



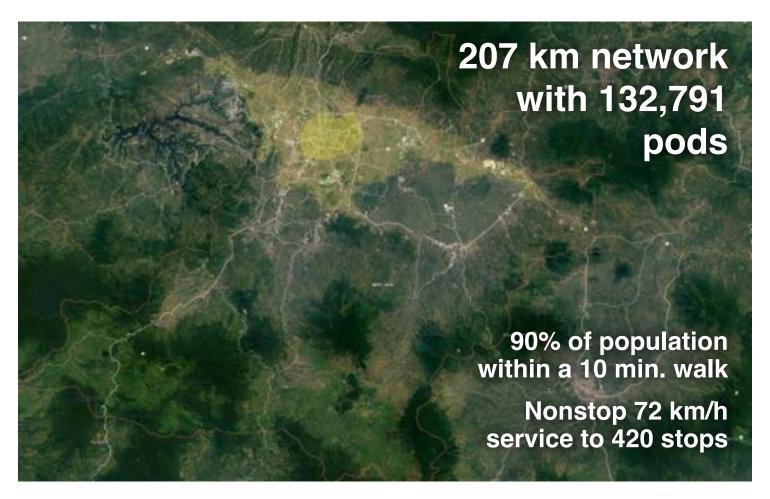
Transit X presents a preliminary proposal for privately-financed, solar-powered public transit micro-rail network — a fleet of fully-autonomous, shared, electric, vehicles (pods) for passengers and freight on a local and regional podway

# Bandung, Indonesia

This proposal is downloadable at <a href="mailto:transit.com/proposals/Transit.com/propo

# 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 Bandung, Indonesia that makes the Transit X service convenient to 90% 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\$181 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 Bandung through better transportation.

Sincerely,

Mike Stanley

CEO, Transit X

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

Email: mike@transitx.com

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

Website: transitx.com

LinkedIn: http://linkedin.com/in/mikestanleymit/

Skype: mikestanley49 WeChat: MikeTransitX

Facebook Messanger: m.me/MikeStanleyMIT Twitter: https://twitter.com/MikeTransitX

