005 infrastructure investment plan, *Renew Ontario 2005-2010*, noted that Ontario's record for managing and financing large-scale infrastructure projects needed improvement. The plan noted that, in the past, substantial cost overruns and late delivery of some projects did not give taxpayers the best value for their investment. The 2005 plan saw the AFP model as being able to take advantage of private-sector capital, expertise and efficiencies to deliver projects on time and on budget.

The Ontario Infrastructure and Lands Corporation—commonly referred to as Infrastructure Ontario—was incorporated in 2005 under the *Business Corporations Act*, initially to deliver large-scale, complex infrastructure projects using the AFP model. However, as a result of amalgamations with other government agencies in 2006 and in 2011, Infrastructure Ontario now has three other main lines of business in addition to AFP Project Delivery: Real Estate and Land Management, Lending and Commercial Projects.

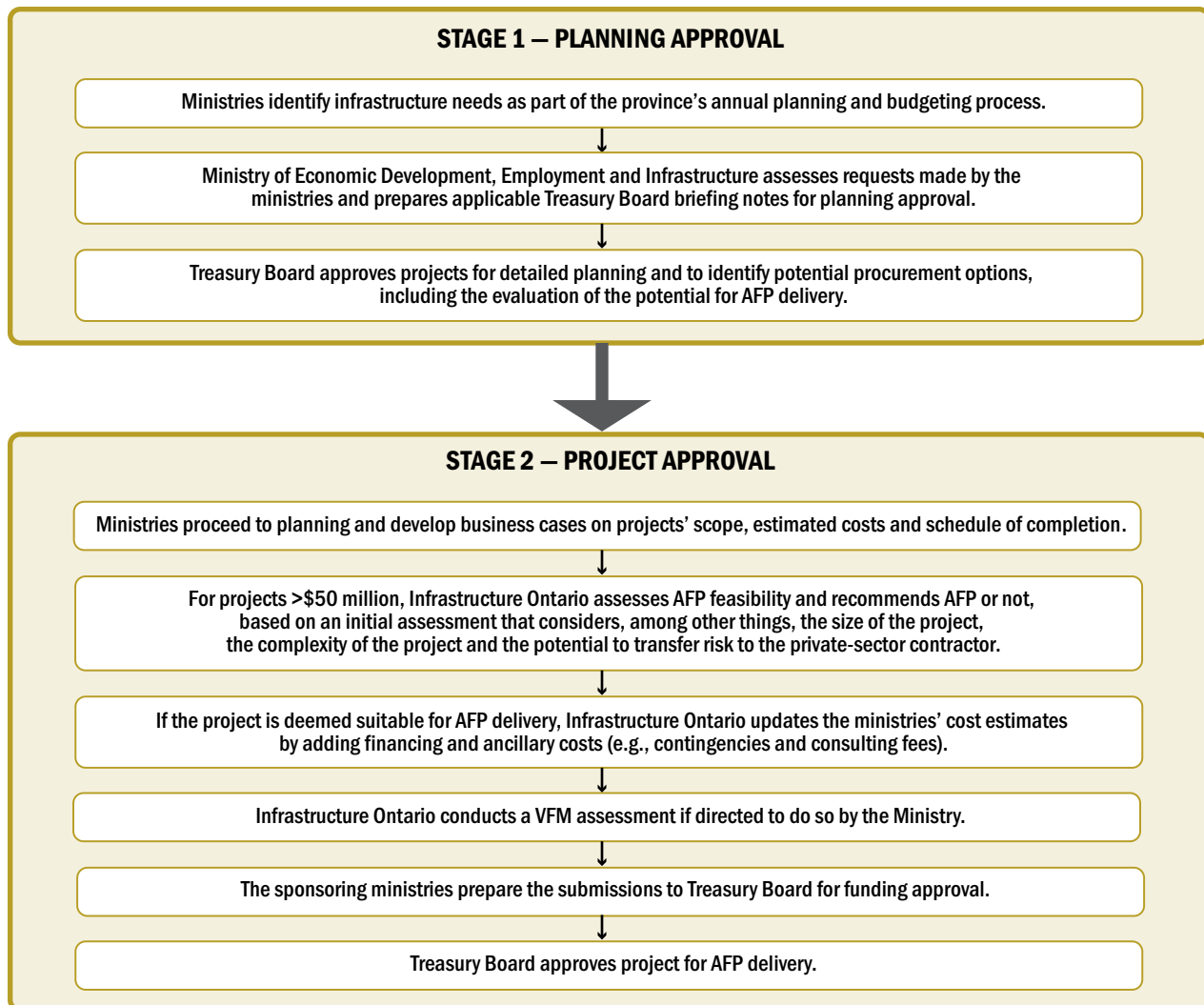
Infrastructure Ontario is governed by a board of directors. As of March 2014, of the 493 full-time employees at Infrastructure Ontario, approximately 160 supported the delivery of AFP projects. The agency funds its AFP activities through fees that it charges project sponsors for its services in delivering projects using the AFP model. Since 2005, Infrastructure Ontario has collected nearly \$450 million in such fees to March 31, 2014. A little over half of these fees were also used to pay for project transaction costs such as external advice, project management and legal fees.

Appendix 1 lists the various AFP models that Infrastructure Ontario normally uses to deliver projects.

For the most part, provincial ministries evaluate and prioritize their infrastructure needs based on factors that include the state of their existing infrastructure, projected demand for their services and government policy changes, and submit a 10-year infrastructure plan as part of the province's annual planning and budgeting process. The Ministry of Economic Development, Employment and Infrastructure (Ministry) reviews and analyzes the funding requests for individual projects submitted by ministries in their plans and makes recommendations to the Treasury Board/Management Board of Cabinet (Treasury Board) for approval, including whether or not the projects should be delivered using the AFP model. Cabinet then ratifies the

Figure 1: The Province's Overall Project Selection and Approval Process

Prepared by the Office of the Auditor General of Ontario



Treasury Board’s decision to approve the project and deliver it using the AFP model. **Figure 1** provides an overview of this approval process.

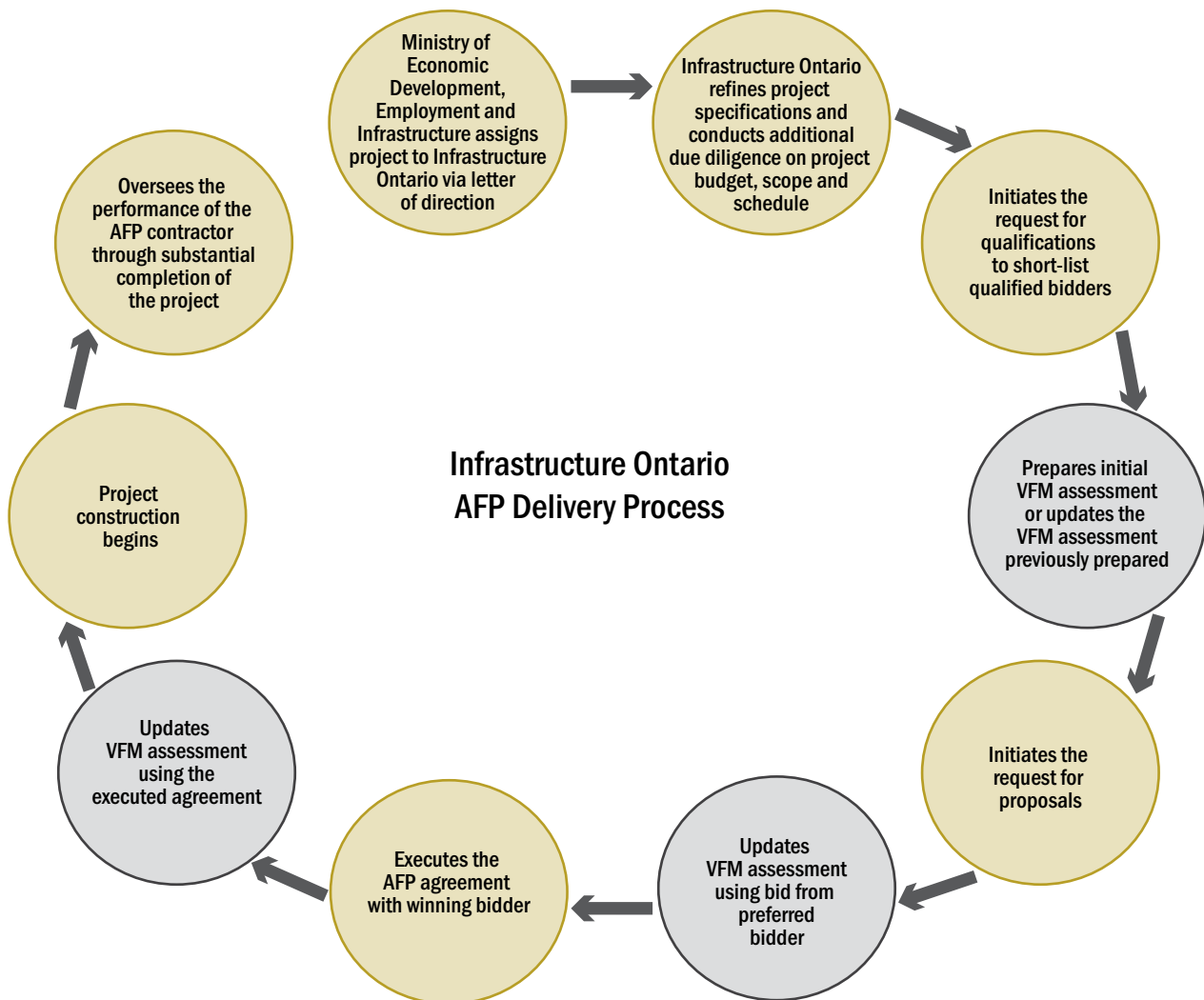
After being approved for AFP delivery, the project is assigned to Infrastructure Ontario by the Ministry via a letter of direction. The letter of direction is accompanied by the project’s approved budget and the expected year of completion. Upon receipt of the letter, a memorandum of understanding, the project charter and the implementation plan are developed between Infrastructure Ontario and the project’s sponsor. As seen in **Figure 2**, in delivering an AFP project, Infrastructure Ontario’s responsibilities include:

