



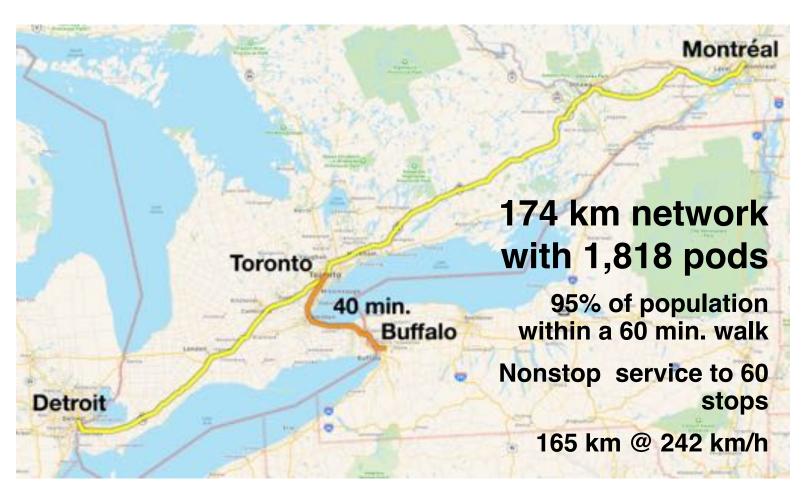
Transit X presents a preliminary proposal for privately-financed, solar-powered public transit network — a fleet of fully-autonomous, shared, electric, 4-passenger vehicles (pods) on a local and regional podway

# **Toronto to Buffalo**

This proposal is downloadable at transitx.com/proposals/Transit X for Toronto to Buffalo.pdf

# High capacity • High speed • Nonstop • 24/7 Solar powered • Zero Wait • Door-to-door • Resilient

A 24-page companion Transit X Handbook is available at transitx.com/transitxhandbook.pdf



## **Proposal Overview**



Transit X proposes to build and operate a green, privately-financed microtransit podway to carry passengers and freight for Toronto to Buffalo that makes the Transit X service convenient to 95% of the population.

Transit X efficiently services both suburbs and cities and provides for a higher quality of life. See transitx.com for more details. This 3-minute video (transitx.com/video) describes our innovative solution.

## **Major benefits**

- · Reduce congestion
- · Provide parking relief
- · Reduce pollution
- Improve safety

The Transit X Handbook (<u>transitx.com/</u> <u>transitxhandbook.pdf</u>) answers many questions about our service, the company, our technology, and the way we address:



congestion, parking, road safety, pedestrian safety, ADA compliance, sustainability, fares, solar+storage, construction, aesthetics, operations, economic development, quality of service, security, station footprint, equitability, carbon footprint, transit integration, resiliency, reliability, rights-of-way, and open space.

## Congestion, parking, pollution, and safety

Most regions suffer from traffic congestion, limited parking, air pollution, and unsafe roads. Potential solutions are costly, but Transit X can solve these challenges without public funding. Transit X can integrate into the built environment, providing both short term relief and a long term solution.

### No public funding

We have reduced or eliminated many costs of transportation including the cost of materials, land, construction, fuel, debt service, and labor. Transit X does not require public funding because revenue from fares more than covers our costs. Our business model appeals to investment banks and private equity firms that finance green infrastructure projects.

### Proven technology

Our team and partners have built fully automated systems that are now in operation around the world. Transit X may look unique, but the underlying design is very similar to systems that have been operating for 40 years with an exemplary safety record. An in-depth (1000+ hours) technical assessment and feasibility analysis has been completed by Altran, a global engineering firm with extensive expertise in automated transit systems. The first pilots of Transit X will be deployed by the end of 2018.

Before any groundbreaking, the system will be safety-certified and fully insured.

## **Service Quality**

Transit X provides on-demand, last-mile service that is superior to cars or buses. An operating agreement will guarantee high levels of availability and reliability. Our use of small vehicles (pods) makes this possible. By reducing car use, Transit X creates walkable and bike-friendly neighborhoods.

## Less pollution: Air, Sound, Light, Visual, Water

Transit X offers a much higher quality of life by eliminating many forms of pollution. Pods are quiet and have no emissions. Pods offer less visual impact than the existing roads and vehicles, and utility lines can be hidden within the track. At night, there is no light pollution from headlights or taillights. Water pollution from road runoff is significantly reduced.

#### Sustainable

Transit X runs on 100% sustainable energy. The energy generated from solar panels on the track and stored within the poles is sufficient in most cases, but sustainable power contracts may used to buy and sell power to the grid. Transit X makes it possible to reduce the amount of impervious surfaces and increase green space by reducing the need for parking and roads. By replacing cars, Transit X has a negative carbon footprint.

