



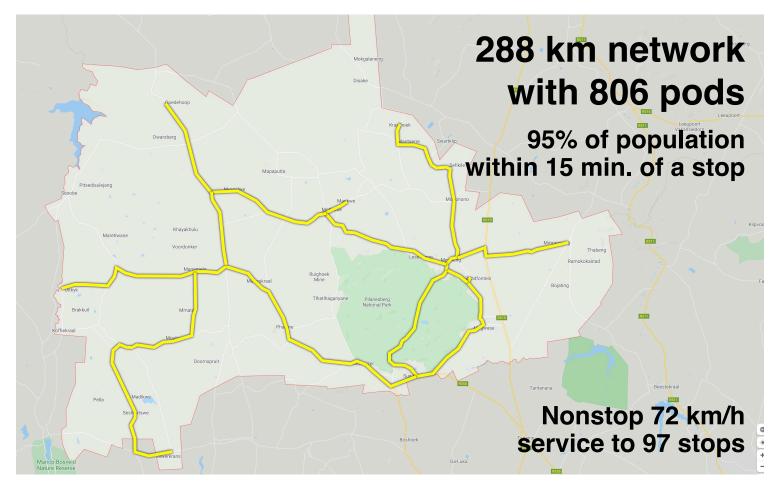
Transit X presents a preliminary proposal for a privately-financed public transit system — a fleet of automated electric vehicles (pods) for passengers and freight on a local and inter-city micro-guideway providing equitable transportation for

# Moses Kotane, South Africa

This proposal is downloadable at transitx.com/proposals/Transit X for Moses Kotane, South Africa.pdf

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

A companion Transit X Handbook is available at <a href="mailto:transitx.com/transitxhandbook.pdf">transitx.com/transitxhandbook.pdf</a>





Transit X proposes to finance, build and operate a sustainable microguideway to carry passengers and freight for Moses Kotane 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, accessibility, 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.

## **High Capacity & High Speed**

A single track carries 12,000 pods per hour (20,000 to 50,000 passengers per hour). Two landing areas fit in a single car space and provide 2,000 boardings per hour. For urban commutes, pods trips are 3 times faster than car trips and the high-speed podway provides faster door-to-door trips than air travel for distances of 1,000 miles or less.

## **Zero Footprint and Minimal Disruption**

Transit X features stops that don't interfere with pedestrians or other forms of transportation. We use space alongside highway and roads and integrate utility lines and poles. Non-stop interchanges fit above existing intersections. Factory-built infrastructure enables fast installation with minimal disruption. Multiple options for long crossings using bridges or underground tunnels. Posts are typically spaced at 23 m (25 yds). Multiple options for pods to traverse any grade or slope.

## Low-cost Infrastructure & equitable fares

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 typically financed by impact investors, private wealth funds, commercial banks, sovereign wealth funds, and governments.

## 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 project groundbreaking will be in 2020.

## **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, efficient and have zero 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. Parking lots and roadways can be converted into green space and community paths as they become unnecessary.

## Sustainable and Efficient

Pods weigh only 55 kg (121 lbs) and achieve over 20 times the efficiency of electric cars. Solar, wind, and storage installed on our tracks and posts can provide 100% of the clean energy needed to power the system.

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

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

## **De-risking Projects**

Transit X partners 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 work with local construction firms.

### Jobs and Workforce Development

Many regional jobs will be created to build a new transportation infrastructure, as well many new types of jobs will be created from economic growth. The majority of

the construction jobs will be locally sourced and preferential hiring is given to those displaced by the transition. We welcome labor unions.

### **Revenue Generator for Government**

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\$1 million per year average over the first 10 years.

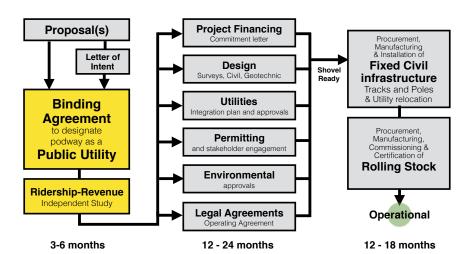
## **Short and Long Term Solution**

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 are re-invested in the community and region.

