

**MANAGEMENT REPORT TO METROLINX**

<b>Report Title:</b>	<b>Planning, Design and Engineering (PDE) Workplan</b>				
<b>Report Number:</b>	<b>ISP 09-004</b>	<b>Date to Board:</b>	<b>February 20, 2009</b>	<b>Date to Committee:</b>	<b>N/A</b>
<b>Report To:</b>	<input checked="" type="checkbox"/> <b>BOARD</b>	<input type="checkbox"/> <b>ADVISORY COMMITTEE</b> <input type="checkbox"/> <b>AUDIT COMMITTEE</b> <input type="checkbox"/> <b>GOVERNANCE COMMITTEE</b> <input type="checkbox"/> <b>HUMAN RESOURCES COMMITTEE</b> <input type="checkbox"/> <b>TECHNICAL ADVISORY GROUP</b> <input type="checkbox"/> <b>OTHER:</b>			
<b>Report Referred From:</b>	<b>Investment Strategy and Projects (ISP) Unit</b>				
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					<input type="checkbox"/>

**1.0 RECOMMENDATION**

*RESOLVED:*

THAT the Chief Executive Officer of Metrolinx be directed to work with provincial, municipal and transit agency officials, and develop recommendations for Board approval and submission to the Province on the principles of PDE funding as outlined in report ISP 09-004, including:

- Coordinating project-level PDE activities to support the Board decision-making on implementation scope, phasing and prioritization;
- Strengthening the confidence of final cost estimates and level/quality of design detail to support the construction bid process;
- Meeting the study requirements imposed by the Ministry of Transportation (MTO) and others, as a condition of determining and finalizing funding commitments to a project;
- Restricting PDE funding eligibility on the Top 15 priority projects approved by the Metrolinx Board;

- Establishing clear rationale for considering a 2007 or 2008 starting date for eligible retroactive PDE costs, where applicable;
- Allocating the \$320 million request in the Board-approved 2009 and Five-Year Capital Plan to initially fund the Metrolinx-coordinated PDE workplan (sourced, in turn, from the \$11.5 billion MoveOntario 2020 commitment;) with an upset limit of up to eight percent of a project's estimated capital cost;
- Adopting sound public-sector standards for competitive, fair and value-for-money procurement of PDE services;
- Creating an efficient, Memorandum of Understanding (MOU) short-form agreement between Metrolinx and PDE funding recipient partners to ensure accountability of PDE funds;
- Appointing an Independent Engineer to Metrolinx to provide expert advice on PDE expenditure approvals and interpretation.

THAT the Metrolinx CEO or staff report back to the Board in April 2009 with feedback from the consultation process and a status report on PDE workplan implementation progress.

## **2.0 PURPOSE AND EXECUTIVE SUMMARY**

PDE costs are generally accepted as essential, legitimate costs incurred in the development and eventual implementation of major capital projects. Most traditional federal-provincial contribution agreements for major public infrastructure undertakings recognize a wide range of PDE costs as eligible for reimbursement, effective from the date of project funding approval.

While Metrolinx and its partners were fully engaged in the development of a long-term, sustainable regional Transportation plan (RTP) and investment strategy, entitled The Big Move, for the Greater Toronto and Hamilton Area (GTHA) in 2008, some municipalities and their transit agencies continued to advance and underwrite PDE activities for a range of high-potential rapid transit projects that were identified in the June 2007 MoveOntario 2020 announcement.

This foundational preparatory work was carried out with the approval of municipal councils primarily in the interest of maintaining practical implementation momentum and readiness, and to begin to reverse the trend away from decades of under-investment in rapid transit in the GTHA.

As a follow-up to Board approval of the RTP as well as the 2009/10 and Five-Year Capital Plan in November 2008, Metrolinx staff are now proposing a process to fund and complete the PDE activities for the RTP Top 15 project priorities.

### **3.0 BACKGROUND**

On November 28, 2008, the Board received and approved report CA 08-033, entitled "2009/10 and Five-Year Capital Plan". The report presented the Metrolinx five-year Capital Plan commencing April 1, 2009 including an amount of \$495.5M for the 2009/10 fiscal year, for a total \$6,996.2M expenditure from 2009/10 to 2013/14.

