



Transit X presents a preliminary proposal for privately-financed, solar-powered micro-rail network — a fleet of automated electric vehicles (pods) for passengers and freight on a local and regional podway providing public transportation for

# Manhattan, NYC, NY

This proposal is downloadable at transitx.com/proposals/Transit X for Manhattan, NYC, NY. 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 micro-rail podway to carry passengers and freight for Manhattan 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

Transit X does not require government funding because our revenue from fares, freight, and advertising is greater than our costs. We have reduced or eliminated many costs of transportation including the cost of materials, land, construction, fuel, debt service, and labor. Our projects are financed by investment banks and private equity firms.

#### 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. The rollout and maiden flight occurred on Oct 29, 2018 in Leominster, Massachusetts. The first Transit X system will be operating by the end of 2019. We partner with local civil engineering and construction firms for the installation.

## **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\$289 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:

**Process Legal Framework** Proposal(s) Fixed infrastructure **Project Financing** Manufacturing Tracks and Poles MoU/LoI to create a Ridership-Revenue Legal Study & Financial Mod **Pods** framework Procurement, Manufacturing Environmental & Commissioning to build and operate Certification **Podwavs** Engineering Operational Expansion

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="mailto: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 Manhattan through better transportation.

Sincerely,

Mike Stanley Founder & Owner, Transit X

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





- 11	al ISIUA.			
1	Transit X network length	336	km	208.9 miles
2	People (resident-equivalent) in region	1,664,727	resident-equivalent	population
3	Route density ratio (route length to service area)	5.82		
4	Number of stops	3,360		
5	Triple-speed route length	0	km	
6	Water crossing route length	0	km	
7	Cost of fixed infrastructure	\$1,219,760,100		
8	per person	\$733		
9	Mode share of travel on Transit X (28% after first year)	86%	after 10 years	
10	Distance traveled by passengers on Transit X, per year	11,398,220,628	km	7,079,640,142 miles
11	per day	31,228,002	km	19,396,274 miles
12	Daily potential energy generation with standard panels on tracks	2,583	MWh	
13	Sustainable energy use per day	212	MWh	8% of max capacity
14	Energy storage capital cost for 1 day(s) of supply at \$100 per kWh	\$21,173,321		
15	Size (rated power) of solar installation	49,225	KW	
16	Cost to generate sustainable energy (at \$1,000 per kW)	\$49,224,600		
17	Cost of buying sustainable energy at \$0.15 per kWh	\$31,760	per day	14% of OPEX
18	Daily passengers riding Transit X	1,424,778		86% of the pop.
19	Distance per passenger per day	22	km	13.6 miles
20	Average distance per trip (assuming 3 trips per day)	7	km	4.5 miles
21	Single passenger fare for shared 7 km trip	\$1.78		
22	Passenger distance traveled during peak hour	6,245,600	km	3,879,255 miles
23	Breakeven			13% of expected and 12% at to Transit X)
24	Boarding capacity			r (85% of customers)
25	- · · · · · · · · · · · · · · · · · · ·			
	Number of pods for peak demand		pods at 86% m	
26 27	Number of customers per pod		and 34 people pe	r pod
	Distance per pod per year	168,192		0.00/ of our parking
28	Two-layer pod garage area (16% of route with side–parking)	54,588		0.2% of car parking
29 30	Cost of pods		is \$149 per perso	
	Capital cost of energy generation and storage	\$91,517,297	is \$55 per person	
31 <b>P</b> I	roject Finances			
32	Total Project Cost (privately financed)	\$1,633,839,897		
33	Project cost	\$4,858,281	per km	US\$7.8M per mi.
34	Equity	\$490,151,969		
35	Private debt financing	\$1,143,687,928		
36				
37				
38	Daha aami'aa (marrosan)	¢171 EFO 100		
39	Debt service (per year)  Yearly fees and taxes (US\$218 per capita)	\$171,553,189 <b>\$362,523,315</b>		
40 41	rearry rees and taxes (03\$210 per capita)	9845.789.400		
42				
43				
44	Project costs — per person	\$981		
45	Number of motor vehicles displaced		motor vehicles	
46		\$6,162		
	Yearly cost of cars displaced — per person			
40	Yearly cost of cars displaced — per person  Operating costs per passenger-km			
47	Operating costs per passenger-km	\$0.01		
	Operating costs per passenger-km Full costs per passenger-km	\$0.01 \$0.05	km	2,574,101 miles
47	Operating costs per passenger-km	\$0.01	km	2,574,101 miles



