

Introduction of Long Combination Vehicles in Ontario

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LCVs

- ▶ Vehicles
 - With an overall length greater than 25 m
 - That carry divisible loads
 - Use standard length trailers
 - Operate by special permit
- ▶ Allowable gross weight is about the legal maximum ~ 63,500 kg
- ▶ Carry goods of low and moderate density between terminals

LCVs



Triple



Rocky Mountain Double



Turnpike Double

LCV Operations

- ▶ Started in Alberta in 1969
- ▶ Now well-established in Saskatchewan, Manitoba, Québec and Yukon
- ▶ Pilot programs
 - New Brunswick, 2005
 - BC, 2007
 - Nova Scotia, 2009

Policy Development and Planning

Ontario Commission on Truck Safety, 1983

- ▶ Among many things
 - Reviewed LCV operations
 - Sponsored an LCV demonstration
- ▶ Concluded that LCVs should “... NOT be allowed at this time”
- ▶ No guidance when the time might be right
- ▶ Minister’s policy “LCVs over my dead body”

Vehicle Bed Length

	Semitrailer	Doubles
1960's	13.71 m (45 ft)	~15.84 m (52 ft)
1978	14.00 m (46 ft)	~16.75 m (55 ft)
1984	14.65 m (48 ft)	~16.75 m (55 ft)
1994	16.20 m (53 ft)	~18.75 m (61 ft 6 in)

▶ LCVs

- Turnpike Double – 32.4 m (106 ft)
- Rocky – 24.7 m (81 ft)
- Triple – 25.6 m (84 ft)

LCVs in the 1990's

- ▶ Academic studies
 - Transportation costs
 - Greenhouse gas emissions
 - Crash rates
- ▶ Industry lobbying

Process

- ▶ Ontario and Québec began removing barriers to inter-provincial trade
- ▶ MTO began in-house LCV policy development in early 2000's
- ▶ Program developed by the two ministries
- ▶ Extensive consultations with:
 - The two trucking associations, and others
 - NB and NS
 - Shippers, looking for seamless LCV service within the four provinces

Policy Platform

- ▶ An Ontario LCV program had to hold carriers, drivers and vehicles to higher standards than in other trucking operations, and to higher standards than LCV operations in Québec and the western provinces:
 - For political approval in Ontario
 - To achieve the highway safety benefits seen in other provinces
 - For public approval

Dynamic Performance of LCVs

Dynamic Performance of LCVs

- ▶ Four studies
 - A-train Turnpike Doubles
 - B-train Turnpike Doubles
 - A-train Turnpike Doubles with quad-axle lead semitrailer
 - A-train hitch offset
- ▶ Each evaluated by computer simulation against the RTAC performance measures

Dynamic Performance of LCVs

- ▶ Various payload combinations
 - Payload weight
 - Payload height
 - Payload distribution
- ▶ Various semitrailer wheelbase variations
- ▶ Single and dual tires
- ▶ Converter dolly wheelbase
- ▶ Others

A-train Turnpike Doubles



- ▶ Tandem or tridem semitrailers
- ▶ 16.2 or 14.65 m (53 or 48 ft) long
- ▶ Tandem converter dolly

A-train Turnpike Doubles

- ▶ Static roll threshold was that of the tractor and lead semitrailer as if it was not part of a Turnpike Double
- ▶ Large high-speed offtracking not an issue
- ▶ Load transfer ratio was critical
- ▶ MTO
 - Set 90 km/h speed limit
 - Set 40 m overall length
 - Defined other dimensions

B-train Turnpike Doubles



- ▶ Semitrailers
 - 16.2 or 14.65 m (53 or 48 ft) van
 - 16.2, 14.65 or 12.19 m (53, 48 or 40 ft) container
- ▶ Tandem or tridem rear semitrailer

B-train Turnpike Doubles

- ▶ Much more space to turn than A-train
- ▶ Low static roll threshold due to B-train, not LCV
- ▶ MTO accepted B-trains
 - Allowed 3.66m (144in) spread centre tridem at 26,000 kg
 - Max 14.65 m (48 ft) lead semitrailer
 - Max 11.5 m rear semitrailer wheelbase

Quad-axle Lead Semitrailer



- ▶ Used as a lead semitrailer in Québec
- ▶ Semitrailer has excessive hitch offset
- ▶ MTO elected not to include this in the pilot program