## **Moving Forward**

The diagram shows our process for a project. We submit a project proposal, then ask for a commitment for Transit X to build and operate a podway along rights-of-way easements. 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.

We hope you will conclude that moving forward with Transit X is an excellent opportunity to meet your current and future challenges.

We look to a commitment for Transit X to build and operate podways along public rights-of-way, similar to other public utilities.

### Other Resources

The links below provide general information about Transit X:

- One minute video overview (transitx.com/video)
- 7 minute video presentation (https://vimeo.com/36606646/eac953c0cc)
- Transit X Handbook (transitx.com/transitxhandbook.pdf)
- Company profile (transitx.com/about.pdf)
- Other proposals (<u>transitx.com/proposals</u>)
- The process and templates for agreements (transitx.com/process)

### 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 Moses Kotane through better transportation.

Sincerely,



Email: hello@transitx.com

Telephone: +1 508-596-7024 (WhatsApp connected)

Zoom e-room: https://zoom.us/j/8229009123

Website: transitx.com

Twitter: http://twitter.com/TransitXCorp

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







- 11	al ISIUA.			
1	Transit X network length	288.3	km	
2	People (resident-equivalent) in region	242,554	resident-equivalent pop	oulation
3	Route density ratio (route length to service area)	0.10		
4	Number of stops	97		
5	Triple-speed route length	0	km	
6	Water crossing route length	0	km	
7	Cost of fixed infrastructure	\$1,045,607,104		
8	per person	\$4,311		
9	Mode share of travel on Transit X (5% after first year)	14%	after 10 years	
10	Distance traveled by passengers on Transit X, per year	311,106,613	km	
11	per day	852,347	km	
12	Daily potential energy generation with standard panels on tracks	2,214.0	MWh	
13	Sustainable energy use per day	3.4	MWh	0.0% of max capacity
14	Energy storage capital cost for 1 day(s) of supply at \$250 per kWh	\$860,174		
15	Size (rated power) of solar installation	800	KW	
16	Cost to generate sustainable energy (at \$1,000 per kW)	\$799,907		
17	Cost of buying sustainable energy at \$0.15 per kWh	\$516	per day	0% of OPEX
18	Daily passengers riding Transit X	34,567	customers	14% of the pop.
19	Distance per passenger per day	25	km	
20	Average distance per trip (assuming 3 trips per day)	8	km	
21	Single passenger fare for shared 8 km trip	\$0.42	7.00	ZAR
22	Passenger distance traveled during peak hour	170,469	km	
23	Breakeven	236 359	customers per day (68 103% of people conve	4% of expected and
24	Boarding capacity		passengers per hour (	
	- · · · · · · · · · · · · · · · · · · ·			
25	Number of pods for peak demand		pods at 14% mod	
26	Number of customers per pod		and 301 people per	pod
27	Distance per pod per year	168,278		0.40/ -1
28	Two-layer pod garage area (1% of route with side-parking)	887		0.1% of car parking
29	Cost of pods		is \$17 per person	
30	Capital cost of energy generation and storage	\$2,158,107	is \$9 per person	
31 <b>P</b>	roject Finances			
32	Total Project Cost	\$1,053,004,211	16,848,067,373	ZAR
33	Project cost per km	\$3,652,659		
34	Equity financing	\$315,901,263	5,054,420,212	ZAR
35	Debt financing	\$737,102,948	11,793,647,161	ZAR
36				
37				
38		<b>#405.007.55</b>	0.001.000	740
39	Debt service (per year)	\$125,307,501 <b>\$1,860,818</b>	2,004,920,017	
40 41	Yearly fees and taxes (US\$8 per capita)	φ1,000,618	29,773,087	ZAH
42				
43				
44	Project costs — per person	\$4,341	69,461	ZAR
45	Number of motor vehicles displaced		motor vehicles	
46	Yearly cost of cars displaced — per person	\$1,154		ZAR
	Operating costs per passenger-km	\$0.17		
47	Full costs per passenger-km	\$0.58		
48	Breakeven revenue distance per day	5,828,019	km	
		, ,		





