

The 13th Annual Golden Spike Seminar

Why Indiana is so Important to the National, MWRRI and Ohio Hub Rail Systems

Presented by:

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TEMS

Transportation Economics &
Management Systems, Inc.

October 6, 2012

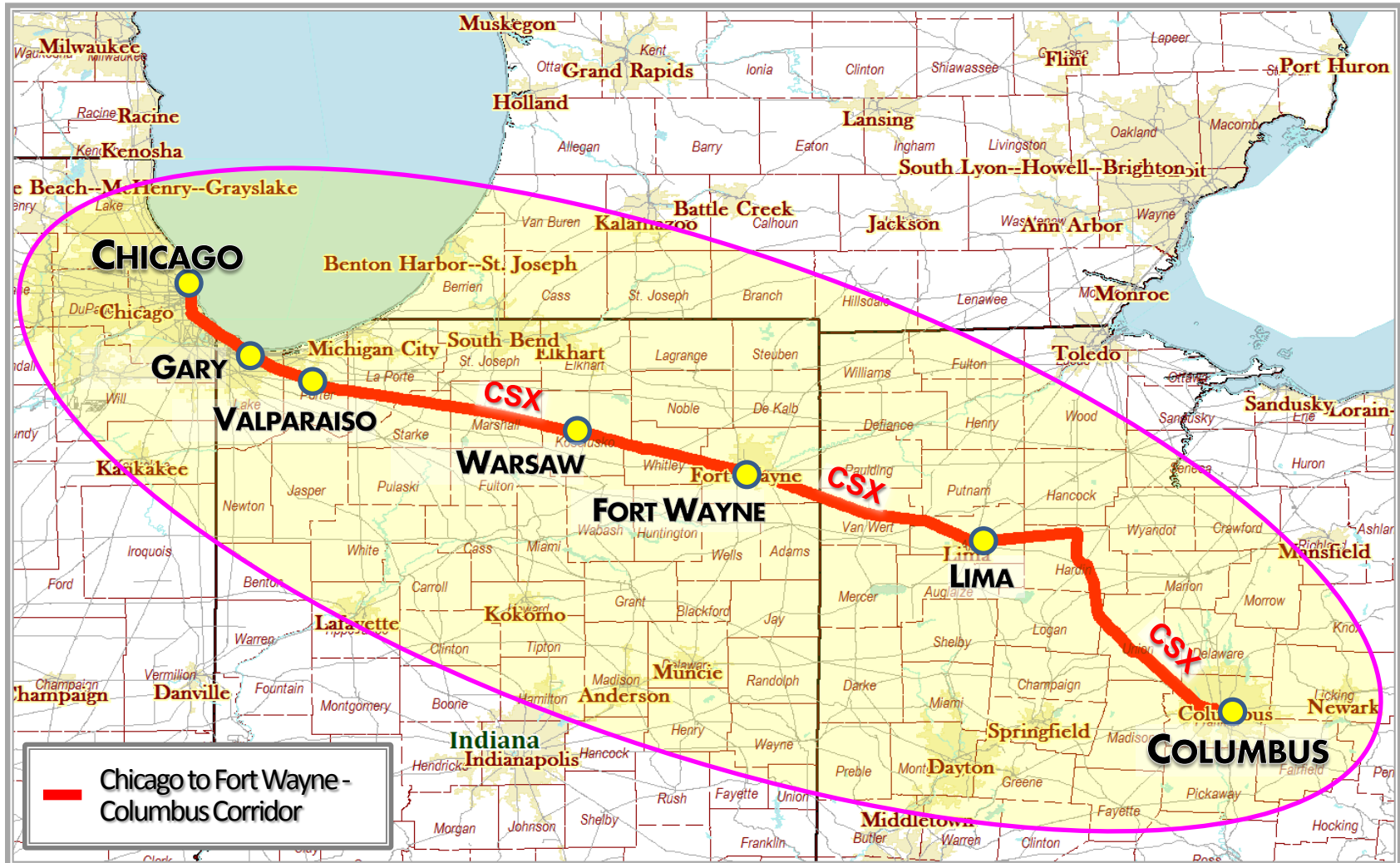
NORTHERN INDIANA / OHIO PASSENGER RAIL CORRIDOR STUDY



