

Presentation to
**Minnesota and Wisconsin
Congressional Delegations**

January 2008

Submitted to
St. Louis and Lake Counties Regional Railroad Authority

Proposal for
Twin Ports-Twin Cities / Duluth-Minneapolis
Restoration of Intercity Passenger Rail Service
Comprehensive Feasibility Study and Business Plan



Submitted by

TEMS

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Work Plan

Tasks		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Study Databank							
Task 1:	Study Design	████████████████████					
Task 2:	Data Assembly						█
	Market Database	████████████████████					█
	Engineering Database	████████████████████					█
	Technology Database	████████████████████					█
Service Scenarios							
Task 3:	Services Scenarios for the Corridor						█
	Base Level Service Concept		████████████████████				█
	Improved Service Concepts		████████████████████				█
Interactive Analysis							
Task 4:	Interactive Analysis						█
	Demand Analysis		████████████████████				█
	Rail Service Analysis		████████████████████				█
System Forecasts & Outputs							
Task 5:	Ridership & Revenue Forecasts			████████████████████			█
Task 6:	Operating & Capital Costs			████████████████████			█
Task 7:	Financial & Economic Feasibility Analyses						█
	Financial Analysis				████████████████████		█
	User & Non-User Benefits				████████████████████		█
Institutional & Financing Plan							
Task 8:	Financing & Funding Arrangements				████████████████████		█
Task 9:	Institutional Framework				████████████████████		█
Task 10:	Allocation of Costs & Revenues				████████████████████		█
Business Plan							
Task 11:	Implementation Plan					████████████████████	
Task 12:	Business Plan Documentation					████████████████████	
Steering Committee Meetings							
		●	●	●	●	●	●



FRA Criteria for Intercity Rail Projects*

- **Positive Operating Ratio**
- **Positive Cost Benefit Ratio**

*High Speed Ground Transportation for America. USDOT FRA 1997

Evaluation Scenarios

79-mph, 110-mph, and 125-mph

	79/1	79/2	79/4	110/4	110/8	125/4	125/8
Speed (mph)	79	79	79	110	110	125	125
Frequency (train/day)	1	2	4	4	8	4	8
Full Fare (\$/mile)	0.22	0.22	0.22	0.35	0.35	0.35	0.35
Running Time (minutes)	170	170	170	120	120	110	110

Scenarios overlap with 4 round trip frequencies to facilitate an “Apples to Apples” comparison. Assumed fare levels, however, are higher in the 110-mph and 125-mph scenarios.

Incremental Rail Equipment Options

Loco-Hauled Coaches

▶ **79-mph**



Colorado DMU



Desiro USA



Talgo T21



ICE TD / ACE 3



Jet Train



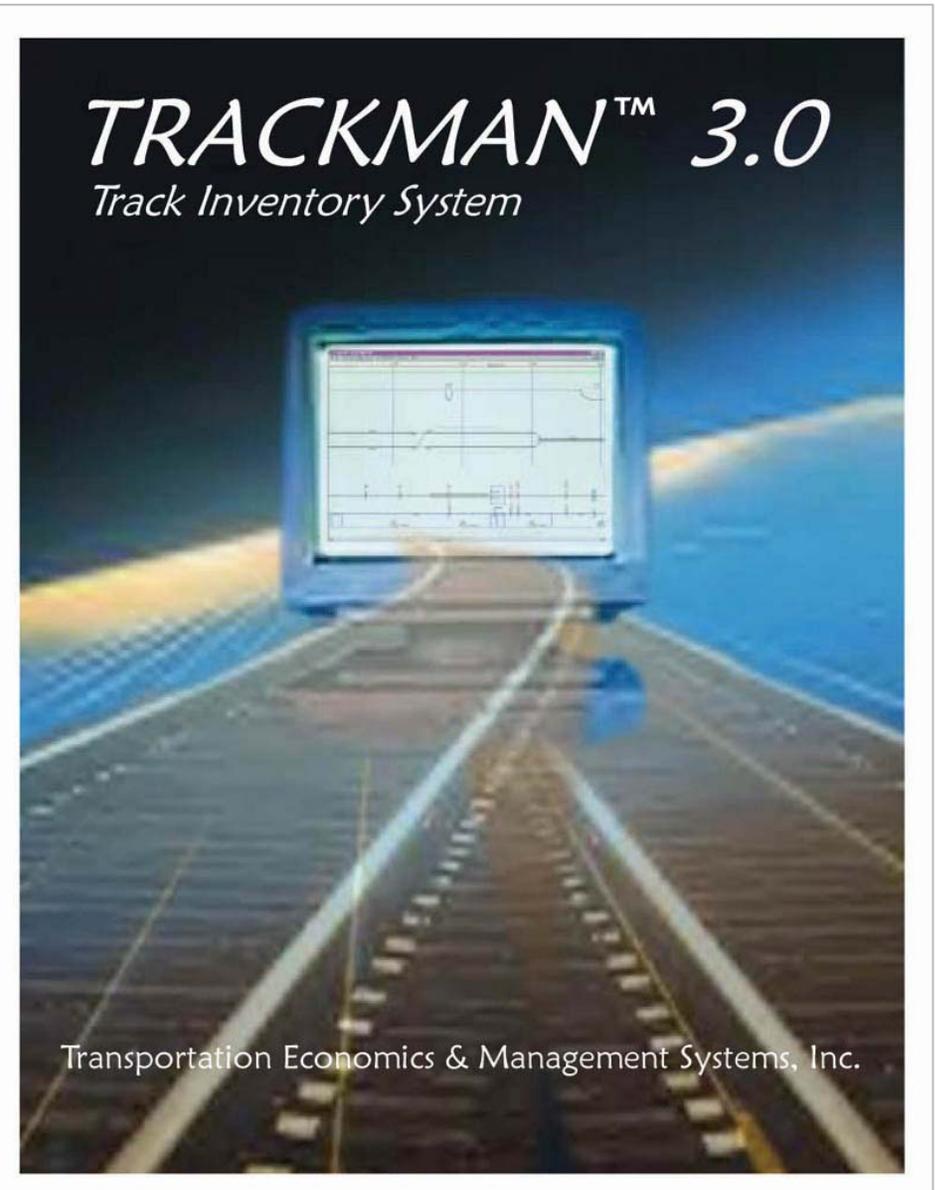
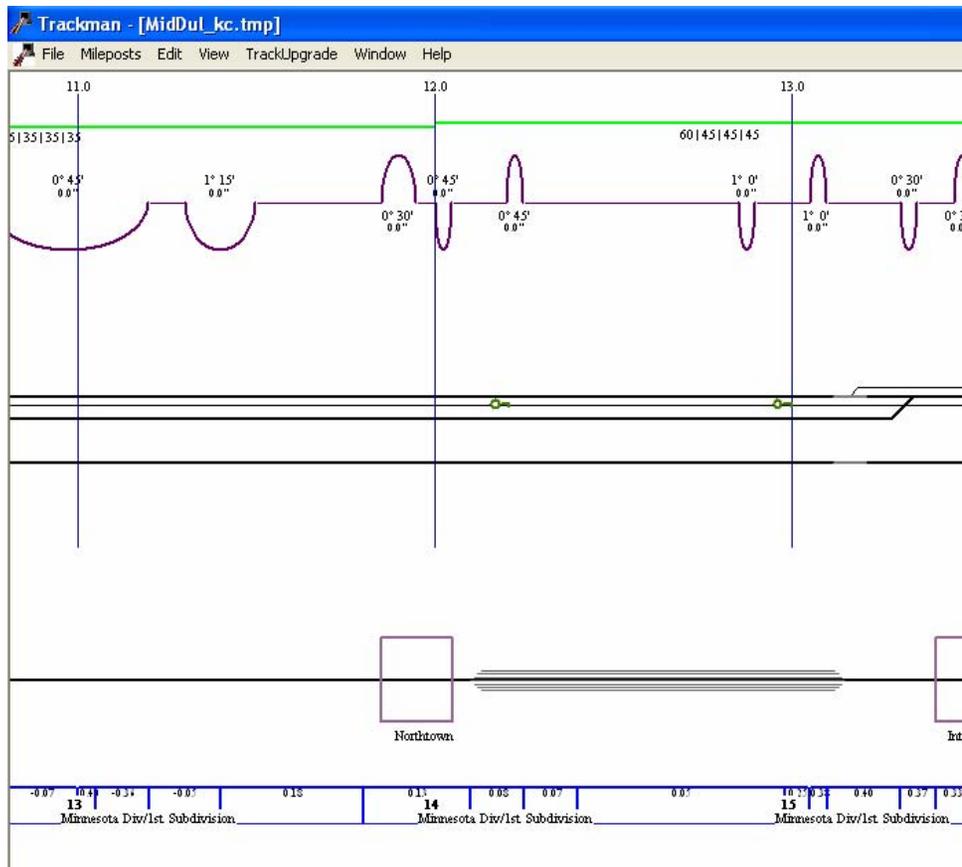
▶ **110-125 mph**

