

Sustainability in the transportation sector

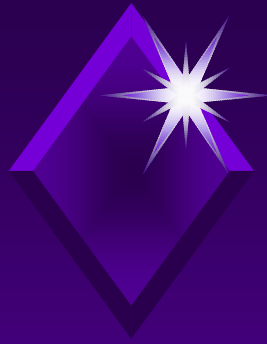
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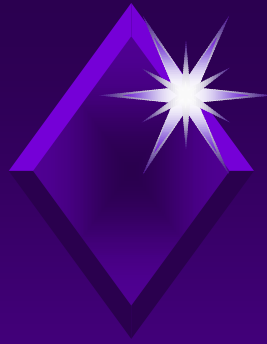
Defining sustainability for transport systems

Economic vs. environmental sustainability – these goals are often conflicting – is there a demand for environmental gains? If unclear, government does have a role to play

Must recognize that economic sustainability in transportation is as big a problem as environmental

Economic sustainability in the transportation context implies that enough revenue is generated for firms to cover fixed plus variable costs

Crucial that policy considerations (i.e. environmental) do not impede economic development

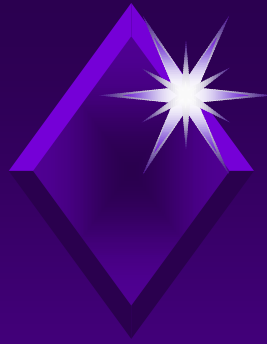


How transportation interacts with economic development

Transportation sector weaknesses limit trade opportunities

Poor transport infrastructure appears to adversely affect the growth of productivity in other sectors

Studies indicate that transportation and communication investment is correlated with growth, and does not crowd out other productive investment

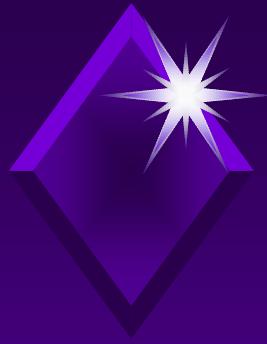


Impediments to economically sustainable transportation

In 2000, Transport Canada estimated that \$17 billion dollars (in 1997\$) was needed to correct national highway system deficiencies – how much has this situation improved?

Infrastructure maintenance - some call for direct user fees or taxes for this purpose - especially when there is a well recognized crisis in infrastructure deterioration

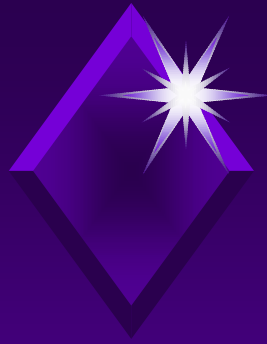
What kind of transportation market intervention/regulation is necessary to achieve sustainability and efficiency?



Transportation regulation

The achievement of a desirable regulatory outcome in transportation depends on;

- 1) the regulatory agency accurately reflecting the public interest – e.g. trucking industry reactions
- 2) government's ability to induce the transportation supplier to work in that public interest. This means creating a proper alignment of incentives in industry - a process easier said than done

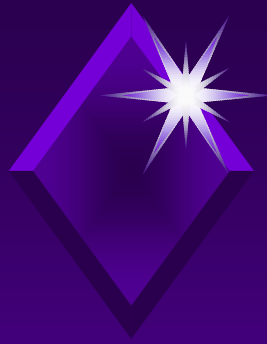


The future of transportation markets in Canada

Efficient and sustainable transportation and the process of economic development are related

Should transportation use continue to be a “free” good?
What role can markets play in meeting all sustainability goals?

Success/failure here boils down to defining and aligning clear policy goals – environmental and economic

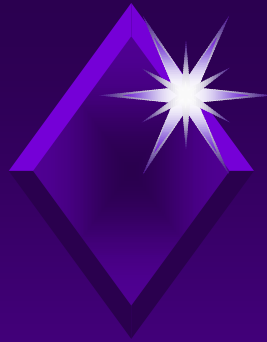


Economic sustainability: Markets and Pricing

Economies of scale, common to transportation infrastructure, often generate budgetary problems for providers

Competitive ideal of Marginal Cost pricing is not viable when there are economies of scale

If the goal of the infrastructure provider is to cover costs (without subsidy), then it must deviate from MC pricing and resort to other forms pricing on the infrastructure (Ramsey pricing)

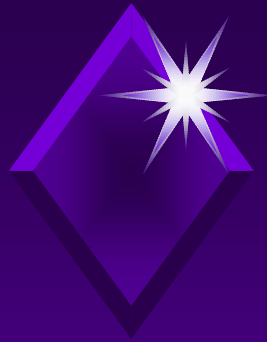


Economic sustainability

If the demand elasticities of the various transportation users are known, then the simple Ramsey formula for optimizing social welfare subject to a break-even constraint is;

$$(P_i - MC_i) / P_i = K / E_i$$

where P_i is the price charged to customer i , MC_i is the marginal cost of serving customer i , E_i is the absolute value of demand elasticity for customer i , and K is a constant determined by the amount of revenue that must be raised to meet the target budget



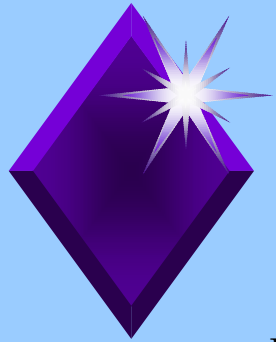
Environmental sustainability: markets and pricing

Rather than mandating more direct environmental regulation, there are also market-based ways to price environmental externalities in transportation