Tridem Lead Hitch Offset

- ▶ Not all tridem semitrailers with a 3.66 m (144 in) spread tridem could meet the 2.8 m hitch offset specified
- ▶ Analysis showed it could be relaxed
- ▶ MTO relaxed hitch offset to 3.4 m for a tridem semitrailer

Ontario LCV Pilot Program

Announcement



- ▶ The Premier of Ontario announced on 2 June 2009 that Ontario would proceed with a carefully controlled LCV pilot program compatible with that in Québec

Program Development

- ▶ OTA and PMTC identified routes
- ▶ OTA and ACQ adapted the CTA driver training program used in the western provinces
- ▶ MTO established the permit process
- ▶ Extensive consultation

Permit Conditions

- ▶ Carrier qualification
- ▶ Driver eligibility
- ▶ Equipment requirements

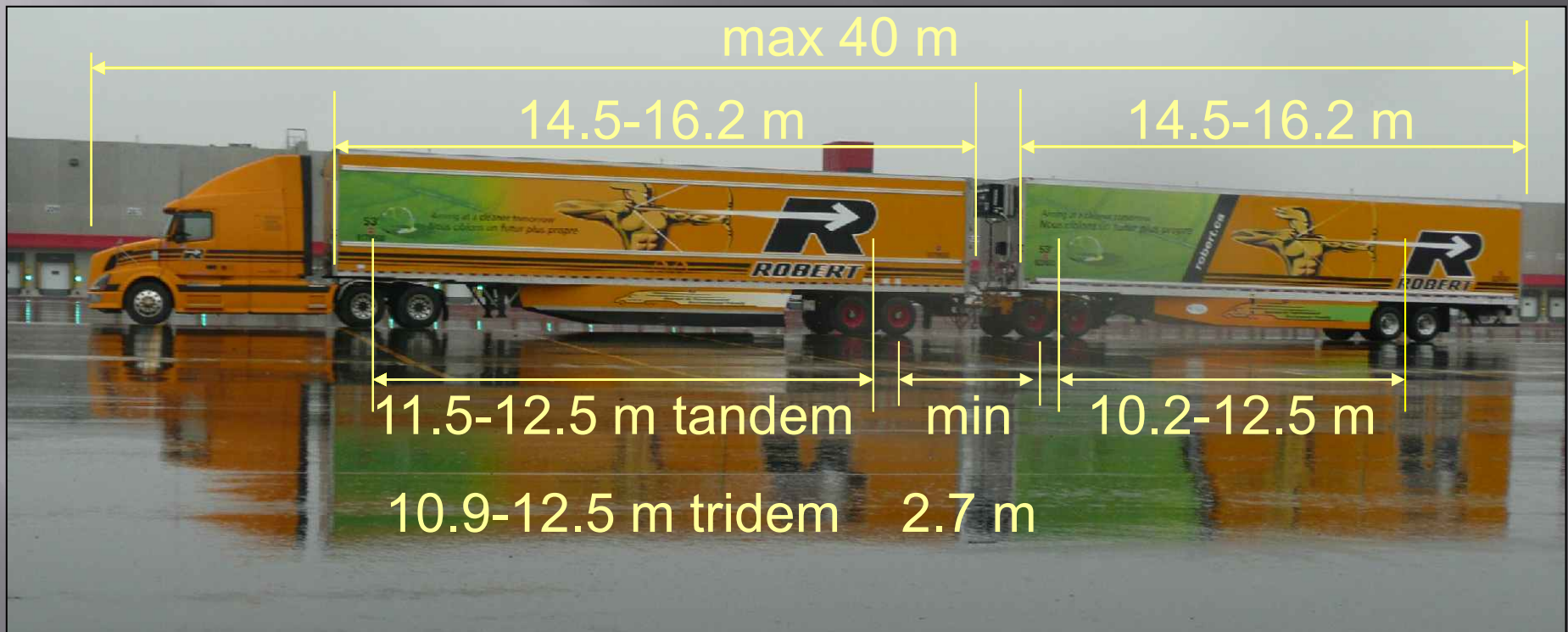
Permit Allocation

- ▶ Two permits each for 50 carriers to:
 - Maximize participation
 - Prevent any carrier from gaining an immediate competitive advantage
- ▶ Permits were not vehicle-specific
- ▶ First 10 carriers needed at least one year's experience operating LCVs