“Integrated Trainsets”

Tilting and Non-Tilting Variants

Capital Cost Development

TRACKMAN™ Engineering Database



Twin Ports Route Alternatives Map



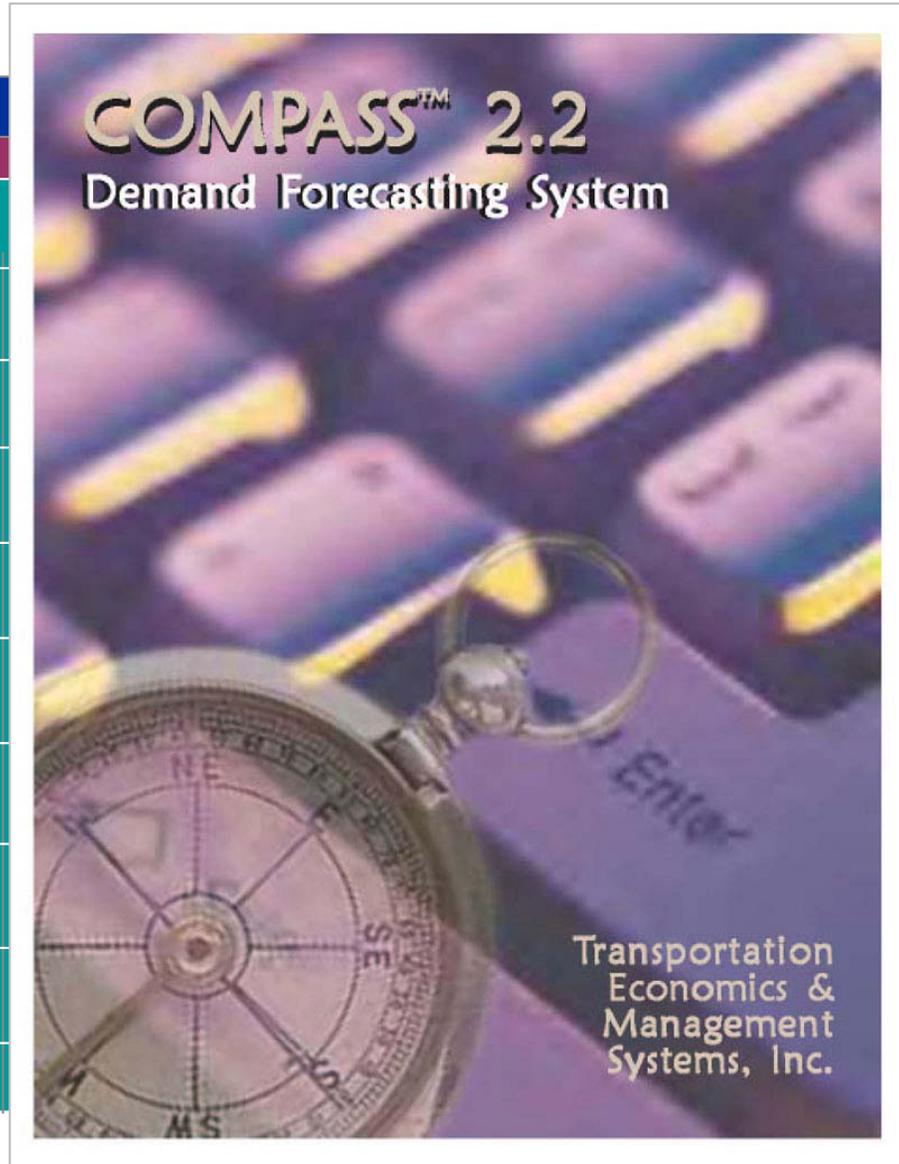
Final Capital Costs

Option	Infrastructure	Equipment	Total Cost
79-a	\$59.4 M	\$16.0 M	\$75.4 M
79-b	\$170.1 M	\$32.0 M	\$202.1 M
110	\$298.6 M	\$64.0 M	\$362.6 M
125	\$545.8 M	\$64.0 M	\$609.8 M

Market Database Development

COMPASS™ Demand Forecasting Software

	Other		
	Commuter		
	Business		
1			
2			
3			
4			
5			
6			
7			
8			
9			



Three Components of Corridor Demand

- **Base Corridor Demand**

- Model calibrated to 2006 corridor socio-economics.
- Updated to reflect 2006 fuel costs.

- **Hinckley Casino Demand**

- 4 million attendance (8 million trips) in 2006
- Base Case assumes a Shuttle Bus connecting casino and rail station
- Potential Ridership generation could be equivalent to that of a city of a million people; however the lack of a direct rail connection to the casino significantly reduces the forecast.

- **MWRRS Connectivity**

- Conservatively assumes transfer from St Paul to Minneapolis
- Not relied upon for supporting the viability of the route.