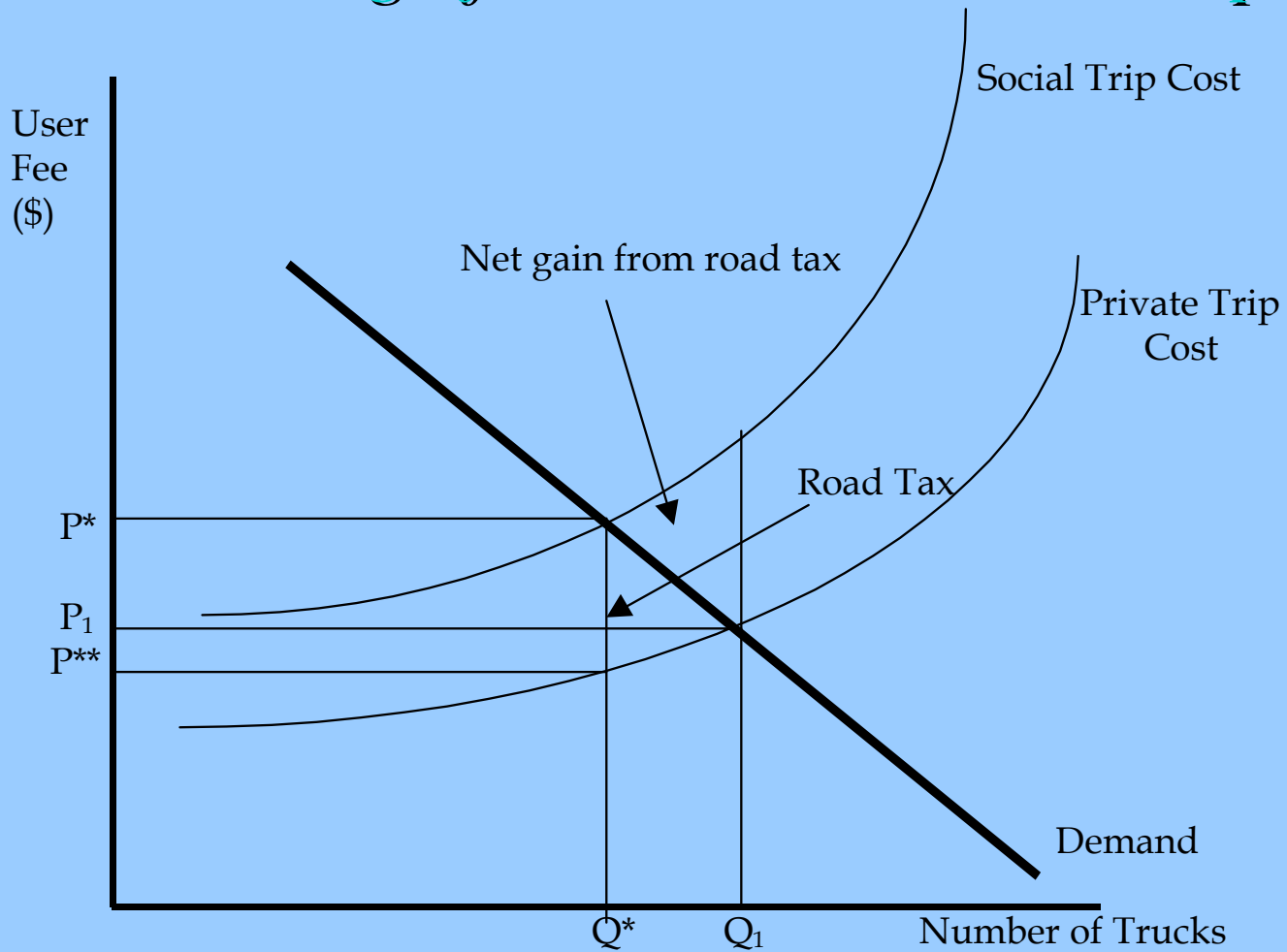
Fuel taxes, license taxes, vehicle taxes, tolls.....

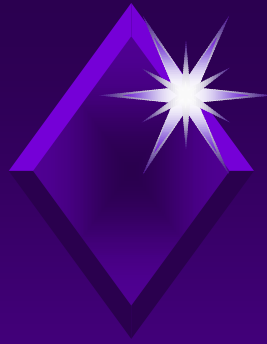
Such policies will definitely impact transportation suppliers – especially those in competitive industries - balance

How feasible is extensive externality pricing in transportation when our largest trading partner will not join in – trade issue



The Pricing of Externalities in Transport



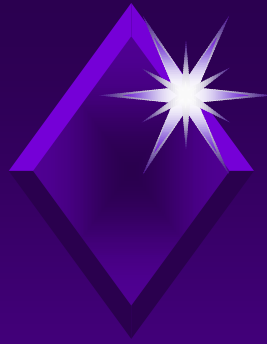


Implications for sustainable development

Environmental and economic sustainability intersect in the consideration of transportation externalities – need correct price signals. User charges can be designed to meet these goals

Careful implementation and regulation of transportation markets, combined with proper full social cost pricing is a sound strategy to help encourage sustainable environment and economic development

Residual transportation regulation, where deemed necessary, needs to be prudent so as not to stifle economic development



Conclusions

Evidence from around the world indicates that well considered economic intervention along with the promotion of economically efficient pricing (i.e. facilitating markets where possible) is a preferred strategy to encourage sustainable economic development

“Don’t throw the baby out with the bath water” - economic efficiency and sustainability should always be given the same consideration as environmental efficiency/sustainability