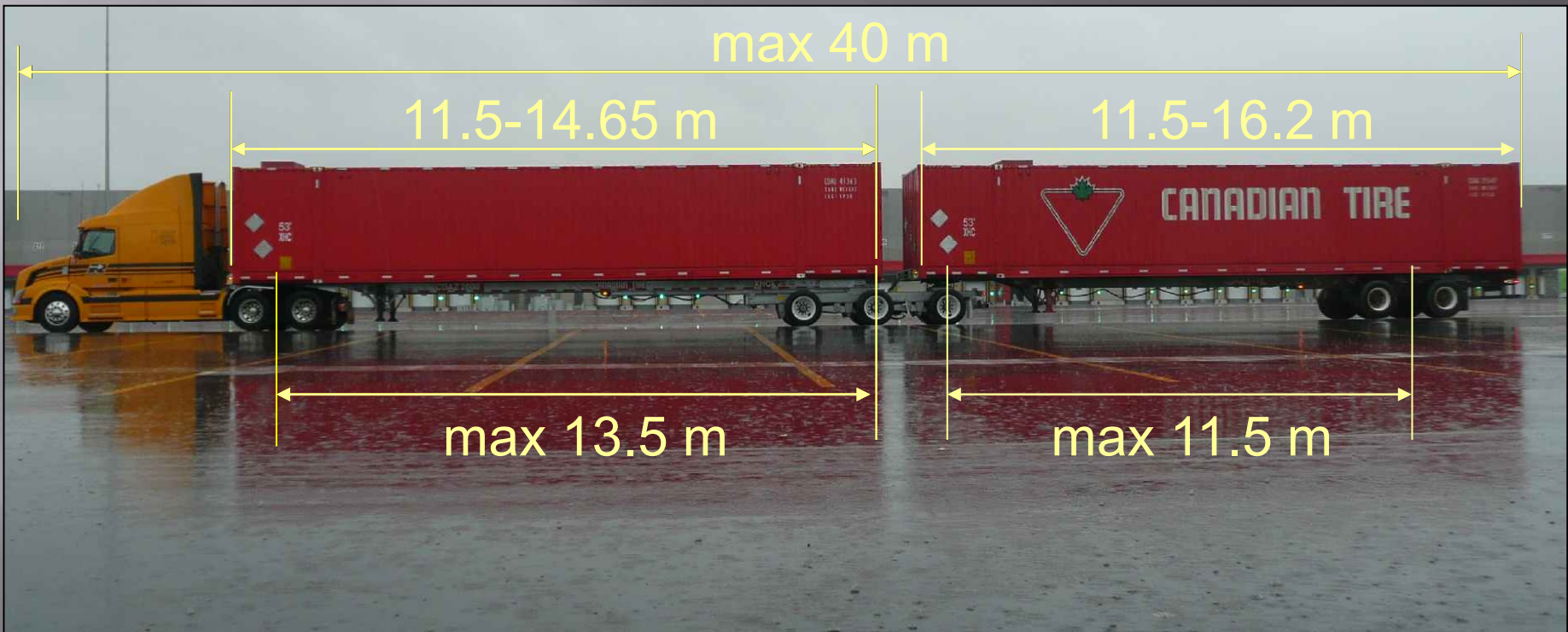
Vehicle Weights and Dimensions

- ▶ Québec has rather general specifications
- ▶ Ontario defined detailed specifications
- ▶ These generally do not restrict existing equipment used by Québec carriers

