



Transit X presents a preliminary proposal for privately-financed public transportation using a fleet of fully-autonomous shared electric vehicles on a local and regional podway network for

# Santa Cruz County, CA

This proposal is downloadable at transitx.com/proposals/Transit X for Santa Cruz County,CA.pdf

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

A 26-page companion Transit X Handbook is available at transitx.com/transitxhandbook.pdf

# 249 mile network with 7,725 pods

95% of population within a 5 min. walk

# Nonstop 45 mph service to 1,620 stops

© 2018 Transit X, LLC. All rights reserved.



### Transit X proposes to build and operate a privately-financed pod network to carry passengers and freight for Santa Cruz County, CA that makes the Transit X service convenient to 95% of the population.

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

### **Major benefits**

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

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



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

### Congestion, parking, pollution, and safety

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

### No public funding

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

### Proven technology

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

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

### **Service Quality**

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

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

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

### Sustainable

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

### More Transit & Fewer Cars

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

### **De-risking Projects**

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

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

### Jobs and Workforce Development

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

### **Revenue Generator**

Not only does Transit X not require public financing, but the government and private easement owners receive 4-5% of gross revenue, which would be US\$38 million

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

### Short and Long Term Solution

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

### Moving Forward

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



### Evaluation

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

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

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

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

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

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

Once we agree to move forward, we need a memorandum of understanding (example at <u>transitx.com/process/mou.html</u>) 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 (transitx.com/video)
- Transit X Handbook (transitx.com/transitxhandbook.pdf)
- · Letters of Project Financing, Due Diligence, Contracts (transitx.com/letters.pdf)
- · Memorandum of Understanding template (transitx.com/process/mou.html)
- Example Resolution (transitx.com/process/resolution.html)
- 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 Santa Cruz County through better transportation.

Sincerely,

Mike Stanley CEO, Transit X

Telephone: +1 508-596-7024 (also via WhatsApp) Email: <u>mike@transitx.com</u> Zoom eRoom: <u>https://zoom.us/j/8229009123</u> Website: <u>transitx.com</u> LinkedIn: http://linkedin.com/in/mikestanleymit/ Skype: mikestanley49 WeChat: MikeTransitX Facebook Messanger: m.me/MikeStanleyMIT Twitter: <u>https://twitter.com/MikeTransitX</u> Mail: 1127 Commonwealth Ave #30, Boston, MA 02134 USA