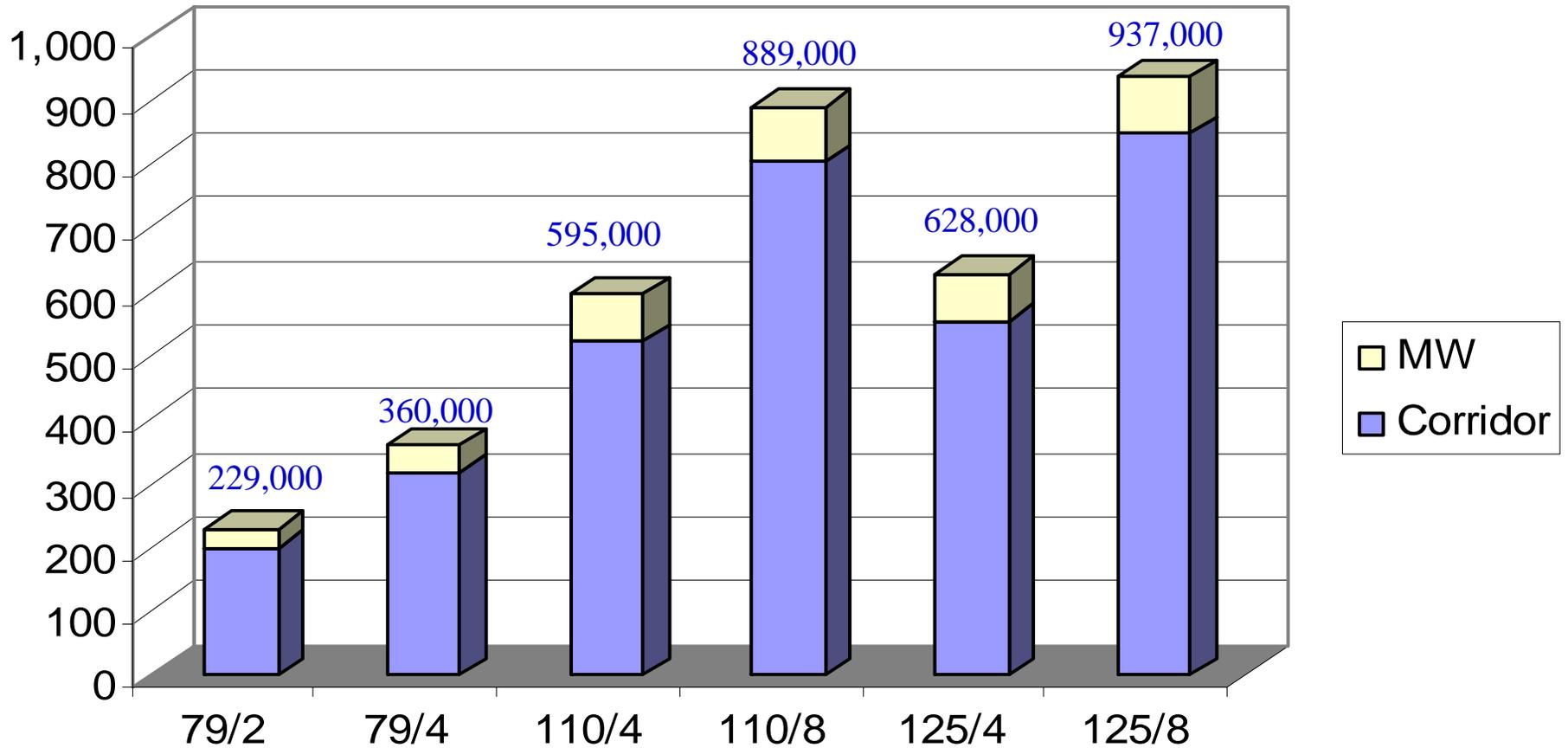
Average Fares

The ability to charge adequate fares is the key to improved cost recovery. For a 110-mph service, revenues grow a lot faster than riders because average fares rise from 18¢ per mile to 29¢ per mile. This reflects not only an increase in the base fare, but also an improvement in the Business/Leisure travel mix.

Speed	79-mph	110-mph
Minneapolis-Duluth	\$22	\$36
Minneapolis-Hinckley	\$11	\$18
Minneapolis-Cambridge	\$9	\$15