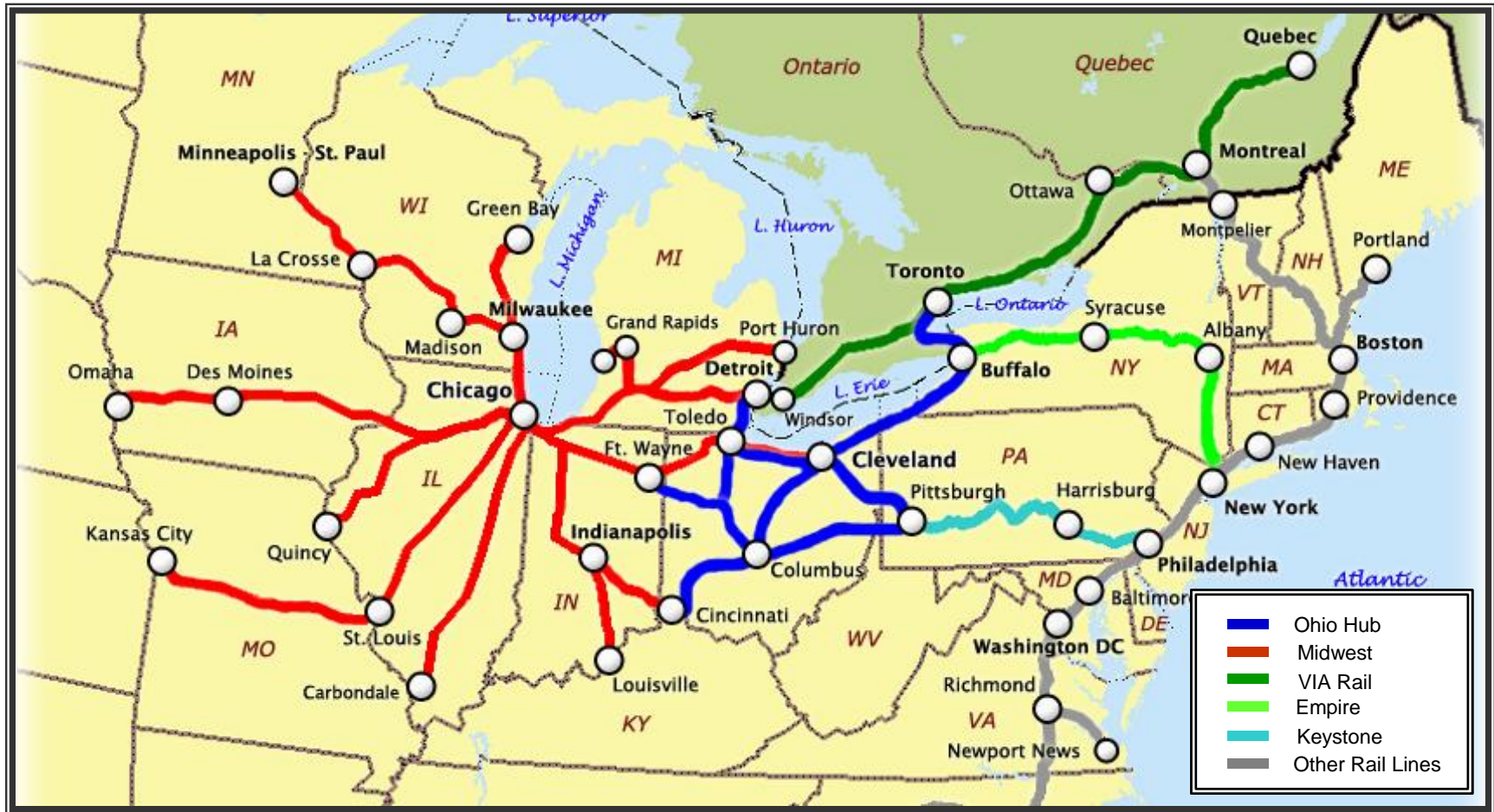
BUSINESS PLAN

Introduction

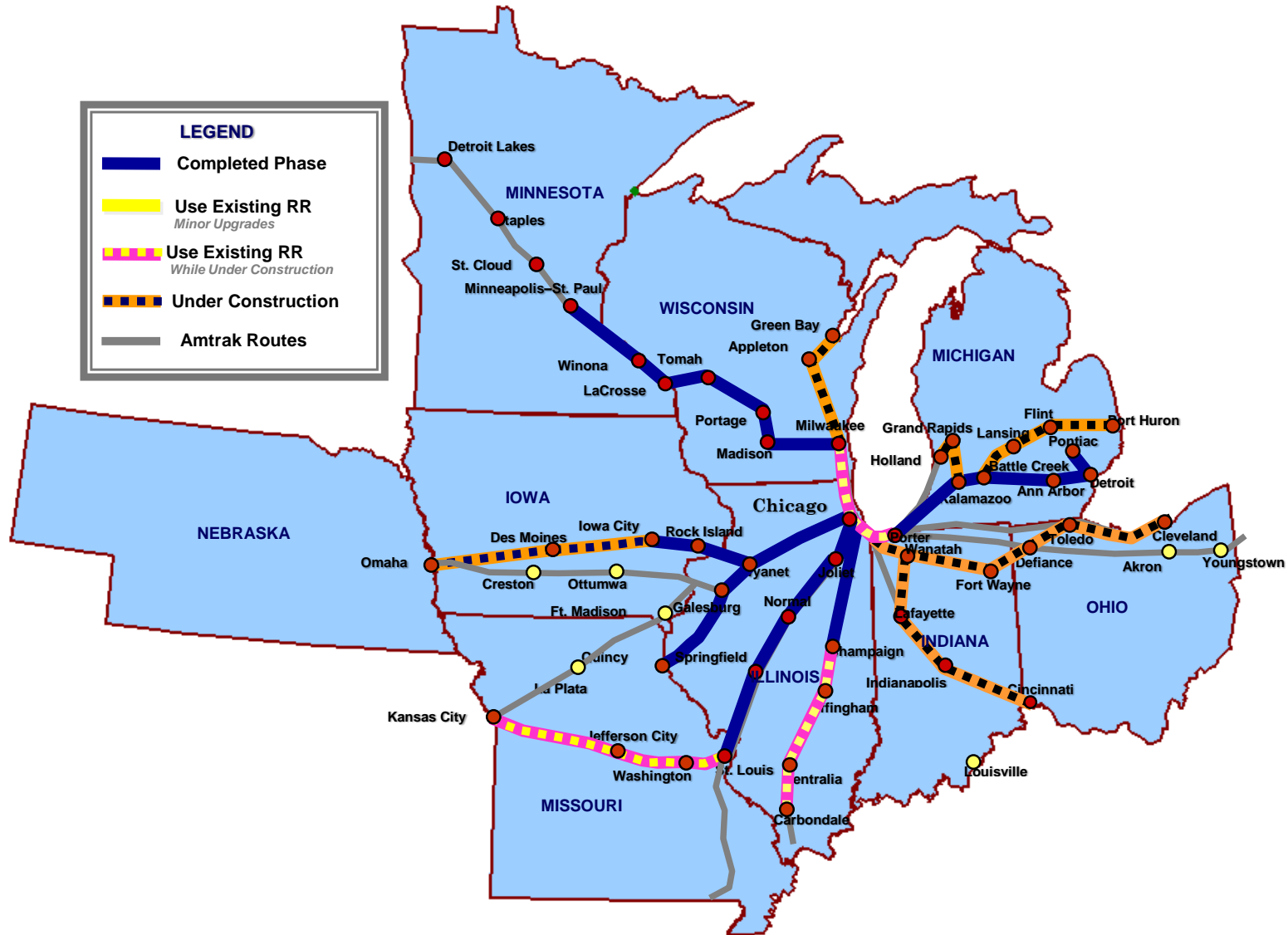
- Chicago-Ft. Wayne-Columbus Business Plan