- reviewing and refining the project scope, budget and schedule of completion initially prepared by the sponsor;
- completing value-for-money assessments to support the decision to use the AFP model to deliver the project;
- conducting a competitive process to select the AFP contractor to build and in some cases maintain and/or operate the project; and
- monitoring and reporting on the performance of the contractor in fulfilling its obligations under the AFP contract.

In June 2011, the government introduced, through the Ministry, a 10-year strategic framework

Figure 2: Infrastructure Ontario’s AFP Delivery Process

Prepared by the Office of the Auditor General of Ontario



titled *Building Together: Jobs and Prosperity for Ontarians*, to guide investments in infrastructure in Ontario. Among other things, the framework proposed to make greater use of Infrastructure Ontario to procure the province's infrastructure. According to the framework:

- Through the province's planning and budgeting process, the Ministry was to make recommendations to the government on the procurement method and delivery of all infrastructure projects or groups of infrastructure projects valued at more than \$50 million. The criteria for assessing these projects would include scope, complexity and the results of value-for-money assessments. The Ministry was to also seek input from the other provincial ministries and from Infrastructure Ontario.
- Infrastructure Ontario would have a greater role in procuring infrastructure, including engaging in traditional public-sector forms of procurement as well as AFPs when appropriate.
- Groups of smaller projects of a similar nature would increasingly be bundled to be delivered by Infrastructure Ontario, either by traditional forms of procurement or by Alternative Financing and Procurement.
- Recipients of provincial infrastructure project grants in excess of \$100 million would consult with Infrastructure Ontario to determine how and whether Infrastructure Ontario

could assist them with the procurement of their projects.

- Infrastructure Ontario would take an expanded role in procuring information technology projects and would support implementation of the *Growth Plan for Northern Ontario* (a strategic framework that was released by the government in 2011 to guide decision-making and investment planning in Northern Ontario over the next 25 years).

As seen in **Figures 3 and 4**, as of May 2014, Infrastructure Ontario had been involved in the delivery of 75 AFP infrastructure projects, ranging from hospitals to courthouses to highways and transit projects. Of these 75 projects, 34 have a maintenance and/or an operating component.

Audit Objective and Scope

The objective of our audit was to assess whether Infrastructure Ontario has effective systems and processes in place to ensure that:

- the decision to use the alternative financing and procurement model is suitably supported by a competent analysis of alternatives;
- all significant risks and issues are considered and appropriately addressed in the final agreement; and

Figure 3: Infrastructure Projects by Sector and AFP Model as of May 2014

Source of data: Infrastructure Ontario

Sector	DBFM	BF	DBF	BFM	DBFMO	Total
Health care	13	27	4	3	—	47
Justice	9	1	—	—	—	10
Transit*	3	—	2	—	1	6
Transportation	4	—	—	—	—	4
Pan Am Games	—	1	3	—	—	4
Education	—	—	3	—	—	3
Information technology	1	—	—	—	—	1
Total	30	29	12	3	1	75

* For two transit projects (Ottawa light rail transit and Waterloo light rail transit), Infrastructure Ontario is acting only as an adviser to the municipalities.

Figure 4: Status of AFP Projects as of May 2014

Source of data: Infrastructure Ontario

Sector	Construction Substantially Complete	Under Construction	Selection of AFP Contractor Under Way	Total
Health care	27	8	12	47
Justice	10	—	—	10
Transit*	—	2	4	6
Transportation	—	3	1	4
Pan Am Games	—	4	—	4
Education	—	1	2	3
Information technology	1	—	—	1
Total	38	18	19	75

* For two transit projects (Ottawa light rail transit and Waterloo light rail transit), Infrastructure Ontario is acting only as an adviser to the municipalities.

- public expenditures are incurred with due regard for economy.

Senior management of Infrastructure Ontario reviewed and agreed to our objective and associated audit criteria.

Our audit work was predominantly conducted between November 2013 and May 2014 at the offices of Infrastructure Ontario, where we interviewed key agency staff and reviewed pertinent documents. For a sample of projects, we also reviewed their budgets, documentation with respect to the procurement of the AFP contractors and advisers, project contractual agreements and Infrastructure Ontario's monitoring of the AFP contractor.

We met with representatives from ministries that were sponsors of AFP projects and with representatives from a sample of the AFP projects sponsored by the broader public sector, such as a hospital or a college.

We also met with external advisers that Infrastructure Ontario used to assign and value the risks in value-for-money assessments, officials at the Ministry of Finance to obtain an understanding of the future liability associated with AFP projects, and lenders to AFP projects to obtain an understanding of their monitoring of AFP projects. We also surveyed other Canadian jurisdictions on their processes for delivering P3 projects.

Additionally, our audit included a review of the relevant audit reports issued by the province's internal audit division, which were helpful in determining the scope and extent of our audit work.

Summary

When the province constructs public-sector facilities such as hospitals, courthouses and schools, it can either manage and fund the construction itself or have the private sector finance and deliver the facilities. For 74 infrastructure projects (either completed or under way) where Infrastructure Ontario concluded that private-sector project delivery (under the Alternative Financing and Procurement [AFP] approach) would be more cost effective, we noted that the tangible costs (such as construction, financing, legal services, engineering services and project management services) were estimated to be nearly \$8 billion higher than they were estimated to be if the projects were contracted out and managed by the public sector.

However, this \$8-billion difference was more than offset by Infrastructure Ontario's estimate of the cost of the risks associated with the public

sector directly contracting out and managing the construction and, in some cases, the maintenance of these 74 facilities. In essence, Infrastructure Ontario estimated that the risk of having the projects not being delivered on time and on budget were about five times higher if the public sector directly managed these projects versus having the private sector manage the projects. It valued the cost of the risks under public sector delivery to be \$18.6 billion and the risks under AFP delivery to be \$4 billion.

While projects managed by the private sector for the most part were delivered on time and cost about the same as their contracts specified, according to Infrastructure Ontario's estimates, the tangible costs are still almost \$8 billion higher than if the public sector had been able to contract out the projects to the private sector and oversee their successful delivery. Successful delivery means on time and on budget, and ensuring that the infrastructure is properly maintained over its useful life. Infrastructure Ontario believes that private-sector financing contributes to the successful delivery of complex projects under the AFP approach, but should only be used to the extent that is required to transfer risks.