# **Project Overview**



<ul> <li>Route density ratio (route length to service area)</li> <li>Number of stops</li> </ul>	401		
<ul> <li>Route density ratio (route length to service area)</li> <li>Number of stops</li> </ul>	401	km	249.3 miles
4 Number of stops	274,673	resident-equivalent	oopulation
•	1.16		
5 Triple an and we shall be write	1,620		
5 Triple-speed route length	0	km	
6 Water crossing route length	0	km	
7 Cost of fixed infrastructure	\$1,455,611,327		
8per person	\$5,299		
9 Mode share of travel on Transit X (27% after first year)	81%	after 10 years	
0 Distance traveled on Transit X, per year	1,774,387,580	km	1,102,104,087 mile
1per day	4,861,336	km	3,019,463 miles
2 Daily potential energy generation with standard panels on tracks	3,082	MWh	
3 Sustainable energy use per day		MWh	1% of max capacity
4 Energy storage capital cost for 1 day(s) of supply at \$100 per kWh	\$3,296,100		
5 Size (rated power) of solar installation	7,663	KW	
6 Cost to generate sustainable energy (at \$1,000 per kW)	\$7,662,908		
7 Cost of buying sustainable energy at \$0.15 per kWh		per day	2% of OPEX
8 Daily passengers riding Transit X		customers	81% of the pop.
9 Distance per passenger per day		km	13.6 miles
0 Average distance per trip (assuming 3 trips per day)		km	4.5 miles
1 Single passenger fare for shared 7 km trip	\$1.80		
2 Passenger distance traveled during peak hour	•	km	603,893 miles
<sup>3</sup> Breakeven		customers per day	
	00,970	(34% of people conv	
	7 705		
5 Number of pods for peak demand		pods at 81% m	ode share
5 Number of pods for peak demand 6 Number of customers per pod	28.7	and 36 people pe	ode share
5 Number of pods for peak demand 6 Number of customers per pod 7 Distance per pod per year	28.7 168,197	and 36 people pe km	ode share
Number of pods for peak demandNumber of customers per podNumber of customers per podDistance per pod per yearTwo-layer pod garage area (3% of route with side-parking)	28.7 168,197 8,498	and 36 people pe km m <sup>2</sup>	ode share r pod 0.2% of car parking
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side-parking)         Cost of pods	28.7 168,197 8,498 \$50,212,500	and 36 people per km m <sup>2</sup> is \$141 per perso	ode share r pod 0.2% of car parking
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods	28.7 168,197 8,498 \$50,212,500	and 36 people pe km m <sup>2</sup>	ode share r pod 0.2% of car parking
S       Number of pods for peak demand         6       Number of customers per pod         7       Distance per pod per year         8       Two-layer pod garage area (3% of route with side-parking)         9       Cost of pods         0       Capital cost of energy generation and storage	28.7 168,197 8,498 \$50,212,500	and 36 people per km m <sup>2</sup> is \$141 per perso	ode share r pod 0.2% of car parking
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side-parking)         Cost of pods         Cost of pods         Cost of pods         Project Finances	28.7 168,197 8,498 \$50,212,500 \$14,246,711	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person	ode share r pod 0.2% of car parking
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side-parking)         Cost of pods         Cost of pods         Capital cost of energy generation and storage         Project Finances         Cost of project Cost (privately financed)	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side-parking)         Cost of pods         Cost of pods         Cost of pods         Cost of pods         Project Finances         Total Project Cost (privately financed)         Project cost	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person	ode share r pod 0.2% of car parking
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Capital cost of energy generation and storage         Project Finances         Cost of project cost         Project state         Equity	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demandNumber of customers per podNumber of customers per podDistance per pod per yearTwo-layer pod garage area (3% of route with side-parking)Cost of podsCapital cost of energy generation and storageProject FinancesCost of podsCost of podsProject FinancesProject costProject costProject costProject costProject costProject costProject costPrivate debt financing	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person	ode share r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Cost of pods         Cost of pods         Cost of pods         Project Finances         Cost of project cost         Project Finances         Project cost         Project cost         Project cost         Project cost         Project cost         Private debt financing         Other	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Cost of pods         Capital cost of energy generation and storage         Project Finances         Cost of poist cost         Project Finances         Project Ost         Project Ost         Project cost         Project cost         Project Ost         Project Cost         Project Ost         Project Ost         Project Ost         Project Ost         Project Ost         Private debt financing         Ost         Private debt financing	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Cost of pods         Cost of pods         Cost of pods         Project Finances         Cost of pods         