Also approved within the report was a division of the Metrolinx RTP Top 15 projects by implementation status:

- Two projects, both in the highest state of implementation readiness, were approved for a fall 2009 major construction and capital funding start -- the York Region VIVA and Toronto Sheppard East Light Rail Transit (LRT) projects; and
- In order to drive continuously towards implementation progress for projects in the subsequent years of the five-year plan, report CA 08-033 also included a funding request of \$320M from the Province of Ontario to support the PDE needs of the remainder of the Top 15 projects.

The estimated \$320M PDE cost is part of the total \$495.5M cost of the 2009/10 Capital Plan. As the Metrolinx capital program ramps up to achieve significant groundbreaking and construction over the next five years, PDE as a percentage of annual capital expenditures will decline. The \$320M estimate will be refined and profiled across 2009/10, 2010/11 and 2011/12 as municipal and transit agency proponents, working collaboratively with Metrolinx, finalize their project-specific PDE workplan scopes.

To complement the implementation-oriented PDE process, the Metrolinx Board directed staff in November 2008 to complete the Benefits Case Analysis (BCA) work for the remaining Top 15 projects. The results of all of the BCA evaluations will feed into a region-wide Project Prioritization Framework that will support: Board decision-making on:

- An evidence-based implementation ranking system for the Top 15 project priorities; and
- The development of the 2010/11 Metrolinx Capital Plan and future update to the rolling five-year capital plan.

Details of the BCA work plan were set out and approved in report ISP 08-016.

## 4.0 DISCUSSION

### PDE Workplan Principles

The current order-of-magnitude estimates to complete the Metrolinx RTP Top 15 project priorities exceed the current \$11.5B provincial MoveOntario 2020 commitment.

The funding gap also highlights the importance of the BCA evaluations and Project Prioritization Framework in providing a defensible, technically-sound basis to justify implementation sequencing strategy.

The PDE workplan strives to strike a balance between maintaining implementation momentum, without contradicting the BCA evaluation and project prioritization decisions by the Board. A key advantage of a regionwide, Metrolinx-coordinated PDE workplan is the opportunity to ensure each proposed project will be evaluated using the same baseline scope and terms of reference across the BCA, prioritization and PDE workplan stages.

According to international and domestic transit project experience, PDE costs typically account for between five to eight percent of total capital costs. Metrolinx staff estimate that PDE costs will range from approximately \$450M to \$730M over the next five to seven years, out of the total \$11.5B MoveOntario 2020 capital funding commitment, and after deducting approximately \$2.4B that is notionally allocated for the total estimated capital cost of implementing the Board-approved York VIVA and Sheppard East LRT projects.

### ***Definition of PDE***

Metrolinx staff support a broad, generally-accepted definition of PDE costs: A combination of project planning, specification and assessment costs, including environmental, surveying, engineering, architectural supervision and management consulting services.

The foregoing definition implies that all related project scope, phasing and prioritization decisions are complete. In cases where this pre-condition is met, the PDE workplan would encompass:

- Identification of all environmental impacts and making adequate provision for their mitigation in accordance with the environmental assessment (EA) process; and
- Design of all major or critical project elements to such a level of detail that no significant unknown impacts relative to their costs or implementation schedule will remain.

The quality and reliability of the project data generated during the PDE process will be critical to the fiscal planning responsibilities and cost management objectives of all project funding partners, and for the credibility of the Metrolinx annual and five-year capital planning processes.

PDE is essentially an enhanced definition of preliminary engineering, in order to produce a solid project definition based on reliable estimates of costs, benefits, impacts and risks. Engineering and design should ultimately and conclusively result in the development of a specific project with definitive scope elements, alignment, and design features such that the project cost and implementation schedule are known with enough certainty to:

- Provide a reasonable assurance that the project will continue to meet the objectives of the Metrolinx RTP through to the final design and construction phases; and
- Identify, with confidence, the amount of funding required to complete the project in order to “lock in” the funding commitments of project partners.