## Impact of proposed network

1	Reduction in GHG emissions (metric tons CO2-eq)	1,125,574 MTCO2-eq annually
2	Estimated cost to maintain public roadways	\$59,578,200 annually
3	Reduced waste products	182,656 metric tons annually
4	Travel time saved (non-stop travel and congestion)	389 hrs/person annually
5	Cost savings from reduced car ownership	\$1,703 per person annually
6	Increase in household income (from time savings and car costs)	13%
7	Reported injuries avoided	7,067 annually
8	Lives saved (from safety)	71 annually
9	Land freed from parking (6,478 acres)	26,215,907 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

## **Model Inputs**

	Model Inputs							
15	Ratio of road length to track length	4						
16	Walking speed	4.9	km/h	3 mph				
17	Width of convenient swath along track	0.16	km	0 miles				
18	Fixed cost per km. Solar+storage not included.	\$2,790,000						
19	Water crossing: additional cost per km	\$8,370,000						
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	6,211 miles				
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%						
26	Maximum capacity per track	23,598	pph					
27	Average dwell time during peak hour		seconds					
28	% of pods traveling on route with highest demand	18%	00000					
29	Average speed of pod		km/h	45 mph				
30	Average # of trips for a daily customer		per day	10 mpn				
31	Average passengers per pod during peak hours		passengers					
32	Average passengers per pod		passengers					
52	Average discount per passenger	18%	passerigers					
33	Maximum passengers per pod		passengers					
34	Empty pods: Percentage non-revenue	25%	passerigers					
35	Ex-Factory cost per pod	\$5,000						
36	Worldwide Median Income per Household (US\$)	10,000						
37	Average number of residents per household	2.3						
	Base fare per km	\$0.41						
38	(per mile)	\$0.41						
39	O&M as % of project cost	5%						
40	Percentage debt financed	70%						
41	Length of loan/debt		vooro					
42	Interest rate for debt	5%	years					
43	kg CO2 emissions per liter of gasoline	2.37						
	Monetary value of 1 hour personal time (USD)	\$13.75						
45	Eat. roadway maintenance per year per km	\$51,000						
46			m²	247 sf				
47	Area of one parking lot space			247 SI				
48	Commercial income of land (annual)		per m <sup>2</sup>					
49	Distance from roadway that is convenient	0.05 10.0	KIII					
50	Stops per km							
51	Boarding capacity per stop	360	ppn					
52	Solar panel area per meter of track	2.0	I-VA/I-					
53	Cost of sustainable energy and storage		per kWh					
54	Global Horizontal Irradiance (GHI)		kWh/m²/day					
55	Cost to generate sustainable energy		per kW					
56	Storage per column		kWh	4.4				
57	Typical span	23		44				
58	Energy storage cost		per kWh					
59	Energy storage capacity		days					
60	Area of parked pod	2.20	m²					
61	Distance discount at max distance	40%	1					
62	Max distance discount	500	кm					
63	Max usage discount at 10,000 km per capita	50%						
64	Shared Pod Discount	20%						
65	Shared Pod Compartment Discount	40%						
66	Mode share starting discount	67%						

## **Model Inputs (continued)**

	• •	
68	Name of region or project	Manhattan, NYC, NY
69	Currency name	
70	Equal to US\$1	1
71	Sustainable energy/electricity generation & storage as	CAPEX
72	Land area of region (sq. km)	59
73	Number of residents in region	1,664,727
74	% travel within region	80%
75	% of land area served by roads	98%
76	Coverage: % of pop. convenient (1 min walk) to Transit X	95%
77	Annual median household income (US\$)	\$55,000
78	Convenient walk time to stop (min)	1
79	Triple-speed route length (km)	0
30	Water crossing route length (km)	0.0
81	Visitors per year	0
82	Average length of visit (days)	2
83	Solar production ratio	1.57
84	Regional Fare Factor	1.0
85	EPC costs & contingency	30%
86	Triple-speed (km/h)	242
87	Daily Passengers Factor	1