Project Finances         Project Ost (privately financed)         Project cost         Equity         Debt service (per year)	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Cost of pods         Cost of pods         Project Finances         Total Project Cost (privately financed)         Project sot         Equity         Private debt financing         Debt service (per year)         Yearly fees and taxes (US\$207 per capita)	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Capital cost of energy generation and storage         Project Finances         Cost of pods         Project Finances         Project Service (privately financed)         Project cost         Project cost         Debt service (per year)         Pearly fees and taxes (US\$207 per capital)	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km	ode share r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Capital cost of energy generation and storage         Project Finances         Cost of pods         Project Finances         Project Cost (privately financed)         Project cost         Equity         Debt service (per year)         Pearly fees and taxes (US\$207 per capital)         OPEX + Debt service (per year)	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Capital cost of energy generation and storage         Project Finances         Cost of pods         Project Finances         Project Cost (privately financed)         Project cost         Equity         Debt service (per year)         Pearly fees and taxes (US\$207 per capital)         OPEX + Debt service (Tox + Pees)         South Service (South Fees)	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406 <b>\$56,992,524</b>	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km	ode share r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Cost of pods         Cost of pods         Project Finances         Total Project Cost (privately financed)         Project cost         Equity         Project Ges and taxes (US\$207 per capita)         Project costs – per person	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406 <b>\$56,992,524</b> \$292,603,458 \$5,534	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Project Cost (privately financed)         Project cost (privately financed)         Project cost (private debt financing         Debt service (per year)         Polet service (per year)         Project costs – per person         Project costs – per person         Number	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406 <b>\$56,992,524</b> \$5,534 177,439	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Project Cost (privately financed)         Project cost (privately financed)         Project cost (private debt financing         Pobl service (per year)         Pobl service (per year)         Poper es and taxes (US\$207 per capita)         Project costs – per person         Project costs – per person         Number of motor vehicles dis	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406 \$56,992,524 \$55,534 177,439 \$5,814	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km per km	<b>ode share</b> r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Cost of pods         Cost of pods         Cost of pods         Project Finances         Total Project Cost (privately financed)         Project Sinances         Project Sinances         Debt service (per year)         Debt service (per year)         Project costs – per person         Project costs – per person         Project cost of pods         Project costs – per person         Number of costs per passenger-km	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406 \$56,992,524 \$55,534 177,439 \$5,814 \$0.04	and 36 people per km m <sup>2</sup> is \$141 per person is \$52 per person per km motor vehicles	ode share r pod 0.2% of car parking n
Number of pods for peak demand         Number of customers per pod         Distance per pod per year         Two-layer pod garage area (3% of route with side–parking)         Cost of pods         Cost of pods         Cost of pods         Cost of pods         Project Finances         Total Project Cost (privately financed)         Project Sinances         Project Finances         Project Sinances	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406 <b>\$56,992,524</b> \$55,534 177,439 \$5,814 \$0.04	and 36 people per km m <sup>2</sup> is \$141 per perso is \$52 per person per km per km	ode share r pod 0.2% of car parking n US\$6.1M per mi.
Number of customers per pod         Project Finances         Project Finances         Project Sinance per pod per year         Project Sinance per pod per year         Project Sinance per pod per year         Project Sinances         Project Cost         Project Cost         Project Sinances         Project Sinances         Project Sinances         Project Cost         Project Costs – per person         Number of motor vehicles displaced         Project costs – per person         Number of motor vehicles displaced         Project costs per passenger-km	28.7 168,197 8,498 \$50,212,500 \$14,246,711 \$1,520,070,537 \$3,787,615 \$456,021,161 \$1,064,049,376 \$159,607,406 \$56,992,524 \$55,534 177,439 \$5,814 \$0.04	and 36 people per km m <sup>2</sup> is \$141 per person is \$52 per person per km motor vehicles km	ode share r pod 0.2% of car parking n