The final PDE reports should contain sufficient detail and quality to provide the Metrolinx Board the confidence to recommend a firm, maximum ceiling for total project funding that will be incorporated in the Performance/Contribution Agreement between Metrolinx, and the project funding and implementation partners.

This approach to cost management sets an expectation for the PDE workplan to confirm the project scope, cost estimate and financial plan that will remain constant, with little or no need for change after the project is approved for final design.

### ***Eligible PDE Costs***

In an effort to clarify and optimize the \$11.5B provincial commitment to rapid transit expansion in the Greater Toronto and Hamilton Area (GTHA), the Ministry of Transportation (MTO) is currently developing funding eligibility criteria for MoveOntario 2020. The final eligibility criteria, expected to be confirmed in spring 2009, will apply to all phases of Metrolinx rapid transit project construction, including the PDE workplan.

The Metrolinx Chief Executive Officer (CEO) has scheduled a series of consultation meetings with municipal Chief Administrative Officers (CAO's), Chief Financial Officers (CFO's) and transit agency general managers on a comprehensive range of project implementation issues, including funding eligibility criteria. In addition, participation by senior officials from MTO, the Ministry of Energy and Infrastructure (MEI) and Infrastructure Ontario at these sessions will help encourage a focussed consultation dialogue between Metrolinx, municipal and transit agency partners, and the province on PDE and broader capital funding eligibility criteria.

Subject to Board approval, Metrolinx staff propose to bring forward for Province of Ontario consideration broad, generally accepted guidelines to define eligible PDE costs, including but not limited to the following components:

- Advance planning studies, including route and locational studies, traffic surveys;
- Environmental impact studies and assessments to meet the requirements of the Ontario Environmental Assessment Act;
- Public consultation and engagement costs associated with planning and EA process;
- Project engineering study costs, including geotechnical surveys to support subsurface capital works;
- Design costs, including engineering plans, structural drawings and technical specifications to support the project construction bid documents;
- Project management, information technology and communication, and accommodation costs directly attributable to PDE activities; and
- Other study requirements identified by MTO as a condition of determining and finalizing the provincial funding commitment to a project

Final design costs of major rapid transit project typically account for 10 to 20 percent of total construction costs. Metrolinx projects that are eventually procured and delivered under an Alternative Financing and Procurement (AFP) arrangement (subject to Board and Province of Ontario approvals) could attract private-sector implementation partners who will assume a larger proportion of final design costs and risks.

***Eligible PDE Project List***

Metrolinx staff propose to fund PDE activities that pertain directly to RTP Top 15 projects identified in the Board-approved 2009/10 and Five-Year Capital Plan:

<b><i>Location</i></b>	<b><i>Major Rapid Transit Project</i></b>
<b>Hamilton</b>	King/Main Street Rapid Transit
<b>Halton-Peel-Toronto</b>	Dundas Street Rapid Transit
<b>Peel</b>	Hurontario Road Rapid Transit
<b>Toronto</b>	Eglinton Crosstown LRT Finch West LRT Scarborough Rapid Transit (SRT)

	Replacement/Extension Sheppard East LRT
<b>Toronto-York</b>	Yonge North Subway Extension
<b>York</b>	VIVA Bus Rapid Transit
<b>Durham</b>	Highway 2 Rapid Transit
<b>GTHA-Wide</b>	GO Lakeshore Express Rail (Electrification) GO Rail Bowmanville Extension Improvements to existing GO Rail services

Note: The Metrolinx BCA evaluation process is currently assessing the feasibility and merits of bundling the Eglinton-SRT and Finch West-Sheppard East projects (subject to Board approval)

Metrolinx staff propose to expand or amend the PDE-eligible project list only when the Board approves:

- Project additions or modifications as part of the development of future Metrolinx annual and five-year capital plans; or
- In-year additions or modifications to the Metrolinx Top 15 priority list.