## Pod & Car

		Pod	Car
87	Service life (years)	20	12
88	Full cost of vehicle per year	\$200	\$9,000
89	Public cost to maintain infrastructure (per km)	\$0	\$100,000
90	Energy consumption (MPGe)	3564	24
91	Energy consumption (liters/100km)	0.07	9.8
92	Energy consumption (Watt-hours/km)	9	1375
93	mass of CO2 per vehicle per km (kg)	0	0.09875
94	Vehicle mass (kg)	45	1950
95	Average speed of urban travel (km/h)	72	16
96	Typical travel time (in minutes) for 7 km trip	6	27
97	Fare/cost per km	\$0.41	\$0.62
98	Number of deaths per 100M passenger-km	0.00001	1
99	Number of injuries per 100M passenger-km	0.0006	62
100	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)	5,782,000 m <sup>2</sup>	1,429 acres
3	Total commercial gov't revenue (US\$)	\$6,360,200	
4	TXCR (Transit X Commercial Rate)	\$1.10 per m <sup>2</sup>	
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.	\$11.84 per sf	

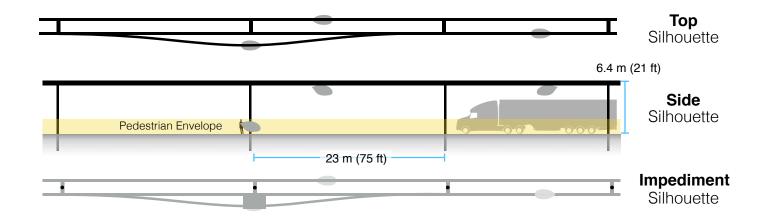
6

## **Private Easement Fees**

8	4% of gross revenue	\$215.60	per route- meter	\$65.76 per route-foot
9	Minimum per year	\$1.63	per route- meter	\$0.50 per route-foot
10	Government Fees a	nd Taxes		
11	% of route on government easements	98%		
12	5% on government easements	\$355,272,849		
13	1% on private easements	\$1,450,093		
14	Total gov't fees and taxes	\$356,722,942	per year	
16	per resident	\$214		
15	with a minimum of	\$549,793	per year	

## Footprint calculations for minimum fee

## Yearly fees and taxes



1	Footprint Calculations	Metric	Imperial
2	Track width	<u>0.30</u> m	11.8 inches
3	Track height	<u>0.60</u> m	23.6 inches
4	Post diameter	<u>0.3</u> m	11.8 inches
5	Post cross section	<u>0.07</u> m <sup>2</sup>	0.8 sf
6	Stop landing area	<u>3.75</u> m <sup>2</sup>	40.4 sf
7	width	<u>1.5</u> m	59.1 inches
8	length	<u>2.5</u> m	98.4 inches
9	Ramp length	<u>21</u> m	68.9 feet
10	Typical Span	<u>23</u> m	75.5 feet
11	Number of posts per unit length	43.5 poles per ki	m 70.0 poles per mile
12	Post height	<u>6</u> m	19.7 feet
13			
14	Single track	1022.1 m <sup>2</sup>	10998 sf
15	Area of Side Silhouette	678.3 m <sup>2</sup>	7298 sf
16	Area of Top Silhouette	313.1 m <sup>2</sup>	3369 sf
17	Impediment Area (adjusted)	30.7 m <sup>2</sup>	331 sf
18	,		
19	Dual track	1322.1 m <sup>2</sup>	14226 sf
20	Area of Side Silhouette	678.3 m <sup>2</sup>	7298 sf
21	Area of Top Silhouette	613.1 m <sup>2</sup>	6597 sf
22	Impediment Area (adjusted)	30.7 m <sup>2</sup>	331 sf
23	podimont, trod (dajdotod)	0011 111	331 31
24	Stop	82.1 m <sup>2</sup>	883 sf
25	Area of Side Silhouette	25.2 m <sup>2</sup>	271 sf
26	Area of Top Silhouette	19.4 m <sup>2</sup>	208 sf
	·	-	
27	Impediment Area (adjusted)	37.5 m <sup>2</sup>	404 sf
28			
29	Stops with dedicated landing areas	2 stops per k	m 3.2 stops per mile
30	% of dual track	100%	0.2 Stope per mile
31	70 of dual traon	10070	
32	Average area per unit length	1,486 m² per rout	e-km <b>25,793 sf per route-mile</b>
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	
00	impediment ractor	10	