## Impact of proposed network

1	Reduction in GHG emissions (metric tons CO2-eq)	30,722 MTCO2-eq annually
2	Estimated cost to maintain public roadways	\$100,140,857 annually
3	Reduced waste products	4,985 metric tons annually
4	Travel time saved (non-stop travel and congestion)	437 hrs/person annually
5	Cost savings from reduced car ownership	\$4,819 per person annually
6	Increase in household income (from time savings and car costs)	59%
7	Reported injuries avoided	193 annually
8	Lives saved (from safety)	2 annually
9	Land freed from parking (177 acres)	715,545 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**

#### Ratio of road length to track length Walking speed 4.9 km/h 16 Width of convenient swath along track 9.80 km Fixed cost per km (track & posts) \$2,790,000 44,640,000 ZAR 18 Water crossing: additional cost per km \$8,370,000 19 Triple-speed: additional cost per km \$5,580,000 20 2.2 Rate factor for water crossings or high-speed links. 21 Average distance traveled per person per year 10,000 km 22 in a developed county for trips under 1600 km) . Average distance per day per person 27 km 23 Mode share % of people convenient to Transit X 85% at 5 min walk. 24 Percentage of daily demand during peak hour 20% 25 Maximum capacity per track 39,636 pph 26 Average dwell time during peak hour 10 seconds 27 18% % of pods traveling on route with highest demand 28 Average speed of pod 72 km/h 45 mph 29 3 per day Average # of trips for a daily customer 30 31 Average passengers per pod during peak hours 3.7 passengers Average passengers per pod 2.3 passengers 32 Average discount per passenger 26% Maximum passengers per pod 5 passengers Empty pods: Percentage non-revenue 25% 34 35 Ex-Factory cost per pod \$5,000 80,000 ZAR Worldwide Median Income per Household (US\$) 10,000 160,000 ZAR 36 2.3 Average number of residents per household ZAR 37 Base fare per km \$0.08 1.4 ZAR 38 (per mile) \$0.14 2.2 ZAR 39 O&M as % of project cost 5% Percentage debt financed 70% 41 Length of loan/debt 10 years 42 Interest rate for debt 7% 43 kg CO2 emissions per liter of gasoline 2.37 44 45 Monetary value of 1 hour personal time (USD) \$2.50 40 ZAR Est. roadway maintenance per year per km \$100,000 1,600,000 ZAR 46 Area of one parking lot space 23 m<sup>2</sup> 47 Commercial income of land (annual) \$0.20 per m<sup>2</sup> ZAR 48 2.97 km Distance from roadway that is convenient 49 Stops per km 0.3 Boarding capacity per stop 360 pph 51 Solar panel area per meter of track 20 Cost of sustainable energy and storage \$0.15 per kWh 53 3.8 kWh/m²/day Global Horizontal Irradiance (GHI) 54 55 Cost to generate sustainable energy \$1,000 per kW 40 kWh Storage per column 56 cols/km: 44 23 m Typical span Energy storage cost \$250 per kWh 58 1 days Energy storage capacity 59 60 Area of parked pod 2.20 m<sup>2</sup> Distance discount at max distance 40% 61 500 km Max distance discount Max usage discount at 10,000 km per capita 50% 63 Shared Pod Discount 20% 64 65 Shared Pod Compartment Discount 40% Mode share starting discount 67% 66

## **Model Inputs (continued)**

		· · · · · · · · · · · · · · · · · · ·
68	Name of region or project	Moses Kotane, South
69	Currency name	ZAR
70	Equal to US\$1	16
71	Sustainable energy/electricity generation & storage as	CAPEX
72	Land area of region (sq. km)	5,719
73	Number of residents in region	242,554
74	% travel within region	90%
75	% of land area served by roads	52%
76	Coverage: % of pop. convenient (60 min walk) to Transit X	95%
77	Annual median household income (US\$)	\$10,000
78	Convenient walk time to stop (min)	60
79	Triple-speed route length (km)	0
80	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 Adjustment	100%
88	Number of Stops Adjustment	100%
89	Mode Share Adjustment	100%