### **More Transit & Fewer Cars**

Transit X provides the convenience and privacy that people value in cars, yet without the negative impacts of personal cars. Transit X combines the best of mass transit and personal transportation modes which will lead to higher use of mass transit and less use of personal vehicles.

## **De-risking Projects**

Transit X is working with large, established firms to provide fixed-price contracts for the engineering, certification, construction, and operations of a Transit X system. Theses partnerships enable Transit X to de-risk all of the major elements of the project, and provide performance guarantees.

We would work with regional urban planning and construction firms who are familiar with permitting and applicable codes.

## Jobs and Workforce Development

Many jobs will be created to build a new transportation infrastructure, as well many new types of job will be created as transportation becomes more efficient. Transit X intends to build manufacturing and assembly plants around the world and locate them where Transit X is first deployed in a region. The vast majority of the construction jobs will be locally sourced. Preferential hiring would be given to those workers displaced by the transition to automated podways.

## **Revenue Generator**

Not only does Transit X not require public financing, but the government and private easement owners receive 4-5% of gross revenue, which would be US\$34 million

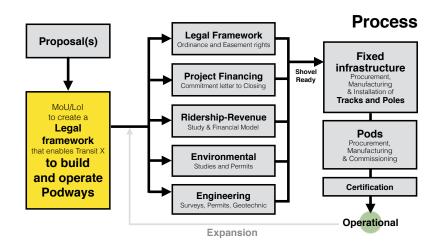
per year average over the first 10 years. For specifics, please see the "Taxes and Fees" section of this proposal. These fees and taxes paid by Transit X enables lower taxes or more spending on public services.

## **Short and Long Term Solution**

A project could be operational within 24 months from the start of a project. Transit X offers a rapidly-deployable solution that provides long term benefits. We would form a local company to build, operate, and maintain the network. At least 75% of the profits would be invested back into the region.

## **Moving Forward**

The diagram shows our general process for working with a government or commercial entity. We would refine a proposal that meets your needs, then ask for a letter stating you will create a legal framework for Transit X to build and operate a podway in your region. Example documents and a sample project schedule can be viewed at:



transitx.com/process

## **Evaluation**

Please review our preliminary proposal, and then ask us any questions. We would be happy to provide further information, address specific concerns, or meet with specific people or groups. Any routes or coverage areas shown on the map are only preliminary suggestions and actual routes would be determined based on needs, rights-of-ways, utility corridors, location of trees, and many other factors.

We expect this proposal to be reviewed by one or more committees or working groups. Familiar transportation options, such as buses, light rail, subways, and ridesharing services (including autonomous vehicles) may have already been considered. Very few options offer the convenience of cars with at least the capacity of buses, and most, if not all, require public funding and subsidies.

Private cars have a dominant mode share because people like the privacy and convenience of a car — despite the significant risks and negative impact associated with them. People won't give up their cars unless the alternative is both better and cheaper. That is what Transit X can provide.

We hope you agree that this proposal offers a way to address your challenges in both the short and long term, providing an option that is better and lower risk than any alternative — including continuing with the status quo.

Whatever process you use to evaluate this proposal, Transit X is open to working with you on refining this proposal to meet your needs. We hope you will conclude

that moving forward with Transit X is an excellent opportunity to meet your current and future challenges.

Once we agree to move forward, we need a memorandum of understanding (example at <a href="transitx.com/process/mou.html">transitx.com/process/mou.html</a>) stating that you intend to pass an ordinance that enables our use of air rights along with an operating agreement.

The buildout of the network would be rolled out in phases, where a first phase could be a 15 to 30 km pilot.

### **Other Resources**

The links below provide general information about Transit X:

- 2 minute video overview (<u>transitx.com/video</u>)
- Transit X Handbook (transitx.com/transitxhandbook.pdf)
- · Letters of Project Financing, Due Diligence, Contracts (transitx.com/letters.pdf)
- Memorandum of Understanding template (<u>transitx.com/process/mou.html</u>)
- Example Resolution (<u>transitx.com/process/resolution.html</u>)
- Operating Agreement (transitx.com/process/operating\_agreement.html)
- General Q & A (<u>transitx.com/QandA.html</u>)
- Other proposals (transitx.com/proposals)

#### **Addendum**

The remaining pages of this proposal provide project-specific details:

- Project Overview and Impact pages 6 and 7
- Taxes and Fees pages 8 and 9
- Fares page 10 and 11
- Financial Project Summary with Pro Forma pages 12 and 13

We look forward to working with you to improve the quality of life for Toronto to Buffalo through better transportation.