The private sector initially finances construction of AFP projects, but, as with projects delivered by the public sector, the province ultimately pays for these projects under the terms of their contracts, some of which are up to 30 years. The March 31, 2014 Public Accounts reported almost \$23.5 billion in liabilities and commitments relating to AFP projects that the present and future governments, and ultimately taxpayers, will have to pay. However, the financial impact of AFP projects is higher since the province has also borrowed funds to make the payments to AFP contractors when the various projects reached substantial completion. These borrowed amounts, which we estimate to be an additional \$5 billion, are part of the total public debt recorded in the March 31, 2014, Public Accounts.

Additional related issues are as follows:

- Costing of risks tips the assessment of whether AFPs or public-sector project delivery will result in more value for money in favour of using AFPs:** To compare using AFPs to using the public sector to deliver infrastructure projects, Infrastructure Ontario relies on “value-for-money” (VFM) assessments. These VFM assessments take into account both estimated tangible costs (including construction, financing, legal services, engineering services and project management services) and the estimated costs of related risks (for example, late changes to project design or changes in government priorities that result in delays). Infrastructure Ontario assigns costs to these risks and assesses how much the province's costs would be reduced by when some risks are transferred to the private sector under AFP. For the projects we reviewed, it was only Infrastructure Ontario's costing of the risks and the impact of transferring some of them to the private sector under AFP that tipped the balance in favour of AFP over public-sector project delivery. As noted, Infrastructure Ontario's VFM assessments indicate that risks to the province are about five times higher when the public sector delivers projects than under AFP. Our concerns about these risk costs included the following:

 - While we acknowledge that there are examples of recent projects delivered by the public sector that have experienced cost overruns, there is no empirical data supporting the key assumptions used by Infrastructure Ontario to assign costs to specific risks. Instead, the agency relies on the professional judgment and experience of external advisers to make these cost assignments, making them difficult to verify. In this regard, we noted that often the delivery of projects by the public sector was cast in a negative light, resulting in significant differences in the assumptions used

to value risks between the public sector delivering projects and the AFP approach.

- In some cases, a risk cost that the project's VFM assessment assumed would be transferred to the private-sector contractor was not actually transferred, according to the project agreement. For example, the VFM assessment for a hospital project assumed the contractor would bear the risk of design changes; however, this hospital project was procured under a Build Finance model, in which the contractor is not responsible for project design, and the project agreement made the public sector responsible for the risk of design changes. In fact, the private-sector contractor was paid an additional \$2.3 million as part of two change orders resulting from changes to the hospital's original design.
- Two of the risks that Infrastructure Ontario included in its VFM assessments were inappropriate. Their combined cost over 74 AFP projects was almost \$6 billion (about a third of the overall total of risk costs for public-sector project delivery), and if they had not been included in the VFM assessments, public-sector delivery for 18 of these projects would have been assessed as \$350 million cheaper than delivery under AFP (taking into account both estimated tangible costs and the remaining estimated risk costs).
- Based on our audit work and review of the AFP model, achieving value for money under public-sector project delivery would be possible if contracts for public-sector projects had strong provisions to manage risk and provide incentives for contractors to complete projects on time and on budget, and if there is a willingness and ability on the part of the public sector to manage the contractor relationship and enforce the provisions when needed. Total costs for these projects could be lower

than under an AFP, and no risk premium would need to be paid. This approach was initially followed in an Ontario college project. Phase 1 of the project, a building with classroom and retail space, was procured using public-sector delivery and was completed on time and on budget. The college was directed to procure phase 2, the construction of a similar building, through AFP. After inflation and some differences between the two buildings were factored in, the cost per square foot for this second building was expected to be about 10% higher than the cost per square foot for the first building. Much of this additional expense stems from higher financing costs and higher ancillary costs (such as legal, engineering and project management fees). The college tried—unsuccessfully—to be released from using the AFP approach for phase 2.

- **Infrastructure Ontario's estimated costs for projects differed significantly from the contracted project costs:** Infrastructure Ontario's estimated costs for those projects either substantially complete or under construction at the time of our audit—as reflected in the budgets it submitted to Treasury Board for approval—were about \$12 billion (or 27%) higher than the contracted costs. The cost difference was mainly due to Infrastructure Ontario's high estimates of long-term costs (long-term financing, maintenance and life-cycle costs) in Design Build Finance Maintain projects. More realistic budgets would enable Infrastructure Ontario to better assess the reasonableness of bids during the tender process. More accurate budgets would also enable Treasury Board to better assess the government's ability to fund these projects and the impact of these projects on other government priorities.

Infrastructure Ontario has a strong track record of delivering projects such as hospitals, courthouses and detention centres on time and on budget. It

may now be in a position to utilize its expertise to directly manage the construction of certain large infrastructure assets and thereby reduce the cost to taxpayers of private sector financing. There is a role for both private sector and public sector project delivery. As experience with AFPs has developed, it may be time to assess what those roles and financing mix could be going forward.

OVERALL INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario appreciates the hard work and insights of the Auditor General's Office in examining Infrastructure Ontario's Alternative Financing and Procurement (AFP) program. We appreciate its recognition of our strong track record of delivering projects such as hospitals, courthouses and detention centres on time and on budget. We believe this report will make a significant contribution to the thinking around public project management in Ontario and in the many other jurisdictions beginning the long overdue task of addressing their infrastructure deficits.

We are in full agreement with the Auditor General's observation that the selection of the appropriate project delivery model—including AFP delivery—ought to be informed by:

- the best evidence around the risks of delivering the projects using traditional and AFP delivery; and
- a recognition that private finance should be used judiciously so that known incremental upfront costs are clearly lower than the risks AFP is meant to mitigate and transfer.

We believe that efficiently structured AFPs are the optimal delivery method for large complex projects. We are in full agreement with the report's recommendation relating to careful consideration of the threshold at which a project is considered large and complex. This is entirely consistent with Infrastructure Ontario's

commitment to constantly seek better ways to deliver projects in the most cost-effective way.

We publish an annual account of our AFP project-delivery results, the most recent of which confirms our internationally recognized track record: 36 of 37 projects delivered within the budget established at the time the contract was awarded. While there are occasionally published reports by others on individual traditionally delivered projects in Ontario and professional cost consulting firms that can draw on their industry expertise, there is no comprehensive database which tracks the results of traditionally delivered projects. We agree that such a comprehensive database would serve as an extremely useful resource to inform the delivery-model selection analysis that should happen for all projects, and we would be pleased to work with the Ministry of Economic Development, Employment and Infrastructure and other line ministries to gather this data.

We also agree with the Auditor General's conclusion that the province could benefit by having Infrastructure Ontario deliver public-sector delivery projects on behalf of ministries, agencies and broader-public-sector partners. Infrastructure Ontario has developed considerable project management experience over the last nine years that could be applied more broadly. Infrastructure Ontario would be pleased to deliver such projects at the direction of the Minister of Economic Development, Employment and Infrastructure.

We also agree with the Auditor General's overall conclusion that there are opportunities to improve the value-for-money methodology. Over the last decade, we have engaged professional accounting and cost consulting firms in the development and refinement of the methodology. We also track developments in P3 projects around the world so we can learn from the experiences of others. There will continue to be opportunities to improve the methodology as we gain more project-delivery experience

and more data on the performance of traditional and of AFP projects, and integrate new insights from organizations such as the Auditor General’s Office.

Infrastructure Ontario will undertake the Auditor General’s recommendations to further improve our AFP program. We will act on each and every recommendation in our commitment to continuously improve the services we provide the province.

Detailed Audit Observations

Value-for-money (VFM) Assessment

A key principle that guides Infrastructure Ontario in delivering projects using the AFP approach is that value for money must be demonstrable. The Treasury Board’s funding approvals for AFP projects are “contingent on continued demonstration of positive value for money.” At the time of our audit, VFM assessments conducted by Infrastructure Ontario on the 74 projects that it had managed or was managing showed that the total of the tangible costs, such as base construction costs, financing costs and ancillary costs, was about \$8 billion higher under the AFP delivery model than if the public sector had delivered these projects. It was only the estimated value of the risks associated with the public sector delivering the projects that resulted in AFPs yielding positive VFM.

