

International Case Studies

**Tolling Policy in PPPs:
Balancing Objectives and Risks in the
Completion of Autoroute 25 in Montréal**

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Agenda

- **Introduction**
- **Canadian and Québec Context**
- **Autoroute 25 Completion: Project Overview**
- **Project Goals ... and Toll Policy Goals**
- **Traffic and Revenue Forecast Characteristics
Relevant to Toll Policy Decisions**
- **Achieving Transport Objectives and Balancing Project
Risks Through Toll Rate Setting Rules**
- **Conclusions**

Disclaimer: The views expressed in this presentation are those of the authors and not necessarily those of the Ministère des Transports du Québec, the Agence des partenariats public-privé du Québec, or PB.

Partnership agreements provide Governments the tools to achieve public policy goals and mitigate risks

- Awarding a toll road concession through a PPP does not mean “handing over the keys of the house”
- Concession agreements can be structured to meet specific project needs, government objectives, and risk preferences
- Toll policies within PPP framework need to balance:
 - The need for long-term certainty with flexibility; and
 - Conflicting objectives of public and private partners
- This presentation shows how public and private objectives were aligned and risks balanced in the Completion of Autoroute 25 in Montréal, Québec

Canadian Provinces have been actively pursuing PPP for the procurement of public infrastructures

- Canadian Provinces, like U.S. States have:
 - Broad legislative authority (AL, BC, ON, QC have PPP authority)
 - Increasing infrastructure needs
 - No intention to raise taxes or increase debt ceiling
- Extensive PPP experience and landmark projects:
 - Highway 407 ETC (Ontario)
 - Confederation Bridge (Prince Edward Island)
- No tax-exempt bond market resulting in smaller premium differentials between public and private debt
- Federal Government provides financial support to PPPs
- Very active PPP market: as of 2005, an estimated 140 PPP projects (across sectors) were considered or being developed*
- In Québec, a dozen projects are being developed, including three transportation projects: A25, A30, highway rest areas

* André De Serres, « La structuration des partenariats public-privé dans le contexte québécois », Université du Québec à Montréal, Cahier de recherche 14-2005

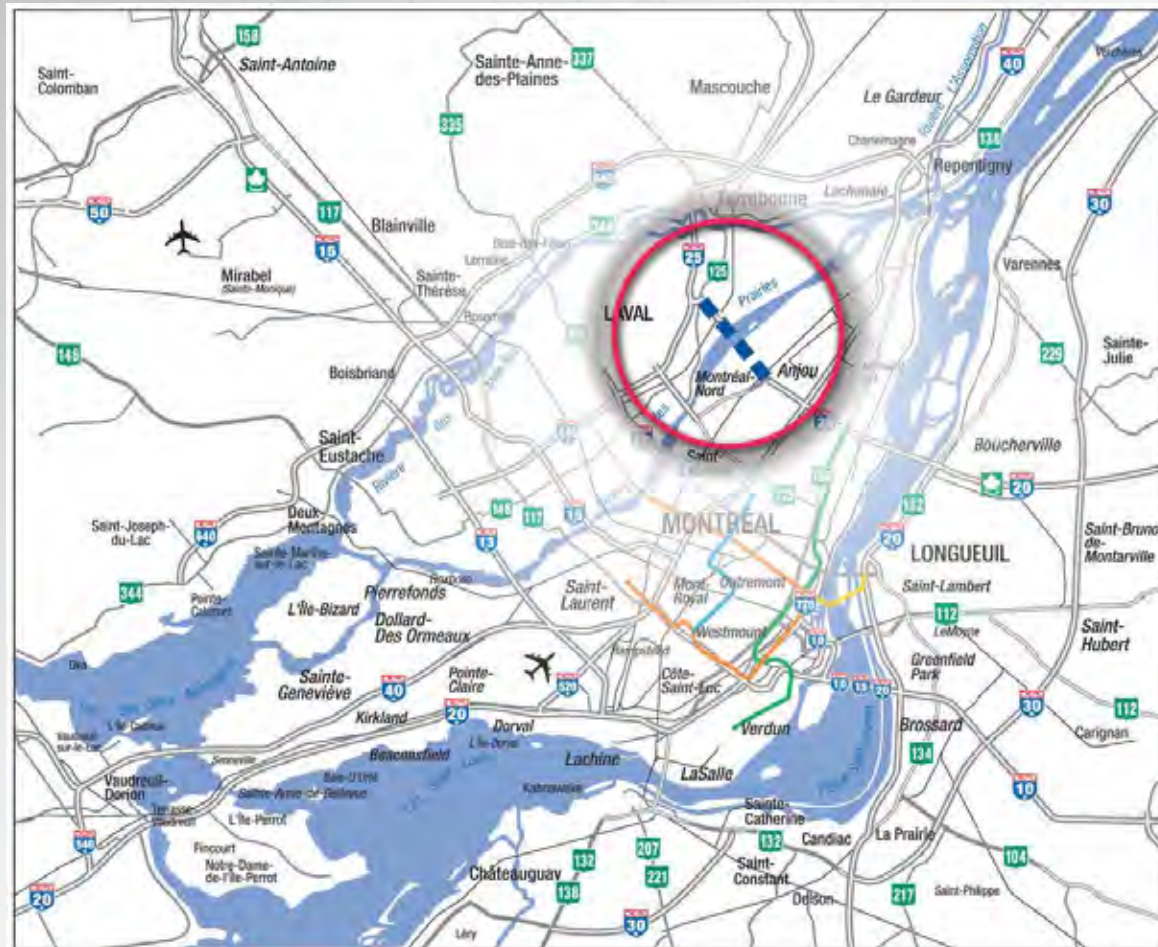
In Québec, new laws and specific governmental agencies have been developed to enable PPPs