Sincerely,

Mike Stanley CEO, Transit X

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Mail: 1127 Commonwealth Ave #30, Boston, MA 02134 USA





Transit X network length	174	km	
People (resident-equivalent) in region	7,062,250	resident-equivalent p	oopulation
Route density ratio (route length to service area)	0.10		
Number of stops	60		
Triple-speed route length	165	km	
Water crossing route length	0	km	
Cost of fixed infrastructure	\$1,829,784,490		
per person	\$259		
Mode share of travel on Transit X (5% after first year)	14%	after 10 years	
Distance traveled on Transit X, per year	1,509,706,893		
1per day	4,136,183		
2 Daily potential energy generation with standard panels on tracks	1,340		
3 Sustainable energy use per day		MWh	2% of max capacity
Energy storage capital cost for 1 day(s) of supply at \$100 per kWh	\$2,607,523		
Size (rated power) of solar installation	6,062	KW	
6 Cost to generate sustainable energy (at \$1,000 per kW)	\$6,062,076		00/ -4 0053
Cost of buying sustainable energy at \$0.15 per kWh	\$3,911		2% of OPEX
8 Daily passengers riding Transit X	1,006,471		14% of the pop.
9 Distance per passenger per day		km	
Average distance per trip (assuming 3 trips per day)		km	
Single passenger fare for shared 1 km trip	\$0.36	0.46	CAD
Passenger distance traveled during peak hour	827,237		
Breakeven	520,234	customers per day	
4		(8% of people conve	nient to Transit X)
Number of pods for peak demand	1,818	pods at 14% me	ode share
N. I. C.			
Number of customers per pod	553.6	and 3,885 people	
Number of customers per pod Distance per pod per year	553.6 565,394		
		km	
Distance per pod per year	565,394 2,000	km	per pod
Distance per pod per year Two-layer pod garage area (2% of route with side–parking)	565,394 2,000 \$11,817,000	km m <sup>2</sup>	per pod
Distance per pod per year Two-layer pod garage area (2% of route with side–parking) Cost of pods	565,394 2,000 \$11,817,000	$\begin{array}{c} km \\ \\ m^2 \\ \\ \text{is $1 per person} \end{array}$	per pod
Distance per pod per year Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage  Project Finances	565,394 2,000 \$11,817,000 \$11,270,478	km m² is \$1 per person is \$2 per person	per pod 0.1% of car parking
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage  Project Finances Total Project Cost (privately financed)	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968	km m² is \$1 per person is \$2 per person 2,408,733,558	per pod 0.1% of car parking
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage  Project Finances  Total Project Cost (privately financed) Project cost	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798	km m² is \$1 per person is \$2 per person 2,408,733,558 per km	per pod  0.1% of car parking  CAD
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Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage  Project Finances  Total Project Cost (privately financed) Project cost Equity	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590	km m <sup>2</sup> is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067	per pod  0.1% of car parking  CAD
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances Total Project Cost (privately financed) Project cost Finances Project cost Project cost Project cost Project cost Private debt financing	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590	km m <sup>2</sup> is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067	per pod  0.1% of car parking  CAD
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances Total Project Cost (privately financed) Project cost Finances Project cost Project cost Project cost Project cost Private debt financing	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378	km m² is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491	per pod  0.1% of car parking  CAD  CAD  CAD
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances Total Project Cost (privately financed) Project cost Equity Private debt financing Debt service (per year)	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378	km m <sup>2</sup> is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491	per pod  0.1% of car parking  CAD  CAD  CAD  CAD
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$7 per capita)	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378	km m² is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491	per pod  0.1% of car parking  CAD  CAD  CAD  CAD
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$7 per capita)	565,394 2,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378	km m <sup>2</sup> is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491	per pod  0.1% of car parking  CAD  CAD  CAD  CAD
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Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances Total Project Cost (privately financed) Project cost Equity Private debt financing Project cost (per year) Project costs — per person	\$11,817,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378 \$194,551,557 \$50,511,405	km m² is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491 252,917,024 65,664,827	per pod  0.1% of car parking  CAD  CAD  CAD  CAD
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$7 per capita) OPEX A Debt service + Tax + Fees Project costs — per person Number of motor vehicles displaced	\$11,817,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378 \$194,551,557 \$50,511,405	km m² is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491 252,917,024 65,664,827 341 motor vehicles	per pod  0.1% of car parking  CAD  CAD  CAD  CAD  CAD  CAD  CAD  CA
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Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$7 per capita) Project costs — per person Number of motor vehicles displaced Yearly cost of cars displaced — per person Operating costs per passenger-km	\$11,817,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378 \$194,551,557 \$50,511,405	km m² is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491 252,917,024 65,664,827 341 motor vehicles 250	per pod  0.1% of car parking  CAD  CAD  CAD  CAD  CAD  CAD  CAD  CA
Two-layer pod garage area (2% of route with side–parking) Cost of pods Capital cost of energy generation and storage Project Finances Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$7 per capita) Project costs — per person Number of motor vehicles displaced Yearly cost of cars displaced — per person Operating costs per passenger-km	\$11,817,000 \$11,817,000 \$11,270,478 \$1,852,871,968 \$10,618,798 \$555,861,590 \$1,297,010,378 \$194,551,557 \$50,511,405 \$262 \$262 \$150,971 \$192 \$0.06	km m² is \$1 per person is \$2 per person 2,408,733,558 per km 722,620,067 1,686,113,491 252,917,024 65,664,827 341 motor vehicles 250	per pod  0.1% of car parking  CAD  CAD  CAD  CAD  CAD  CAD  CAD  CA