## Pod & Car

		Pod	Car
90	Service life (years)	20	12
91	Full cost of vehicle per year	\$200	\$9,000
92	Public cost to maintain infrastructure per year per km	\$0	\$100,000
93	Energy consumption (MPGe)	3564	24
94	Energy consumption (liters/100km)	0.07	9.8
95	Energy consumption (Watt-hours/km)	9	1375
96	mass of CO2 per vehicle per km (kg)	0	0.09875
97	Vehicle mass (kg)	45	1950
98	Average speed of urban travel (km/h)	72	16
99	Typical travel time (in minutes) for 8 km trip	7	31
100	Fare/cost per km	\$0.08	\$0.62
101	Number of deaths per 100M passenger-km	0.00001	1
102	Number of injuries per 100M passenger-km	0.0006	62
103	Volume to park (cubic meters)	5.7	70.9

## **Taxes and Fees**

## 5% of gross revenue is paid for air rights and local taxes.

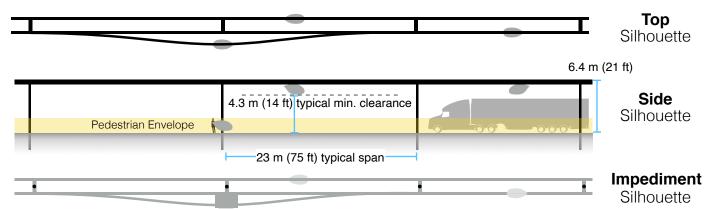
A minimum payment is based on the Footprint and the Transit X Commercial Rate (TXCR).

1	Air-rights and Local Taxes		(for calculating r	ninimums)	
2	Total commercial land (estimated)	297,388,000	m²	acres	
3	Total commercial gov't revenue (US\$)	\$59,477,600		951,641,600 ZAR	
4	TXCR (Transit X Commercial Rate)	\$0.20	per m <sup>2</sup> (estimated)	3.2 ZAR	
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.				
7	Private Easement Fees	For examp	ole		
8	4% of gross revenue	\$1.29	per route-meter		
		Φ0.00			
9	Minimum per year	\$0.30	per route-meter		
9	Transit X payment to Gover		per route-meter		
		rnment	per route-meter		
10	Transit X payment to Gover	rnment	estimated	29,296,718 ZAR	
10	Transit X payment to Government easements	rnment	estimated	29,296,718 ZAR 121 ZAR	
10 11 12	Transit X payment to Government easements  Total air-rights and local taxes	rnment 98% \$1,831,045	estimated per year		
10 11 12 13	Transit X payment to Government easements  **Total air-rights and local taxes**  per resident	98% \$1,831,045	estimated per year	121 ZAR	
10 11 12 13 14	Transit X payment to Government easements  **Total air-rights and local taxes**  per resident	rnment  98%  \$1,831,045  \$8  \$85,690	estimated  per year  per year	121 ZAR 1,371,041 ZAR	
10 11 12 13 14 15	Transit X payment to Government easements  **Total air-rights and local taxes**  per resident  with a minimum of	rnment  98%  \$1,831,045  \$8  \$85,690	estimated  per year  per year	121 ZAR 1,371,041 ZAR	
10 11 12 13 14 15	Transit X payment to Government easements  **Total air-rights and local taxes**  per resident with a minimum of  **Other financial benefits to 6**	rnment 98% \$1,831,045 \$8 \$85,690  Government	estimated  per year  per year	121 ZAR 1,371,041 ZAR	