- 1999** ■ Creation *Bureau of partnership affairs* (BPA)
- 2000** ■ *Act respecting transport infrastructure partnerships* (R.S.Q. Chapter 9.001) updated December 2005
- 2001** ■ *Bureau de la mise en œuvre du partenariat public-privé* (BMOPPP) established within the *Ministère des Transports du Québec* (MTQ)
- 2004** ■ *Act respecting the Agence des Partenariats Public-Privé du Québec* established the *Agence des partenariats public-privé du Québec* (“the Agency”) as part of the *Conseil du Trésor* to provide advice and expertise on PPP projects
- 2005** ■ Start procurement for Autoroute 25
- 2006** ■ Start procurement for Autoroute 30

Québec has had a “tumultuous” history with tolling

- From 1959 to 1984, the Province of Québec operated four toll roads through the Office des Autoroutes du Québec (on A-15, A-10, A-40, and A-13)
- Tolls on these infrastructure were abolished between 1984 and 1985, following chronic revenue deficit and strong popular opposition to toll increases
- Tolls have also been abolished on two bridges under Federal jurisdiction in the Montréal region: Pont Jacques Cartier in 1962 and Pont Champlain in 1990
- The A25 Bridge will be the first toll road project in the Montréal region since 1990

The completion of Autoroute 25, including a 1.2 km bridge between Laval and Montréal, is the first toll road developed under a PPP in Québec



The A25 Bridge provides much needed congestion relief between Laval and Montréal

- Missing North-South link on A25
- From 1971 to 2003, average annual daily traffic increased from 270,610 to 646,900 vehicles between Laval, Montréal, and the North Shore
- Adjacent bridges at capacity during peak periods in 2006 (free facilities)
- Although demographic growth is limited in the Montréal region, strong development in the eastern metropolitan area between the northern suburbs, Laval, Montréal and the South Shore creates a strong local demand for transport



The A25 Bridge is an open-access toll facility with a 100% electronic toll collection (ETC) system

- 7.2 km of two-lane highway, including a three-lane 1.2 km bridge, interchange and overpasses
- 100% ETC open road toll facility
- Estimated cost: 400 million Cdn\$
- 35-year concession to design, build, finance, operate, and maintain
- Pre-qualification followed by best and final offer
- Revenues to the concessionaire include:
 - Progress payments during construction
 - Toll revenues
 - Availability payments (**bid item**)
- Status: Successful bidder to be announced



A-26 northbound, between the Anjou interchange and Henri-Bourassa Boulevard

Toll policy decisions are at the confluence of economic, transport, fiscal, and environmental objectives