## Impact of proposed network

1	Reduction in GHG emissions (metric tons CO2-eq)	149,084 MTCO2-eq annually
2	Estimated cost to maintain public roadways	\$30,912,245 annually
3	Reduced waste products	24,193 metric tons annually
4	Travel time saved (non-stop travel and congestion)	73 hrs/person annually
5	Cost savings from reduced car ownership	\$281 per person annually
6	Increase in household income (from time savings and car costs)	2%
7	Reported injuries avoided	936 annually
8	Lives saved (from safety)	9 annually
9	Land freed from parking (858 acres)	3,472,326 m <sup>2</sup>
12	Temperature reduction (from heat island effect & GHG reductions)	0.5 to 2 °C
11	Health care savings (from pollution, injuries)	High
	Madalloweda	

## **Model Inputs**

	Model Inputs						
15	Ratio of road length to track length	4					
16	Walking speed	4.9	km/h				
17	Width of convenient swath along track	9.80					
18	Fixed cost per km. Solar+storage not included.	\$2,790,000	3,627,000	CAD			
19	Water crossing: additional cost per km	\$8,370,000	-,,	0,12			
20	Triple-speed: additional cost per km	\$5,580,000					
21	Rate factor for water crossings or high-speed links.	2.2					
22	Average distance traveled per person per year (for trips under 1600 km)	10,000	km				
23	Average distance per day per person	27	km				
24	Mode share % of people convenient to Transit X		at 5 min walk.				
25	Percentage of daily demand during peak hour	20%	at o mini main.				
26	Maximum capacity per track	25,380	pph				
27	Average dwell time during peak hour		seconds				
	% of pods traveling on route with highest demand	18%	00001140				
28	Average speed of pod		km/h	150 mph			
30	Average # of trips for a daily customer		per day	100 mpm			
31	Average passengers per pod during peak hours		passengers				
32	Average passengers per pod		passengers				
02	Average discount per passenger	19%	passengers				
33	Maximum passengers per pod		passengers				
34	Empty pods: Percentage non-revenue	25%	passerigers				
35	Ex-Factory cost per pod	\$5,000	6,500	CAD			
36	Worldwide Median Income per Household (US\$)	10,000	13,000				
37	Average number of residents per household	2.3	15,000	CAD			
38	Base fare per km	\$0.43	0.6	CAD			
39	(per mile)	\$0.70		CAD			
40	O&M as % of project cost	5%	0.5	OAD			
41	Percentage debt financed	70%					
42	Length of loan/debt		years				
43	Interest rate for debt	5%	yours				
44	kg CO2 emissions per liter of gasoline	2.37					
45	Monetary value of 1 hour personal time (USD)	\$12.50	16	CAD			
46	Eat. roadway maintenance per year per km	\$51,000	66,300				
47	Area of one parking lot space		m <sup>2</sup>	O/ ID			
48	Commercial income of land (annual)		per m <sup>2</sup>	CAD			
49	Distance from roadway that is convenient	2.97		O/ ID			
50	Stops per km	0.3	MII				
51	Solar panel area per meter of track	2.0					
52	Cost of sustainable energy and storage		per kWh				
53	Global Horizontal Irradiance (GHI)		kWh/m²/day				
54	Cost to generate sustainable energy		per kW				
55	Storage per column		kWh				
56	Typical span	23		44			
57	Energy storage cost		per kWh				
58	Energy storage capacity		days				
59	Area of parked pod	2.20	•				
60	Distance discount at max distance	40%					
61	Max distance discount	500	km				
62	Max usage discount at 10,000 km per capita	50%					
63	Shared Pod Discount	20%					
64	Shared Pod Compartment Discount	40%					
65	Mode share starting discount	67%					
03	mode share starting discount	01/6					