A-train Dimensions



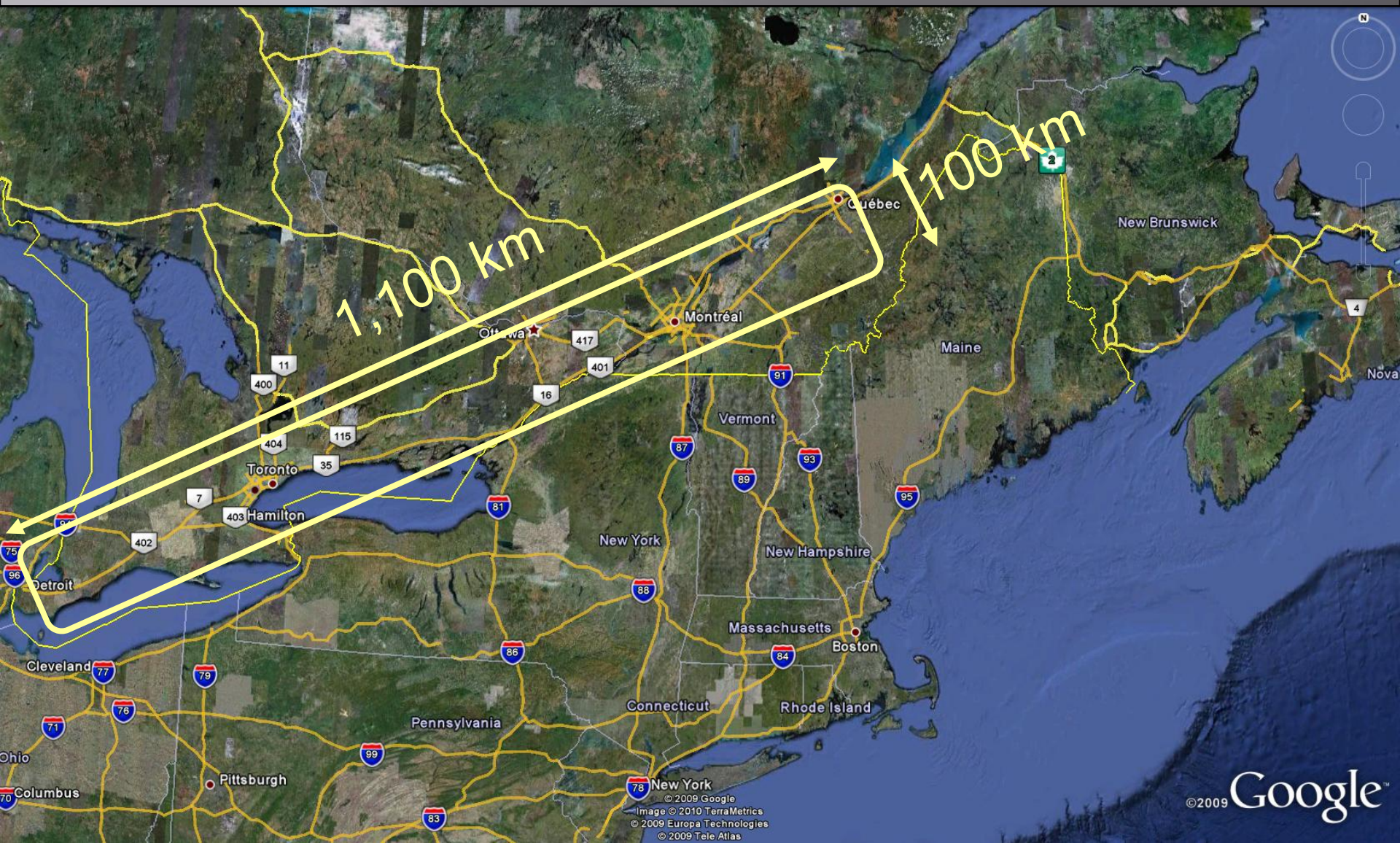
B-train Dimensions



Operational Rules

- ▶ Approved routes
 - LCV primary network – freeways
 - Approved rest/emergency stops
 - Approved O/D locations to the LCV primary network, generally < 2 km, engineering assessment needed
- ▶ No detours, except for a semitrailer pulling a converter dolly with no rear semitrailer
- ▶ 90 km/h
- ▶ No livestock or dangerous goods

Windsor-Québec City Corridor



An LCV Must Not Operate ...

- ▶ At the start or end of specified long weekends
- ▶ In or around Toronto Monday through Friday during specified rush hours
- ▶ Same rules for an oversize or overweight permit

Highway 401 in Toronto

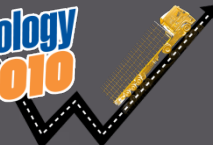
AADT 374,300 (2006)



