

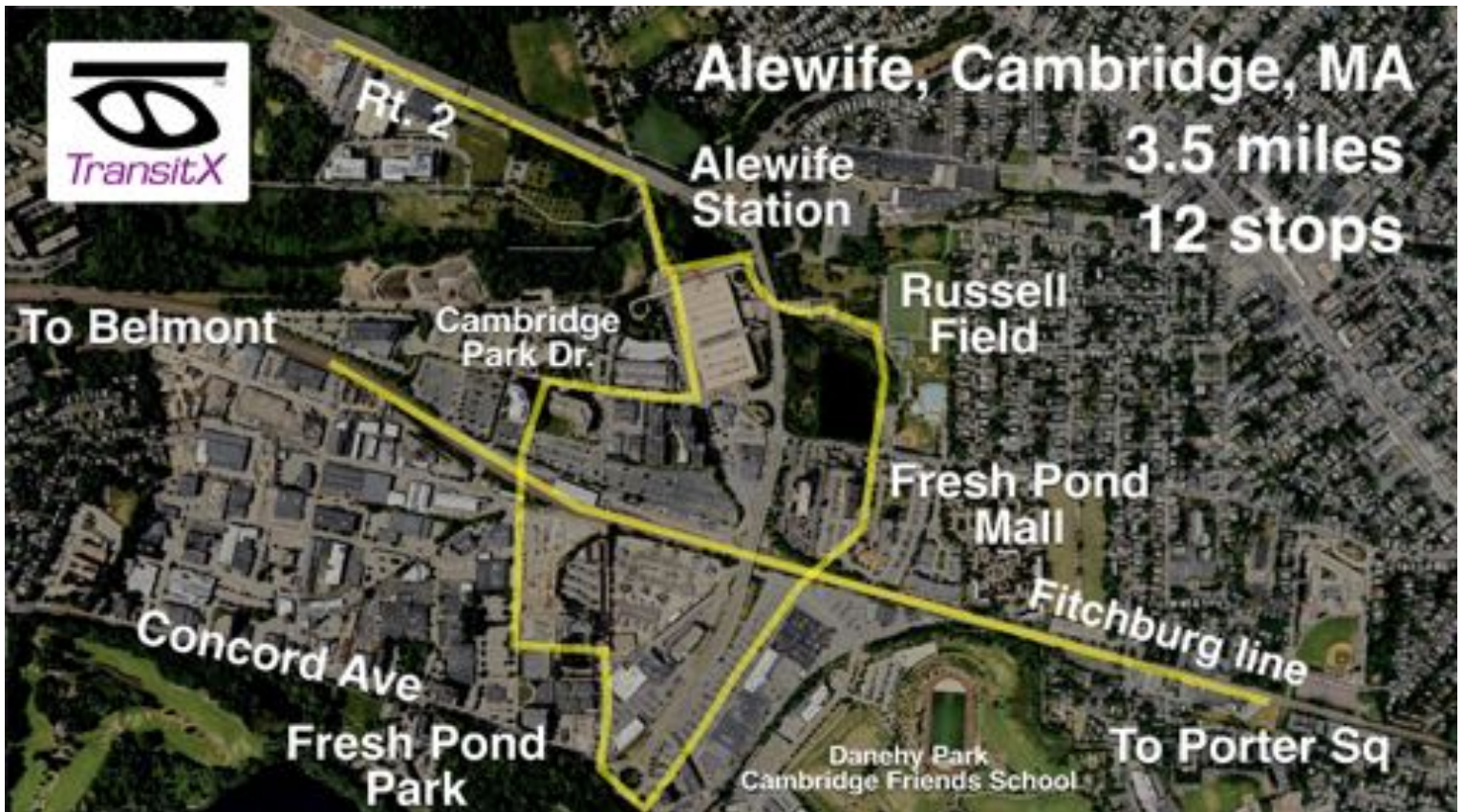


Transit X, LLC offers a preliminary proposal for

Alewife, Cambridge

For a privately-funded mobility service that is

**No waiting • High Capacity • Last mile
Solar powered • Automated • Resilient**





March 1, 2017

To: Alewife TMA

Thank you for the opportunity to present at your board meeting this morning. I would like for you to consider support and advocacy for a Transit X system in Alewife that would provide many benefits to the area including reduced congestion, improved air quality, reduced carbon emissions, improved resiliency, and increased economic development. A video simulation can be found on our website at transitx.com.

Transit X does not interfere with other transportation modes because it operates on a grade-separated, exclusive right-of-way. The installation is also fast and causes minimal disruption – similar to utility poles and lines.

Transit X will provide private capital to finance projects – we do not require public funding. In addition, 5% of gross revenue is paid to the owner of the right-of-way and pay taxes on any land used.

Members of our team have participated in the design and construction of several automated transit systems now in operation. The new design is unique, but is based on well proven technologies and materials. A full-sized test track will be demonstrated in 2017 in MA.

We would like to present a proposal to Cambridge with the goal of entering into a master license agreement where individual routes would be planned for and coordinated with city planners and other stakeholders such as major employers, commercial developers, and community groups. This agreement is non-exclusive; therefore, options remain open for other solutions.

This preliminary proposal provides many details on Transit X and we look forward to hearing from you, answering any questions, and moving forward.

Sincerely,

A handwritten signature in black ink that reads "Mike Stanley". The signature is fluid and cursive, with a long horizontal stroke at the bottom.

Mike Stanley, CEO, TransitX



Economics for Alewife

Inputs are underlined.

Size of region	<u>7.8</u> km ²	3.0 sq miles
Number of people in region (residents + visitors)	<u>20,000</u>	
Percentage of all travel that occurs within the region	<u>10%</u>	
Region's area that is conveniently served by paved roads	<u>90%</u>	
Desired coverage (percent of people convenient to Transit X)	<u>70%</u>	
Estimate #1 for network length based on desired coverage	<u>6</u> km	3.7 miles
Length of paved roads (non-highway) in region	<u>18</u> km	10.9 miles
Estimate #2 for network length based on paved roadways	<u>6</u> km	3.8 miles
Transit X network length	6 km	3.8 miles
Mode share of travel on Transit X	60%	
Average trip distance	<u>1</u> km	0.8 miles
Number of pods needed to meet peak demand	41 pods	
Pod parking volume equivalent	3 car spaces	
Yearly payment to municipality for RoW	\$283,698	

System Economics

One-time fixed costs (per person)	\$724
Operating costs (per passenger-mile)	\$0.18
Equivalent number of cars taken off the road	1,190 cars
Yearly cost of cars removed (per person)	\$536
Breakeven (people riding daily)	4,795 people
IRR (Internal rate of return)	17%
Payback period (profits pays back equity)	23 months

Externalities (estimated)

Reduction in CO2 emissions	2,044,718 kg CO ₂
Public cost for maintaining roadways per year	\$895,050
Reduced waste products per year	111,563 kg
Increase in household income from time saving and car costs	3%
Reported injuries avoided per year	10.7
Lives saved per year	0.1
Land freed from less street parking and parking lots	TBD
Health care cost savings from lower pollution	TBD

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	<u>0.82</u> 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	\$0.28	
(per mile)	\$0.45	
O&M per year as a % of capital costs	7%	
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)	

	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)	0.06	0.25
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.