## **Model Inputs (continued)**

67	Name of region or project	Toronto to Buffalo
68	Currency name	CAD
69	Equal to US\$1	1.3
70	Sustainable energy/electricity generation & storage as	CAPEX
71	Land area of region (sq. km)	20,000
72	Number of residents in region	7,062,250
73	% travel within region	15%
74	% of land area served by roads	9%
75	Coverage: % of pop. convenient (60 min walk) to Transit X	95%
76	Annual median household income (US\$)	\$50,000
77	Convenient walk time to stop (min)	60
78	Triple-speed route length (km)	165
79	Water crossing route length (km)	0.0
80	Visitors per year	0
81	Average length of visit (days)	2
82	Solar production ratio	1.57
83	Regional Fare Factor	1.0
84	EPC costs & contingency	30%
85	Triple-speed (km/h)	242

## Pod & Car

		Pod	Car
86	Service life (years)	20	12
87	Full cost of vehicle per year	\$200	\$9,000
88	Public cost to maintain infrastructure (per km)	\$0	\$100,000
89	Energy Efficiency in MPGe	3564	24
90	Energy Efficiency in liters/100km	0.07	9.8
91	Energy used (Watt-hours/km)	9	1375
92	mass of CO2 per vehicle per km (kg)	0	0.09875
93	Vehicle mass (kg)	45	1950
94	Average speed of urban travel (km/h)	72	16
95	Typical travel time (in minutes) for 1 km trip	1	5
96	Fare/cost per km	\$0.43	\$0.62
97	Number of deaths per 100M passenger-km	0.00001	1
98	Number of injuries per 100M passenger-km	0.0006	62
99	Volume to park (cubic meters)	5.7	70.9



5% of gross revenue is paid to government easement owners for all fees and taxes. When on a private easement, 4% is paid to the private owner and 1% to the government. A minimum payment is based on the Footprint and the Transit X Commercial Rate (TXCR).

## Government Fees and Tax rate

(for calculating minimums)

2	Total commercial land (estimated)	180,000,000 m <sup>2</sup>	acres
3	Total commercial gov't revenue (US\$)	\$180,000,000	234,000,000 CAD
4	TXCR (Transit X Commercial Rate)	\$1.00 per m <sup>2</sup>	1.3 CAD
5	TXCR is the yearly tax rate per land area. Calculation: total land area of commercial properties in the governmental region, divided by all the governmental income generated by those properties. The TXCR is used to calculate the minimum tax/fee.		

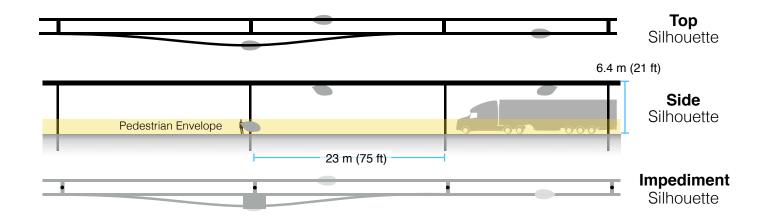
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## Private Easement Fees

15	with a minimum of	\$294,502	per year	382,852 CAD	
16	per resident	\$7		9 CAD	
14	Total gov't fees and taxes	\$49,703,223	per year	64,614,190 CAD	
13	1% on private easements	\$202,046			
12	5% on government easements	\$49,501,177		64,351,530 CAD	
11	% of route on government easements	98%			
10	Government Fees a	nd Taxes			
9	Minimum per year	\$1.69	per route- meter		
8	4% of gross revenue	JO. 100	per route- meter		

# Footprint calculations for minimum fee

## Yearly fees and taxes



1	Footprint Calculations	Metric		Imperial
2	Track width	0.41	m	
3	Track height	0.61	m	
4	Pole diameter	0.3	m	
5	Pole cross section	0.07	m <sup>2</sup>	
6	Stop landing area	2	m <sup>2</sup>	
7	width	<u>2</u>	m	
8	length	1	m	
9	Ramp length	21		
10	Pole span	<u>23</u>	m	
11	Number of poles per unit length	<u>43.5</u>	poles per km	
12	Pole height	<u>6</u>	m	
13				
14	Single track	1142.1	m <sup>2</sup>	
15	Area of Side Silhouette	688.3	m <sup>2</sup>	
16	Area of Top Silhouette	423.1	m <sup>2</sup>	
17	Impediment Area (adjusted)	30.7	m <sup>2</sup>	
18	· , , ,			
19	Dual track	1552.1	m <sup>2</sup>	
20	Area of Side Silhouette	688.3		
21	Area of Top Silhouette	833.1		
22	Impediment Area (adjusted)	30.7		
23	( <b>,</b> ,			
24	Stop	67.8	m <sup>2</sup>	
25	Area of Side Silhouette	25.6		
26	Area of Top Silhouette	22.2		
27	Impediment Area (adjusted)	20.0	m²	
28				
29	Stops with dedicated landing areas	2	stops per km	
30	% of dual track	100%	otopo por turi	
31	, , , , , , , , , , , , , , , , , , , ,	.00,		
32	Average area per unit length	1,688	m² per route-km	
33				
34	Contract values			
35	% gross revenue for government on private prop.	1%		
36	% gross revenue for private easement	4%		
37	% gross revenue for government easement	5%		
38	Impediment Factor	10		
		10		