PROJECT GOALS

PUBLIC-PRIVATE PARTNERSHIP GOALS

TOLL POLICY GOALS

The Project aims primarily at supporting economic growth and relieving congestion

PROJECT GOALS



- Decrease travel time between Montréal and Laval (particularly during peak)
- Improve traffic conditions on the other major regional highways
- Support for the economic development of the east end of Montréal and Laval
- Reduce pollution caused by vehicles

The DBFO delivery method was chosen to procure a high quality infrastructure at the lowest cost

PROJECT GOALS

PUBLIC-PRIVATE PARTNERSHIP GOALS



Procure

- High quality, efficient, and safe infrastructure
- At the lowest cost for the Government
- While protecting the best interest of the Public

The Partnership Agreement toll setting rules must integrate all project objectives and constraints

PROJECT GOALS

PUBLIC-PRIVATE PARTNERSHIP GOALS

TOLL POLICY GOALS

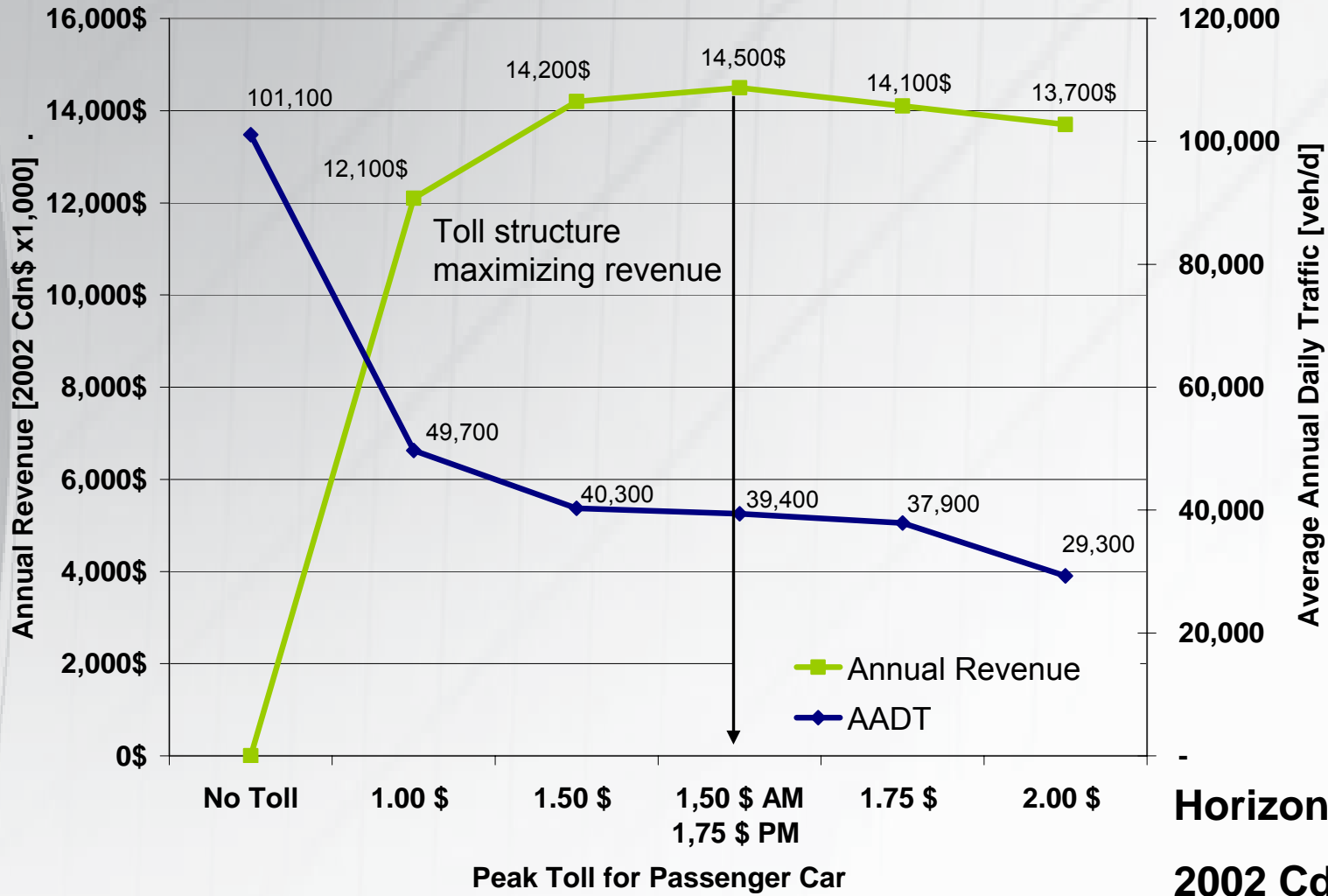


- Achieve lowest cost to the Government
- Encourage (peak) usage of the Bridge
- Design for 100% ETC
- Respect equity among users
- Prevent prohibitive tolls / toll increases
- Respect environmental constraints

Principle #1: Respect equity among users

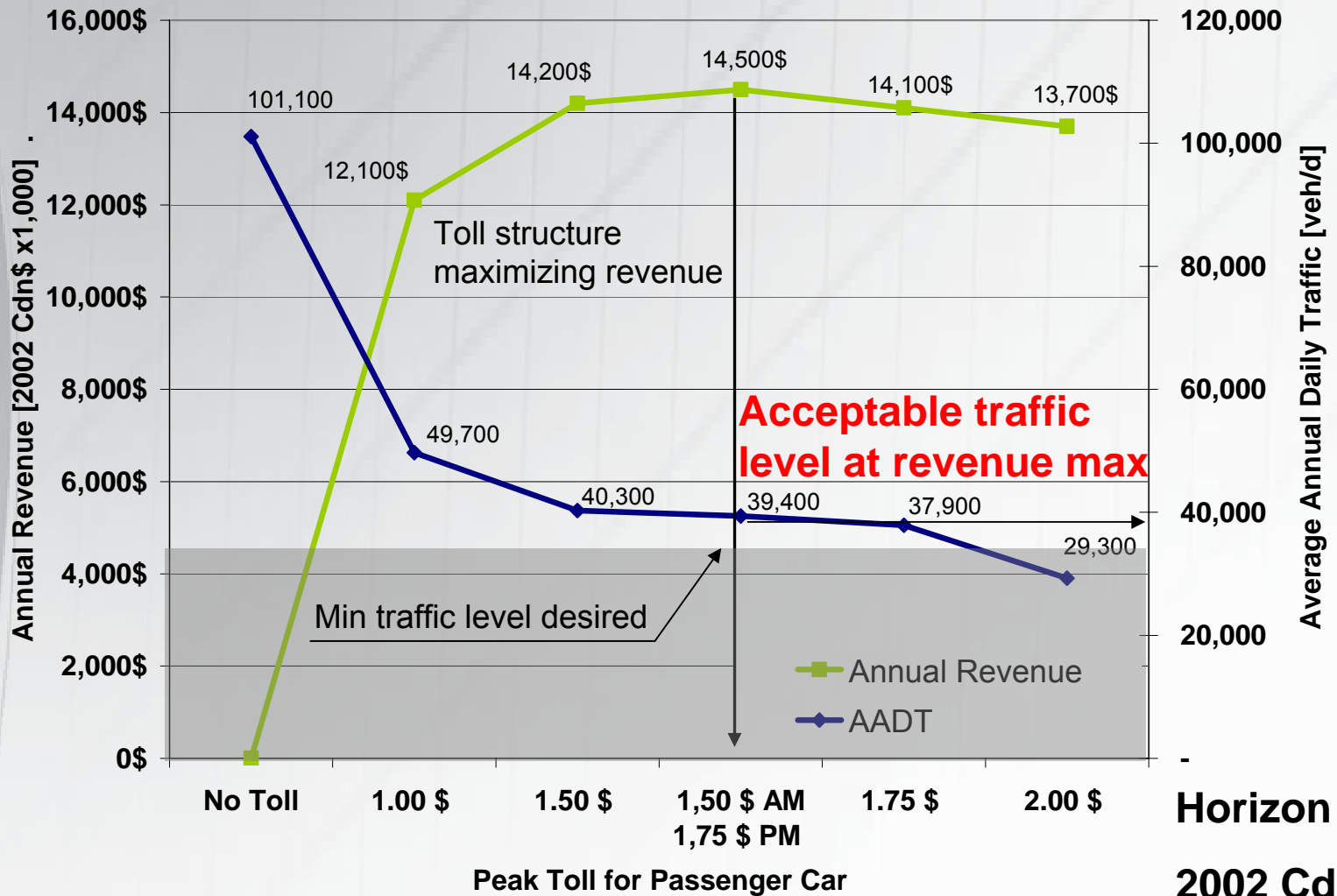
- Three vehicle categories:
 - **Category 1**: any vehicle with height less than 230 cm (7'6")
 - **Category 2** : any vehicle with height greater than 230 cm
 - **Category 3** : exempt vehicles (emergency, transit...)
- Direct per axel charge in each category:
 - Toll = Per axle base toll for the category x Number of axles
 - Category 2 base toll $\leq 2 \times$ Category 1 base toll
- Toll per axle is the same for all vehicles within the same category, whether or not they are equipped with a Transponder
- "Loop" technology and transponders enable per-axle tolling