## Project Overview p. 2

175,221 MTCO2-eq annually

28,435 metric tons annually 389 hrs/person annually \$1,671 per person annually

\$71,098,163 annually

13%

4,081,091 m<sup>2</sup> 0.5 to 2 °C High

1,100 annually 11 annually



### Impact of proposed network

1	Reduction in GHG emissions (metric tons CO2-eq)
2	Estimated cost to maintain public roadways
3	Reduced waste products
4	Travel time saved (non-stop travel and congestion)
5	Cost savings from reduced car ownership
6	Increase in household income (from time savings and car costs)
7	Reported injuries avoided
8	Lives saved (from safety)
9	Land freed from parking (1,008 acres)
12	Temperature reduction (from heat island effect & GHG reductions)
11	Health care savings (from pollution, injuries)

### **Model Inputs**

15	Ratio of road length to track length	
16	Width of conversions work along the	
17	Width of convenient swath along track Fixed cost per km. Solar+storage not included.	¢0.700
18	Water crossing: additional cost per km	\$2,790 \$8,370
19	Triple-speed: additional cost per km	\$5,580
20 21	Rate factor for water crossings or high-speed links.	φ0,000
21	Average distance traveled per person per year	
22	(for trips under 1600 km)	1(
23	Average distance per day per person	
24	Mode share % of people convenient to Transit X	
25	Percentage of daily demand during peak hour	
26	Maximum capacity per track	23
27	Average dwell time during peak hour	
28	% of pods traveling on route with highest demand	
29	Average speed of pod	
30	Average # of trips for a daily customer	
31	Average passengers per pod during peak hours	
32	Average passengers per pod	
	Average discount per passenger	
33	Maximum passengers per pod	
34	Empty pods: Percentage non-revenue	<b>.</b>
35	Ex-Factory cost per pod	\$5
36	Worldwide Median Income per Household (US\$)	1(
37	Average number of residents per household	
38	Base fare per km (per mile)	
39 40	O&M as % of project cost	
40	Percentage debt financed	
41	Length of loan/debt	
43	Interest rate for debt	
44	kg CO2 emissions per liter of gasoline	
45	Monetary value of 1 hour personal time (USD)	\$
46	Eat. roadway maintenance per year per km	\$5
47	Area of one parking lot space	
48	Commercial income of land (annual)	5
49	Distance from roadway that is convenient	
50	Stops per km	
51	Solar panel area per meter of track	
52	Cost of sustainable energy and storage	5
53	Global Horizontal Irradiance (GHI)	
54	Cost to generate sustainable energy	\$
55	Storage per column	
56	Typical span	
57	Energy storage cost	
58	Energy storage capacity	
59	Area of parked pod	
60	Distance discount at max distance	
61	Max distance discount	
62	Max usage discount at 10,000 km per capita Shared Pod Discount	
63	Shared Pod Discount Shared Pod Compartment Discount	
64	Mode share starting discount	
65	would share starting discount	

4		
	km/h	3 mph
0.82	km	1 miles
90,000		
70,000		
80,000		
2.2		
10,000	km	6,211 miles
27	km	
85%	at 5 min walk.	
20%		
23,598	pph	
10	seconds	
18%		
72	km/h	45 mph
3	per day	· F
2.2	passengers	
1.4	passengers	
18%	passengers	
5	passengers	
	passengers	
25%		
\$5,000		
10,000		
2.3		
\$0.41		
\$0.66		
5%		
70%		
10	years	
5%		
2.37		
\$13.75		
51,000		
23	m <sup>2</sup>	247 sf
\$1.10	per m <sup>2</sup>	
	km	
4.0		
2.0		
	per kWh	
3.8	kWh/m²/day	
\$1,000	per kW	
40 40	kWh	
23	m cols/km:	44
	per kWh	
	days	
1		
2.20	m <sup>2</sup>	
40%	lum	
500	KIN	
50%		
20%		
40%		
67%		

### Model Inputs (continued)

67	Name of region or project	Santa Cruz County, C
68	Currency name	
69	Equal to US\$1	1
70	Sustainable energy/electricity generation & storage as	CAPEX
71	Land area of region (sq. km)	1,150
72	Number of residents in region	274,673
73	% travel within region	80%
74	% of land area served by roads	30%
75	Coverage: % of pop. convenient (5 min walk) to Transit X	95%
76	Annual median household income (US\$)	\$55,000
77	Convenient walk time to stop (min)	5
78	Triple-speed route length (km)	0
79	Water crossing route length (km)	0.0
80	Visitors per year	0
81	Average length of visit (days)	2
82	Solar production ratio	1.57
83	Regional Fare Factor	1.0
84	EPC costs & contingency	30%
85	Triple-speed (km/h)	242