## **Fair Fare Formula**

## Summary

The average commute would be 3.5 times faster saving each commuter 295 hours per year.\*

At 0.34 CAD per km, a typical commute on Transit X is 17% less than public transit and 74% less than a Taxi.\*

			Trip Length	
A	II prices in CAD	2 km	10 km	40 km
Transit X		<b>0.67</b> to 1.12 2 min., 3.6x faster	<b>3.33 to 5.58</b> 8 min., 3.6x faster	<b>12.78</b> to 21.78 33 min., 3.4x faster
P	Public transit average	3.77	6.00	8.80
nodes	Taxi	<b>5.23</b> 2 to 6 minutes	<b>22.78</b> 8 to 30 minutes	<b>88.61</b> 30 to 120 minutes
Common public modes	Uber/Lyft	<b>3.98</b> 2 to 6 minutes	<b>16.41</b> 8 to 30 minutes	<b>62.99</b> 30 to 120 minutes
mon p	Public Bus	<b>3.04</b> 3 to 12 minutes	<b>3.04</b> 15 to 60 minutes	<b>4.66</b> 60 to 240 minutes
Com	Train	<b>4.56</b> 2 to 12 minutes	<b>5.37</b> 8 to 60 minutes	<b>8.41</b> 30 to 240 minutes
F	Personal car	<b>4.26</b> 2 to 6 minutes	<b>13.19</b> 8 to 30 minutes	<b>46.70</b> 30 to 120 minutes
Travel n	Avg. Low High Speed Speed spee node km/h km/h km/h	d Dist D	lax Time Mode share ist. cost 6% 70% 24% m per min 2 10 40	* All numbers on mode shares, speeds, and costare rough estimates

Taxi 30 20 80 3.04 1.52 0.5 100 1.35 5% 4% 1% Uber/Lyft 30 20 2.43 1.22 0.5 100 10% 10% 2% 80 0.68 **Public Bus** 15 10 40 3.04 0.08 0.5 50 0 50% 50% 40% Train 30 10 80 4.56 0.10 2 100 0 35% 36% 57% Transit X 72 72 72 0 0.34 0.1 0 Personal car 1.01 0.1 400 30 20 80 2.03 0.21

the amount of discounted fares. Transit X Fair Fare is a universal passenger fare formula that applies to all regions and all times.

Base fares are set for first 5 years, then adjusted by formula. A 20% discount on a shared pod and a 40% discount on a shared compartment. Trips are discounted proportional to their length reaching a maximum of a 40% discount on a 500 km trip. No congestion–based pricing. Fares are proportional to the median income of the area and inversely proportional to per capita use, so the more use of Transit X, the lower the base fare up a to 50% discount. The amount of market–rate fares must be equal or less than