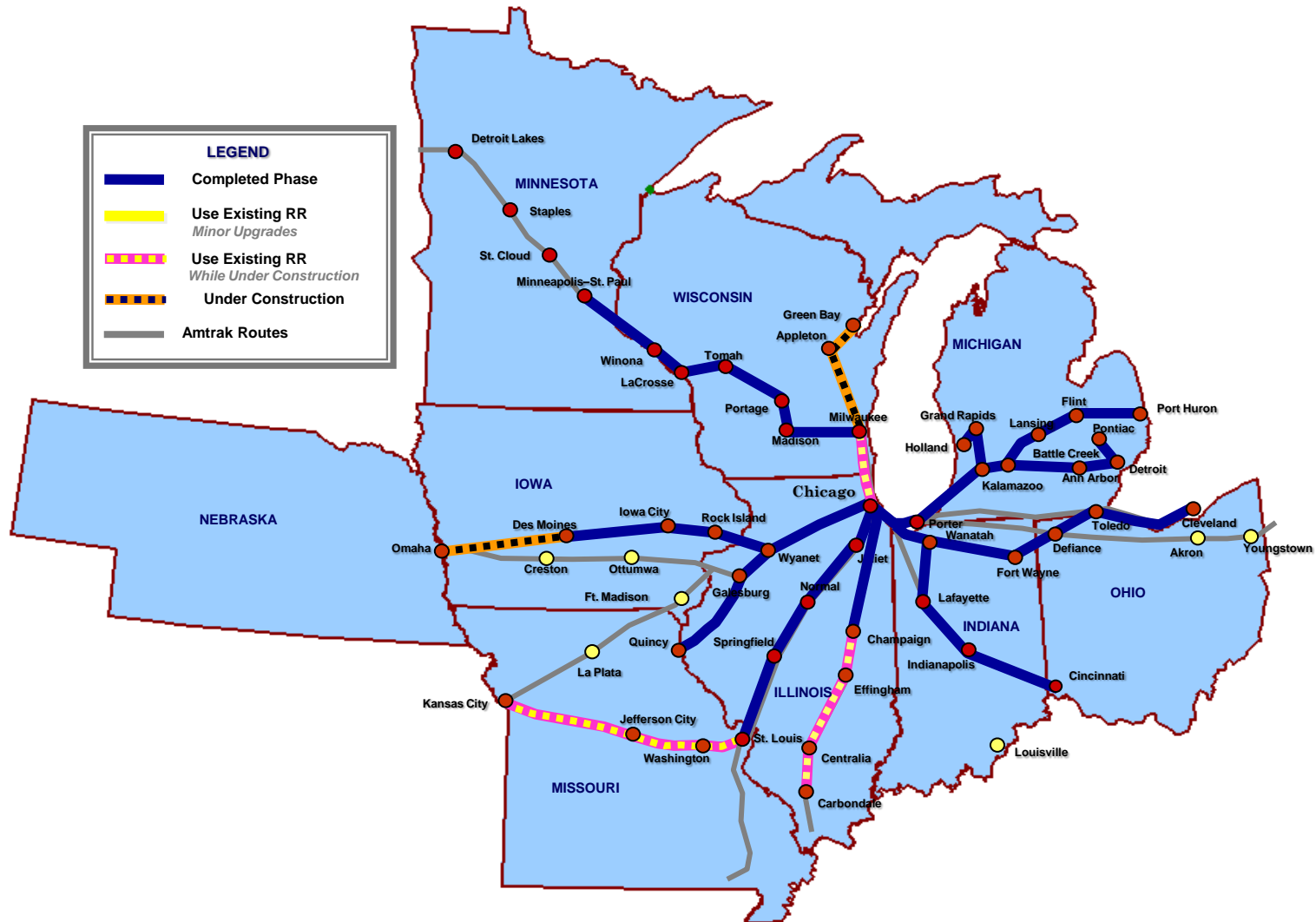
Midwest/Ohio Hub/Northeast Corridor Vision