A VFM analysis compares the estimated project costs of the public sector delivering the project (known as the public-sector comparator, or PSC) with the estimated cost of delivering the same project to the identical specifications using the AFP delivery model. If the cost for the AFP delivery model is less than the cost for public-sector delivery, then there is positive VFM by procuring the project using the AFP approach. Infrastructure Ontario uses external advisers to prepare VFM

assessments and, for the most part, assessments are prepared at four different stages: before Treasury Board approval when directed to do so by the Ministry; just before the issuance of the request for proposal during the procurement of the AFP contractor; after the preferred bidder has been identified; and after the project agreement has been finalized. The following components make up the total project cost under both delivery methods (that is, the public-sector comparator and AFP):

- **Base costs:** Costs that are incurred in completing the construction of the project (including labour, materials, construction equipment, site preparation, construction management and contingencies); life-cycle costs (costs associated with planned or scheduled replacement and/or refurbishment of building systems, equipment and fixtures that have reached the end of their useful service life during the contract term); and facility management costs (includes the costs associated with the management, maintenance and repair services related to the building and building components to allow the facility to be used for its intended purposes throughout the term of the project agreement; may also include soft facility management such as grounds maintenance, parking, security and retail services such as a food court or a cafeteria). In VFM assessments, Infrastructure Ontario assumes the base costs on both the public-sector comparator and AFP sides to be the same.
- **Premium:** On the AFP side, Infrastructure Ontario adds a premium that it assumes the private sector will charge as compensation for the risks transferred to it under the AFP delivery model.
- **Competitive neutrality:** According to Infrastructure Ontario, the base costs under the AFP side include taxes and the costs that the private sector incurs with respect to insurance. Since the government does not pay taxes and typically “self-insures,” it is perceived to have a cost advantage in VFM assessments.

As a result, Infrastructure Ontario makes an adjustment called the “competitive neutrality adjustment” by adding such costs to the public-sector comparator.

- **Financing costs:** When the public sector delivers a project, funds to build the project are for the most part provided by the province. While the province may not borrow the money directly, the assumption is that it incurs a cost of having to pay earlier than it would under an AFP and that it could have used these funds to pay down existing public debt, thus avoiding interest costs on the paid-down debt. Under an AFP, payment for construction is delayed until substantial completion or later; thus, in the interim, the contractor has to borrow funds and incur financing costs. The benefits of any private-sector financing need to be managed only to a level required to transfer risks. Infrastructure Ontario is in the process of assessing what the appropriate level of private-sector financing ought to be to optimize risk transfer and, at the same time, minimize financing costs.
- **Ancillary costs:** These costs normally consist of project management, legal services, architectural, engineering, advisory, transaction and other professional fees. These fees are typically higher under the AFP model.
- **Retained risks:** These are additional costs that may result due to certain events or risks, such as those listed in **Appendix 2**, that may arise over the life of a project.

Since 2006, Infrastructure Ontario has conducted over 200 VFM assessments for 74 of the 75 infrastructure projects noted in **Figure 3** that, based on an initial assessment, it had deemed suitable for AFP delivery. None of these VFM assessments has shown a negative VFM from using the AFP model. In other words, all of these VFM assessments concluded that the delivery of the projects would be cheaper under the AFP approach than the public sector. The assessments are accompanied by a letter from an accounting firm that acknowledges

that the assessment was prepared in accordance with Infrastructure Ontario’s methodology. However, all letters contain a disclaimer by the firm that it has not audited or attempted to independently verify the accuracy and completeness of the information used in the calculation of VFM.

Figure 5 combines the results of the latest VFM assessments that were conducted on the 74 AFP projects that Infrastructure Ontario had managed or was managing at the time of our audit. It shows that the total of the tangible components of project cost (including base cost, financing costs and ancillary costs) is \$8 billion higher under the AFP delivery model than in the public sector comparator. However, the estimated value of the risks retained by the public sector when the public sector delivers a project offsets the higher costs of the AFP delivery model. A key assumption behind this result is that the risks are about five times higher when the public sector delivers its own projects versus when the AFP delivery model is used. It is this assumption that gives AFPs an overall positive VFM.

No formal VFM assessment was done for service centres along Highways 400 and 401 that had been recently procured using the AFP approach. Infrastructure Ontario was directed by the Ministry to work with the Ministry of Transportation in procuring the service centres using the AFP model. It was determined by Infrastructure Ontario that a VFM assessment was not appropriate because the existing service centres were already outsourced and the province expects its investment in the new service centres to be fully recovered through payments from leaseholders under the terms of the contract.

Based on **Figure 1**, projects greater than \$50 million are considered large-scale and, therefore, candidates for AFP delivery. This threshold could be revisited to ensure that the skills and expertise needed to manage a project is balanced between the use of public-sector delivery versus the AFP approach.

Delivery Models' Retained Project Risks

Value-for-money assessments consider about 90 risks grouped into the 11 categories shown in **Appendix 2**. As noted in **Figure 5**, the VFM assessments that were done by Infrastructure Ontario for 74 projects assumed that, by using the AFP model instead of public-sector delivery to procure projects, \$14.6 billion in risks would either be mitigated or transferred to the private sector. The following are some concerns we have with respect to this assumption:

No Empirical Data Supports the Valuation of the Cost of the Risks

Infrastructure Ontario uses two external firms to assign and value the cost of the risks in comparing public-sector project delivery (the public-sector comparator) and the AFP delivery model. The expected cost of each risk is based on the probability of the risk occurring multiplied by the cost impact of the risk. In our discussions with the external advisers, they confirmed that the probabilities and cost impacts are not based on any empirical

data that supports the valuation of the risks, but rather on their professional judgment and experience. They spoke anecdotally of public-private partnership projects in Ontario and other jurisdictions delivered on time and on budget that contrast with the province's poor track record in delivering infrastructure projects through the public sector. In this regard, we noted that often the delivery of projects by the public sector was cast in a negative light, resulting in significant differences in the assumptions used to value risks between the public-sector comparator and the AFP delivery model. For example, close to \$1.2 billion in costs has been allocated to the public-sector comparator side for the risk that incomplete information would be provided to potential bidders during the request for proposal (RFP) stage, leading bidders to submit higher bids to hedge against the uncertainty. In contrast, on the AFP side only about \$34 million in costs have been allocated for this risk.

Such a significant difference between the two approaches may not be justified. RFP tender documentation includes an element of uncertainty under both procurement approaches, and both

Figure 5: Combined Results of the Latest Value-for-money Assessments Conducted by Infrastructure Ontario (\$ billion)

Source of data: Infrastructure Ontario

Component of Project Cost	Public-sector Comparator (PSC)	Alternative Financing and Procurement (AFP)	Difference ¹
Base costs	26.0	26.0	
Premium	—	1.9	
Competitive neutrality	0.8	—	
Subtotal	26.8	27.9	(1.1)
Financing costs	0.5	7.0	(6.5) ²
Ancillary costs	0.7	1.1	(0.4)
Subtotal	28.0	36.0	(8.0)
Retained risks	18.6	4.0	14.6
Overall Total	46.6	40.0	6.6

1. Numbers in parentheses show components where the cost of PSC is cheaper than the costs of AFP.

2. AFP financing costs are typically higher than public-sector financing costs, primarily because the provincial cost of borrowing included in the latest value-for-money assessments (VFMs) is lower than the private-sector cost. This difference in borrowing costs, extended over the long term of project agreements (where the AFP contractor may be responsible for maintaining and operating the facility) results in the AFP financing-cost component being \$6.5 billion higher.

approaches give potential bidders opportunities to ask for clarification. In one respect there may be greater uncertainty in the AFP model. Under public-sector delivery, a “stipulated sum contract”—where bidders submit a lump-sum bid for the construction of the project based on a finalized design—is typically used. In contrast, the AFP approach may be more open-ended, using only output specifications that are subject to discussion and clarification with potential bidders. For example, in an AFP with a design component, the contractor is provided only with the owner’s vision, objectives and requirements (that is, “must haves”) for the project. From these, the contractor then has to develop a detailed project design.