# **Fair Fare Formula**

## Fare rates are updated annually using this formula

	Formula Name	Value	Units	Description of the value or model input
1	GlobalIncome	13,000	CAD	Global median household income. Updated annually based on most recent standard published data.
2	AllTravel	23,000	km	Travel distance per household per year on any mode for trips under 1600 km. A global constant
3	PercentIncomeForTransport	20%		% of median household income for all transportation under 1600 km trips. A
4	GlobalRate	0.11	CAD/km	global constant. Global rate: GlobalIncome * PercentIncomeForTransport / AllTravel
5	IncomeFirst	\$65,000	CAD	Median household income at first stop (per person per day). External input. Based on reliable public data source updated annually.
6	IncomeDest	\$97,500	CAD	Median household income at destination per trip. External input. Based on reliable public data updated annually.
7	RegionalRate	0.57	CAD/km	Regional rate based on median income:  MedianIncomeFirst * PercentIncomeForTransport / AllTravel
8	UnderIncomeRate	0.00	CAD/km	Under global income adjustment: if (RegionalRate < GlobalRate, GlobalRate - RegionalRate, 0)
9	NominalRate	0.57	CAD/km	Nominal rate: RegionalRate + UnderIncomeRate
10	RegionalFactor	1.00	0.15#	Regional Fare Factor. Negotiated upfront to make network financially viable.
11	AdjustedRate	0.57	CAD/km	Regional adjusted rate: NominalRate * RegionalFactor
13	Population	7,062,250		Population in region. Updated annually based on trusted public data source.
12	UsageMaxDiscount	50%		Fare Discount when Transit X travel per household equals AllTravel. Global constant.
14	PassengerTravel	1,509,706,893	km	Total passenger distance traveled previous calendar year. Based on expected mode share for first 3 years. Based on actual passenger trips. Audited.
15	ModeShare	1%		Percent of Total Travel Per Capita on Transit X:  PassengerTravel / (Population x AllTravel)
16	BaseRate	0.56	CAD/km	Base rate for single-passenger pod (without discounts) (1 - UsageMaxDiscount x min(1,ModeShare)) x AdjustedRate
17	SpecialRateFactor	2.20		Rate factor for water crossings or high-speed links. Global constant.
18	SpecialBaseRate	1.24	CAD/km	Base rate for high-speed travel or water crossings:  BaseRate * SpecialRateFactor
19	DistanceDiscount	40%		Distance discount at max distance. Global constant.
20	MaxDistanceDiscount	500	km	Max distance discount. Global constant.
21	DistanceDiscountPerKm	0.000450	CAD/km	Discount amount per km:  BaseRate x DistanceDiscount / MaxDistanceDiscount
22	SeniorDiscount	20%		Senior discount set according to local regulations
23	StudentDiscount	20%		Student discount set according to local regulations
	DisabilityDiscount	20%		Disability discount set according to local regulations
24	DiscountBaseRate	0.45	CAD/km	Discounted base rate: BaseRate x (1 - SeniorDiscount)
25	SharedPodDiscount	20%		Discount for a shared pod. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.
26	SharedPodRate	0.45	CAD/km	Rate for a shared pod: BaseRate x (1 - SharedPodDiscount)
27	SharedCompartmentDiscount	40%		Discount for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.
28	SharedCompartmentRate	0.34	CAD/km	Rate for shared compartment  BaseRate x (1 - SharedCompartmentDiscount)
29	SingleOccupancyMaxDistance	0.38	CAD/km	Rate for 500 km in single–passenger pod.
30	Senior + SharedCompartmentRate	0.16	CAD/km	Rate for a Senior taking a 500 km trip in a shared compartment.  BaseRate x (1 - SeniorDiscountAmount) x (1 - SharedCompartmentDiscount) x (1 - MaxDistanceDiscount)
31	50PctIncomeAtDest	25%		% Higher fare rate if Destination has 50% higher median income than First (IncomeDest / IncomeFirst - 1) / 2
32	DistanceBase	1,117,183,101	km	Passenger distance under base fare. Audited value from operational data.
33	PercentBase	74%		Percent of passenger distance under base fare:  DistanceBase / PassengerTravel
34	BaseRevenue	509,688,176	CAD	Annual revenue from all travel under base rate. Audited value from operational data.
35	AverageDiscount	19%		Average fare discount from Base Rate: 1 - (BaseRevenue / (DistanceDase x BaseRate))
36	MarketFactor	1.0		Market rate factor. Negotiated value for setting ratio of AverageDiscount
37	MarketRateCap	19%		Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor
38	MarketTravelCap	211,216,887	km	Cap on passenger travel distance at market rate:  DistanceBase x MarketRateCap

## **Project Summary**

**Project** A fully-automated, solar-powered, micro-**Description** rail network. A transportation utility.

Project type Privately-funded Public Transit

Design, Build, Finance, Own, Operate,

Maintain (DBFOOM)

Project cost US\$1.85 billion

Cost to Gov't \$0

Structure Privately financed equity and debt

Debt term 10 years @ 5%

**Equity terms** A waterfall profit distribution with:

1. 90/10 split until Return of Capital,

2. then 50/50 until Target IRR met

3. then 10/90 onwards

Taxes & Fees \$49,703,223 per year

Benefits to

society and Extremely high environment

## **Financials**

(US\$ in millions)

	Year 1	Total Years 1-12
Gross Revenues	333	8,118
Taxes and fees	17	406
Debt service	\$168	\$1,680

## ESG (Environmental, Social, Governance) Benefits

Clean energy	yes	Resiliency	yes
Energy security	yes	Sustainable	yes
Emissions-free	yes	Equitable	yes
GHG-free	yes	Recyclable materials	yes
Lowers pollution	yes	Affordable housing	yes
Clean water	yes	Improved Health	yes
Improved Safety	yes	Econ. Development	yes
New infrastructure	yes	Access to Food	yes
Equitable transport	yes	New job creation	yes





