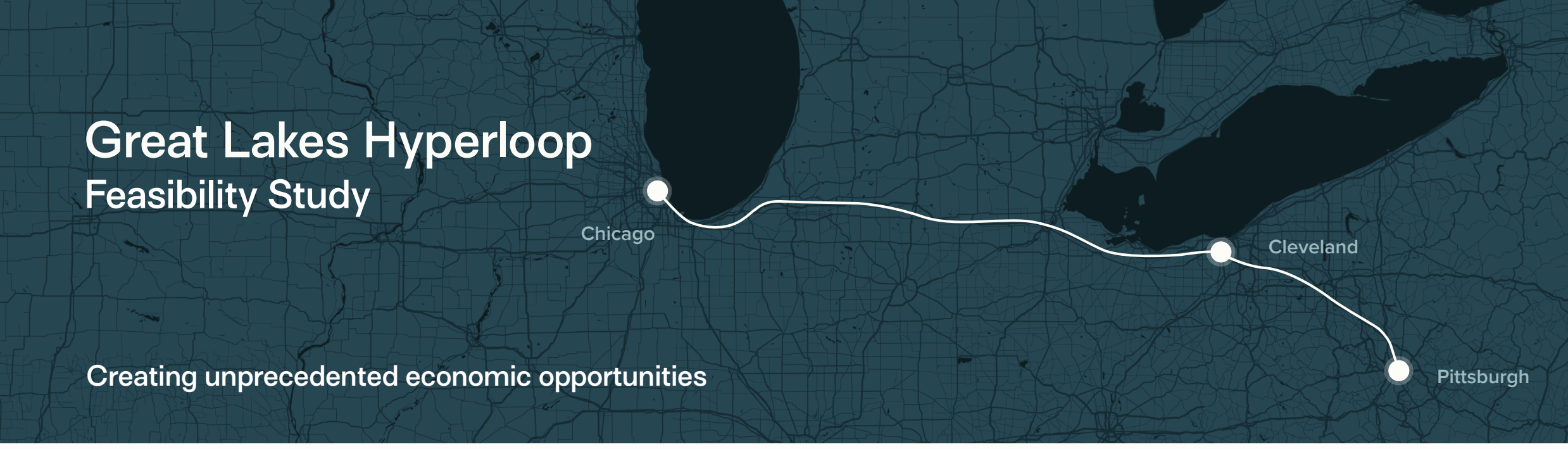


Great Lakes Hyperloop
Feasibility Study

Creating unprecedented economic opportunities

Chicago to Cleveland Speed Profile

Route Options	Distance (miles)	Travel Time* (minutes)	Top Speed* (mph)	Average Speed* (mph)
Straight	315	31:52	760	593
Toll Road	330	47:18	700	439
Hybrid	337	36:28	760	554

*0.1 G acceleration

Cleveland to Pittsburgh Speed Profile

Route Options	Distance (miles)	Travel Time* (minutes)	Top Speed* (mph)	Average Speed* (mph)
Toll Road	139	24:04	525	339
Hybrid	142	18:58	525	447

*0.1 G acceleration

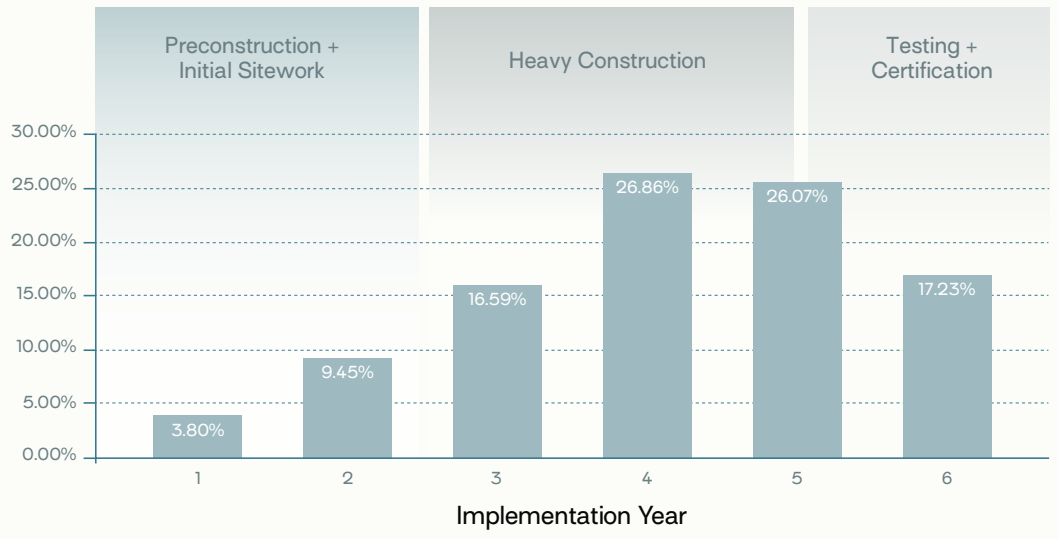
Chicago–Cleveland–Pittsburgh Capital Cost Summary