20 Less investment needed in road-based infrastructure (charging stations, signals, BRT, etc)

## Footprint calculations for minimum fee

## Yearly fees and taxes



Pod landing area: 1.5m x 2.5m with 3m minimum spacing

1	Footprint Calculations	Metric		Imperial
2	Track width	0.30	m	
3	Track height	0.60	m	
4	Post diameter	0.3	m	
5	Post cross section	0.07	m <sup>2</sup>	
6	Stop landing area	<u>3.75</u>	m <sup>2</sup>	
7	width	<u>1.5</u>	m	
8	length	<u>2.5</u>	m	
9	Ramp length	21		
10	Typical Span	<u>23</u>		
11	Number of posts per unit length	<u>43.5</u>	poles per km	
12	Post height	<u>6</u>	m	
13				
14	Single track	1022.1	m <sup>2</sup>	
15	Area of Side Silhouette	678.3	m <sup>2</sup>	
16	Area of Top Silhouette	313.1	m <sup>2</sup>	
17	Impediment Area (adjusted)	30.7	m <sup>2</sup>	
18				
19	Dual track	1322.1	m <sup>2</sup>	
20	Area of Side Silhouette	678.3	m <sup>2</sup>	
21	Area of Top Silhouette	613.1		
22	Impediment Area (adjusted)	30.7	m <sup>2</sup>	
23	· , ,			
24	Stop	82.1	m <sup>2</sup>	
25	Area of Side Silhouette	25.2		
26	Area of Top Silhouette	19.4		
27	•	07.5	0	
27	Impediment Area (adjusted)	37.5	m²	
28				
29	Stops with dedicated landing areas	2	stops per km	
30	% of dual track	100%		
31				
32	Average area per unit length	1.486	m² per route-km	
33	Andrage area per anni longui	.,	m por route km	
34	Contract values			
35	% gross revenue for government on private prop.	1%		
36	% gross revenue for private easement	4%		
37	% gross revenue for private easement % gross revenue for government easement	5%		
38	Impediment Factor	10		
00	impediment ractor	10		



## **Fair Fare Formula**

## Summary

Faster travel saves a household 295 hours per year.\*

At 0.81 ZAR 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 ZAR	2 km	10 km	40 km
	Transit X	<b>1.62</b> to 2.70 2 min., 3.6x faster	<b>8.01</b> to 13.42 8 min., 3.6x faster	<b>30.73 to 52.37</b> 33 min., 3.4x faster
F	Public transit average	9.07	14.43	21.16
sepou	Taxi	<b>12.58</b> 2 to 6 minutes	<b>54.78</b> 8 to 30 minutes	<b>213.02</b> 30 to 120 minutes
Common public modes	Uber/Lyft	<b>9.58</b> 2 to 6 minutes	<b>39.44</b> 8 to 30 minutes	<b>151.43</b> 30 to 120 minutes
non p	Public Bus  7.30 3 to 12 minut		<b>7.30</b> 15 to 60 minutes	<b>11.20</b> 60 to 240 minutes
Comi	Train	<b>10.96</b> 2 to 12 minutes	<b>12.90</b> 8 to 60 minutes	<b>20.21</b> 30 to 240 minutes
F	Personal car	<b>9.78</b> 2 to 6 minutes	<b>29.42</b> 8 to 30 minutes	103.08 30 to 120 minutes

	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	7.30	1	3.65	0.5	100	3.25	5%	4%	1%
Uber/Lyft	30	20	80	5.84	1	2.92	0.5	100	1.62	10%	10%	2%
Public Bus	15	10	40	7.30	20	0.19	0.5	50	0	50%	50%	40%
Train	30	10	80	10.96	2	0.24	2	100	0	35%	36%	57%
Transit X	72	72	72	0	0	0.81	0.1	50	0	-	-	-
Personal car	30	20	80	4.87	0	2.43	0.1	400	0.04	-	-	-