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



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1	Transit X network length	207	km	
2	People (resident-equivalent) in region	8,201,928	resident-equivalent p	opulation
3	Route density ratio (route length to service area)	0.55		
4	Number of stops	420		
5	Triple-speed route length	0	km	
6	Water crossing route length	0	km	
7	Cost of fixed infrastructure	\$750,256,053		
8	per person	\$91		
9	Mode share of travel on Transit X (23% after first year)	71%	after 10 years	
10	Distance traveled on Transit X, per year	55,145,012,905	km	
11	per day	151,082,227		
12	Daily potential energy generation with standard panels on tracks	1,589		
13	Sustainable energy use per day		MWh	36% of max capacity
14	Energy storage capital cost for 1 day(s) of supply at \$100 per kWh	\$56,657,517		
15	Size (rated power) of solar installation	131,720		
16	Cost to generate sustainable energy (at \$1,000 per kW)	\$131,719,706		000/ (000)
17	Cost of buying sustainable energy at \$0.15 per kWh	\$84,986		33% of OPEX
18	Daily passengers riding Transit X	5,804,738		71% of the pop.
19	Distance per passenger per day		km	
20	Average distance per trip (assuming 3 trips per day)		km	
21	Single passenger fare for shared 9 km trip	\$0.31	4.00	IDR
22	Passenger distance traveled during peak hour	30,216,445	km	100/ of poople convenient
23	Breakeven	913,095	to Transit X)	12% of people convenient
24	Boarding capacity	151,200	passengers per hour	(3% of customers)
25	Normale and a formation of the state of the			
20	Number of pods for peak demand	132,791	pods at 71% m	ode share
26	Number of pods for peak demand  Number of customers per pod		pods at 71% me and 62 people per	
			and 62 people per	
26	Number of customers per pod	43.7	and 62 people per km	
26 27	Number of customers per pod Distance per pod per year	43.7 168,192 146,070	and 62 people per km	pod
26 27 28	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side-parking)	43.7 168,192 146,070 \$863,141,500	and 62 people per km m <sup>2</sup>	pod
26 27 28 29 30	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods	43.7 168,192 146,070 \$863,141,500	and 62 people per km m <sup>2</sup> is \$81 per person	pod
26 27 28 29 30	Number of customers per pod  Distance per pod per year  Two-layer pod garage area (65% of route with side–parking)  Cost of pods  Capital cost of energy generation and storage	43.7 168,192 146,070 \$863,141,500 \$244,890,390	and 62 people per km m <sup>2</sup> is \$81 per person	pod 0.1% of car parking
26 27 28 29 30	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances	43.7 168,192 146,070 \$863,141,500 \$244,890,390	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197	pod 0.1% of car parking
26 27 28 29 30 31 <b>P</b> I	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed)	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km	pod 0.1% of car parking IDR
26 27 28 29 30 31 <b>P</b> I 32	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359	pod 0.1% of car parking IDR
26 27 28 29 30 31 <b>Pi</b> 32 33 34 35 36	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359	pod 0.1% of car parking IDR
26 27 28 29 30 31 <b>P1</b> 32 33 34 35 36 37	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359	pod 0.1% of car parking IDR
26 27 28 29 30 31 <b>PI</b> 33 34 35 36 37 38	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560	and 62 people per km m <sup>2</sup> is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838	pod 0.1% of car parking  IDR  IDR  IDR
26 27 28 29 30 31 <b>Pi</b> 32 33 34 35 36 37 38 39	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year)	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560 \$195,120,234	and 62 people per km m <sup>2</sup> is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838	pod  0.1% of car parking  IDR  IDR  IDR
26 27 28 29 30 31 <b>PI</b> 33 34 35 36 37 38	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560	and 62 people per km m <sup>2</sup> is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838	pod  0.1% of car parking  IDR  IDR  IDR
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26 27 28 29 30 31 <b>Pi</b> 32 33 34 35 36 37 38 39 40 41 42	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$28 per capita)  OPEX + Debt service + Tex + Fees  Project costs — per person	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560 \$195,120,234	and 62 people per km m <sup>2</sup> is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838	identification points and parking of car parking of
26 27 28 29 30 31 <b>PI</b> 32 33 34 35 36 37 38 39 40 41 42 43 44 45	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$28 per capita)  OPEX + Debt service + Tax + Fees  Project costs — per person Number of motor vehicles displaced	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560 \$195,120,234 \$227,203,125	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838 2,731,683,276 3,180,843,746 3,172 motor vehicles	ide pod  0.1% of car parking  IDR  IDR  IDR  IDR  IDR  IDR  IDR  ID
26 27 28 29 30 31 <b>P1</b> 32 33 34 35 36 37 38 39 40 41 42 43 44	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side–parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$28 per capita)  OPEX + Debt service + Tex + Fees  Project costs — per person	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560 \$195,120,234 \$227,203,125	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838 2,731,683,276 3,180,843,746	ide pod  0.1% of car parking  IDR  IDR  IDR  IDR  IDR  IDR  IDR  ID
26 27 28 29 30 31 <b>PI</b> 32 33 34 35 36 37 38 39 40 41 42 43 44 45	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side—parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$28 per capita)  Project costs — per person Number of motor vehicles displaced Yearly cost of cars displaced — per person Operating costs per passenger-km	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560 \$195,120,234 \$227,203,125 \$227 5,514,501 \$6,051 \$0.00	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838 2,731,683,276 3,180,843,746 3,172 motor vehicles	ide pod  0.1% of car parking  IDR  IDR  IDR  IDR  IDR  IDR  IDR  ID
26 27 28 29 30 31 <b>P1</b> 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side—parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$28 per capita)  OPEX + Debt service + Text + Fees  Project costs — per person Number of motor vehicles displaced Yearly cost of cars displaced — per person	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560 \$195,120,234 \$227,203,125 \$227 5,514,501 \$6,051 \$0.00 \$0.00	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838 2,731,683,276 3,180,843,746 3,172 motor vehicles 84,715	pod  0.1% of car parking  IDR  IDR  IDR  IDR  IDR  IDR  IDR
26 27 28 29 30 31 <b>PI</b> 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Number of customers per pod Distance per pod per year Two-layer pod garage area (65% of route with side—parking) Cost of pods Capital cost of energy generation and storage  roject Finances  Total Project Cost (privately financed) Project cost Equity Private debt financing  Debt service (per year) Yearly fees and taxes (US\$28 per capita)  Project costs — per person Number of motor vehicles displaced Yearly cost of cars displaced — per person Operating costs per passenger-km	43.7 168,192 146,070 \$863,141,500 \$244,890,390 \$1,858,287,943 \$8,983,613 \$557,486,383 \$1,300,801,560 \$195,120,234 \$227,203,125 \$227 5,514,501 \$6,051 \$0.00	and 62 people per km m² is \$81 per person is \$30 per person 26,016,031,197 per km 7,804,809,359 18,211,221,838 2,731,683,276 3,180,843,746 3,172 motor vehicles 84,715	pod  0.1% of car parking  IDR  IDR  IDR  IDR  IDR  IDR  IDR