Principle #2 : Allow toll revenue maximization



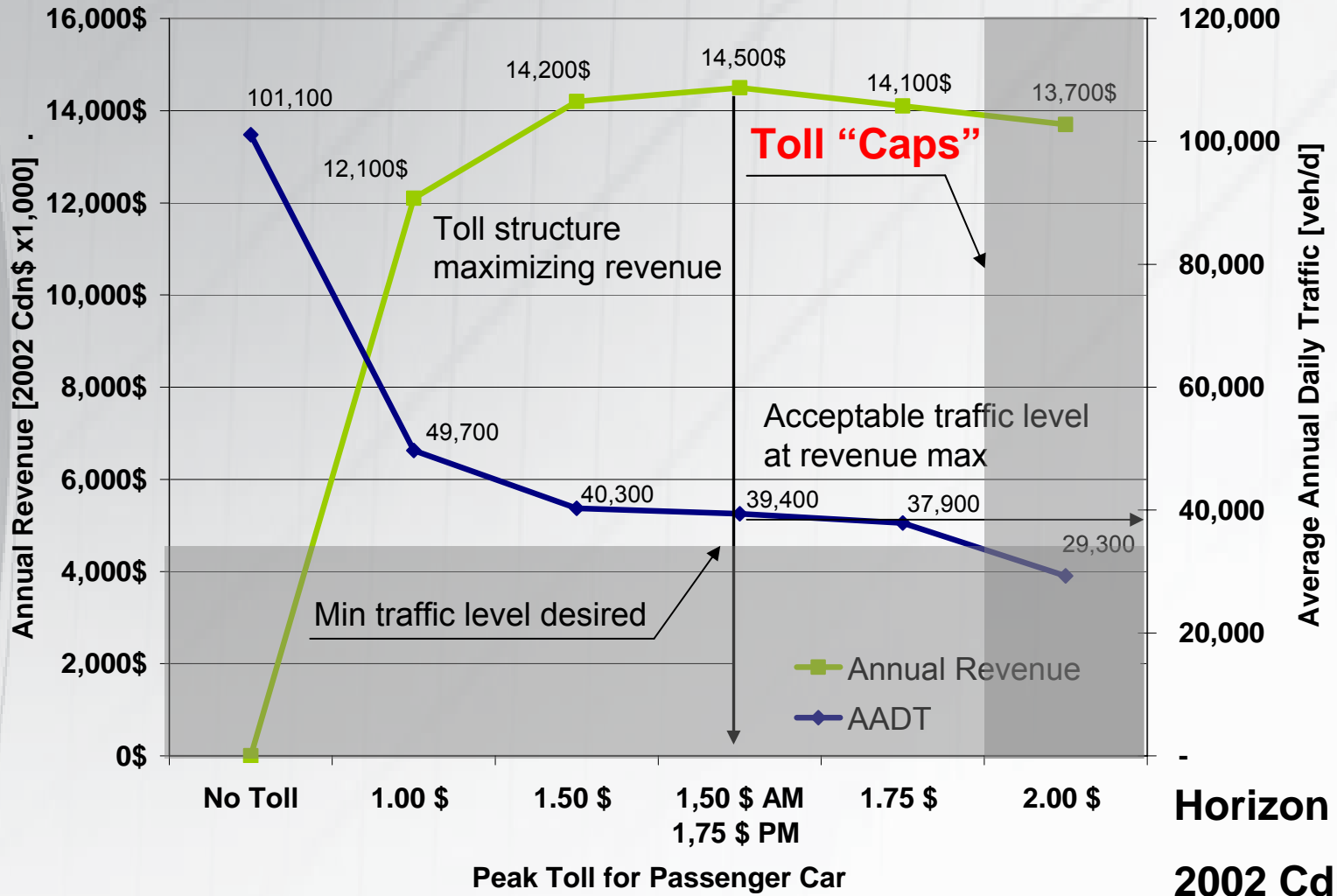
Horizon 2016
2002 Cdn\$

Principle #3 : Encourage usage of the Bridge above minimum acceptable traffic levels determined by MTQ



Horizon 2016
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Principle #4 : Protect the public against abusive tolls