## **Fair Fare Formula**

## Summary

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

At 0.39 USD per mile, a typical commute on Transit X is 17% less than public transit and 74% less than a Taxi.\*

			Trip Length	
A	II prices in USD	1 mile	6 mile	25 mile
	Transit X	<b>0.49</b> to 0.81 2 min., 3.6x faster	<b>2.41</b> to 4.04 8 min., 3.6x faster	<b>9.25 to 15.76</b> 33 min., 3.4x faster
P	Public transit average	2.73	4.34	6.37
səpou	Taxi	<b>3.79</b> 2 to 6 minutes	<b>16.49</b> 8 to 30 minutes	<b>64.11</b> 30 to 120 minutes
Common public modes	Uber/Lyft	<b>2.88</b> 2 to 6 minutes	<b>11.87</b> 8 to 30 minutes	<b>45.58</b> 30 to 120 minutes
non p	Public Bus	<b>2.20</b> 3 to 12 minutes	<b>2.20</b> 15 to 60 minutes	<b>3.37</b> 60 to 240 minutes
Comi	Train	<b>3.30</b> 2 to 12 minutes	<b>3.88</b> 8 to 60 minutes	<b>6.08</b> 30 to 240 minutes
Personal car		<b>3.16</b> 2 to 6 minutes	<b>9.94</b> 8 to 30 minutes	<b>35.36</b> 30 to 120 minutes
	Avg. Low High	n Min M	lax Time Mode share	* All numbers on mode

	Avg. Speed	Low Speed	High speed				Min Dist	Max Dist.	Time cost	Mode 6%	shar 70%	
Travel mode	km/h	km/h	km/h	Base	Includ es km	Over per-km	km	km	per min	2	10	40
Taxi	30	20	80	2.20	1	1.10	0.5	100	0.98	5%	4%	1%
Uber/Lyft	30	20	80	1.76	1	0.88	0.5	100	0.49	10%	10%	2%
Public Bus	15	10	40	2.20	20	0.06	0.5	50	0	50%	50%	40%
Train	30	10	80	3.30	2	0.07	2	100	0	35%	36%	57%
Transit X	72	72	72	0	0	0.24	0.1	50	0	-	-	-
Personal car	30	20	80	1.47	0	0.73	0.1	400	0.23	-	-	-

<sup>\*</sup> All numbers on mode shares, speeds, and costs are rough estimates..

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 less than the amount of discounted fares. Transit X Fair Fare Formula and Fair Freight Formula is universal and applies to all regions and all times.