## Impact of proposed network

Reduction in GHG emissions (metric tons CO2-eq)  Estimated cost to maintain public roadways  Reduced waste products  Reduced waste products  Travel time saved (non-stop travel and congestion)  Cost savings from reduced car ownership  Increase in household income (from time savings and car costs)  5,445,570 MTCO2-eq at 3,883,681,522 annually  883,681,522 annually  883,699 metric tons at 462 hrs/person at 5,326 per person at 3,326 per person at	innually nnually
Reduced waste products Reduced waste products  Travel time saved (non-stop travel and congestion) Cost savings from reduced car ownership  \$53,061,322 annually  883,699 metric tons a  462 hrs/person a  \$5,326 per person a	nnually
Travel time saved (non-stop travel and congestion)  Cost savings from reduced car ownership  462 hrs/person a  \$5,326 per person a	nnually
Cost savings from reduced car ownership \$5,326 per person a	•
Cost savings from reduced car ownership \$5,526 per person a	بالمبيمة
6 Increase in household income (from time savings and car costs) 367%	illually
7 <b>Reported injuries avoided</b> 34,190 annually	
8 <b>Lives saved</b> (from safety) 342 annually	
9 <b>Land freed from parking (31,340 acres)</b> 126,833,530 m <sup>2</sup>	
Temperature reduction (from heat island effect & GHG reductions) 0.5 to 2 °C	
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						
17	Width of convenient swath along track	1.63							
18	Fixed cost per km. Solar+storage not included.	\$2,790,000	39,060,000	IDR					
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						
23	Average distance per day per person	27	km						
24	Mode share % of people convenient to Transit X	85%	at 5 min walk.						
25	Percentage of daily demand during peak hour	20%							
26	Maximum capacity per track	42,665	haa						
27	Average dwell time during peak hour		seconds						
28	% of pods traveling on route with highest demand	18%							
29	Average speed of pod		km/h	45 mph					
30	Average # of trips for a daily customer		per day						
31	Average passengers per pod during peak hours		passengers						
32	Average passengers per pod		passengers						
	Average discount per passenger	27%	policionig						
33	Maximum passengers per pod		passengers						
34	Empty pods: Percentage non-revenue	25%	passongers						
35	Ex-Factory cost per pod	\$5,000	70,000	IDB					
36	Worldwide Median Income per Household (US\$)	10,000	140,000						
37	Average number of residents per household	2.3	,	IDR					
38	Base fare per km	\$0.06	0.8	IDR					
39	(per mile)	\$0.10		IDR					
40	O&M as % of project cost	5%							
41	Percentage debt financed	70%							
42	Length of loan/debt	10	years						
43	Interest rate for debt	5%	,						
44	kg CO2 emissions per liter of gasoline	2.37							
45	Monetary value of 1 hour personal time (USD)	\$0.38	5	IDR					
46	Eat. roadway maintenance per year per km	\$51,000	714,000	IDR					
47	Area of one parking lot space		m²						
48	Commercial income of land (annual)	\$0.03	per m <sup>2</sup>	IDR					
49	Distance from roadway that is convenient	0.49							
50	Stops per km	2.0							
51	Boarding capacity per stop	360	pph						
52	Solar panel area per meter of track	2.0	• •						
53	Cost of sustainable energy and storage	\$0.15	per kWh						
54	Global Horizontal Irradiance (GHI)		kWh/m²/day						
55	Cost to generate sustainable energy		per kW						
56	Storage per column		kWh						
57	Typical span	23	m cols/km:	44					
58	Energy storage cost	\$100	per kWh						
59	Energy storage capacity		days						
60	Area of parked pod	2.20	-						
61	Distance discount at max distance	40%							
62	Max distance discount	500	km						
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	Bandung, Indonesia
69	Currency name	IDR
70	Equal to US\$1	14.000
71	Sustainable energy/electricity generation & storage as	CAPEX
72	Land area of region (sq. km)	1,877
73	Number of residents in region	8,201,928
74	% travel within region	95%
75	% of land area served by roads	20%
76	Coverage: % of pop. convenient (10 min walk) to Transit X	90%
77	Annual median household income (US\$)	\$1,500
78	Convenient walk time to stop (min)	10
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	0.8
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 Efficiency in MPGe	3564	24
91	Energy Efficiency in liters/100km	0.07	9.8
92	Energy used (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 9 km trip	7	33
97	Fare/cost per km	\$0.06	\$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)	37,540,000 m <sup>2</sup>	acres
3	Total commercial gov't revenue (US\$)	\$1,126,200	15,766,800 IDR
4	TXCR (Transit X Commercial Rate)	\$0.03 per m <sup>2</sup>	0.4 IDR
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.		