### Pod & Car

		Pod	Car
86	Service life (years)	20	12
87	Full cost of vehicle per year	\$200	\$9,000
88	Public cost to maintain infrastructure (per km)	\$0	\$100,000
89	Energy Efficiency in MPGe	3564	24
90	Energy Efficiency in liters/100km	0.07	9.8
91	Energy used (Watt-hours/km)	9	1375
92	mass of CO2 per vehicle per km (kg)	0	0.09875
93	Vehicle mass (kg)	45	1950
94	Average speed of urban travel (km/h)	72	16
95	Typical travel time (in minutes) for 7 km trip	6	27
96	Fare/cost per km	\$0.41	\$0.62
97	Number of deaths per 100M passenger-km	0.00001	1
98	Number of injuries per 100M passenger-km	0.0006	62
99	Volume to park (cubic meters)	5.7	70.9



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

1	Government Fees and Ta	ax rate	(for calculating minimums)	
2	Total commercial land (estimated)	34,500,000	m <sup>2</sup>	8,525 acres
3	Total commercial gov't revenue (US\$)	\$37,950,000		
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				
7	Private Easement Fees			
8	4% of gross revenue	\$28.40	per route- meter	\$8.66 per route-foot
9	Minimum per year	\$1.86	per route- meter	\$0.57 per route-foot
10	Government Fees a	and Taxes		
11	% of route on government easements	98%		
12	5% on government easements	\$55,852,674		
13	1% on private easements	\$227,970		
14	Total gov't fees and taxes	\$56,080,644	per year	
16	per resident	\$204		
15	with a minimum of	\$745,090	per year	

## Footprint calculations for minimum fee



1	Footprint Calculations	Metric	Imperial
2	Track width	<u>0.41</u> m	16.1 inches
3	Track height	<u>0.61</u> m	24.0 inches
4	Pole diameter	<u>0.3</u> m	11.8 inches
5	Pole cross section	<u>0.07</u> m <sup>2</sup>	0.8 sf
6	Stop landing area	2 m <sup>2</sup>	21.5 sf
7	width	<u>2</u> m	78.7 inches
8	length	<u>1</u> m	39.4 inches
9	Ramp length	<u>21</u> m	68.9 feet
10	Pole span	<u>23</u> m	75.5 feet
11	Number of poles per unit length	43.5 poles per km	n 70.0 poles per mile
12	Pole height	<u>6</u> m	19.7 feet
13			
14	Single track	1142.1 m <sup>2</sup>	12289 sf
15	Area of Side Silhouette	688.3 m <sup>2</sup>	7406 sf
16	Area of Top Silhouette	423.1 m <sup>2</sup>	4553 sf
17	Impediment Area (adjusted)	30.7 m <sup>2</sup>	331 sf
18	[·····		
19	Dual track	1552.1 m <sup>2</sup>	16701 sf
20	Area of Side Silhouette	688.3 m <sup>2</sup>	7406 sf
21	Area of Top Silhouette	833.1 m <sup>2</sup>	8964 sf
22	Impediment Area (adjusted)	30.7 m <sup>2</sup>	331 sf
23			
24	Stop	67.8 m <sup>2</sup>	730 sf
25	Area of Side Silhouette	25.6 m <sup>2</sup>	276 sf
26	Area of Top Silhouette	22.2 m <sup>2</sup>	239 sf
27	Impediment Area (adjusted)	20.0 m <sup>2</sup>	215 sf
28	impediment Area (adjusted)	20.0 11-	210 31
	Other a with the dealer at a diamatic a survey	0 stans manla	
29	Stops with dedicated landing areas % of dual track	2 stops per kn	a 3.2 stops per mile
30	% of dual track	100%	
31			
32	Average area per unit length	1,688 m <sup>2</sup> per route	-km 29,291 sf per route-mile
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	



Summary

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

At 0.40 USD per mile, a typical commute on Transit X is 17% less than public transit and 74% less than a Taxi.\*