Some Risks Considered Transferred to the Private Sector Are Not Supported by Project Agreements

At the time of our audit, we requested data from Infrastructure Ontario for a sample of AFP projects to verify that risks were indeed being transferred to the private sector. At our request, Infrastructure Ontario mapped the risks in the VFM assessments assumed to be transferred to relevant provisions of the respective project contractual agreements. The exercise revealed a number of inconsistencies between the risks assumed to have been transferred in the VFM assessments and the respective project agreements. For instance:

- In VFM assessments the cost associated with permit approvals is considered to be the responsibility of the AFP contractor. However, according to the AFP agreements, these costs are shared between the contractor and the province.
- We noted that the VFM assessment for a hospital procured under the Build Finance model incorrectly assumed the transfer of design risk (which includes additional costs resulting from changes due to design co-ordination, completeness, conflicts, etc.) to the private sector, even though, according to the project contractual agreement, this risk remained

with the hospital. That the hospital continued to bear this risk was further evidenced by the additional \$2.3-million payment made to the private-sector contractor as part of two change orders because of subsequent changes made to the original design of the hospital.

Two Significant Risks on the Public-sector Comparator Side Should Not Have Been Included

Two specific risks, whose costs account for about one-third of the value in retained risks on the public-sector comparator side in **Figure 5**, should not have been included. Specifically:

- For AFP projects with a maintenance component, nearly \$3 billion in costs associated with “asset residual” risk has been included in the \$18.6 billion of retained risk on the public-sector comparator side in **Figure 5**, and only \$200 million of the \$4 billion under the AFP model. This assumes that assets procured through the public sector will not be maintained as well as assets procured via AFP, where the private-sector contractor is responsible for maintaining the asset over the 30-year term of the AFP agreement. Although ownership of the asset resides with the province, such agreements contain a schedule of maintenance, including replacement of the asset’s major components, which the private-sector contractor must adhere to. The agreements usually contain provisions for penalties that can be levied on the contractor if it fails to carry out maintenance work in accordance with the schedule. This discipline in maintaining assets is commonly regarded as one of the key benefits of AFP contracts with a maintenance component. The normal assumption is that government does not allocate sufficient funds to maintain infrastructure once it is built. Therefore, AFP assets at the end of the term of agreements that include maintenance are considered to be in better condition than assets procured through the public sector.

Although this risk may well be legitimate, it has been double counted. Specifically, in the VFM assessments, in addition to including a cost of nearly \$3 billion in retained risk on the public-sector side, Infrastructure Ontario also assumed a base cost on the public-sector side for maintaining projects and replacing their major components in the same amount and timing as in the base cost on the AFP side. Under this situation, there should not be any difference in the condition of assets between the two procurement approaches and hence there should be no need for an additional public-sector comparator cost related to “asset residual” risk.

- Over \$2.9 billion in costs associated with “planning, process and allocation practices” risk has also been included in the \$18.6 billion of retained risk on the public-sector comparator side in **Figure 5**, and only \$800 million has been included in the \$4 billion on the AFP side. This assumes that internal government approvals will be delayed and in turn will delay the issuance of tenders. However, since this risk is specifically taken into account when approval is still being sought for the project and the method of delivering the projects (that is, public-sector vs. AFP model) has not yet been determined, the risk is equally applicable under both models. Infrastructure Ontario, in an update of its methodology for assessing VFM that was being proposed at the time of our audit (discussed below), has recognized this and will be eliminating most of the costs associated with “planning, process and allocation practices” from both delivery models.

If the cost impact of the above two risks had been removed from VFM assessments that have been completed to date, 18 of the 74 projects would not have shown a positive VFM from procuring the projects using the AFP model. The latest VFM assessments for these 18 projects initially calculated a consolidated savings of over \$1.5 billion from using the AFP delivery model. Removing the two risks

results in changing this scenario to a \$350-million savings if the public-sector delivery model is used.

In our discussions, the sponsors of AFP projects, particularly those with more experience in procuring infrastructure assets, felt that there was a lack of transparency in allocating the costs associated with risks to the two procurement approaches and an over-reliance on consultants in developing the allocations. Other, less experienced sponsors were satisfied overall with Infrastructure Ontario’s process of delivering projects using AFP, because it provided them with move-in facilities.

Proposed Changes to Infrastructure Ontario’s VFM Assessment Methodology

Figure 6 highlights changes that, at the time of our audit, Infrastructure Ontario had proposed to its methodology for assessing whether the AFP delivery approach would yield a positive VFM in future projects.

In a sample of the latest VFM assessments of the 74 projects, we incorporated these proposed changes and noted that the changes did not significantly change the VFM assessments. In our sample, the changes resulted in differences that ranged from an increase of about 2% to a decrease of about 9% in the previously reported VFM.

We question Infrastructure Ontario’s plan to add an innovation adjustment of up to 13.3% to the base cost on the public-sector comparator side. Infrastructure Ontario came to the conclusion that this adjustment was needed by comparing the pre-RFP budget of various projects to the average bids received for the same projects, and finding that the bids were lower. It made the assumption that the private-sector bidders were containing costs through value-added innovations that the RFPs had not anticipated. However, the average bid coming in below budget could also be due to a number of other factors, such as overly generous budget estimates and changing market conditions, and may not necessarily be directly related to innovation.

Figure 6: Infrastructure Ontario's Proposed Changes to Its Methodology for Future VFM Assessments

Source of data: Infrastructure Ontario

Components of Project Cost	Key Changes Proposed by Infrastructure Ontario for Future VFM Assessments
Base costs	Increase the base cost on the public-sector side by up to 13.3% to reflect value-added innovations that the private sector brings to projects that are not realized under public-sector procurement.
Financing costs	Vary the percentage of the payment when a project's construction is substantially complete to optimize financing costs and ensure that the contractor has sufficient "skin in the game." For social projects such as hospitals, courthouses and jails, Infrastructure Ontario proposed to increase the payment from 50% of the cost of the project to 60%. For civil projects such as roads and transit systems, the Infrastructure Ontario proposed to decrease the payments at substantial completion to 75% from 85% of the cost of the project.
Ancillary costs	No changes proposed.
Premium	To better reflect changes in the AFP market, reduce the estimate of the risk premium on the AFP side from 5% to 10% of the base cost depending on the type of project to 0% to 6%.
Competitive neutrality	Figure 5 shows an \$800-million "competitive neutrality" adjustment to the public-sector comparator. Over half of this adjustment relates to the government normally self-insuring. Infrastructure Ontario assumes that when the government chose to self-insure, it not only saved on insurance premiums but also took on risks that would otherwise be covered by insurance. The government should therefore have to account for these added risks, so Infrastructure Ontario adjusted the public-sector comparator by adding an amount equivalent to the premiums otherwise paid by the private sector under an AFP. But in the VFM assessments in Figure 5, Infrastructure Ontario assumes the same base costs for projects under both procurement models instead of assuming a lower base cost under the public-sector comparator. Therefore, the addition of the premiums resulted in a double counting of costs. Infrastructure Ontario has acknowledged this double counting and will no longer be adding insurance premiums on the public-sector comparator side in future VFM assessments.
Risks retained	Consolidate the number of risks considered and assign new risk probabilities and impact to reflect Infrastructure Ontario's experience gained to date on the delivery of AFPs. Infrastructure Ontario has proposed to significantly reduce the cost differential between the public-sector comparator and AFP resulting from the "planning, process and allocation practices" risk discussed in the section "Risks Considered to Be Retained by the Two Project Delivery Models."

RECOMMENDATION 1

Infrastructure Ontario should, in conjunction with the Ministry of Economic Development, Employment and Infrastructure, gather data on actual cost experience from recent public-sector infrastructure procurements and alternative financing and procurements (AFPs) and revise its VFM assessment methodology to ensure that the valuation of risks assumed to be retained under both the AFP and public-sector delivery models are well justified.

INFRASTRUCTURE ONTARIO RESPONSE

As acknowledged by the Auditor General, the absence of comprehensive, formal data for traditionally delivered projects provides an industry-wide challenge in making meaningful comparisons between the delivery models. We would be pleased to work with the Ministry of Economic Development, Employment and Infrastructure and other line ministries to gather this data.

Infrastructure Ontario is focused on continually improving all of our processes, including value for money (VFM), and will continue to

leverage our experience, industry expertise and data relating to traditionally delivered projects to further refine the VFM methodology.

RECOMMENDATION 2

To ensure that value-for-money assessments in procuring large-scale infrastructure projects are valid and objective, Infrastructure Ontario should confirm:

- that all risks assumed to be transferred to the AFP contractor are supported by relevant provisions of the project agreement; and
- that the costs assigned to retained risks in the public-sector comparator are not accounted for elsewhere in the assessments.