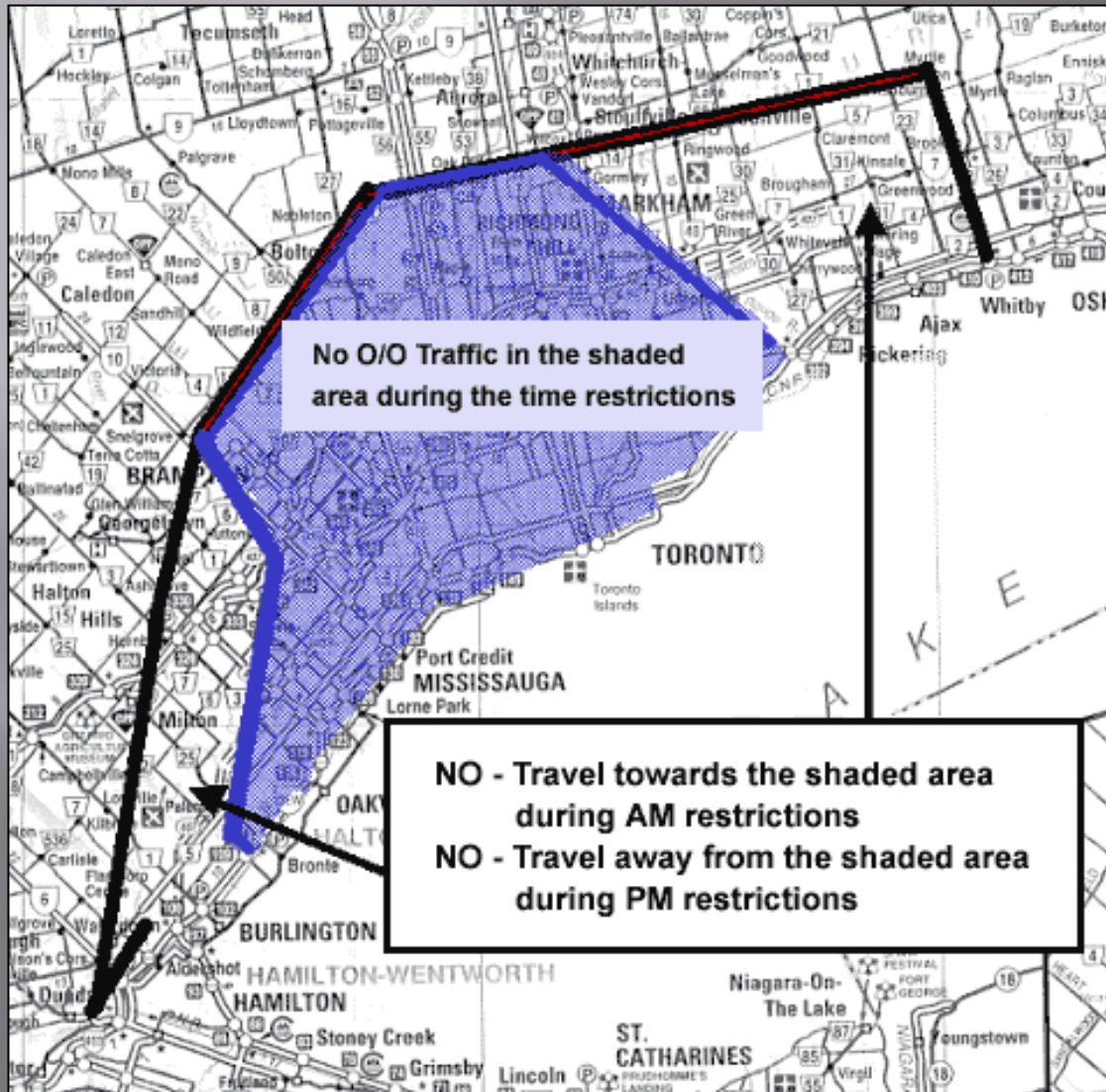
Highway 401



Technology
Activity 2010



Toronto Time Restriction



40 km

Morning

7:00 to 9:30 am

Evening

3:30 to 6:30 pm

An LCV must not Operate

- ▶ During specified bad weather conditions
- ▶ During December, January or February
- ▶ Consistent with Québec



LCV Program Benefits

1.5 million LCV trips per year

- ▶ Save \$320 million Cdn for shippers
- ▶ Save 70 million l of fuel
- ▶ Reduce greenhouse gases by 200,000 t
- ▶ Reduce infrastructure stress by 2%
- ▶ Reduce tractor-semitrailer collisions by 9%
- ▶ Reduce congestion around Toronto
- ▶ Alleviate a developing driver shortage

Current Status

Status

- ▶ Shut down for winter from 1 December 2009 to 1 March 2010
- ▶ 63 permits issued to 32 carriers
- ▶ 20 rest/emergency stops approved
- ▶ 31 origin/destinations approved in 10 municipalities
- ▶ 11,000 trips since 9 August 2009
- ▶ 3.5 million vehicle-km
- ▶ One relatively minor incident
- ▶ Minimal public concern