***Retroactive PDE Cost Eligibility***

Metrolinx introduced the GTHA-wide RTP and capital planning processes at a time when various municipal- and GO Transit-led rapid transit planning initiatives were already underway. Across the region, the level and maturity of planning and development work on the eligible projects varies significantly from one proponent municipalities or transit agency to the next. The City of Toronto and York Region, for example, are generally considered to be relatively at a more advanced stage of PDE readiness on the Transit City, Viva and Yonge North projects -- compared to other GTHA municipal proponents.

Metrolinx staff support the principle of funding legitimate retroactive PDE costs linked to the RTP Top 15 priorities. Staff recognize that in the interest of an efficient use of available resources and fairness:

- The leading-edge municipal proponents assumed considerable cost – and risk – to create and maintain implementation readiness for transformational-scale rapid transit projects, prior to the formation of Metrolinx and in the absence of a coordinated GTHA-wide transportation planning and investment framework;
- These PDE costs are prerequisite expenditures in order to transition the projects from planning to funding and implementation commitments;

- In the interest of cost efficiency, acceptance of prior and completed PDE activities will avoid the need for future duplication of PDE effort; and
- The retroactive PDE costs under consideration all apply to projects that are confirmed in the more recent Metrolinx RTP Top 15 priorities.

Metrolinx staff propose to consult with MTO, municipal and transit agency partners on prior milestones that could potentially serve as starting dates to calculate retroactive PDE-eligible cost, including:

- Premier of Ontario's MoveOntario 2020 announcement (June 2007);
- Board approval of the Metrolinx "initial six" project priorities for AFP and BCA evaluation (November 2007 and January 2008);
- Board approval of the Metrolinx RTP draft network concepts (May 2008);
- Board approval of the final Metrolinx plan, The Big Move (November 2008);
- Board approval of the Metrolinx Capital Plan (November 2008);
- Municipal council approval of the project PDE workplan and the supporting municipal budget allocation (varies by project).

Setting the start date to a point further in the past will result in a larger draw from the \$11.5B MoveOntario funding pool. On the other hand, if no funding is provided until after BCA completion, prioritization and performance agreement approvals, the seamless and timely transition from planning to implementation will be jeopardized.

An intermediate point to trigger PDE costs could be the point at which the Metrolinx Capital Plan was approved by the Board on November 28, 2008. At that time, the Board also approved the RTP Top 15 priorities and the projects designated for PDE funding in the 2009/10 Capital Plan. PDE activities prior to November 2008 were performed in the absence of a Board-approved priority project list.

### ***Proposed Mechanism to Flow PDE Funding***

Municipal and transit agency partners that receive PDE funding should be expected to adhere to public sector-recognized standards for fair and competitive procurement, consistent with value-for-money principles.

To maintain its fiduciary responsibility for the funding, Metrolinx is recommending that PDE funding recipients enter into a short-form Memorandum of Understanding (MOU) agreement with Metrolinx that sets out proposed expenditure categories, the conditions for funding, and the standard procedures for payment, audit and dispute resolution.

Metrolinx staff also recommend retaining an Independent Engineer on contract as an advisor to assist with the approval and interpretation of PDE expenditures. The Independent Engineer will act on behalf of Metrolinx to validate the expenditures and ensure the conditions of the MOU are met.

**5.0 FINANCIAL MATTERS:**

N/A

**6.0 HUMAN RESOURCES MATTERS:**

N/A

**7.0 ENVIRONMENTAL MATTERS:**

N/A

**8.0 COMMUNICATION MATTERS:**

N/A

**9.0 LEGAL MATTERS:**

As discussed above

**10.0 CONCLUSION:**

PDE activities are essential to support a robust and sustainable capital expansion program. An efficient, Metrolinx-coordinated PDE funding process will facilitate municipal- and transit agency-led project development – to elevate project design and implementation readiness in a manner consistent with the Metrolinx Board’s final project scope, phasing and prioritization decisions.

Respectfully submitted,

Approved for Submission to the Board



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John Howe, General Manager,  
Investment Strategy & Projects



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Vince Mauceri, Acting CEO

***Appendices:***

N/A
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***Notifications:***

N/A
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***Special Instructions:***

N/A
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