Infrastructure Ontario should also confirm that the threshold for what is considered a large-scale project is useful in screening projects that should be procured using the AFP approach versus the public-sector delivering the project.

INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario uses the established value-for-money (VFM) process to conduct preliminary analysis of potential projects to ensure proper project delivery methodology is used. It is important to note that value for money is part of a larger assessment process that takes into consideration technical aspects of a project such as size, complexity and cost. We recognize that the size threshold at which projects become large and complex merits careful consideration. The costs in the VFM methodology are accounted for using the best advice of third-party experts. Through our continuous improvement efforts, we also endeavour to confirm that costs are appropriately allocated to responsible parties.

Earlier this year, Infrastructure Ontario, with its commitment to continuous improvement, undertook a refresh of its VFM methodology to reflect what we have learned from the projects we delivered. We will continue to ensure our

documents reflect appropriate risk transfer, and monitor the effectiveness through our annual track record.

RECOMMENDATION 3

Infrastructure Ontario should ensure that all proposed changes to its VFM assessment methodology, including its plan to increase the base cost on the public-sector comparator side by up to 13.3% to reflect value-added innovations that the private sector may be bringing to projects, can be and are fully supported and can sustain scrutiny.

INFRASTRUCTURE ONTARIO RESPONSE

Recognizing the evolution of the market, and the advice of the Auditor General, Infrastructure Ontario is undertaking a review of the value-for-money methodology to ensure that costs are appropriately accounted for, and that innovation incorporated into the process is reflected. Infrastructure Ontario relies on the knowledge of third-party advisers to ensure that costs are accurately reflected throughout each stage of the project development and procurement process, and we will continue to incorporate new findings into our methodology through our continuous improvement efforts.

A Properly Structured Contract under Public-sector Procurement Might Also Help Manage Risks Considered to Have Been Mitigated or Transferred under AFPs

We reviewed the 38 AFP projects that were completed at the time of our audit and found that, with a few exceptions, the construction of most projects was on time and on budget. Specifically:

- Infrastructure Ontario gauged whether an AFP project was on time by comparing the actual date when the project was substantially completed (that is, all requirements had been

completed in accordance with the project agreement other than the rectification of minor deficiencies, and the occupancy permit had been issued) to the date in the AFP agreement. In our review of the 38 projects that were substantially completed at the time of our audit, we noted that eight were delayed by greater than 60 days, with the longest delayed over a year. For six of these projects, the contractor bore the financial consequences for the delay. For the remaining two projects, the province bore additional financial consequences since the delays were due to design errors or changes to the projects' scope, which the contractor was not responsible for according to the contractual agreement.

- For the 38 projects that were completed at the time of our audit, we also compared the construction cost stipulated in the awarded contracts to the projects' actual costs to date and found that on average cost overruns were only about 3%.

A project completed on time and on budget is seen as a key benefit of the AFP delivery option. According to a recent paper published by the Fraser Institute, in a P3 the private-sector partner assumes more risk, which encourages improved performance. In an AFP, the private-sector partner also provides up-front financial capital during the construction period and, in most cases, receives payment only when the project is completed according to the contract specifications. By providing the initial financing, the private-sector partner has its own money at risk. Failure to restrain costs or produce positive results means less profit or a loss for the private-sector partner. According to the paper, this incentive is not present in public-sector procurements.

However, the assumption of additional risk and the provision of up-front financial capital by the private sector come at a cost. As seen in **Figure 5**, in the VFM assessments that Infrastructure Ontario conducted on AFP projects, it estimated that, while the base costs under the AFP and public-sector

delivery models are the same, the total of the financing costs and premium is significantly higher under the AFP delivery model.

A properly structured contract under public-sector procurement may also be able to manage risks considered to have been mitigated or transferred under AFPs. Cost overruns in public-sector procurements can in many cases be due to incomplete project design that leads to late changes to the project specifications, unknown site conditions or delays caused by weather and work stoppages.

According to a recent article by an associate professor at the University of Toronto, apparent cost overruns in public-sector procurements may also result from government departments understating their project budgets. In public-sector procurements, sponsors, in an environment where there is always competition between projects for scarce resources, may strategically underestimate the costs of their favoured projects. A project that is seen to have lower costs and a shorter construction period is more likely to gain government support and approval than a more expensive alternative. Once a project is approved and construction begins, it becomes difficult to cancel, even as costs rise and deadlines are missed.

Many of the pitfalls that may result in projects procured via traditional means being delayed and/or going over budget can be avoided if the projects are properly planned and effectively managed. Just as AFP contractors are responsible for and make contingencies for factors that may result in cost overruns, public-sector contracts can be structured so that many of the risks are with the contractor, and projects can be planned and managed so that their sponsors do not put in late changes that add to project costs.

During our audit we noted a project in which one phase was contracted through the public sector and the second phase was handled as an AFP. In July 2011, an Ontario college completed the construction of phase 1 of the project, a 159,000-square-foot building on its campus in Mississauga housing classroom and retail space.

This building was procured through the public sector on time and on budget at a cost of \$253 per square foot. It was funded in equal measure by the federal government, the province and the college. We estimated a financing cost of about \$2.60 per square foot, which brought the total cost of phase 1 to just under \$256 per square foot. The Ministry directed the college to procure phase 2 of the building by way of an AFP because it met the ministry's \$50 million threshold for delivering the project using an AFP and the VFM analysis showed a positive VFM using the AFP delivery model. Phase 2, scheduled to be completed in June 2016, is similar to phase 1, but at about 226,000 square feet, it is a larger building. Its cost is expected to come in at about \$326 per square foot. The following factors account for some of the higher cost of constructing phase 2:

- There was escalation in construction costs between 2009, the year the contract for phase 1 was awarded, and 2014, when the contract for phase 2 was awarded (estimated additional cost: \$23 per square foot).
- Phase 2 has more classroom space, which is more expensive to build (estimated additional cost: \$10 per square foot).
- Phase 2 also has some upgraded features from those that phase 1 had, which make it more expensive (estimated additional cost: \$6 per square foot).

However, even after factoring in the above additional costs for building phase 2, phase 1 will still be cheaper by about 10%. This is because:

- Financing charges incurred by the private-sector contractor are expected to be about \$3.8 million, compared to only about \$420,000 for phase 1 (estimated additional cost: about \$14 per square foot).
- The ancillary costs—such as legal, architectural and engineering fees—in phase 2 are expected to be about \$6 million, compared to only \$1.2 million in phase 1 (estimated additional cost: \$20 per square foot).

The college unsuccessfully attempted to be released from having to use the AFP delivery model for phase 2, and even had the mayor of the city where the campus is located write to the premier on its behalf in March 2013. In the letter, the mayor indicated that based on analyses completed by the college, it was apparent that the college would be able to build a larger facility and achieve higher value for taxpayer dollars if development of Phase 2 proceeded outside the AFP process.

An official from the college with an important role in procuring both phases of the building informed us that a key reason in ensuring that phase 1 was completed on time and on budget was that the college had contractors bid on a complete design for phase 1 of the building that had the buy-in of all the key stakeholders. This approach prevented late changes to the building's specifications that could have delayed the project and added additional costs.

Infrastructure Ontario has a strong track record of delivering projects such as hospitals, courthouses and detention centres on time and on budget. Infrastructure Ontario may now be in a position to utilize its expertise to directly manage the construction of certain large infrastructure assets and thereby reduce the cost to taxpayers of private sector financing.

RECOMMENDATION 4

The Ministry of Economic Development, Employment and Infrastructure should also engage Infrastructure Ontario in traditional forms of procurement that utilize the experience that the agency has gained in delivering AFPs, for the most part, on time and on budget, in order to achieve cost benefits and to be consistent with the government's June 2011 strategic framework to guide investments in infrastructure in the province.

INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario oversees over 4,000 projects every year, the majority of which are delivered using traditional forms of procurement through our Real Estate Division. We agree with the Auditor General's conclusion that the province could benefit by having Infrastructure Ontario deliver public-sector delivery projects on behalf of ministries, agencies and other broader-public-sector partners as directed by the Minister of Economic Development, Employment and Infrastructure. Infrastructure Ontario has developed considerable project-management experience over the last nine years that could be applied more broadly.