<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

	Name	Value	Units	Description of the value or model input	In USD
1	GlobalIncome	160,000	ZAR	Global median household income. Updated annually based on most recent standard published data.	10,000
2	AllTravel	23,000	km	Travel distance per household per year on any mode for trips under 1600 km. A global constant	
3	PercentIncomeForTr ansport	20%		% of median household income for all transportation under 1600 km trips. A global constant.	
4	GlobalRate	1.39	ZAR/km	Global rate: GlobalIncome * PercentIncomeForTransport / AllTravel	0.09
5	IncomeFirst	\$160,000	ZAR	Median household income at first stop (per person per day). External input. Based on reliable public data source updated annually.	\$10,000
6	IncomeDest	\$240,000	ZAR	Median household income at destination per trip. External input. Based on reliable public data updated annually.	\$15,000
7	RegionalRate	1.39	ZAR/km	Regional rate based on median income:  MedianIncomeFirst * PercentIncomeForTransport / AllTravel	0.09
8	UnderIncomeRate	0.00	ZAR/km	Under global income adjustment: if (RegionalRate < GlobalRate, GlobalRate - RegionalRate, 0)	0.00
9	NominalRate	1.39	ZAR/km	Nominal rate: RegionalRate + UnderIncomeRate	0.09
10	RegionalFactor	1.00		Regional Fare Factor. Negotiated upfront to make network financially viable.	
11	AdjustedRate	1.39	ZAR/km	Regional adjusted rate: NominalRate * RegionalFactor	0.09
13	Population	242,554		Population in region. Updated annually based on trusted public data source.	
12	UsageMaxDiscount			Fare Discount when Transit X travel per household equals AllTravel. Global constant.	
14	PassengerTravel	311,106,613	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	6%		Percent of Total Travel Per Capita on Transit X:  PassengerTravel / (Population x AllTravel)	
16	BaseRate	1.35	ZAR/km	Base rate for single-passenger pod (without discounts) (1 - UsageMaxDiscount x min(1,ModeShare)) x AdjustedRate	0.08
17	SpecialRateFactor	2.20		Rate factor for water crossings or high-speed links. Global constant.	
18	SpecialBaseRate	2.98	ZAR/km	Base rate for high-speed travel or water crossings:  BaseRate * SpecialRateFactor	0.19
19	DistanceDiscount	40%		Distance discount at max distance. Global constant.	
20	MaxDistanceDiscou nt		km	Max distance discount. Global constant.	
21	DistanceDiscountPe rKm	0.001082	ZAR/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	1.08	ZAR/km	,	0.07
25	SharedPodDiscount	20 / 0		Discount for requesting a shared pod. 15% minimum and 30% maximum.	
26 27	SharedPodRate SharedCompartment	1.08	ZAR/km	Rate for a shared pod: BaseRate x (1 - SharedPodDiscount)  Discount for requesting a shared compartment. 25% minimum and 40% maximum. At least 10	0.07
<1	Discount	40%		percentage points higher than SharedPodDiscount.	:
28	SharedCompartment Rate	0.81	ZAR/km	Rate for shared compartment  BaseRate x (1 - SharedCompartmentDiscount)	0.05
29	SingleOccupancyMa xDistance	0.92	ZAR/km	Rate for 500 km in single-passenger pod.	
30	Senior + SharedCompartment Rate	0.39	ZAR/km	Rate for a Senior taking a 500 km trip in a shared compartment.  BaseRate x (1 - SeniorDiscountAmount) x (1 - SharedCompartmentDiscount) x (1 - MaxDistanceDiscount)	0.02
31	50PctIncomeAtDest	25%		% Higher fare rate if Destination has 50% higher median income than First (IncomeDest / IncomeFirst - 1) / 2	
32	DistanceBase	230,218,893	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	231,097,700	ZAR	Annual revenue from all travel under base rate. Audited value from operational data.	
35	AverageDiscount			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	26%		Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor	
38	MarketTravelCap	59,353,133	km	Cap on passenger travel distance at market rate:  DistanceBase x MarketRateCap	

## **Project Summary**

**Project** A fully-automated, solar-powered, micro-**Description** guideway network providing a sustainable

transportation utility.

**Project type Sustainable Transportation Infrastructure** 

Design, Build, Finance, Own, Operate, Maintain

(DBFOOM)

Project equity US\$316 million (30% of total)

Cost to Gov't \$0

Structure Privately financed equity and debt

Debt term 10 years @ 7%

Equity terms A waterfall profit distribution per year with:

1. 90% until capital payback,

2. then 50% until Target% is reached

3. then 10%

Taxes & Fees \$1,831,045 per year

Benefits to

society and Extremely high environment

Estimated return loss average IRR at 5 yrs

loss average IRR at 10 yrs

<b>Financials</b>		Total
(US\$ in millions)	Year 1	<b>Years 1-12</b>
Gross Revenues	12	356
Taxes and fees	1	18
Debt service	<b>\$52</b>	\$568

## ESG (Environmental, Social, Governance) Benefits

Clean Energy	yes	Improve Resiliency	yes
Energy security	yes	Sustainable	yes
Zero Emissions	yes	Equitable	yes
Zero GHG	yes	Recyclable Materials	yes
<b>Lowers Pollution</b>	yes	Affordable Housing	yes
Clean Water	yes	Improved Health	yes
Improved Safety	yes	<b>Economic Development</b>	yes
Add Green Space	yes	Access to Food	yes
Accessible	yes	Add Quality Jobs	yes