## **Fair Fare Formula**

## Fare rates are updated annually using this formula

Global median household income. Updated annually based on most recent standard published color published color provision of per year on any mode for trips under 1600 km. A global constant. Vision of the provision of the provisi		Formula Name	Value	Units	Description of the value or model input
PercentinomeForTransport   20%   Software	1	GlobalIncome	10,000	USD	
Se of median household income for all transportation under 1500 km trips. A global constant.  Global rate: Global rate: Global constant.  Global patient patient patient patient patient patient patient patient patient	2	AllTravel	23,000	km	Travel distance per household per year on any mode for trips under 1600 km. A
Global Fate	3	PercentIncomeForTransport	20%		% of median household income for all transportation under 1600 km trips. A
Based on reliable public data source updated annually.  Regional Ratis  O.48  USD  Morninal Ratis  O.50  Norminal Ratis  O.60  Norminal Ratis  Norminal Ratis  Norminal Ratis  Norminal Ratis  Regional Ratis  Regional Ratis  Norminal Ratis  Regional Ratis	4	GlobalRate	0.09	USD/km	
RegionalRate   0.48   USD/km	5	IncomeFirst	\$55,000	USD	. "
MedianincomeFirst   PercentincomeFortransport / AllTravel	6	IncomeDest	\$82,500	USD	• • • • • • • • • • • • • • • • • • • •
NominalRate   0.48   USD/km   NominalRate   0.48   USD/km   RegionalRate   CalobalRate   RegionalRate   NominalRate   NominalRate   RegionalRate   NominalRate	7	RegionalRate	0.48	USD/km	·
Regional Algusted Flast   1.00	8		0.00	USD/km	,
13				USD/km	-
Population   1,664,727   Population   region. Updated annually based on trusted public data source. Fare Discount when Transit X travel per household equals AlTravel. Global constant.		<del>_</del>		1100 #	o ,
Fare Discount when Transit X travel per household equals AlTravel. Global constant.		•		USD/km	
PassengerTravel   11,398,220,628 km	13	Population	1,664,727		
mode share for first 3 years. Based on actual passenger trips. Audited. Percent of Total Travel Per Capita on Transit X: PassengerTravel / (Population x AllTravel) Base rate for single-passenger pod (without discounts) (1 - UsageMaxDiscount x min(1,ModeShare) x AdjustedRate Rate factor for water crossings or high-speed links, Global constant. Base rate for high-speed travel or water crossings: Base Rate or high-speed links, Global constant.  Max distance discount at max distance. Global constant.  Max distance discount at max distance. Global constant.  Max distance discount at max distance. Global constant.  Max distance discount water crossings or high-speed links, Global constant.  Max distance discount at max distance. Global constant.  Max distance discount at max distance. Global constant.  Max distance discount water crossings or high-speed links, Global constant.  Max distance discount at max distance. Global constant.  Max distance discount at max distance. Global constant.  Max distance discount water crossings or high-speed links, Global constant.  Max distance discount at max distance. Global constant.  Max distance discount	12	UsageMaxDiscount	50%		constant.
Base Rate   D. 41   USD/km   Base Rate   D. 41   USD/km   SpecialRateFactor   2.20   Rate factor for water crossings or high-speed links. Global constant.	14	PassengerTravel	11,398,220,628	km	mode share for first 3 years. Based on actual passenger trips. Audited.
Comparison   Com	15	ModeShare	30%		PassengerTravel / (Population x AllTravel)
Base rate for high-speed travel or water crossings: Baserate *SpecialRateFactor  DistanceDiscount 40%  MaxDistanceDiscount 500 km  DistanceDiscount 40%  DistanceDiscount 40%  DistanceDiscount 500 km  Max distance discount. Global constant.  Max distance discount at max distance. Global constant.  Discount mount per km:  BaseRate x DistanceDiscount 4 MaxDistanceDiscount  Senior discount set according to local regulations  Student discount set according to local regulations  Disability discount set according to local regulations	16		0.41	USD/km	(1 - UsageMaxDiscount x min(1,ModeShare)) x AdjustedRate
BaseRate * SpecialRateFactor   DistanceDiscount   40%   Distance discount at max distance. Global constant.	17	SpecialRateFactor	2.20		9 9 .
MaxDistanceDiscount		·		USD/km	BaseRate * SpecialRateFactor
DistanceDiscountPerKm Disablishoriscount SeniorDiscount DisablilityDiscount Set according to local regulations Disablility Discount Set according to local regulations Discount for a shared Docal regulations Disablility Discount Maximum yearly change is oce percentage point.  Rate for a Sanerd Dod. BaseRate x (1 - SanerdDodDiscount) Discount for shared Dod. BaseRate x (1 - SanerdDod Discount) Discount for shared Dod. BaseRate x (1 - SanerdDod Discount Prematical Premat					
SeniorDiscount   20%   Senior discount set according to local regulations	20	MaxDistanceDiscount	500	km	