Procurement of AFP Contractor Market Capacity and Competition

The AFP market in the province is dominated by a few large players. There are only a limited number of firms equipped to handle large complex projects. During the various requests for qualifications, 47 general contractors and 14 facility management companies expressed interest. Only five general contractors were awarded over 80% of the 56 AFP projects that are either substantially complete or under construction. Similarly, two facility management companies were awarded 15 out of the 27 AFP contracts that have a maintenance component. To increase market capacity, Infrastructure Ontario

has for the most part been announcing the “market pipeline” of AFP projects in advance of any RFP to allow companies time to team up and prepare for upcoming projects. Infrastructure Ontario began this initiative in the fall of 2010.

Significant Differences between Infrastructure Ontario's Estimates of Project Costs and Actual Contract Values

In order to assess the reasonableness of bids, a good estimate of project costs should be made before issuing a tender. For the 56 projects that were either substantially complete or under construction at the time of our audit, we compared the budgeted costs that had been approved by the Treasury Board to the contract values at financial close. As seen in **Figure 7**, we found that the total contract values were about \$12 billion (or 27%) lower. The vast majority of the difference stemmed from long-term financing, maintenance and life-cycle costs in the Design Build Finance Maintain projects. Overall, this variance indicates that Infrastructure Ontario's budgeting practices are not accurately estimating these longer-term costs of AFP projects.

In 2013, the Ontario Internal Audit Division did a similar analysis. Its findings prompted it to conclude that opportunities existed to enhance budgeting practices, especially for long-term financing and life-cycle costs for Design Build Finance Maintain projects. It further concluded that improving the accuracy of initial budgets would allow the Ministry to provide better recommendations to the Treasury Board, leading to more informed decisions on the

Figure 7: Comparison of Approved Budget to Contract Value at Financial Close for AFP Projects Either Substantially Complete or under Construction

Source of data: Infrastructure Ontario

	AFP Model				Total	Difference (\$ million)
	BF	BFM	DBF	DBFM		
Over budget	7	0	0	0	7	(122)
Under budget <10%	9	2	2	3	16	238
Under budget ≥10%	7	1	1	19	28	12,134
Total	23	3	3	22	51	12,250

fiscal impact of these projects and the ability to fund other government priorities.

Having a good estimate of project costs before going to tender, in order to better evaluate the reasonableness of future bids, is especially important when the market may be dominated by only a few large players. Infrastructure Ontario prepares a pre-tender estimate for submission to its board of directors for approval to release the request for proposal. This pre-tender estimate is supposed to represent a high degree of certainty on the scope and design specifications of the projects. However, for the 56 projects that were either substantially complete or under construction at the time of our audit, we compared the pre-tender estimates to the contract value at financial close and noted that the pre-tender estimates in total were still higher by over \$7 billion. Again, this variance was predominantly in the long-term financing, maintenance and life-cycle costs for the Design Build Finance Maintain projects.

RECOMMENDATION 5

In order to have a good estimate of project costs before seeking Treasury Board approval, as well as to better evaluate the reasonableness of future bids, Infrastructure Ontario should identify the reasons for the significant differences between actual contract values and its estimates of project cost, especially for projects that have long-term financing, maintenance and life-cycle costs. Infrastructure Ontario should accordingly review and update its processes for arriving at these estimates.

INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario will continue to seek out improvements to its budgeting practices, especially for long-term financing and life-cycle costs for Design Build Finance Maintain projects. Infrastructure Ontario strives to align with industry best practices and will continue to work on building our expertise in this area.

Evaluation of Bidders for AFP Projects

In our review of Infrastructure Ontario's evaluation of bidders' submissions in response to tenders that the agency had issued for the various AFP projects, we noted the following:

- **Infrastructure Ontario's system of scoring places more weight on a low bid than on technical merits:** In its evaluation of the bidders' submissions for projects in which the contractor is also the project designer, Infrastructure Ontario recognized the importance of carefully evaluating the technical merits of the proposal. But in practice, its scoring system gave the lowest bidder a decided edge, which often resulted in the strength of the submissions' technical aspects not being a significant factor. We noted a number of projects, for which the contractor was also the project designer, that were awarded to the lowest bidder that in some cases, had met only the minimum technical-design requirements for the project. We noted that the other bidders' submissions had significantly exceeded the project's minimum technical-design requirements.
- **Conflict of interest declarations were missing:** According to the agency's policies, each participant involved in evaluating submissions received in response to the request for qualifications/proposals that the agency issues for AFP projects is required to sign a conflict of interest declaration and disclose any relationships with any entities identified in the submissions. Evaluation teams typically include staff from Infrastructure Ontario; project sponsors; and various legal, financial, technical and cost consultants. However, in a sample of projects that we reviewed, Infrastructure Ontario was unable to provide us with signed conflict of interest declarations for a number of the participants involved in evaluating submissions, both at the request for qualifications and request for proposal stages.

In November 2005, Cabinet authorized the payment of design and bid fees to unsuccessful bidders on projects in which the contractor is also the project designer. The fee is to be up to 50% of the estimated proponents' bid cost. The bid fees, developed by Infrastructure Ontario based on market consultation, ranged from \$400,000 to \$800,000 for social infrastructure projects (such as hospitals and courthouses) to \$2 million for civil projects (such as highway and transit projects). In order to qualify for the fee, bidders had to achieve a minimum technical score of at least 50%. In return for the bid fee, Infrastructure Ontario acquired all the intellectual property rights associated with the designs of the unsuccessful bidders. A letter from the Minister dated March 29, 2012, directed Infrastructure Ontario to report back to the Ministry in the first quarter of the 2013/14 fiscal year on the development and implementation of a formal process for managing the intellectual property rights acquired, to ensure that the government benefits from the designs when planning new projects. At the time of our audit, Infrastructure Ontario had not yet done this.

RECOMMENDATION 6

Infrastructure Ontario should review and update its system of scoring bidders' submissions to ensure that due consideration is afforded to both the technical merits of the submissions and to price.

INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario will undertake a review of its evaluation methodology. The current process requires that bidders meet minimum technical- and design-quality thresholds prior to being evaluated on price to ensure that the government or other public-sector client ultimately receives a high-quality, cost-efficient project. We are proud to report that approximately two-thirds of Infrastructure Ontario's projects are

awarded to the bidder with the lowest bid and the highest-ranked design.

RECOMMENDATION 7

Infrastructure Ontario should ensure that participants involved in evaluating the submissions sign the required conflict of interest declaration that discloses any relationships with entities identified in the submissions.

INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario agrees with the importance of proper record-keeping. We recognized that there was incomplete diligence in the archiving of conflict-of-interest declarations and have taken steps to remedy this. We have streamlined our filing system and approach to document management, and have dedicated resources to manage this process. Along with a standardized filing procedure, there is now a close-out checklist, which includes the digital and physical storage of all related paperwork, that must be completed for all procurements.

RECOMMENDATION 8

Consistent with the March 2012 letter from the Minister of Economic Development, Employment and Infrastructure, Infrastructure Ontario should develop a formal process for managing the intellectual property rights acquired in exchange for the bid fees paid to unsuccessful bidders to ensure that the province receives any benefits from these rights in planning new projects.

INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario agrees with the importance of using the lessons learned from past projects to enhance the development and delivery of future projects. It is currently working

to implement this recommendation through the development of a centralized repository of design and bid information to support planning activities for future projects.

Monitoring of AFP Projects

On behalf of the province, Infrastructure Ontario signs project agreements for government assets, such as highways, courthouses and detention centres. The agency oversees these projects during construction, predominantly through external consultants. The consultants ensure that the projects are progressing in accordance with the project agreements and are in compliance with the design. For projects in which the contractor also operates and maintains the facility, Infrastructure Ontario is also responsible for overseeing the project's operation and maintenance phase. An exception is made for Ministry of Transportation projects, which the Ministry of Transportation oversees. Broader-public-sector sponsors of AFP projects, such as hospital corporations and colleges, are signatories on their project agreements. For the most part, although Infrastructure Ontario is represented on these projects' oversight committees, the broader-public-sector entities are responsible for project oversight during the construction and maintenance phases.