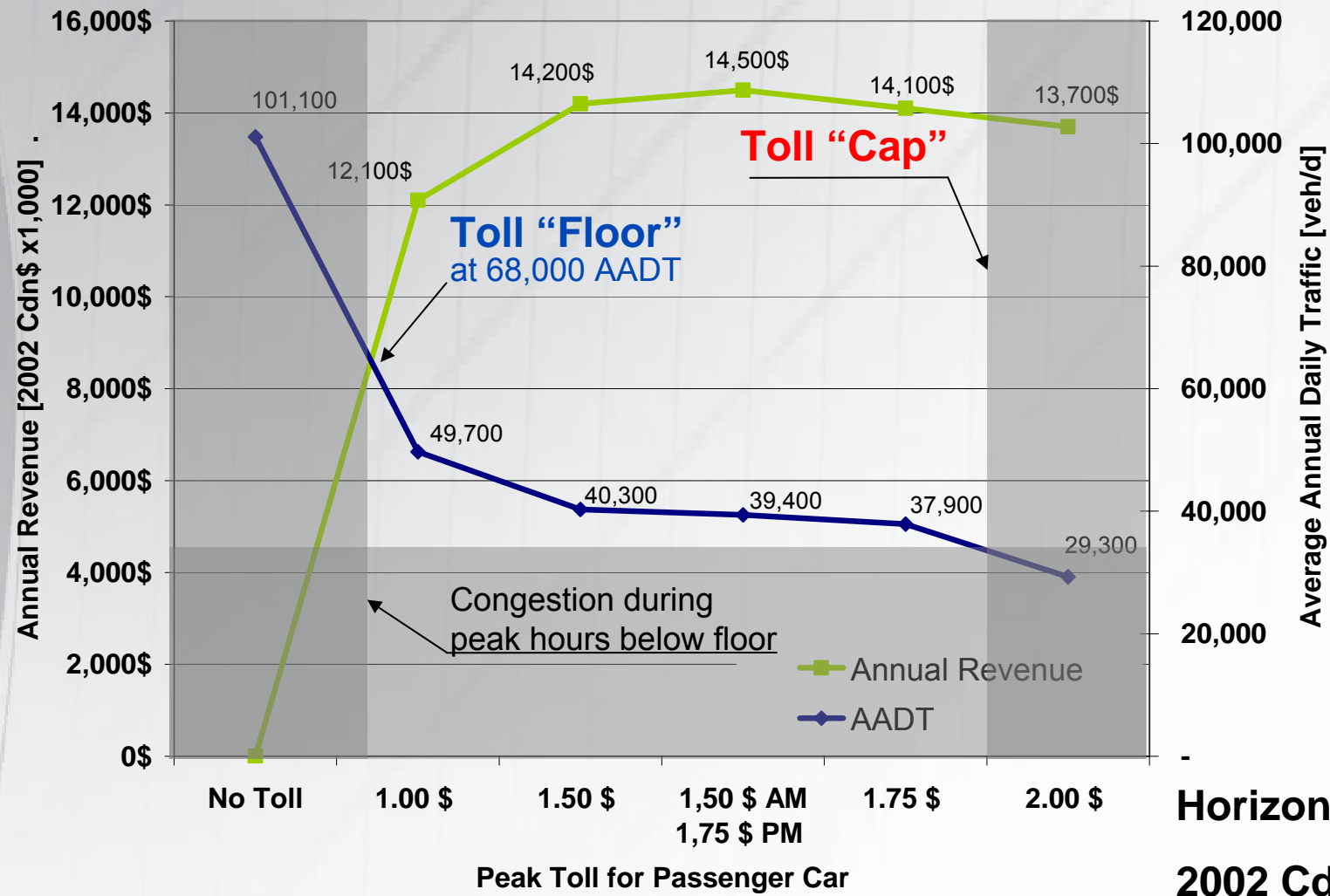


Horizon 2016
2002 Cdn\$

Principle #4 (part II): Protect the public against abusive tolls (and other charges)

- The A25 is a 100% ETC facility designed for transponders and video tolling only
- Administrative charges are:
 - The same for all vehicle categories
 - Set at the discretion of the concessionaire below caps
- Caps on annual (or monthly) charges for transponders and video tolling with “account in good standing”
- Caps on per trip charges for video tolling

Principle #5 : Respect environmental decree



Horizon 2016
2002 Cdn\$

How to balance revenue and throughput objectives while protecting users against abusive toll increases?

Demand Characteristics

- Adjacent free facilities at capacity during peak hours
- Without tolls, A25 bridge congested during peak hours
- Relatively small time savings
- Time-of-day pricing pushes up the revenue curve (commuters)
- Throughput is “acceptable” at revenue maximum
- A25 service offering is to provide **reliable travel time** in “congestion-free” conditions

Tolling Principles

- Set **peak toll cap** to protect users while allowing revenue maximization
- Set **off-peak toll cap** to “encourage” off-peak utilization
- **Partner is free to set tolls** between caps and floors
- **Automatic toll cap increases** when specific **traffic thresholds** are met (based on elasticity and rolling average traffic measures)
- Tolls set ahead monthly
- Toll caps adjusted for inflation

Generous risk mitigation measures are balanced by revenue sharing clause and rate setting constraints

- To lower financing cost, the Government limited the revenue risk born by the Partner by offering a guarantee on toll revenue

Sources of Revenue	Level of Risk
Construction Progress Payments	Certain (Performance based)
Toll Revenue	Certain up to the Guarantee
Availability Payments	Performance based