Student discount set according to local regulations Disability Discount Disability Discount Disability Discount Disability Discount Discount Set according to local regulations Disability discount set according to local regulations Discount for a shared pod. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  SharedCompartmentDiscount Discount for a shared pod. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  Rate for a shared pod. BaseRate x (1 - SharedPodDiscount) Discount for shared compartment. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  Biscount for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Biscount for shared compartment. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  Biscount for a shared pod. BaseRate x (1 - SharedPodDiscount) Discount for shared compartment. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  BaseRate x (1 - Shared Compartment BaseRate x (1 - Shared Compartment BaseRate x (1 - SharedCompartmentDiscount) BaseRate x (1 - SeniorDiscountAmount) x (1 - SharedCompartment. BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (1 - SeniorDiscountAmount) x (1 - MaxDistanceDiscount)  BaseRate x (			0.000326	USD/km	·
Disability Discount Disability Discount Disability Discount set according to local regulations DiscountBaseRate					<u> </u>
DiscountBaseRate   D.33   USD/km   Discounted base rate: BaseRate x (1 - SeniorDiscount)	23				<del>-</del>
Discount for a shared pod. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  Rate for a shared pod: BaseRate x (1 - SharedPodDiscount) Discount for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for a shared pod: BaseRate x (1 - SharedPodDiscount) Discount for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for shared compartment. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  Rate for a shared compartment. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  Rate for a shared compartment. Set by Transit X per year. 15% minimum and 30% maximum. Maximum yearly change is one percentage point.  Rate for a shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for a shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for a shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for a shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for a shared compartment. Set by Transit X per year. 25% minimum and 40% maximum yearly change is one percentage point.  Rate for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum yearly change is one percentage point.  Rate for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum yearly change is one percentage point.  Rate for shared compartment. Set by Transit X per year. 25% minimum and 40%					
maximum. Maximum yearly change is one percentage point.  SharedPodRate 0.33 USD/km Rate for a shared pod: BaseRate x (1 - SharedPodDiscount)  SharedCompartmentDiscount 40% Discount for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for a SharedCompartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  Rate for a Senior decompartment and baseRate x (1 - SharedCompartment)  Senior + SharedCompartmentDiscount)  Senior + SharedCompartmentDis	24	DiscountBaseRate	0.33	USD/km	Discounted base rate: BaseRate x (1 - SeniorDiscount)
Discount for shared compartment. Set by Transit X per year. 25% minimum and 40% maximum. Maximum yearly change is one percentage point.  SharedCompartmentRate  USD/km  Senior + SharedCompartmentRate  O.12 USD/km  Senior + SharedCompartmentRate  O.12 USD/km  Senior + SharedCompartmentRate  O.12 USD/km  Senior + SharedCompartmentBate  O.12 USD/km  Senior + SharedCompartmentBate  O.12 USD/km  Senior + SharedCompartmentBate  O.12 USD/km  Senior + SharedCompartmentDiscount Amount) x (1 - SharedCompartmentDiscount) x (1 - MaxDistanceDiscount)  SoPottncomeAtDest  S	25	SharedPodDiscount	20%		
28 SharedCompartmentRate 29 SingleOccupancyMaxDistance 30 Senior + SharedCompartmentRate 31 SoPctIncomeAtDest 32 DistanceBase 33 PercentBase 34 BaseRevenue 35 AverageDiscount 36 MarketFravelCan 37 MarketTravelCan 38 MarketTravelCan 39 MarketTravelCan 30 MarketTravelCan 31 MarketTravelCan 32 DistanceBase 33 AverageDiscount 34 MarketTravelCan 35 MarketTravelCan 36 MarketTravelCan 37 MarketTravelCan 38 MarketTravelCan 39 MarketTravelCan 30 MarketTravelCan 30 MarketTravelCan 30 MarketTravelCan 31 MarketTravelCan 32 DistanceBase 33 AverageDiscount 34 MarketTravelCan 35 MarketTravelCan 36 MarketTravelCan 37 MarketTravelCan 38 MarketTravelCan 39 MarketTravelCan 30 MarketTravelCan 30 MarketTravelCan 30 Market TravelCan 31 MarketTravelCan 32 MarketTravelCan 33 MarketTravelCan 34 MarketTravelCan 35 MarketTravelCan 36 MarketTravelCan 37 Cap on passenger travel distance at market rate:  AverageDiscount x MarketTravelCan 39 MarketTravelCan 30 Market TravelCan 30 Market TravelCan 31 MarketTravelCan 32 MarketTravelCan 33 MarketTravelCan 34 MarketTravelCan 35 MarketTravelCan 36 Market TravelCan 37 Market TravelCan 38 MarketTravelCan 39 MarketTravelCan 30 Market TravelCan 30 Market TravelCan 30 Market TravelCan 31 MarketTravelCan 32 MarketTravelCan 33 MarketTravelCan 34 MarketTravelCan 35 MarketTravelCan 36 MarketTravelCan 37 MarketTravelCan 38 MarketTravelCan 39 MarketTravelCan 30 MarketTravelCan 30 MarketTravelCan 31 MarketTravelCan 31 MarketTravelCan 32 MarketTravelCan 33 MarketTravelCan 34 MarketTravelCan 35 MarketTravelCan 36 MarketTravelCan 37 MarketTravelCan 38 MarketTravelCan 39 MarketTravelCan 30 MarketTravelCan 30 MarketTravelCan 30 MarketTravelCan 31 MarketTravelCan 31 MarketTravelCan 32 MarketTravelCan 33 MarketTravelCan 34 MarketTravelCan 35 MarketTravel	26	SharedPodRate	0.33	USD/km	Rate for a shared pod: BaseRate x (1 - SharedPodDiscount)