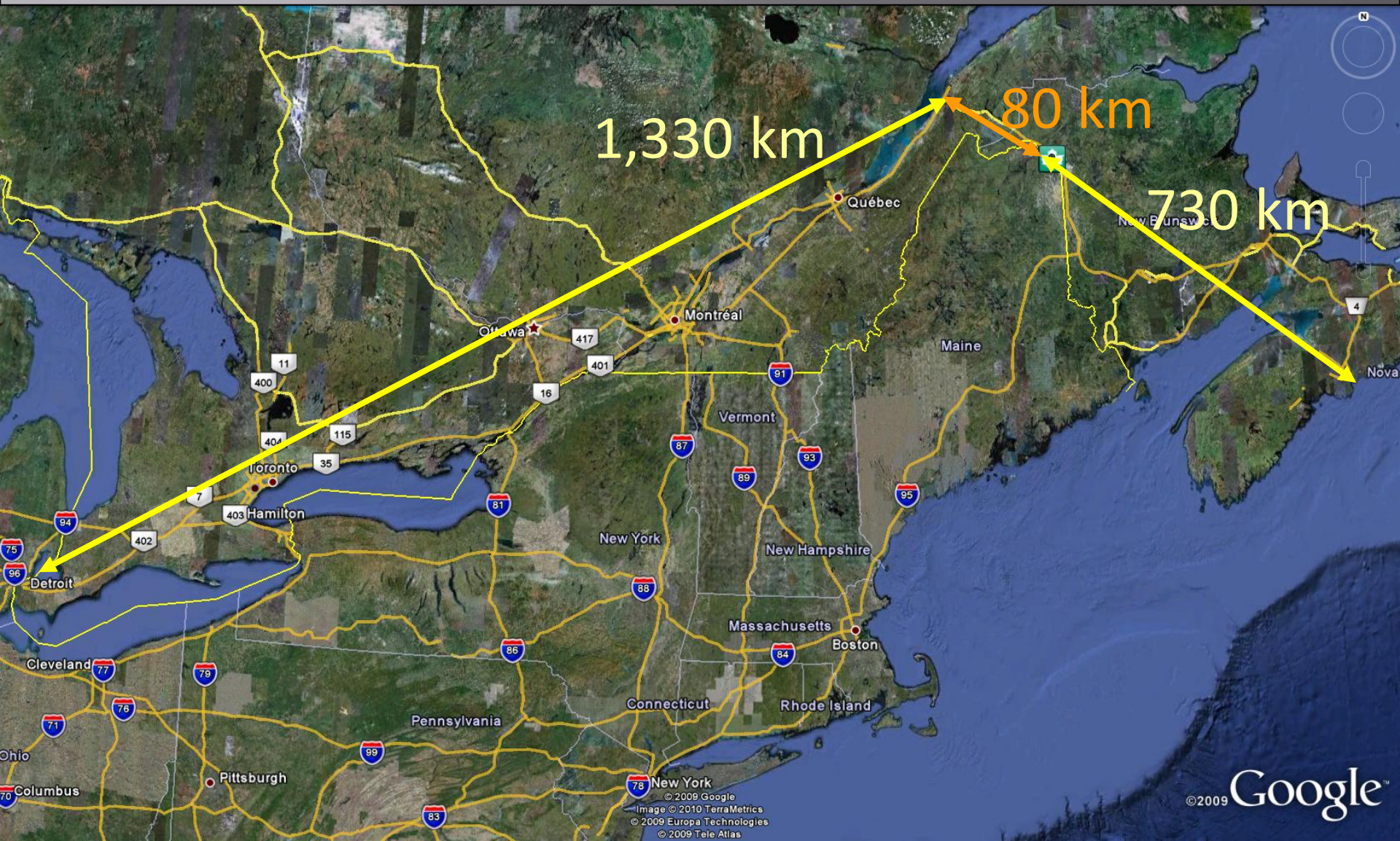
Status

- ▶ Pilot extended from June to 30 November
- ▶ Allows more time for
 - More carriers to get started
 - Evaluation
- ▶ Issues
 - Rest/emergency stops
 - O/D locations
 - Access

Status

- ▶ Progress will be reviewed during the winter 2010-2011 shutdown
- ▶ If all is well, permit limits may be relaxed, so operations gradually ramp up

LCV Ultimate Range



Thank you for you attention!