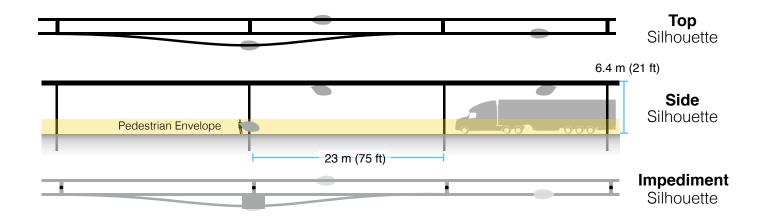
6

## Private Easement Fees

8	4% of gross revenue	\$219.68 pe	er route- eter	
9	Minimum per year	\$0.04 pe	er route- eter	
10	Government Fees a	nd Taxes		
11	% of route on government easements	98%		
12	5% on government easements	\$222,659,062	3,117,226,871 IDR	
13	1% on private easements	\$908,812		
14	Total gov't fees and taxes	<b>\$223,567,875</b> pe	er year 3,129,950,246 IDR	
16	per resident	\$27	382 IDR	
15	with a minimum of	<b>\$9,223</b> pe	er year 129,119 IDR	

## Footprint calculations for minimum fee

## Yearly fees and taxes



1	Footprint Calculations	Metric	Imperial
2	Track width	<u>0.30</u> m	
3	Track height	<u>0.60</u> m	
4	Post diameter	<u>0.3</u> m	
5	Post cross section	<u>0.07</u> m <sup>2</sup>	
6	Stop landing area	3.75 m <sup>2</sup>	
7	width	<u>1.5</u> m	
8	length	<u>2.5</u> m	
9	Ramp length	<u>21</u> m	
10	Typical Span	<u>23</u> m	
11	Number of posts per unit length	<u>43.5</u> po	les 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 m <sup>2</sup>	
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 m <sup>2</sup>	
26	Area of Top Silhouette	19.4 m <sup>2</sup>	
27	Impediment Area (adjusted)	37.5 m <sup>2</sup>	
28			
29	Stops with dedicated landing areas	2 sto	pps per km
30	% of dual track	100%	
31			
32	Average area per unit length	1,486 m <sup>2</sup>	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	
		-	