			_	Trip Length									
All prie	ces in	USD	)		1 m	nile			6	m	ile	÷	25 mile
Transit X				<b>0.49</b> to 0.82 2 min., 3.6x faster				<b>2.43</b> to 4.08 8 min., 3.6x faster			ster	<b>9.34</b> to 15.92 33 min., 3.4x faster	
Public transit average				2.76				4.39				6.43	
Taxi				<b>3.82</b> 2 to 6 minutes				<b>16.65</b> 8 to 30 minutes			es	<b>64.75</b> 30 to 120 minutes	
	Jber/L	_yft		<b>2.91</b> 2 to 6 minutes				<b>11.99</b> 8 to 30 minutes			es	<b>46.03</b> 30 to 120 minutes	
Common public modes	ublic	Bus		3	<b>2.</b> to 12 i	<b>22</b> minute	es		15 to	<b>2.2</b>		tes	<b>3.40</b> 60 to 240 minutes
Com	Trai	n		<b>3.33</b> 2 to 12 minutes				<b>3.92</b> 8 to 60 minutes			es	<b>6.14</b> 30 to 240 minutes	
Personal car				21	<b>3.</b> to 6 r	<b>19</b> ninute	es		<b>1</b> 8 to 3	<b>0.</b> 30 n			<b>35.66</b> 30 to 120 minutes
	Avg. Speed	Low Speed	High speed				Min Dist	Max Dist.	Time cost		e shar 70%	-	* All numbers on mode shares, speeds, and cos
Travel mode	km/h	km/h	km/h	Base	Includ es km	Over per-km		km	per min	2	10	40	are rough estimates
Taxi	30	20	80	2.22	1	1.11	0.5	100	0.99	5%	4%	1%	
Uber/Lyft	30	20	80	1.78	1		0.5			10%			
Public Bus	15	10	40	2.22	20		0.5	50	0		50%		
Train	30	10	80	3.33	2	0.07		100	0	35%	36%	5/%	

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

0

0.23

0.25 0.1 50

0.74 0.1 400

72

30

72

20

72

80

0

1.48

0

0

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	10,000	USD	Global median household income. Updated annually based on most recent
1	Clobaliteonie	10,000	030	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	0.09	USD/km	Global rate: GlobalIncome * PercentIncomeForTransport / AllTravel
5	IncomeFirst	\$55,000	USD	Median household income at first stop (per person per day). External input. Based on reliable public data source updated annually.
6	IncomeDest	\$82,500	USD	Median household income at destination per trip. External input. Based on reliable public data updated annually.
7	RegionalRate	0.48	USD/km	Regional rate based on median income: MedianIncomeFirst * PercentIncomeForTransport / AllTravel
8	UnderIncomeRate	0.00	USD/km	Under global income adjustment: if (RegionalRate < GlobalRate, GlobalRate - RegionalRate, 0)
9	NominalRate	0.48	USD/km	Nominal rate: RegionalRate + UnderIncomeRate
10 11	RegionalFactor	1.00		Regional Fare Factor. Negotiated upfront to make network financially viable.
13	AdjustedRate Population	0.48	USD/km	Regional adjusted rate: NominalRate * RegionalFactor
		274,673		Population in region. Updated annually based on trusted public data source. Fare Discount when Transit X travel per household equals AllTravel. Global
12	UsageMaxDiscount	50%		constant. Total passenger distance traveled previous calendar year. Based on expected
14	PassengerTravel	1,774,387,580	km	mode share for first 3 years. Based on actual passenger trips. Audited.
15	ModeShare	28%		Percent of Total Travel Per Capita on Transit X: PassengerTravel / (Population x AllTravel)
16	BaseRate	0.41	USD/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	0.90	USD/km	Base rate for high-speed travel or water crossings: BaseRate * SpecialRateFactor
19	DistanceDiscount	40%		Distance discount at max distance. Global constant.
20	MaxDistanceDiscount	500	km	Max distance discount. Global constant.
21	DistanceDiscountPerKm	0.000329	USD/km	Discount amount per km: BaseRate x DistanceDiscount / MaxDistanceDiscount
22	SeniorDiscount	20%		Senior discount set according to local regulations
23	StudentDiscount	20%		Student discount set according to local regulations
	DisabilityDiscount	20%		Disability discount set according to local regulations
24	DiscountBaseRate	0.33	USD/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	0.33	USD/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	0.25	USD/km	Rate for shared compartment BaseRate x (1 - SharedCompartmentDiscount)
29	SingleOccupancyMaxDistance	0.28	USD/km	Rate for 500 km in single-passenger pod. Rate for a Senior taking a 500 km trip in a shared compartment.
30	Senior + SharedCompartmentRate	0.12	USD/km	BaseRate x (1 - SeniorDiscountAmount) x (1 - SharedCompartmentDiscount) x (1 - MaxDistanceDiscount)
31	50PctIncomeAtDest	25%	USD/km	% Higher fare rate if Destination has 50% higher median income than First (IncomeDest / IncomeFirst - 1) / 2
32	DistanceBase	1,313,046,809	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	442,374,056	USD	Annual revenue from all travel under base rate. Audited value from operational data.
35	AverageDiscount	18%		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	18%		Cap on passenger travel distance at market rate: AverageDiscount x MarketFactor
38	MarketTravelCap	236,963,323	km	Cap on passenger travel distance at market rate: DistanceBase x MarketRateCap