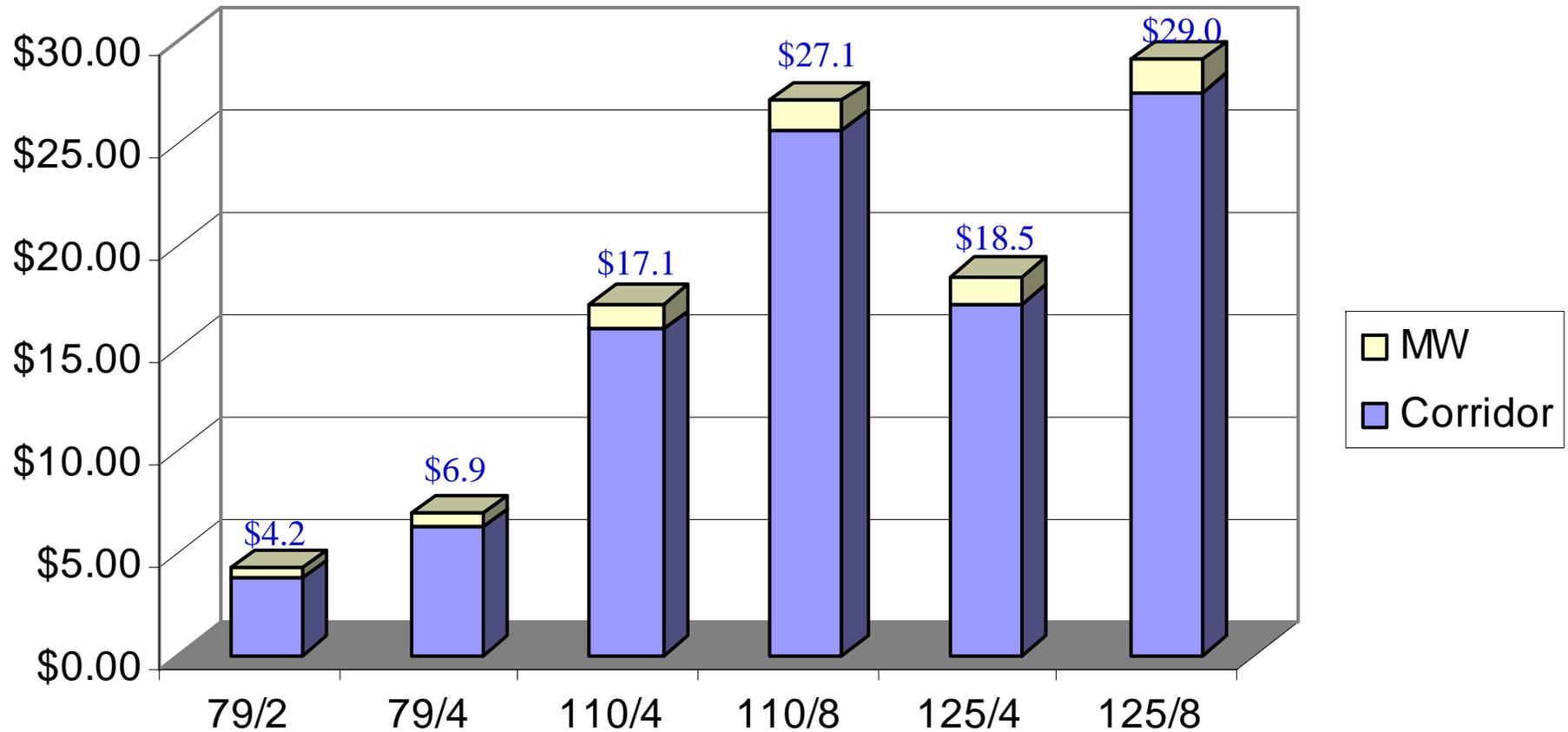
2010 Ridership

Thousands of Riders

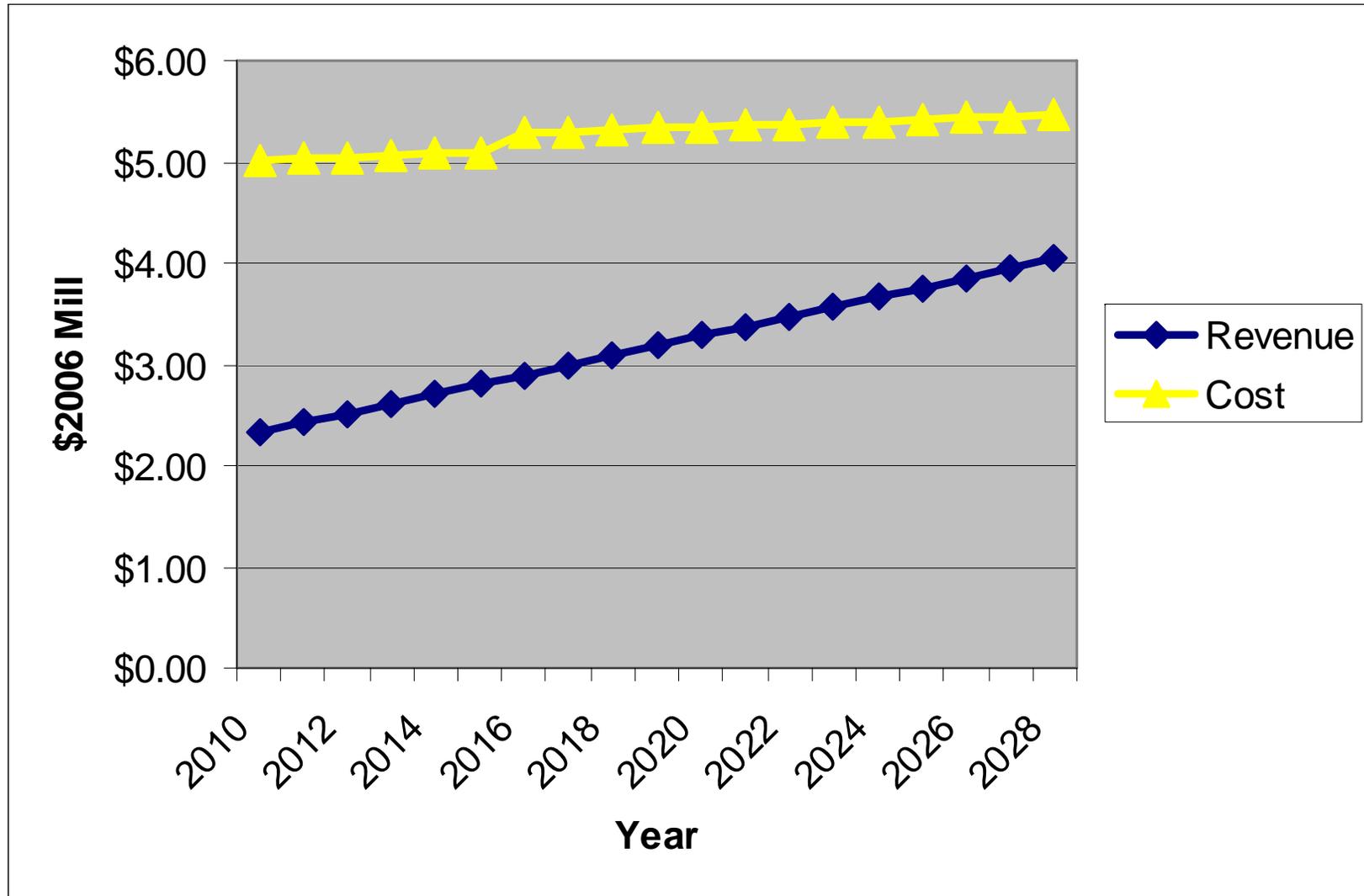


2010 Revenue

Millions of \$2006

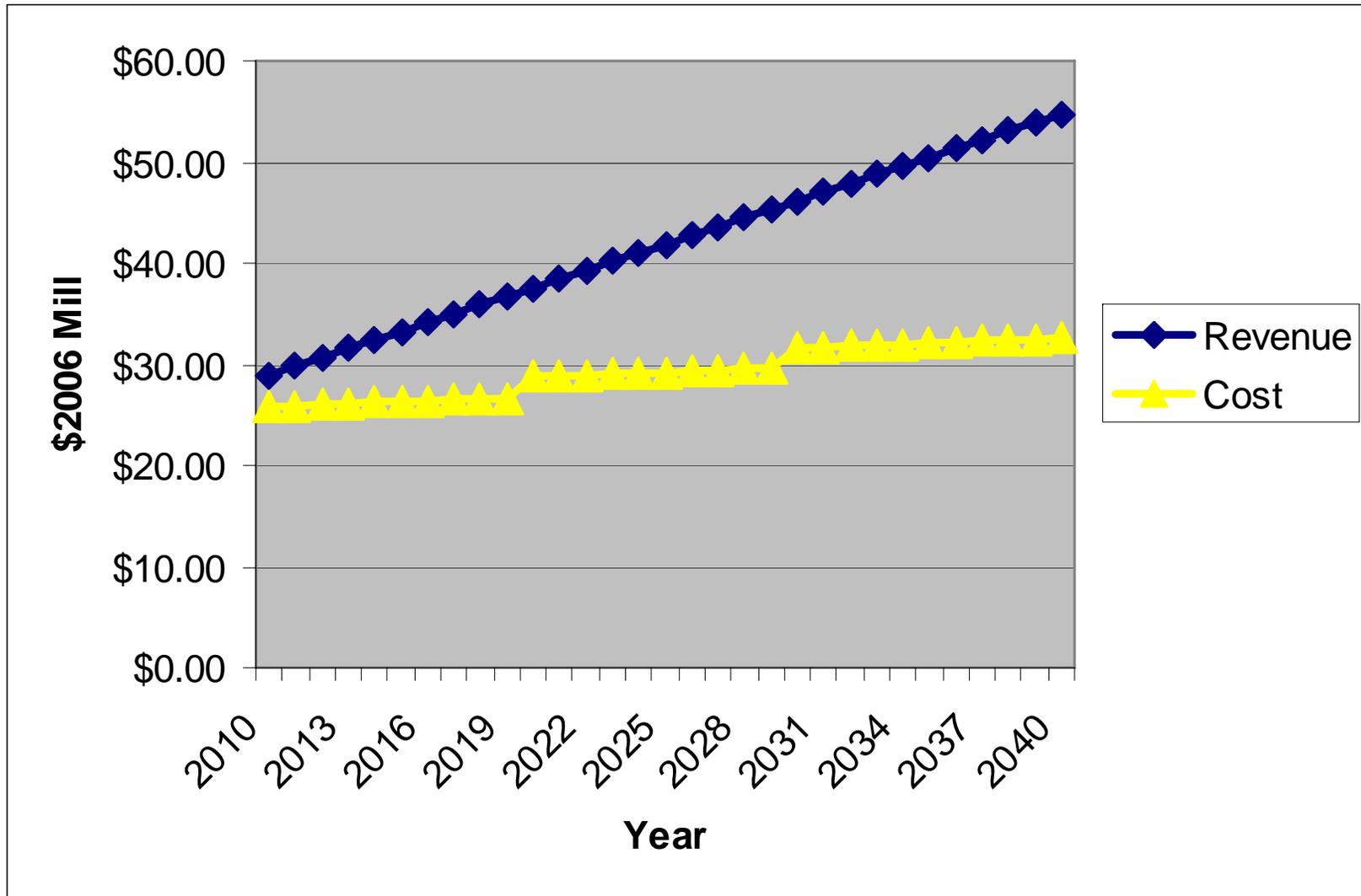


Financial Results – 79 mph P42 2 Trains



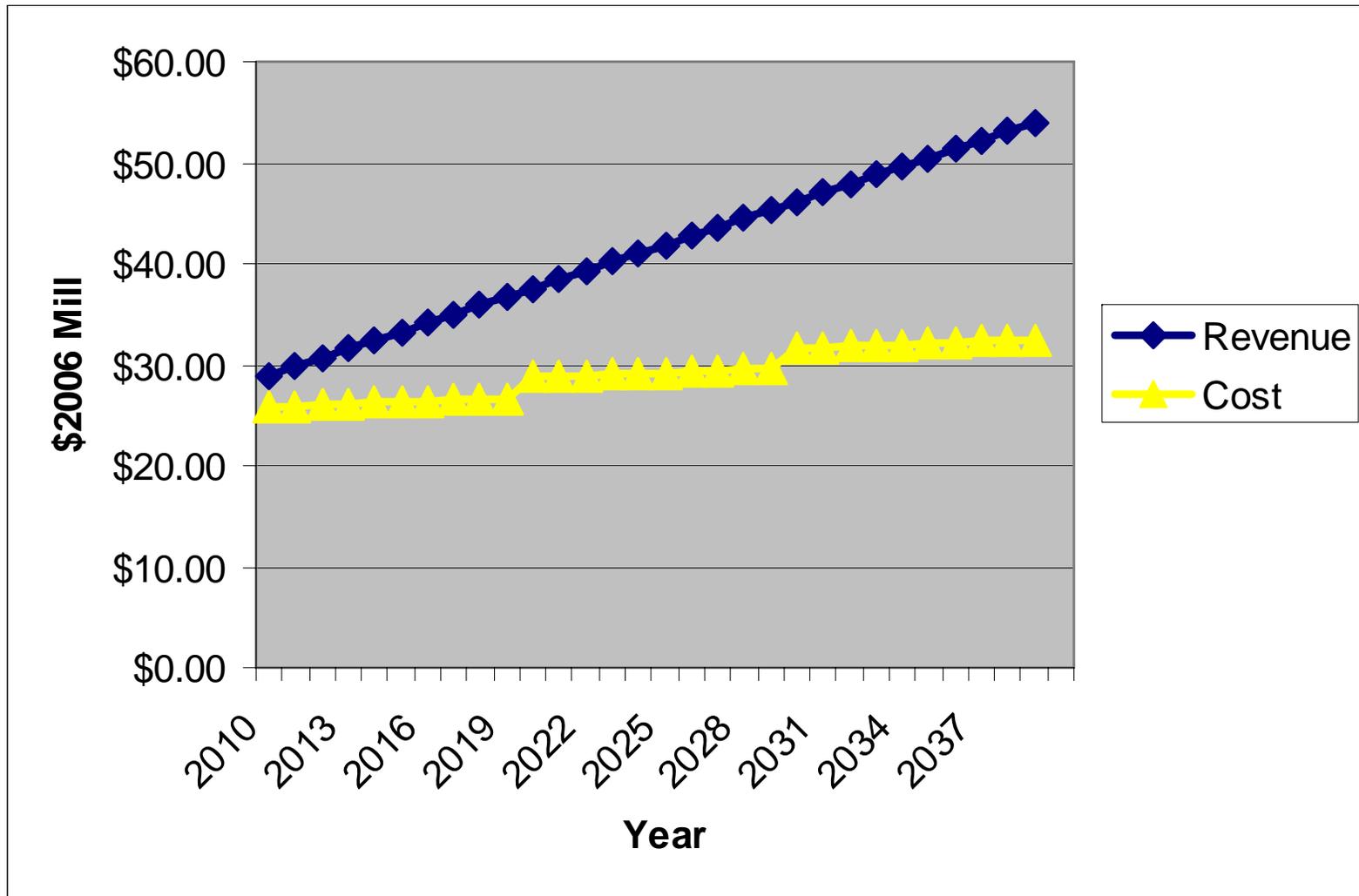
79-mph systems do not cover even variable operating costs.

Financial Results – 110 mph 8 Trains