## **Fair Fare Formula**

## Summary

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

At 0.50 IDR per km, a typical commute on Transit X is 17% less than public transit and 74% less than a Taxi.\*

Trip I enath

									Irij	) LE	eng	uı	
All prices in IDR					2 k	m			1	0 ŀ	۲m		40 km
Transit X				1.00 to 1.66 2 min., 3.6x faster					<b>4.92 to 8.25</b> 8 min., 3.6x faster				<b>18.89</b> to 32.20 33 min., 3.4x faster
Public transit average			5.58				8.87				13.01		
sepou	Taxi			<b>7.73</b> 2 to 6 minutes				<b>33.68</b> 8 to 30 minutes			es	<b>130.97</b> 30 to 120 minutes	
Common public modes	Uber/Lyft			<b>5.89</b> 2 to 6 minutes				<b>24.25</b> 8 to 30 minutes			es	<b>93.10</b> 30 to 120 minutes	
d uom	Public Bus			<b>4.49</b> 3 to 12 minutes				<b>4.49</b> 15 to 60 minutes			tes	<b>6.89</b> 60 to 240 minutes	
Train			<b>6.74</b> 2 to 12 minutes				<b>7.93</b> 8 to 60 minutes			es	<b>12.42</b> 30 to 240 minutes		
Personal car			2 t	<b>5.9</b> to 6 m		es		<b>1</b> 8 to 3	<b>7.</b> 30 m			<b>62.99</b> 30 to 120 minutes	
Travel mode	·	Low Speed km/h	High speed km/h	Base	Includ	Over	Dist	Max Dist.	Time cost	6%	share 70%	-	* All numbers on mode shares, speeds, and cost are rough estimates
Taxi	30	20	80	4.49	es km	per-km 2.25	0.5		2.00	5%		1%	
Uber/Lyft	30	20	80	3.59	1	1.80	0.5	100	1.00	10%	10%	2%	
Public Bus	15	10	40	4.49	20	0.12	0.5	50	0	50%	50%	40%	

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.