### **Project Summary**

Project Description	A fully-automated, solar-powered, ultra- light, micro railway				
Project type	<b>Privately-funded Public Transportation</b> Design, Build, Finance, Own, Operate, Maintain (DBFOOM)				
Project cost	US\$1.52 billion				
Cost to Gov't	\$0				
Structure	Privately financed equity and debt				
Debt term	10 years @ 5%				
Equity terms	<ul><li>A waterfall profit distribution with:</li><li>1. 90/10 split until Return of Capital,</li><li>2. then 50/50 until Target IRR met</li><li>3. then 10/90 onwards</li></ul>				
Taxes & Fees	\$56,080,644 per year				
Benefits to society and environment	Extremely high				

### **Financials**

(US\$ in millions)

	Year 1	Total Years 1-12
Gross Revenues	376	9,158
Taxes and fees	19	458
Debt service	\$138	\$1,378

### 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, LLC presents a preliminary proposal for a privately-funded fleet of fully-autonomous shared electric vehicles on local and regional podway network for

### Santa Cruz County, CA

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 transit infrastructure to supplant buses, trains, cars, and trucks. Transit X offers its service to governments and commercial developers. First pilots will begin in 2019. Transit X is a privately held company founded in 2015, based in Boston, Massachusetts, and intends to be certified as a public benefit company.

### Status

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

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

### 12-year Pro Forma



### **Model Inputs and Assumptions**

Route length (km)	401
Starting number of pods	2,549
Projected revenue growth	15%
Project Cost (Privately funded)	\$1,520,070,537
% Debt financed	70%
Debt	\$1,064,049,376
Equity	\$456,021,161
Capital return per year	\$91,204,232
Debt payment (per year)	\$137,799,262

- Travel per year per pod (km) 168,197
- Revenue per vehicle-km (US\$) 0.88
  - 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

Ye	nrs O	1	2	3	4	5	6	7	8	9	10	11	12
Revenue	0	376,113,772	432,530,837	497,410,463	572,022,032	657,825,337	756,499,138	869,974,009	1,000,470,110	1,150,540,626	1,323,121,720	1,521,589,978	1,749,828,475
5% RoW+tax+fee	0%	18,805,689	21,626,542	24,870,523	28,601,102	32,891,267	37,824,957	43,498,700	50,023,505	57,527,031	66,156,086	76,079,499	87,491,424
Debt service	0	\$137,799,262	\$137,799,262	\$137,799,262	\$137,799,262	\$137,799,262	\$137,799,262	\$137,799,262	\$137,799,262	\$137,799,262	\$137,799,262	0	0
Investor balance		-\$339,465,408	-\$218,408,000	-\$92,173,691	\$40,014,055	\$179,048,254	\$325,955,873	\$408,954,539	\$502,365,805	\$607,751,558	\$726,907,973	\$875,680,575	\$1,042,664,877

#### **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 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.