



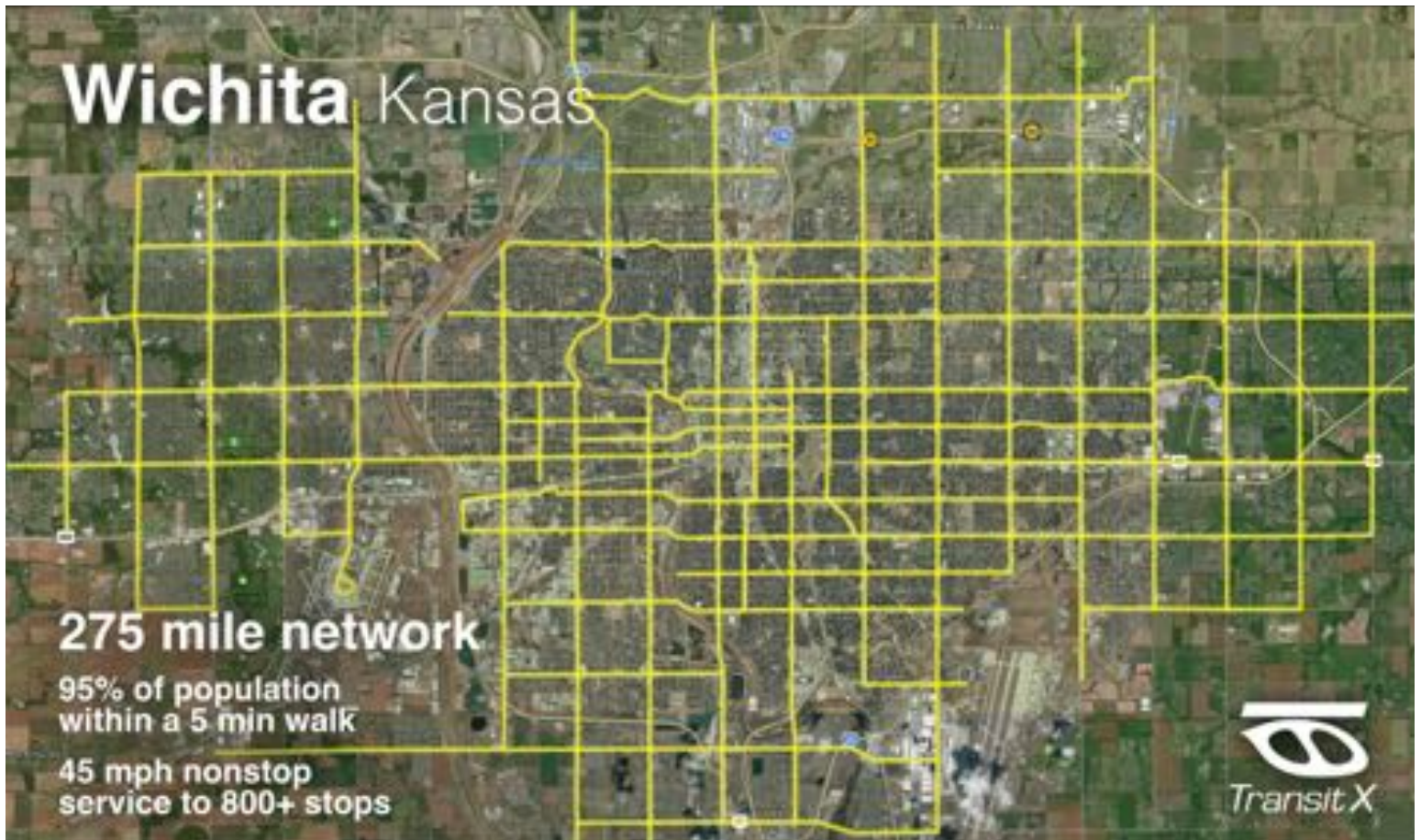
Transit X, LLC offers a preliminary proposal for

Wichita, Kansas

For a privately-funded shared mobility service that is

High capacity • Automated • Wait-free
Solar powered • Last mile • Resilient

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





Economics for Wichita, Kansas

Inputs are underlined.