All cost estimates are fully loaded and include escalation and a 30% contingency on line items. Costs also include all technology, stations, easements, rights of way, and maintenance.

	Chicago to Cleveland Non-stop	Cleveland to North Lima	North Lima to Pittsburgh	Total
Capital Cost	$16.9 B	$4.8 B	$3.7 B	$25.4B
Miles	330.0	84.6	54.1	468.7
Cost Per Mile	$51.23 M	$56.22 M	$67.43 M	$54.2 M

Toll Road route example | All costs in 2018 dollars

Capital Spend Distribution & Timeline



2025–2050 Regional Economic Impact

Employment Growth
900,000+ jobs in all sectors

Increased Income
2x project capital costs

Property Value Increase
3x project capital costs

Expanded Tax Base
50–55% of project capital costs

Direct Socioeconomic Benefits (2025 - 2050)	
Economic Supply Side Items	Economic Supply Side Improvements
Employment Improvement	931,745
Income	$47.6 B
Property Value	$74.8 B
Transfer Payments | Tax Benefits (2025 - 2050)	
Local Income Tax	$2.0 B
Federal Income Tax	$9.4 B
Property Tax	$1.3 B
Total Tax Payments	$12.7 B

Financial Viability

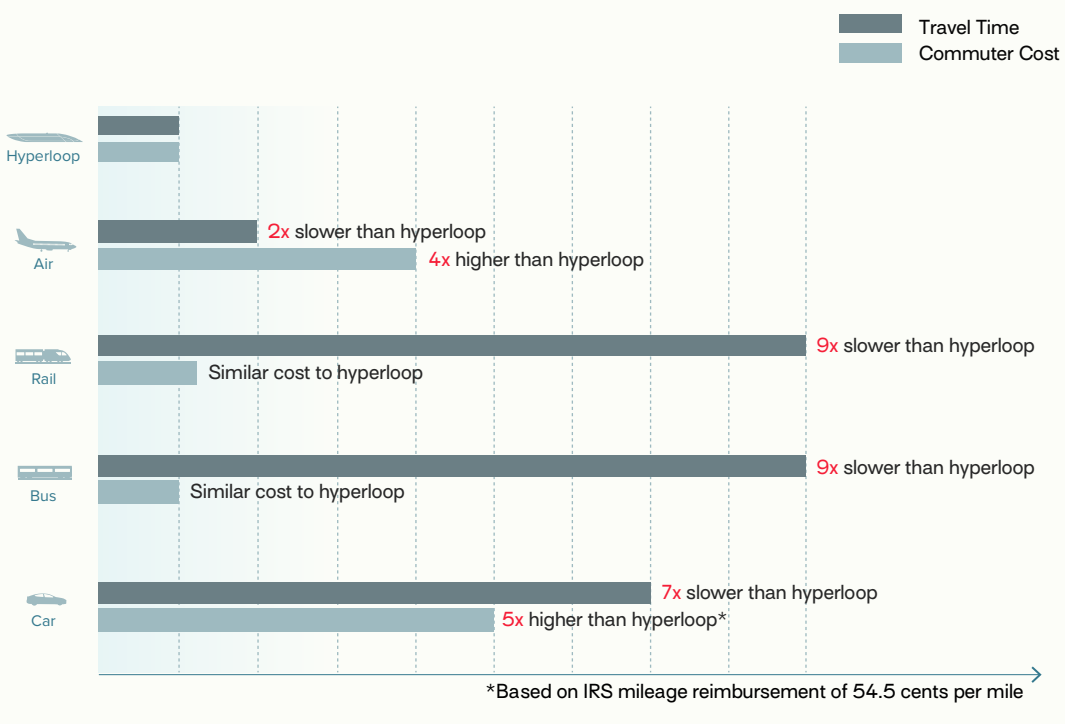
The passenger and freight market along the full corridor is estimated to generate revenue sufficient to pay all capital and operating costs with a net financial return of 6.5% nominal and an economic return of 11.8% nominal. This project would not require any operating subsidies.