- The revenue guarantee is payable when toll revenues are below approx. 60% of the revenues forecasted in T&R studies
- When guarantee payments are made, **maximum tolls decrease automatically and gradually**
- Increase mechanism based on traffic volume thresholds is resumed when guarantee payments stop
- For symmetry, when toll revenues exceed T&R forecasts by approx. 120%, the **excess revenue is shared 50/50** between Partner and MTQ

A25 toll policy designed to balance public policy goals with pricing flexibility, revenue risk, and throughput

- Toll structure aimed at preserving user equity
- Market pricing applies, within some limits:
 - Caps on toll rates were set to allow revenue maximization
 - Within caps and floors, Partner has total control over rate setting
 - Caps increase with traffic volume, encouraging the Partner to increase throughput while maintaining congestion-free conditions
 - Floors to respect environmental constraints and prevent “manipulation” of increase mechanism
 - If volume drops, Partner will adjust pricing as it sees fit to maximize revenue
- Traffic and revenue risks are shared symmetrically
 - If demand drops to the extent that guarantee payments are made, toll caps will go down automatically
 - Toll revenue guarantee balanced with revenue sharing

Toll policies in PPPs put public agencies in control but require a clear understanding of goals and tradeoffs

- Establish clear goals: transportation, fiscal, public policy
- Recognize conflicts between goals
- Define priorities
- Evaluate trade-offs
- Manage public perception (and agency expectations)
- Use tolling as a tool for risk allocation in the partnership
- More flexibility provides more opportunities (revenue maximization, adapt to new conditions...) at low cost

Thank you for your attention

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Q & A

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