	Size of region	<u>412</u> km ²	158.9 sq miles
	Number of people in region (residents + visitors)	<u>389,902</u>	
	Travel distance per year by all people (residents and visitors)	5,653,579,000 km	3,511,539,752 mi
	Percentage of all travel that occurs within the region	<u>90%</u>	
	Road coverage (percent of area conveniently served by paved roads)	<u>90%</u>	
	Service area size	370.8 km ²	143.1 sq miles
	Coverage: percent of people convenient (5 min walk) to Transit X	<u>95%</u>	
	Estimate #1 for network length based on desired coverage	431 km	267.9 miles
	Length of paved roads (non-highway) in region	<u>927</u> km	575.8 miles
	Estimate #2 for network length based on paved roadways	440 km	273.5 miles
	Transit X network length	440 km	273.5 miles
	Route density ratio (route length to service area)	1.19	
	Total fixed costs for Transit X	\$1,023,755,625	
	...per person	\$2,626	
	Mode share of travel on Transit X	81%	
	Distance traveled on Transit X, per year	4,108,738,538 km	2,552,011,514 mi
	...per day	11,256,818 km	6,991,812 mi
	Daily number of people riding Transit X	314,846 customers	
	Distance per Transit X customer per day	36 km	22.2 mi
	Average trip distance	12 km	7.4 miles
	Cost for an average trip (at \$0.28 per km)	\$3.35	
	Distance traveled during peak hour	1,125,682 km	699,181 mi
	Breakeven (customers per day)	49,350 customers	
	Number of pods needed to meet peak demand	9,772 pods	
	Pod shed parking volume [in cubic 40' shipping containers (sc)]	8 sc ³	
	Cost of pods	\$48,860,000	
	Cost of pods per person	\$125	
	Yearly payment from Transit X to municipality for air rights (5% of revenue)	\$57,779,136	
System Economics			
	Total system cost (privately financed from Transit X)	\$1,072,615,625	
	OPEX (O&M) per year	\$111,409,917	
	Private equity	\$536,307,813	
	Financed	\$536,307,813	
	Gross Revenue from fares	\$1,155,582,714	
	EBITA (Profit)	\$1,044,172,797	
	Debt service	\$69,720,016	
	OPEX + Debt service	\$181,129,933	
	Net income	\$974,452,781	
	Operating Margin	90%	
	One-time project costs (per person)	\$2,751	
	Operating costs (per passenger-mile)	\$0.07	
	Equivalent number of cars taken off the road	283,361 motor vehicles	
	Yearly cost of cars removed (per person)	\$6,541	
	Breakeven revenue distance per day	1,764,432 km	1,095,920 mi
	IRR (Internal rate of return)	91%	
	Payback period (profits pays back equity)	6 months	
	Network capacity (number of pods)	13,128 pods	
	Peak demand as % of maximum track capacity	74%	
Externalities (estimated)			
	Reduction in CO2 emissions	486,885,517 kg CO ₂	
	Public cost for maintaining roadways per year	\$47,277,000	
	Reduced waste products per year	26,565,120 kg	
	Travel time saved (hours per person per year)	634	
	Cost savings per household per year over personal car ownership	\$4,421	
	Increase in household income from time saving and car costs	31%	
	Reported injuries avoided per year	2,547	
	Lives saved per year	25	
	Land freed from less street parking and parking lots	TBD km ²	
	...and its value	TBD	

Health care cost savings from lower pollution
 Change in local temperature heat island (degrees C)
 Change in global temperature
 Decrease in sea level

TBD
 TBD °C
 TBD °C
 TBD mm

Assumptions	Value		
Ratio of road length to track length	2		
Convenient walk time to Transit X route	5 min.		
Walking speed	4.9 km/h (3 mph)		
Width of convenient swath along track	0.82 km (1 mi)		
Fixed cost for main route per km	\$3,100,000		
Fixed cost per km for branch	\$1,550,000		
Percentage of main route vs. all routes	50%		
Average cost of fixed infrastructure per km	\$2,325,000		
Distance traveled per person per year across all modes	14,500 km (9,006 mi)		
Mode share % of people convenient to Transit X	85%		
Percentage of daily travel during peak hour	10%		
Max capacity: number of pods per km of track	149 pods		
Max track capacity during peak hour as % of capacity	20%		
Average speed of pod	72 km/h		
Average # of trips for people riding Transit X	3 per day		
Occupancy per pod	2 people		
Maximum occupancy per pod	4 people		
Empty pods: Percentage non-revenue vehicle travel	25%		
Cost per pod	\$5,000		
Median household income	\$30,000		
Typical fare per km (per mile)	\$0.28 (\$0.45)		
O&M as % of project cost	5%		
O&M as % of gross revenue	5%		
Percentage debt financed	50%		
Length of loan/debt	20 years		
Interest rate for financing	8%		
kg CO2 emissions	2.37 per liter of gasoline		
Monetary value of 1 hour personal time	\$8		
Public roadway maintenance costs per year per km	\$51,000		
Infrastructure's footprint per km	5.78 m ² (62 sf)		
Lease rate per m ²	\$1,156		
Parking footprint for road vehicle	23 m ² (247 sf)		
Cost of land per km ²	\$100,000		
Fee for leasing air rights (percentage of gross revenue)	5%		

8/17/17

	Transit X	Car
Service life (years)	20	12
Full cost of vehicle per year	\$200	\$9,000
Public cost to maintain infrastructure (per km)	\$0	\$100,000
Energy Efficiency (MPGe)	1000	20
mass of CO2 per vehicle per km (kg)	0	0.1185
Vehicle mass (kg)	45	1950
Average speed of travel (km/h)	72	16
Average travel time (hours)	0.50	2.23
Fare per km	\$0.28	\$0.62
Number of deaths per 100M passenger-km	0.00001	1
Number of injuries per 100M passenger-km	0.0006	62
Volume to park (cubic meters)	5.7	70.9

Assumptions	Value		
% of HH income for 16km travel	15%		
Width of convenient swath for road	0.4 km		

Currency conversion

Currency name	
Equal to US\$1	1.