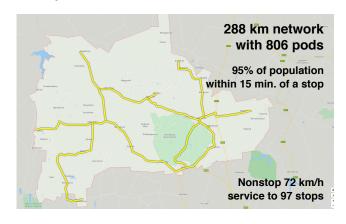




Transit X presents a preliminary proposal for a sustainable micro-guideway network
— a fleet of automated electric vehicles (pods) for passengers and freight on a
local and regional podway providing equitable public transportation for

## Moses Kotane, South Africa

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-guideway 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 2019. First pilots will break ground in 2020 and begin operations in 2021. Transit X is a privately held company founded in 2015, based in Boston, Massachusetts.

## Status

	Now	Prior to close
Project financing	Available	Yes
Test Track	2018	Yes
Rider-Revenue study	Internal model	Yes
<b>Environmental study</b>	Per region	Yes
Air rights	Per project	Yes
Permitting	Per project	Yes
Safety certification	Per country	Yes
Construction firm	Per project	Yes
Design and major subs	Per project	Yes
<b>Operations &amp; Maint</b>	Partners	Yes
<b>Utility relocation</b>	Per project	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, Transit X, <u>mike@transitx.com</u>, 508-596-7024



## **Model Inputs and Assumptions**

Route length (km, miles) 288

Starting number of pods 266

Projected revenue growth 15%

Project Cost (Privately funded) \$1,053,004,211

% Debt financed 70%

Debt \$737,102,948

**Equity** \$315,901,263

Debt payment (per year) \$51,597,206

178

Travel per year per pod (km) 168,278

Revenue per vehicle-km (US\$) 0.27

OPEX as % of project cost 5%

Debt Interest rate 7%

Debt term (yrs) 10

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	12,282,322	14,124,670	16,243,371	18,679,876	21,481,858	24,704,136	28,409,757	32,671,220	37,571,903	43,207,689	49,688,842	57,142,169
5% RoW÷tax÷fee	•	0%	614,116	706,234	812,169	933,994	1,074,093	1,235,207	1,420,488	1,633,561	1,878,595	2,160,384	2,484,442	2,857,108
Debt service		0	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206	\$51,597,206

Investor share	0	0	0	0	0	0	0	0	0	0	0	0	0
Investor share (%)													
Share / Orig Capital	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
IRR to date	loss												

### **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.

# Jobs Report\*

This would create 25,300 new jobs in manufacturing, construction, and operations. About 2,900 existing transportation jobs would be impacted — of which 100 workers would need significant retraining. Improving the transportation infrastructure will boost the economy overall and lead to 15,300 new jobs. Lowering the cost of transportation and reducing travel times raises household income by 59%.

1	Annual median household income (US\$)	\$10,000	
2	CAPEX		
3	Average gross CAPEX salary (% of median HH)	125%	
4	Average gross CAPEX salary	\$12,500	
5	% of CAPEX as salary	15%	
6	Years of CAPEX	2	
7	# of CAPEX jobs	6,320	
8	% of jobs that are manufacturing vs. construction	75%	
9	Manufacturing jobs	4,740	
10	Construction jobs	1,580	
11	Supply chain jobs factor	3	
12	Jobs in supply chain	18,960	
13	Average gross OPEX salary (% of median HH)	115%	
14	Average gross OPEX salary	\$11,500	
15	% of OPEX as salary	30%	
16	Operations and Maintenance jobs	1,370	
17	Secondary-effect jobs factor	7%	
18	Secondary effect jobs	15,280	
19	Job transitioning and training		
20	Expected mode share at 10 years (from page 6, line 9)	14%	
21	% of population with a full-time job	60%	145,532
22	jobs in transportation	10%	14,553
23	jobs impacted with this proposed network	20%	2,911
24	jobs requiring significant retraining	20%	582
25	Jobs needing retraining with this proposed network (over 10 years)	0.1%	80
26	Training cost per person as % of salary (from line 13)	100%	\$11,500
27	Number of years that training is divided across	10	
28	Ratio (as %) of training costs vs. gov't revenue from Transit X	5%	\$92,000

<sup>\*</sup> Numbers are approximations based on a universal model. A regional study could analyze data based on local conditions.