0.01

0.15 2 100

0.50 0.1 50 1.50 0.1 400 35% 36% 57%

30

72

30

10

72

20

80

72

80

6.74

2.99

0

Train

Transit X

Personal car



## **Fair Fare Formula**

## Fare rates are updated annually using this formula

	Formula Name	Value	Units	Description of the value or model input
1	GlobalIncome	140,000	IDR	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 global constant.
4	GlobalRate	1.22	IDR/km	Global rate: GlobalIncome * PercentIncomeForTransport / AllTravel
5	IncomeFirst	\$21,000	IDR	Median household income at first stop (per person per day). External input. Based on reliable public data source updated annually.
6	IncomeDest	\$31,500	IDR	Median household income at destination per trip. External input. Based on reliable public data updated annually.
7	RegionalRate	0.18	IDR/km	Regional rate based on median income:  MedianIncomeFirst * PercentIncomeForTransport / AllTravel
8	UnderIncomeRate	1.03	IDR/km	Under global income adjustment: if (RegionalRate < GlobalRate, GlobalRate - RegionalRate, 0)
9	NominalRate	1.22	IDR/km	Nominal rate: RegionalRate + UnderIncomeRate
10	RegionalFactor	0.80	IDD///	Regional Fare Factor. Negotiated upfront to make network financially viable.
11	AdjustedRate Population	0.97	IDR/km	Regional adjusted rate: NominalRate * RegionalFactor
13	Population	8,201,928		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	55,145,012,905	km	Total passenger distance traveled previous calendar year. Based on expected mode share for first 3 years. Based on actual passenger trips. Audited. Percent of Total Travel Per Capita on Transit X:
15	ModeShare	29%		PassengerTravel / (Population x AllTravel)
16	BaseRate	0.83	IDR/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	1.83	IDR/km	Base rate for high-speed travel or water crossings:  BaseRate * SpecialRateFactor
19	DistanceDiscount  MaxDistanceDiscount	40%		Distance discount at max distance. Global constant.
20	MaxDistariceDiscourit	500	km	Max distance discount. Global constant.
21	DistanceDiscountPerKm	0.000665	IDR/km	Discount amount per km:  BaseRate x DistanceDiscount / MaxDistanceDiscount
22	SeniorDiscount StudentDiscount	20%		Senior discount set according to local regulations
23		20%		Student discount set according to local regulations
0.4	DisabilityDiscount	20%		Disability discount set according to local regulations
24	DiscountBaseRate	0.67	IDR/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	0.67	IDR/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	0.50	IDR/km	Rate for shared compartment  BaseRate x (1 - SharedCompartmentDiscount)
29	SingleOccupancyMaxDistance	0.57	IDR/km	Rate for 500 km in single-passenger pod.
30	Senior + SharedCompartmentRate	0.24	IDR/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	40,807,309,550	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	24,689,602,165	IDR	Annual revenue from all travel under base rate. Audited value from operational data.
35	AverageDiscount	27%		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	27%		Cap on passenger travel distance at market rate:  AverageDiscount x MarketFactor
38	MarketTravelCap	11,116,770,332	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\$1.86 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 \$223,567,875 per year

Benefits to

society and Extremely high environment

## **Financials**

(US\$ in millions)

	Year 1	Total Years 1-12
Gross Revenues	1,500	43,489
Taxes and fees	75	2,174
Debt service	\$168	\$1,685

## 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

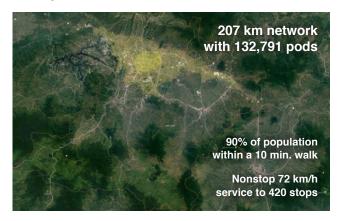




Transit X presents a preliminary proposal for privately-financed, solar-powered public transit network — a fleet of fully-autonomous, shared, electric, 4-passenger vehicles (pods) on a local and regional podway

## Bandung, Indonesia

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 <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, <u>mike@transitx.com</u>, 508-596-7024



## **Model Inputs and Assumptions**

Route length (km) 207

Starting number of pods 43,821

Projected revenue growth 15%

Project Cost (Privately funded) \$1,858,287,943

% Debt financed 70%

Debt \$1,300,801,560

Equity \$557,486,383

Capital return per year \$111,497,277

Debt payment (per year) \$168,459,753

Travel per year per pod (km) 168,192

Revenue per vehicle-km (US\$) 0.20

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	1,499,539,596	1,724,470,536	1,983,141,116	2,280,612,284	2,622,704,126	3,016,109,745	3,468,526,207	3,988,805,138	4,587,125,909	5,275,194,795	6,066,474,014	6,976,445,116
5% RoW+tax+fe	ee	0%	74,976,980	86,223,527	99,157,056	114,030,614	131,135,206	150,805,487	173,426,310	199,440,257	229,356,295	263,759,740	303,323,701	348,822,256
Debt service		0	\$168,459,753	\$168,459,753	\$168,459,753	\$168,459,753	\$168,459,753	\$168,459,753	\$168,459,753	\$168,459,753	\$168,459,753	\$168,459,753	0	0
Investor balance	ce		-\$311,022,834	-\$43,459,907	\$248,367,304	\$568,098,443	\$919,919,099	\$1,308,642,698	\$1,650,606,862	\$2,041,375,169	\$2,488,268,241	\$2,999,704,792	\$3,602,212,321	\$4,290,078,601

#### **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.