

System Requirements and Performance (Dollars are in millions except as noted.)

Chicago-St. Louis	90	110	125F	125E	150F	150E	New HSR	Maglev
<i>Physical, production, and traffic factors (traffic data is for the year 2020)</i>								
Route-miles	297	297	297	297	297	297	301	301
Trip-time, hours, Chicago-Saint Louis	4.2	3.6	3.3	3.3	3.0	3.0	2.2	1.5
Average train speed (mph)	73	83	90	90	98	98	138	203
Average fare per passenger-mile (dollars)	0.147	0.167	0.188	0.188	0.187	0.187	0.218	0.290
Trains per day in each direction	10	13	12	12	14	14	16	32
Passengers, Millions of Trips (2020)	1.4	1.7	1.7	1.7	1.9	1.9	2.2	2.3
Passenger-Miles, Millions (2020)	291	362	355	360	414	417	499	531
Average trip length (miles)	209	211	213	214	217	217	227	229
Average trip length as % of route length	71%	71%	72%	72%	73%	73%	75%	76%
HSGT traffic density per route-mile (millions of passenger-miles per route-mile)	1.0	1.2	1.2	1.2	1.4	1.4	1.7	1.8
Percent of air traffic diverted	10.5%	16.4%	17.4%	17.8%	22.0%	22.2%	29.7%	35.5%
Percent of intercity auto traffic diverted	4.0%	5.0%	4.5%	4.5%	5.2%	5.2%	5.5%	5.1%
Percent of HSGT traffic by source:								
Diverted from air	25%	31%	34%	34%	37%	37%	43%	48%
Diverted from auto	36%	35%	33%	33%	33%	33%	30%	26%
Diverted from conventional rail	28%	23%	24%	23%	21%	21%	18%	17%
Diverted from bus	2%	2%	1%	1%	1%	1%	1%	0%
Induced	8%	8%	8%	8%	8%	8%	8%	8%
<i>Operating efficiency factors, 2020</i>								
Train-miles, millions	2.2	2.8	2.6	2.6	3.0	3.0	3.5	7.0
Passenger-miles per train mile	131	128	136	138	136	137	141	76
Seat-miles, millions	588	746	689	689	803	803	1,006	1,055
Load factor	49%	48%	52%	52%	52%	52%	50%	50%
Gross ton-miles, millions	806	978	850	824	962	931	1,389	633
Passenger-miles per gross ton-mile	0.36	0.37	0.42	0.44	0.43	0.45	0.36	0.84
Train-hours, millions	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Passenger-miles per train hour	9,541	10,664	12,181	12,482	13,327	13,452	19,405	15,319
Operating ratio	83%	70%	61%	67%	60%	67%	65%	45%
<i>Operating results for 2020</i>								
Revenues:								
Passenger transportation revenue	\$43	\$60	\$67	\$68	\$78	\$78	\$109	\$154
Income from ancillary activities	\$2	\$2	\$2	\$2	\$2	\$3	\$3	\$3
System revenues	\$44	\$63	\$69	\$70	\$80	\$81	\$112	\$157
<i>Percent of system revenues from ancillary activities</i>	<i>4%</i>	<i>4%</i>	<i>3%</i>	<i>3%</i>	<i>3%</i>	<i>3%</i>	<i>2%</i>	<i>2%</i>
Operating and maintenance expenses:								
Maintenance of way	\$3	\$3	\$3	\$7	\$4	\$9	\$18	\$14
Maintenance of equipment	\$5	\$6	\$5	\$5	\$6	\$6	\$9	\$5
Transportation	\$8	\$10	\$9	\$10	\$10	\$11	\$12	\$18
Passenger traffic and services	\$10	\$11	\$11	\$11	\$12	\$13	\$14	\$16
General and administrative	\$11	\$13	\$12	\$12	\$14	\$14	\$18	\$16
Total O&M expense	\$35	\$42	\$41	\$45	\$46	\$53	\$70	\$69
<i>Per passenger-mile (dollars):</i>								
Maintenance of way	<i>\$0.009</i>	<i>\$0.008</i>	<i>\$0.009</i>	<i>\$0.019</i>	<i>\$0.009</i>	<i>\$0.022</i>	<i>\$0.036</i>	<i>\$0.026</i>
Maintenance of equipment	<i>\$0.017</i>	<i>\$0.016</i>	<i>\$0.015</i>	<i>\$0.014</i>	<i>\$0.015</i>	<i>\$0.014</i>	<i>\$0.017</i>	<i>\$0.010</i>
Transportation	<i>\$0.026</i>	<i>\$0.027</i>	<i>\$0.024</i>	<i>\$0.027</i>	<i>\$0.024</i>	<i>\$0.027</i>	<i>\$0.024</i>	<i>\$0.034</i>
Passenger traffic and services	<i>\$0.033</i>	<i>\$0.031</i>	<i>\$0.031</i>	<i>\$0.031</i>	<i>\$0.030</i>	<i>\$0.030</i>	<i>\$0.028</i>	<i>\$0.030</i>
General and administrative	<i>\$0.037</i>	<i>\$0.035</i>	<i>\$0.035</i>	<i>\$0.035</i>	<i>\$0.034</i>	<i>\$0.034</i>	<i>\$0.035</i>	<i>\$0.030</i>
Total O&M expense	<i>\$0.122</i>	<i>\$0.117</i>	<i>\$0.115</i>	<i>\$0.126</i>	<i>\$0.112</i>	<i>\$0.126</i>	<i>\$0.141</i>	<i>\$0.130</i>
Operating surplus	\$9	\$20	\$28	\$25	\$34	\$28	\$41	\$88
<i>Operating surplus per passenger-mile (dollars)</i>	<i>\$0.031</i>	<i>\$0.056</i>	<i>\$0.080</i>	<i>\$0.068</i>	<i>\$0.082</i>	<i>\$0.068</i>	<i>\$0.083</i>	<i>\$0.165</i>
Year showing first operating surplus	Year 2000							