BaseRate x (1 - SharedCompartmentDiscount)  Senior + SharedCompartmentRate  O.12 USD/km Rate for 500 km in single-passenger pod.  Rate for a Senior taking a 500 km trip in a shared compartment.  BaseRate x (1 - SeniorDiscountAmount) x (1 - SharedCompartmentRate)  SharedCompartmentDiscount x (1 - MaxDistanceDiscount)  SoPetIncomeAtDest 25% SharedCompartmentDiscount x MarketFactor  SopetIncomeAtDest 25% Shared compartmentDiscount x MarketFactor  SopetIncomeAtDest 25% Sh	27	SharedCompartmentDiscount	40%		
SingleOccupancyMaxDistance  O.28 USD/km Rate for 500 km in single-passenger pod.  Rate for a Senior taking a 500 km trip in a shared compartment.  BaseRate x (1 - SeniorDiscountAmount) x (1 - SharedCompartmentDiscount)  SoPctIncomeAtDest 25% "Higher fare rate if Destination has 50% higher median income than First (IncomeDest / IncomeFirst - 1) / 2  DistanceBase 8,434,683,265 km Passenger distance under base fare. Audited value from operational data.  Percent of passenger distance under base fare: DistanceBase / PassengerTravel  Annual revenue from all travel under base rate. Audited value from operational data.  Average fare discount from Base Rate: 1 - (BaseRevenue / (DIstanceDase x BaseRate))  Market RateCap 18% Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:  Oap on passenger travel distance at market rate:	28	SharedCompartmentRate	0.24	USD/km	•
Rate for a Senior taking a 500 km trip in a shared compartment.  BaseRate x (1 - Senior DiscountAmount) x (1 - SharedCompartmentRate)  Senior + SharedCompartmentRate  D.12 USD/km  BaseRate x (1 - Senior DiscountAmount) x (1 - SharedCompartmentDiscount)  Higher fare rate if Destination has 50% higher median income than First (IncomeDest / IncomeFirst - 1) / 2  DistanceBase 8,434,683,265 km Passenger distance under base fare. Audited value from operational data.  PercentBase 74% Passenger distance under base fare: DistanceBase / PassengerTravel  Annual revenue from all travel under base rate. Audited value from operational data.  Average fare discount from Base Rate: 1 - (BaseRevenue / (DistanceDase x BaseRate))  MarketRateCap 18% Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:  Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:	29	SingleOccupancyMaxDistance	0.28	USD/km	
SoPctIncomeAtDest   25%   Wigher fare rate if Destination has 50% higher median income than First (IncomeDest / IncomeFirst - 1) / 2	30		0.12	USD/km	BaseRate x (1 - SeniorDiscountAmount) x (1 -
DistanceBase   8,434,683,265   km   Passenger distance under base fare. Audited value from operational data.   PercentBase   74%   Percent of passenger distance under base fare:	31	50PctIncomeAtDest	25%		% Higher fare rate if Destination has 50% higher median income than First
Percent of passenger distance under base fare: DistanceBase / PassengerTravel  Annual revenue from all travel under base rate. Audited value from operational data.  AverageDiscount 18% Average fare discount from Base Rate: 1 - (BaseRevenue / (DIstanceDase x BaseRate))  MarketFactor 1.0 Market rate factor. Negotiated value for setting ratio of AverageDiscount  AverageDiscount x MarketFactor  AverageDiscount x MarketFactor  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate: AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate: AverageDiscount x MarketFactor		DietancoRoss		km	,
Annual revenue from all travel under base rate. Audited value from operational data.  AverageDiscount 18% Average fare discount from Base Rate: 1 - (BaseRevenue / (DIstanceDase x BaseRate))  MarketFactor 1.0 Market rate factor. Negotiated value for setting ratio of AverageDiscount  Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:				KIII	Percent of passenger distance under base fare:
Average fare discount from Base Rate: 1 - (BaseRevenue / (DistanceDase x BaseRate))  MarketFactor 1.0 Market rate factor. Negotiated value for setting ratio of AverageDiscount  Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:	34	BaseRevenue	2,813,893,777	USD	Annual revenue from all travel under base rate. Audited value from operational
MarketFactor 1.0 Market rate factor. Negotiated value for setting ratio of AverageDiscount  Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:	35	AverageDiscount	18%		Average fare discount from Base Rate:
AverageDiscount x MarketFactor  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor  Cap on passenger travel distance at market rate:	36	MarketFactor	1.0		
Cap on passenger travel distance at market rate:					Cap on passenger travel distance at market rate:
	38	MarketTravelCap	1,522,192,934	km	Cap on passenger travel distance at market rate:

## **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\$1.63 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 \$356,722,942 per year

Benefits to society and

Extremely high environment

## **Financials**

(US\$ in millions)

	Year 1	Total Years 1-12
Gross Revenues	2,393	69,390
Taxes and fees	120	3,470
Debt service	\$148	\$1,481

## 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

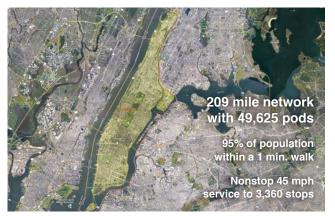




Transit X presents a preliminary proposal for privately-financed, solar-powered public transit network — a fleet of fully-autonomous, shared, electric, 4-passenger vehicles (pods) on a local and regional podway

## Manhattan, NYC, NY

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	Letter of intent	Yes
Outdoor test system	Dec, 2019	Yes
Rider-Revenue study	Preliminary	Yes
<b>Environmental study</b>	Per region	Yes
Air rights	Per project	Yes
Permitting	Per project	Yes
Safety certification	In process	Yes
Construction firm	Per project	Yes
Design and major subs	Per project	Yes
Operations & Maint	Yes	Yes
Utility relocation	Per project	Agreements

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



## **Model Inputs and Assumptions**

Route length (km) 336

Starting number of pods 16,376

Projected revenue growth 15%

Project Cost (Privately funded) \$1,633,839,897

% Debt financed 70%

Debt \$1,143,687,928

**Equity** \$490,151,969

Capital return per year \$98,030,394

**Debt payment (per year)** \$148,112,819

Travel per year per pod (km) 168,192

Revenue per vehicle-km (US\$) 0.87

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	2,392,617,352	2,751,509,955	3,164,236,448	3,638,871,916	4,184,702,703	4,812,408,108	5,534,269,325	6,364,409,723	7,319,071,182	8,416,931,859	9,679,471,638	11,131,392,384
5% RoW÷tax÷fe	ee	0%	119,630,868	137,575,498	158,211,822	181,943,596	209,235,135	240,620,405	276,713,466	318,220,486	365,953,559	420,846,593	483,973,582	556,569,619
Debt service		0	\$148,112,819	\$148,112,819	\$148,112,819	\$148,112,819	\$148,112,819	\$148,112,819	\$148,112,819	\$148,112,819	\$148,112,819	\$148,112,819	0	0
Investor balance	e		-\$166,037,282	\$192,741,285	\$591,383,315	\$1,035,868,327	\$1,533,072,767	\$2,090,904,551	\$2,640,033,465	\$3,269,342,041	\$3,990,857,227	\$4,818,410,016	\$5,782,717,330	\$6,887,259,373

#### **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.