Transit X presents a preliminary proposal for privately-financed, solar-powered public transit network — a fleet of fully-autonomous, shared, electric, 4-passenger vehicles (pods) on a local and regional podway

## **Toronto to Buffalo**

High capacity • High speed • Nonstop • 24/7
Solar powered • Zero Wait • Door-to-door • Resilient



#### **About Transit X**

Transit X finances, designs, builds, and operates solar-electric micro-rail public transit podways to supplant buses, trains, cars, and trucks. Transit X offers its service to governments and commercial developers. Maiden Flight was on Oct 29, 2018 and pilot projects started in 2018. First pilots will break ground in 2019 and begin operations in 2020. Transit X is a privately held company founded in 2015, based in Boston, Massachusetts.

### Status

	Now	Prior to close			
Project financing	Financing letter	Yes			
Demonstration system	Ready	Yes			
Rider-Revenue study	Preliminary	Yes			
Environmental study	Expedited	Yes			
Air rights	Letter of Intent	Yes			
Permitting	Expedited	Yes			
Safety certification	Expedited	Yes			
Construction firm	Letter of interest	Contract			
Design and major subs	Letter of interest	Contract			
<b>Operations &amp; Maint</b>	Letter of interest	Contract			
Utility relocation	Identified	Agreements			

General information available at <u>transitx.com</u>. Detailed information and references can be provided under appropriate non-disclosure/non-compete/non-circumvent agreements. Contact: Mike Stanley, CEO, Transit X, mike@transitx.com, 508-596-7024



## **Model Inputs and Assumptions**

Route length (km) 174

Starting number of pods 600

Projected revenue growth 15%

Project Cost (Privately funded) \$1,852,871,968

% Debt financed 70%

**Debt** \$1,297,010,378

**Equity** \$555,861,590

Capital return per year \$111,172,318

Debt payment (per year) \$167,968,778

Travel per year per pod (km) 565,394

Revenue per vehicle-km (US\$) 0.98

OPEX as % of project cost 5%

Debt Interest rate 5%

Debt term (yrs) 10

Years to return equity capital 5

Profit share when below capital return 90%

Profit share when below Target IRR 50%

Profit share when above Target IRR 10%

#### **Pro Forma**

	Years	0	1	2	3	4	5	6	7	8	9	10	11	12
Revenue		0	333,408,615	383,419,907	440,932,893	507,072,827	583,133,752	670,603,814	771,194,386	886,873,544	1,019,904,576	1,172,890,262	1,348,823,802	1,551,147,372
5% RoW÷tax÷f	fee	0%	16,670,431	19,170,995	22,046,645	25,353,641	29,156,688	33,530,191	38,559,719	44,343,677	50,995,229	58,644,513	67,441,190	77,557,369
Debt service		0	\$167,968,778	\$167,968,778	\$167,968,778	\$167,968,778	\$167,968,778	\$167,968,778	\$167,968,778	\$167,968,778	\$167,968,778	\$167,968,778	0	0
Investor balance	ce		-\$490,344,975	-\$392,325,083	-\$272,634,677	-\$130,524,656	\$17,077,968	\$170,997,085	\$243,242,314	\$323,841,105	\$414,046,491	\$515,299,464	\$646,054,037	\$791,419,041

#### **Important Notices**

The information contained in this document is not an offer to sell or a solicitation to buy any security. These materials and documents and information from which they are derived or which are referred to by or accessible from them may contain forward looking statements within the meaning of Section 27A of the Securities Act of 1933, Section 2E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact are forward looking statements and are subject to risks and uncertainties. Forward looking statements generally can be identified by the use of forward looking terminology such as "may," "will," "expect," "intend," "estimate," "project," "anticipate," "believe" or "plan" or the negative thereof or variations thereon or similar terminology. Although Transit X believes that the expectations reflected in such forward looking statements are reasonable, it can give no assurance that such expectations will prove to be correct. All forward looking statements speak only as of the date made. Except as required by law, Transit X undertakes no obligation to update any forward looking statement to reflect events or circumstances after the date on which it is made or to reflect the occurrence of anticipated or unanticipated events or circumstances. These materials and documents and information from which they are derived or which are referred to by or accessible from them represent Transit X's best estimate as to the allocation of the funding proceeds based upon its present business plan and financial condition. The costs and expenses to be incurred in pursuing the Company's business plan cannot be predicted with certainty. There can be no assurance that unforeseen events will not occur or that the Company's business plan will be achieved or that it will not be changed, and it is possible that the funding proceeds may be applied in a manner other than that described herein.