	($millions)	($millions)
Total User Benefits	$60,488	$29,370
Total Public at Large Benefits	$14,160	$6,876
NPV Total Benefits	$74,648	$36,245
NPV Total Costs	$33,948	$26,345
NPV Benefits Less Costs	$40,700	$9,901
Benefit/Cost Ratio	*2.20	*1.38

*Meets Office of Management & Budget (OMB) recommendation

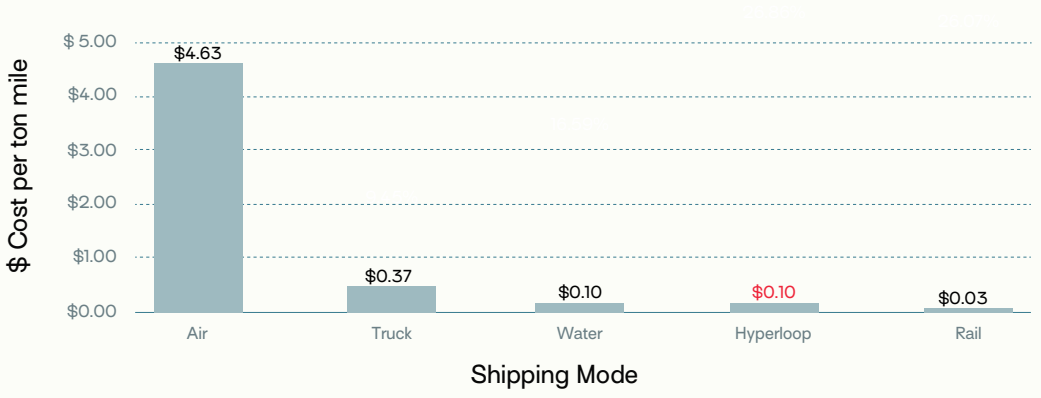
Illustrative Commuter Cost Comparison

Hyperloop fares will vary based on ridership frequency with the expectation that travel will be accessible and affordable. This comparison is based on a one-way, 47-minute hyperloop trip from Cleveland to Chicago at a commuter fare of $40.



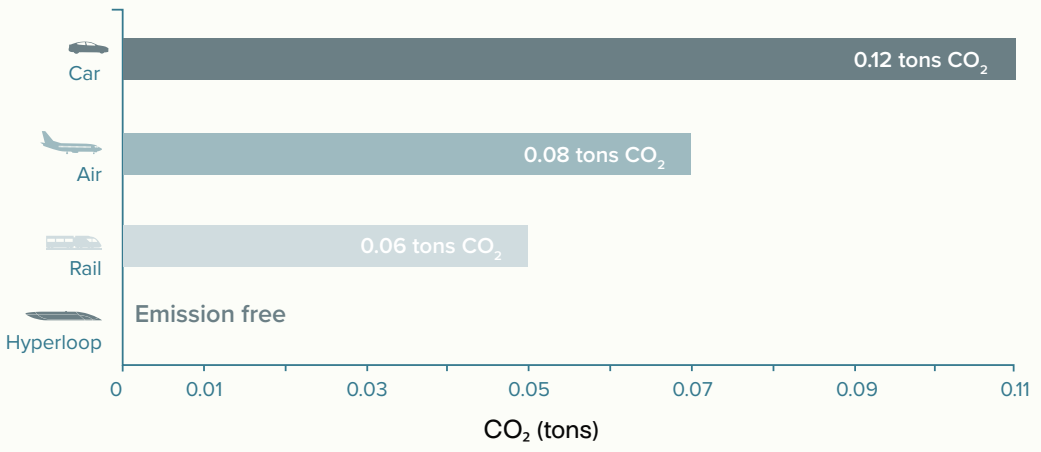
Hyperloop Freight Estimated Operating Cost

Air cargo and less-than-truckload express trucking demand along the corridor is growing at 4 to 5% per year. With lower costs and significantly shorter travel times, hyperloop can not only transform the freight industry but absorb all estimated growth.



CO_2 Emissions Comparison

Based on the forecasted travel demand along the corridor, Carbon Dioxide (CO_2) emissions will be reduced by 143 million tons when implementing a HyperloopTT transportation system.



Highlights are representative of the final draft of the Great Lakes Hyperloop Feasibility Study report | December 2019