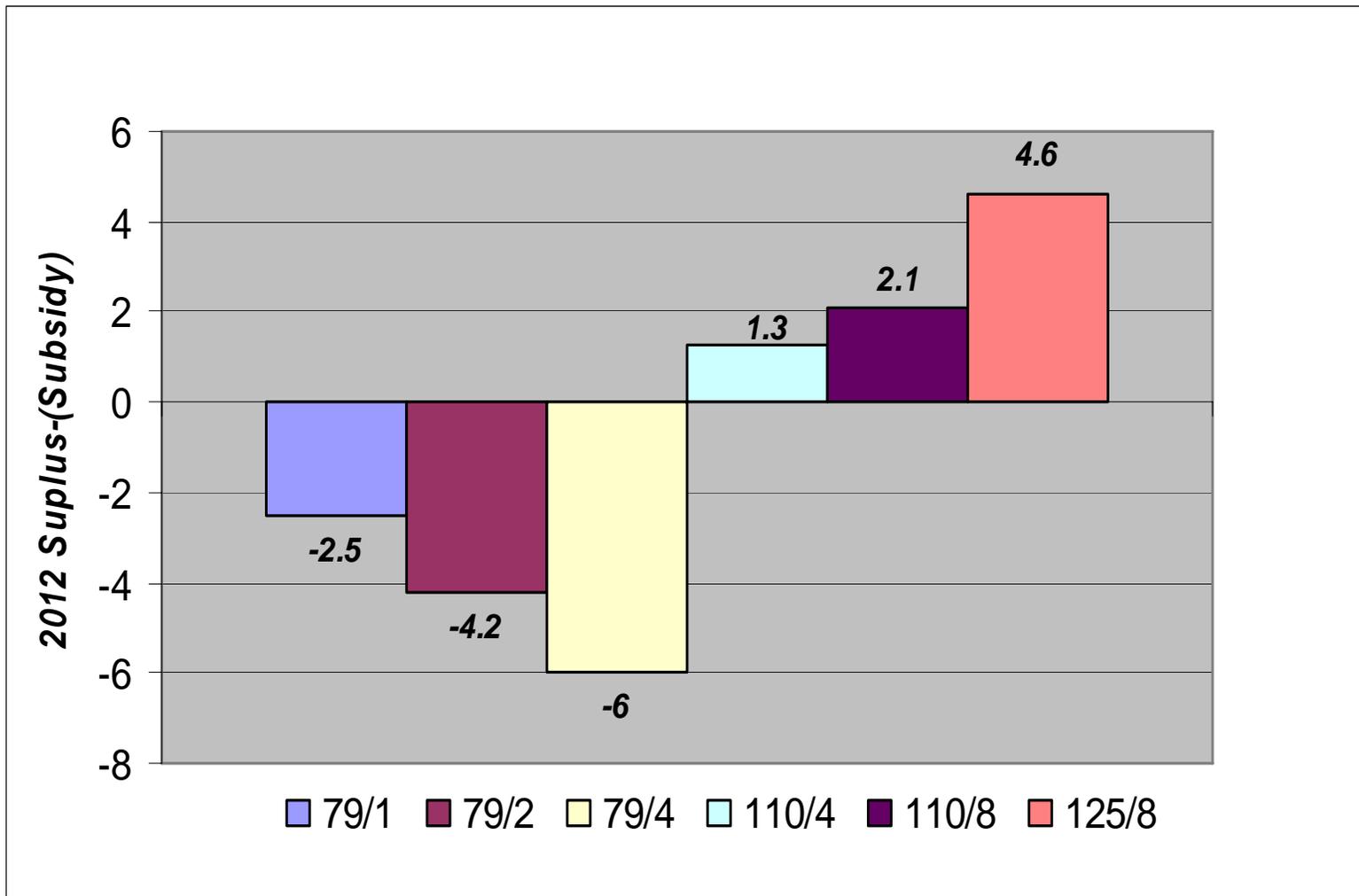
After ramp-up. 110-mph systems cover full operating costs.

Financial Results – 125 mph 8 Trains



125-mph systems have higher revenue than 110-mph systems, but also higher track and fuel costs. The operating performance at 125-mph is slightly better but needs a large increase to capital investment for grade crossing elimination.