Infrastructure Ontario advised us that it also places reliance on project lenders for ongoing monitoring and enforcement during the construction term. However, based on our discussion with lenders, we noted that they are not actively involved in the day-to-day monitoring of projects. Apart from intermittent site visits, their technical advisers mainly rely on reports from the private-sector contractor to monitor construction progress and the continued financial strength of the contractor.

Problems in AFP Projects

The first AFP project delivered by Infrastructure Ontario came into service in late 2009. Sponsors of the 38 projects that were substantially complete whom we met with at the time of our audit did not highlight any significant deficiencies with respect to the workmanship and the quality of materials used in these projects.

However, prior to our audit, problems in the construction of a high-profile AFP project were identified. According to an interim report of an independent expert review panel tasked by the Minister of Transportation to review the problems associated with the Herb Gray Parkway during construction, the contractor obtained girders for use on the project from a supplier whose manufacturing processes had not yet been certified by the Canadian Standards Association. This brought the safety and durability of the girders, some of which had already been installed, into question. The panel recommended that either the deficient and non-compliant girders be replaced with new ones or remedial measures be taken to bring deficient girders up to standards at the contractor's expense. Infrastructure Ontario and the Ministry of Transportation informed us that the contractor would be replacing all girders obtained from their initial supplier with girders from another supplier.

AFP agreements require minor deficiencies (for example, touch-up painting, replacement of missing components, lighting repairs, installation and adjustment of doors or furniture, floor repairs) to be rectified 45 to 120 days after substantial completion.

Based on our review of projects that had reached final close, the average time to resolve such deficiencies was 13 months. Although the deficiencies did not negatively affect the projects' overall operation, two hospital projects had not reached final close three years after substantial completion because all minor deficiencies had not yet been resolved. For one of these projects, the construction contractor and the operations contractor were disputing who was responsible for the deficiencies.

According to project agreements, the sponsor is entitled to hold back payments amounting to 200% of the value of minor deficiencies. The relatively small cost of repairing minor deficiencies, however, may not be sufficient incentive for the contractor to return to repair them. For hospital corporations especially, the timely resolution of minor deficiencies is important since the Ministry of Health and Long-Term Care holds back 5% of total funding for the project until the project has reached final close, leaving the hospital responsible to fund this portion of the payment from substantial completion until final close.

RECOMMENDATION 9

Infrastructure Ontario should review the amount of the payments that it holds back at substantial completion of the projects it delivers to help ensure that minor deficiencies are corrected on a timely basis.

INFRASTRUCTURE ONTARIO RESPONSE

Through the AFP model, Infrastructure Ontario endeavours to appropriately transfer the risk for project delivery to the party most capable to bear it. We agree that timely resolution of minor deficiencies is important to ensure project completion, and we will review our current policy regarding hold backs.

Project Reporting

Infrastructure Ontario produces a monthly construction status report for each project. These reports are also shared with project sponsors. Based on our review of a sample of the reports, we noted instances of incorrect or incomplete reports. For example, in some of the reports the budgeted costs for the projects did not agree with their most recent budgets, and the list of change orders related to certain projects was not complete. We also noted that

other required information—such as the approved budget and the number of change orders processed to date—was missing from the reports.

During our audit, we noted that information on projects was stored in multiple locations or databases, including staff personal computers and emails. There was no consistent structure or centralized database for this information. This created a real risk of a loss of knowledge on projects if a staff person responsible for monitoring a project were to leave the agency. In one instance, Infrastructure Ontario was unable to explain to us the rationale behind decisions for a particular project, since all personnel who had worked on this project were no longer with the agency. Gathering information on projects was also time-consuming. For instance, it took Infrastructure Ontario two months to assemble a listing of change orders associated with past and current AFP projects for us.

We also noted that project governance documents (that is, memorandums of understanding, project implementation plans, project charters) between Infrastructure Ontario and the project sponsors are not always executed in a timely manner. These documents are intended to lay out the roles, responsibilities and expectations of each party with respect to the delivery of the project. In several cases, documents had been executed a number of months after the construction of the project had been begun, or not at all.

Since 2009, internal reviews commissioned by Infrastructure Ontario have also noted the above deficiencies in project reporting, but Infrastructure Ontario has yet to resolve these weaknesses.

RECOMMENDATION 10

In order to properly monitor the construction phase of projects, Infrastructure Ontario should ensure that information on individual projects is stored in a centralized database using a consistent structure, and that its construction status reports are accurate and complete.

INFRASTRUCTURE ONTARIO RESPONSE

Infrastructure Ontario's construction-monitoring program has evolved to ensure that critical project information is stored in a centralized database. We will continue to expand our monitoring and reporting efforts to include quality controls to ensure the completeness and accuracy of information being reported.

Debt Related to AFPs

As noted earlier, typically payments for projects procured using the AFP model are made only upon substantial completion of the projects. In cases where the AFP contractor is also responsible for the maintenance and/or operation of the projects, the contractor is usually paid monthly for these functions over the 30-year term of the contract.

Liabilities and commitments associated with AFPs are recorded in the province's Public Accounts. According to the March 31, 2014, Public Accounts of the province, the AFP projects that were either substantially complete or under construction have left a long-term liability of nearly \$7.5 billion and approximately \$16 billion in commitments, mainly associated with the financing, maintenance and operation of projects, for future governments to deal with.

However, the actual financial impact of AFP projects is higher than the nearly \$7.5 billion given in the Public Accounts, since these amounts do not include funds that were borrowed to make the payments to AFP contractors when the various projects reached substantial completion. These borrowed amounts, which we estimate to be an additional \$5 billion, are part of the total public debt recorded in the March 31, 2014, Public Accounts.

Appendix 1—AFP Delivery Models

Source of data: Infrastructure Ontario

Build Finance (BF): Typically considered for smaller projects that involve renovations or significant addition or expansion of existing infrastructure. The private sector is responsible for construction and financing during the construction period, and the project is paid for by the public sector at the completion of construction.

Design Build Finance (DBF): The private sector is generally responsible for design, construction and financing during the construction period. The project is paid for by the public sector at the completion of construction.

Build Finance Maintain (BFM): The private sector is generally responsible for the construction and maintenance of the project and provides long-term financing. The project is paid for by the public sector in installments over a fixed period, usually 30 years. The public-sector sponsor is responsible for developing the detailed design of the project.

Design Build Finance Maintain (DBFM): Typically considered for large projects involving new construction on a vacant site. The private sector is generally responsible for design, construction, long-term financing and maintenance. The project is paid for in installments over a fixed period, usually 30 years.

Design Build Finance Maintain Operate (DBFMO): In addition to being responsible for design, construction, long-term financing and maintenance, the private sector also operates the facility.

Appendix 2—Categories of Possible Project Risks

Source of data: Infrastructure Ontario

Risk Category	Description
Policy and strategic	The risk that changes in government policy/strategy or priorities will result in delays or cancellation of a project.
Design and tender	The risk that gaps in project design, specifications and/or documentation will lead to change orders by project owner or uncertainty for project contractor. Also covers the risk that inability to manage the project tender process can lead to delays.
Site conditions/environmental	The risk that assessment of site conditions is incomplete, unforeseen conditions exist, geotechnical or environmental problems occur leading to additional project costs and/or delays.
Construction	The risk that construction cost estimates are incorrect or that changes to schedule occur as a result of inability to source materials, adverse weather conditions, force majeure and other events.
Equipment	The risk that equipment procurement or co-ordination costs are higher than expected as a result of selection changes by owner or delays in the procurement by owner as a result of lack of coordination with project contractor.
Permits and approvals	The risk that Ontario Building Code requirements are not met, or that municipal and other building permits are not acquired in time, resulting in project delays.
Completion commissioning	The risk that deficiencies in construction exist, and that commissioning activities do not occur on schedule, leading to delays and/or additional costs.
Labour	The risk that strikes occur (general or contractor-specific) or that labour is unavailable. These risks affect both the construction and operations phase in the case of a DBFM project.
Project agreement	The risk that ambiguities in agreements (project agreement under BF and DBFM, and “stipulated sum contract” under the public-sector model) lead to confusion or disputes that cause delay or increase project costs.
Life-cycle and residual	The risk that preventive maintenance and emergency maintenance activities are not performed to specifications or that cost of performing maintenance exceeds the original budget. The risk that the facility is not handed back to the owner at the conditions set in the project agreement.
Operational	The risk that operating costs exceed estimates or that the services do not meet the owner’s requirements.