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<i>Life-Cycle Measures</i> (All amounts are present values, as of the year 2000, of cash inflows/outflows between 2000 and 2040.)								
Revenues:								
Passenger Transportation Revenues	\$330	\$477	\$524	\$532	\$616	\$620	\$871	\$1,262
Income from Ancillary Activities	\$13	\$17	\$17	\$18	\$20	\$20	\$22	\$24
System Revenues	\$344	\$494	\$541	\$550	\$636	\$640	\$893	\$1,286
Less: Total O&M expenses	\$291	\$349	\$346	\$393	\$388	\$453	\$616	\$621
Operating surplus	\$53	\$145	\$196	\$157	\$248	\$186	\$277	\$664
Less: Continuing investments	\$20	\$34	\$26	\$26	\$32	\$32	\$59	\$46
Surplus after continuing investments	\$33	\$111	\$169	\$131	\$215	\$154	\$218	\$618
Initial investment:								
Initial vehicle investment	\$116	\$155	\$155	\$155	\$155	\$155	\$235	\$144
Initial infrastructure investment	\$382	\$498	\$916	\$1,358	\$1,833	\$2,458	\$5,661	\$9,143
Initial investment for ancillary activities	\$3	\$3	\$3	\$3	\$3	\$3	\$4	\$4
Initial investment, Total	\$500	\$657	\$1,074	\$1,516	\$1,991	\$2,617	\$5,900	\$9,291
<i>Percent of total initial investment pertaining to--</i>								
Vehicles	23%	24%	14%	10%	8%	6%	4%	2%
Infrastructure	76%	76%	85%	90%	92%	94%	96%	98%
Ancillary activities	1%	0%	0%	0%	0%	0%	0%	0%
<i>Total initial investment per route-mile</i>	\$1.7	\$2.2	\$3.6	\$5.1	\$6.7	\$8.8	\$19.6	\$30.9
Portion of initial investment that is <u>not</u> covered by surplus after continuing investments	\$468	\$545	\$905	\$1,385	\$1,776	\$2,463	\$5,682	\$8,673
Percentage of initial investment covered by surplus after continuing investments	7%	17%	16%	9%	11%	6%	4%	7%
Comparison of Benefits and Costs; Assessment of Partnership Potential								
Surplus after continuing investments	\$33	\$111	\$169	\$131	\$215	\$154	\$218	\$618
Total benefits:								
Benefits to HSGT users:								
System revenues	\$344	\$494	\$541	\$550	\$636	\$640	\$893	\$1,286
Users' consumer surplus	\$459	\$642	\$649	\$662	\$799	\$805	\$1,027	\$1,225
Total benefits to HSGT users	\$803	\$1,136	\$1,190	\$1,211	\$1,434	\$1,445	\$1,920	\$2,511
Benefits to the public at large:								
Airport congestion delay savings								
Operation delays	\$111	\$164	\$171	\$174	\$206	\$208	\$263	\$308
Passenger delays	\$202	\$295	\$309	\$314	\$372	\$375	\$473	\$554
Total airport congestion delay savings	\$313	\$459	\$480	\$489	\$579	\$583	\$735	\$861
Highway delay savings	\$40	\$50	\$45	\$46	\$52	\$53	\$57	\$53
Emission savings	\$5	\$27	\$26	\$39	\$23	\$47	\$53	\$48
Total benefits to the public at large	\$359	\$536	\$551	\$573	\$654	\$683	\$845	\$963
Total benefits	\$1,162	\$1,672	\$1,740	\$1,785	\$2,088	\$2,128	\$2,765	\$3,474
Total costs:								
Initial investment	\$500	\$657	\$1,074	\$1,516	\$1,991	\$2,617	\$5,900	\$9,291
O&M expense	\$291	\$349	\$346	\$393	\$388	\$453	\$616	\$621
Continuing investments	\$20	\$34	\$26	\$26	\$32	\$32	\$59	\$46
Total costs	\$811	\$1,040	\$1,446	\$1,935	\$2,412	\$3,102	\$6,575	\$9,959
Incidence of total costs:								
Costs borne by users	\$344	\$494	\$541	\$550	\$636	\$640	\$893	\$1,286
Publicly-borne costs	\$468	\$545	\$905	\$1,385	\$1,776	\$2,463	\$5,682	\$8,673

Chicago-St. Louis	90	110	125F	125E	150F	150E	New HSR	Maglev
Total benefits less total costs	\$350	\$632	\$294	(\$151)	(\$324)	(\$974)	(\$3,810)	(\$6,485)
Benefits to HSGT users less costs borne by users	\$459	\$642	\$649	\$662	\$799	\$805	\$1,027	\$1,225
Benefits to the public at large less publicly-borne costs	(\$109)	(\$10)	(\$354)	(\$812)	(\$1,123)	(\$1,779)	(\$4,837)	(\$7,710)
Ratio of total benefits to total costs	1.43	1.61	1.20	0.92	0.87	0.69	0.42	0.35
Ratio of benefits to HSGT users, to costs borne by users	2.34	2.30	2.20	2.20	2.26	2.26	2.15	1.95
Ratio of benefits to the public at large, to publicly-borne costs	0.77	0.98	0.61	0.41	0.37	0.28	0.15	0.11
Does this case meet the threshold tests for "partnership potential"?	YES	YES	YES	NO	NO	NO	NO	NO