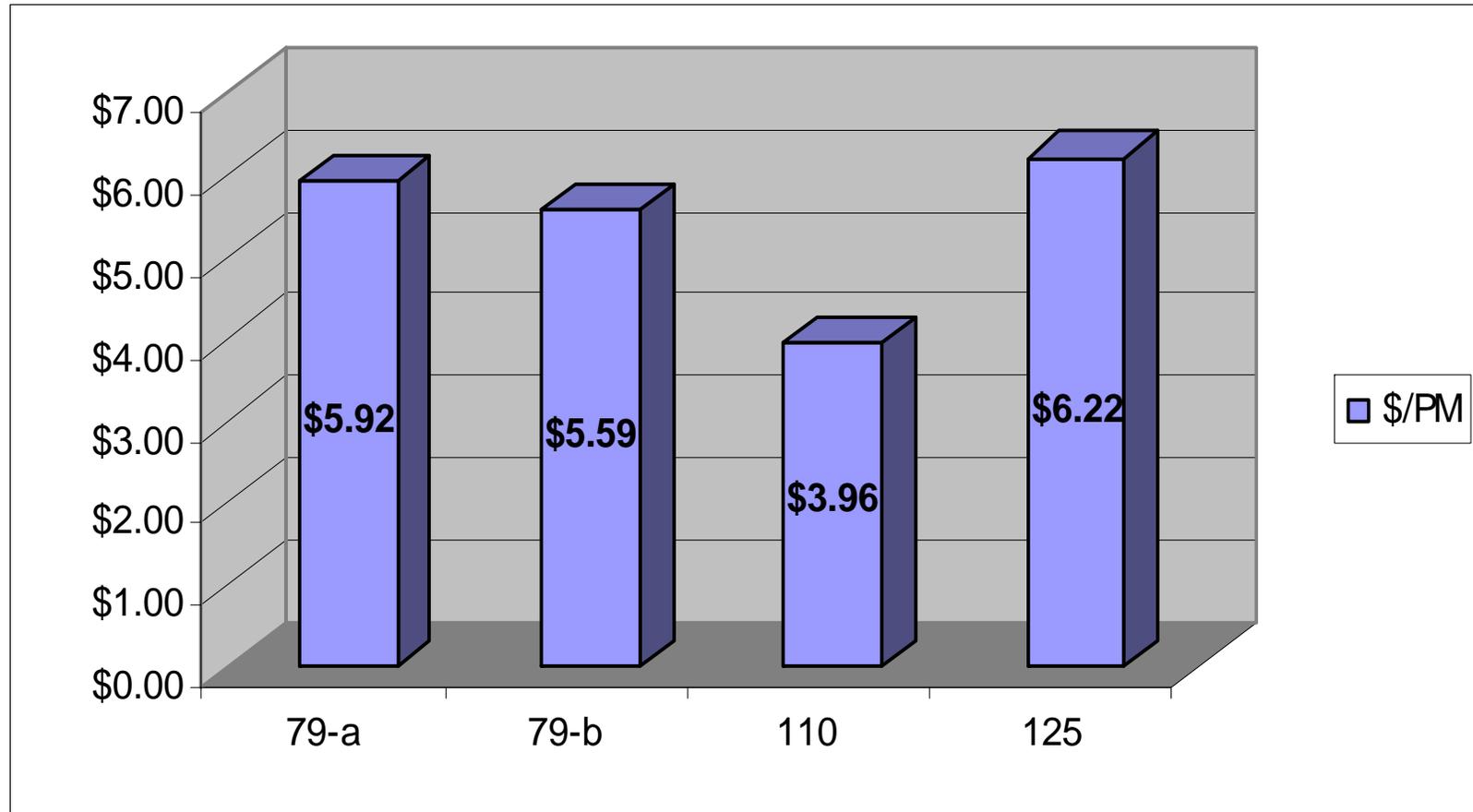
Financial Results – 2012 Comparisons



- Increased Speed or Frequency requires more Capital Investment
- For 79-mph Service, Increased Frequency requires more subsidy
- For 110-mph Service, Increased Frequency generates more surplus

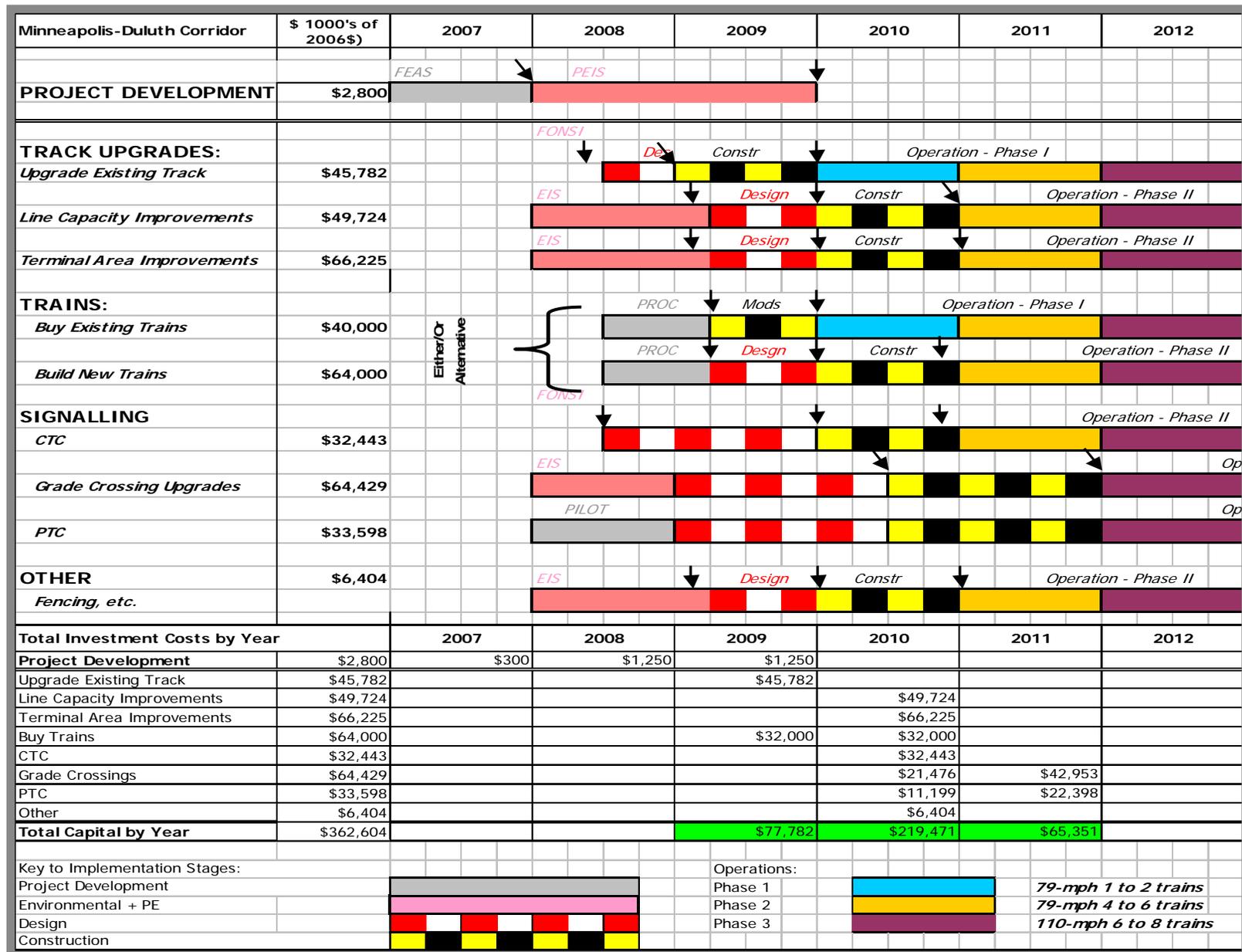
Capital Efficiency – 2012 Comparisons

Capital Dollars per Passenger-Mile

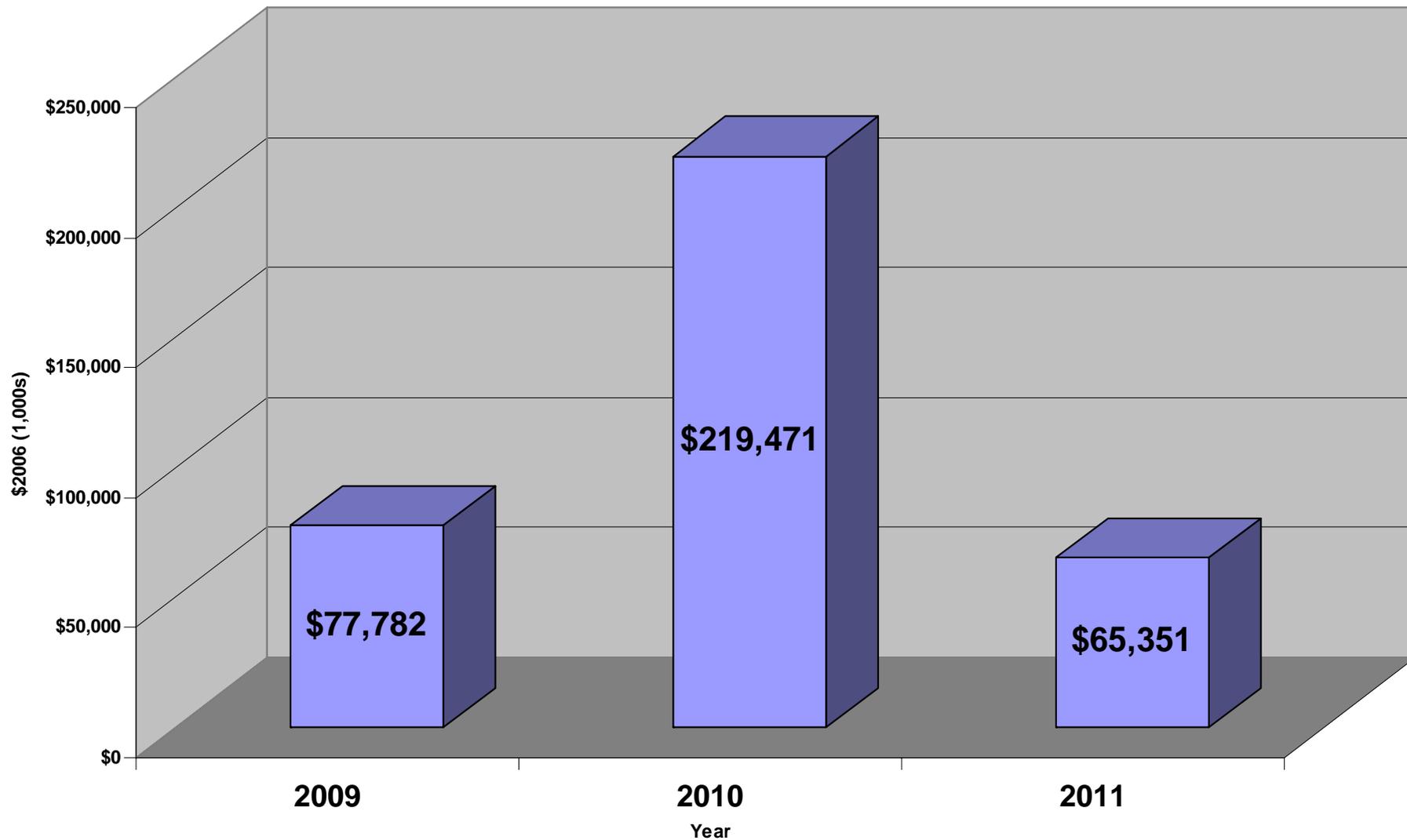


Scenario	79-a	79-b	110	125
Capital (\$ Mill)	\$75.4	\$202.1	\$362.6	\$609.8
Pass-Miles (Mill)	12.73	36.13	91.57	98.02

Implementation Phasing

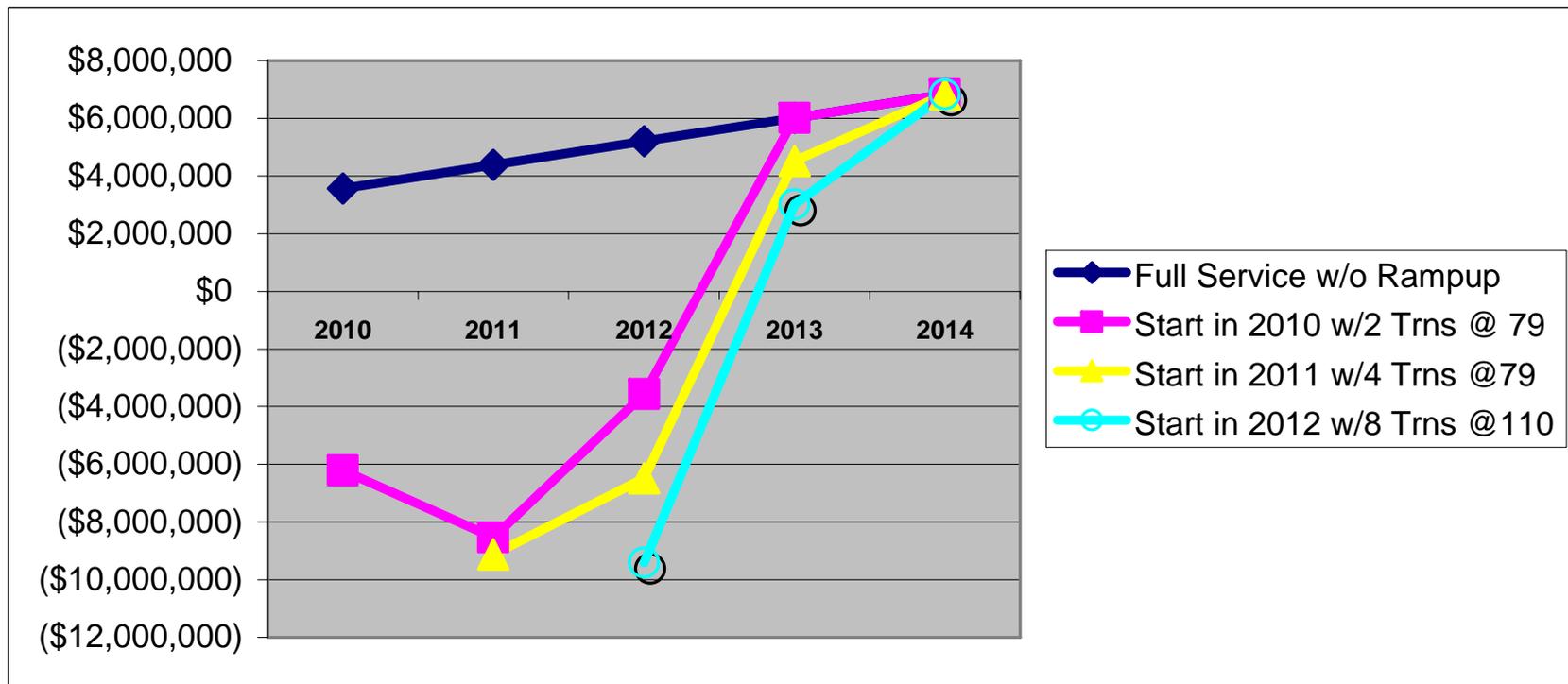


Capital Funding Requirements - Front Loaded Plan



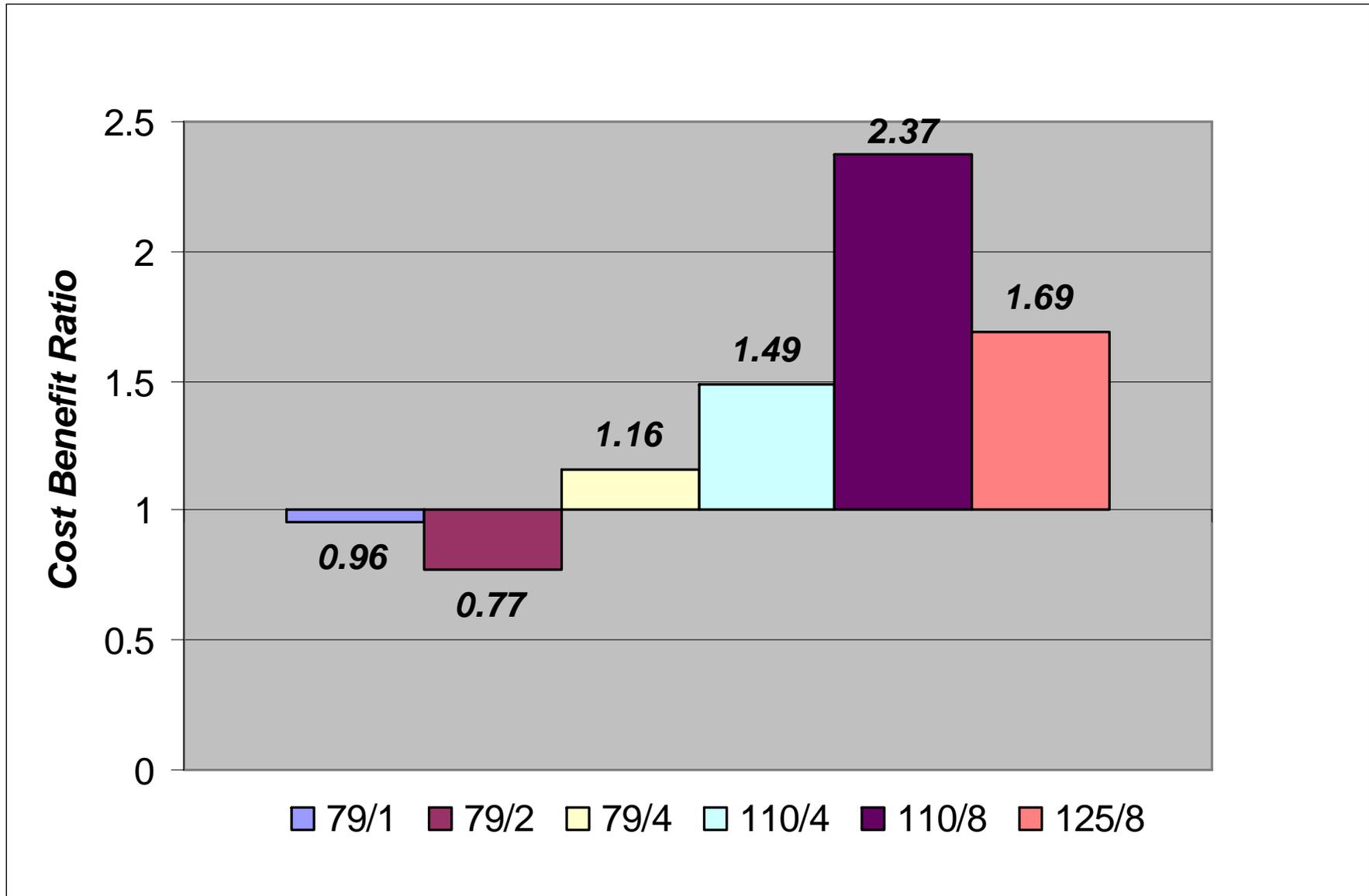
Ramp Up Subsidy Requirements

Year	2010	2011	2012	2013	2014	TIFIA LOAN
Start in 2010 w/2 Trns @ 79	(\$6.20)	(\$8.53)	(\$3.56)	\$6.02	\$6.83	(\$18.30)
Start in 2011 w/4 Trns @79		(\$9.13)	(\$6.48)	\$4.51	\$6.83	(\$15.61)
Start in 2012 w/8 Trns @110			(\$9.40)	\$3.01	\$6.83	(\$9.40)



These can be wrapped up in a TIFIA loan and repaid from operating surpluses, within the first 2-3 years of operations.

Cost Benefit Ratio



Economic Rent Benefits for then Minneapolis-Duluth/Superior Corridor

Economic Benefits:	110 mph (4 trains)	125 mph (4 trains)	110 mph (8 trains)	125 mph (8 trains)
Employment (# productivity jobs)	5,952	6,760	13,833	14,641
Income* (\$)	\$267 mill	\$302 mill	\$617 mill	\$653 mill
State Income Tax* (\$)	\$11 mill	\$13 mill	\$26 mill	\$27 mill
Federal Income Tax* (\$)	\$30 mill	\$34 mill	\$69 mill	\$73 mill
Assessed Property Value* (\$)	\$767 mill	\$869 mill	\$1,778 mil	\$1,880 mill
Property Tax* (\$)	\$9 mill	\$10 mill	\$21 mill	\$23 mill
Average Household Income* (\$)	\$161	\$182	\$372	\$393

Joint Development by Station (millions of 2006\$)

Station:	110 mph (4 trains)	125 mph (4 trains)	110 mph (8 trains)	125 mph (8 trains)
Twin Cities	\$300-430	\$370-510	\$730-990	\$820-1,000
Suburban North	\$90-120	\$90-120	\$190-260	\$190-260
Cambridge	\$60-80	\$60-90	\$120-170	\$120-170
Hinckley	\$110-140	\$120-160	\$250-340	\$260-350
Superior	\$30-40	\$30-50	\$70-90	\$70-100
Duluth	\$60-80	\$70-90	\$140-190	\$150-210

Conclusion

- **79-mph Service**
 - Capital cost of \$75-\$202 million
 - An annual operating subsidy of \$2.5 increasing to \$6.0 million per year as train miles are added.
 - Cost benefit is negative or marginal.
- **110-mph Service**
 - Capital cost of \$362 million
 - It generates \$1.2- \$4.6 million annual operating surplus.
 - Cost benefit is positive.
- **125-mph Service**
 - Capital cost of \$610 million
 - It generates \$0.6- \$5.2 million annual operating surplus.
 - Cost benefit is positive.

Thank You

For additional information contact:

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Estimated Economic Impacts for Twin Ports - Twin Cities Corridor (110 mph, 8 trains/day)

Economic Benefits:	Total Corridor
Employment (# Jobs)	13,800
Household Income (\$ ml)	\$600
Development Potential (\$ ml)	\$1,780

*Income and development potential estimates are given in 2006 \$

Estimated Economic Impacts for Twin Ports - Twin Cities Corridor Stations

(100 mph, 8 trains a day)

Economic Benefits:	Twin Cities	Suburban North	Cambridge
Employment (# Jobs)	5,500-7,400	1,400-2,000	100-250
Household Income (\$ ml)	250-340	70-90	5-11
Development Potential (\$ ml)	730-990	190-260	30-50

*Income and development potential estimates are given in 2006 \$

Estimated Economic Impacts for Twin Ports - Twin Cities Corridor Stations – (100 mph, 8 trains a day) – cont.

Economic Benefits:	Hinckley	Superior	Duluth
Employment (# Jobs)	1,900-2,500	700-900	1,400-1,900
Household Income (\$ ml)	90-120	25-30	50-70
Development Potential (\$ ml)	250-340	70-90	140-190

*Income and development potential estimates are given in 2006 \$