Midwest Context – Phases 1/2/3/4



Midwest Context – Phase 5: Development of Indiana Corridors



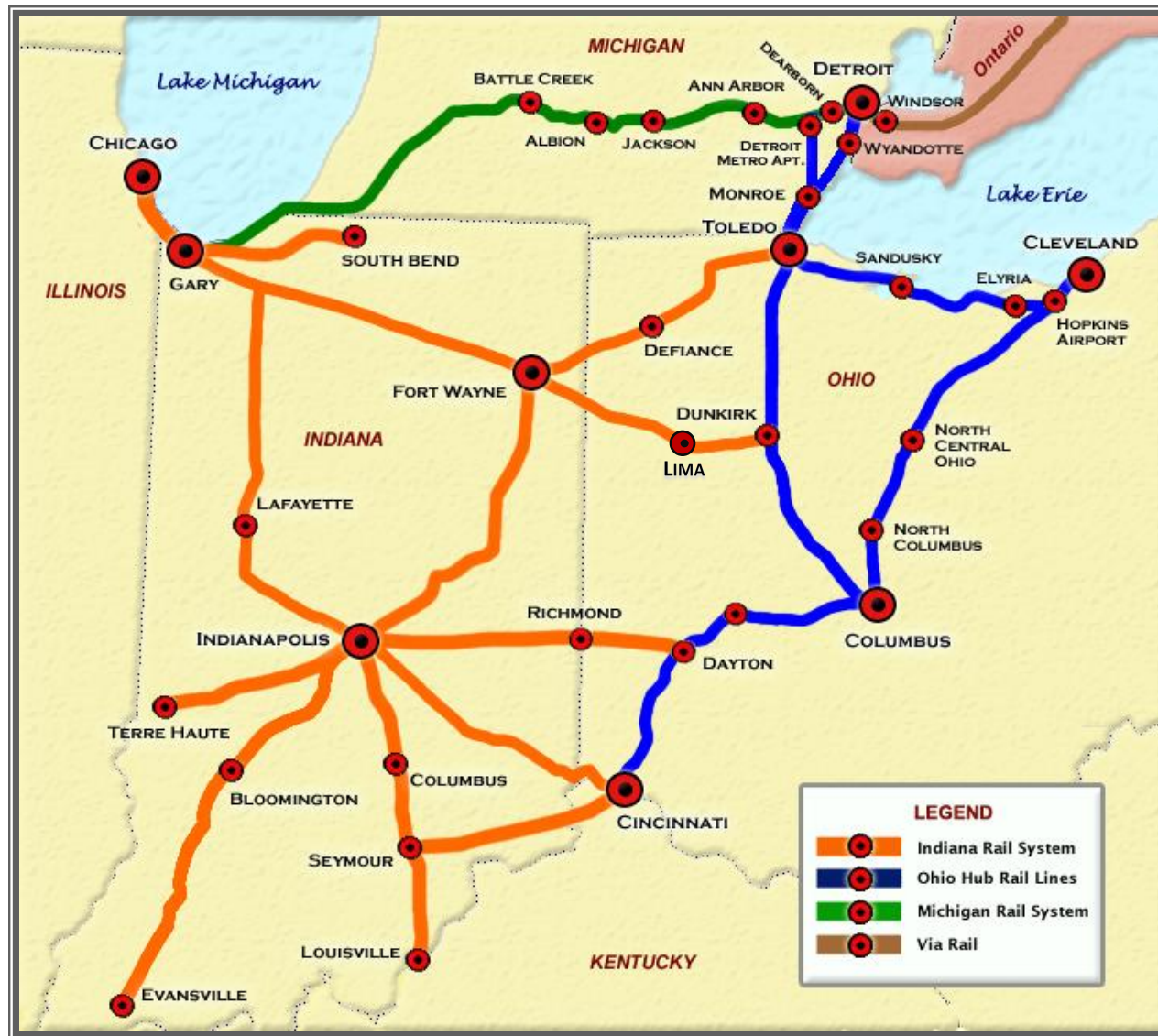
Ohio Hub and Corridor Extensions



Northern Indiana High Speed Rail System



Indiana Statewide System

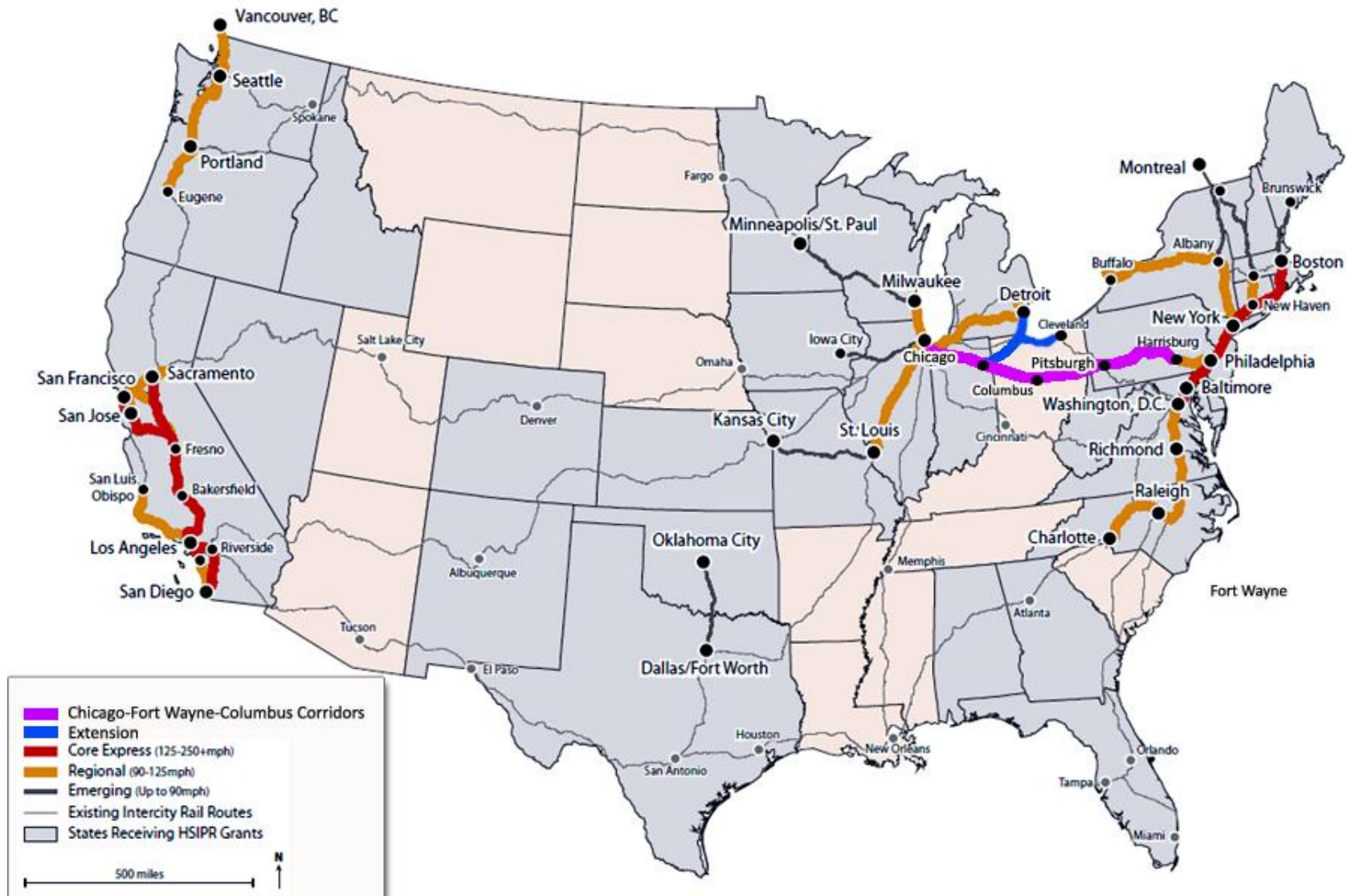


Purpose and Need National Goals

- Chicago-Ft. Wayne-Columbus-Pittsburgh-Philadelphia
- Chicago-Ft. Wayne-Toledo/Detroit-Cleveland-Pittsburgh-Philadelphia

Both national routes linking Midwest to Ohio Hub to Northeast Corridor use the Chicago-Ft. Wayne segment.

Purpose and Need: USDOT FRA Map



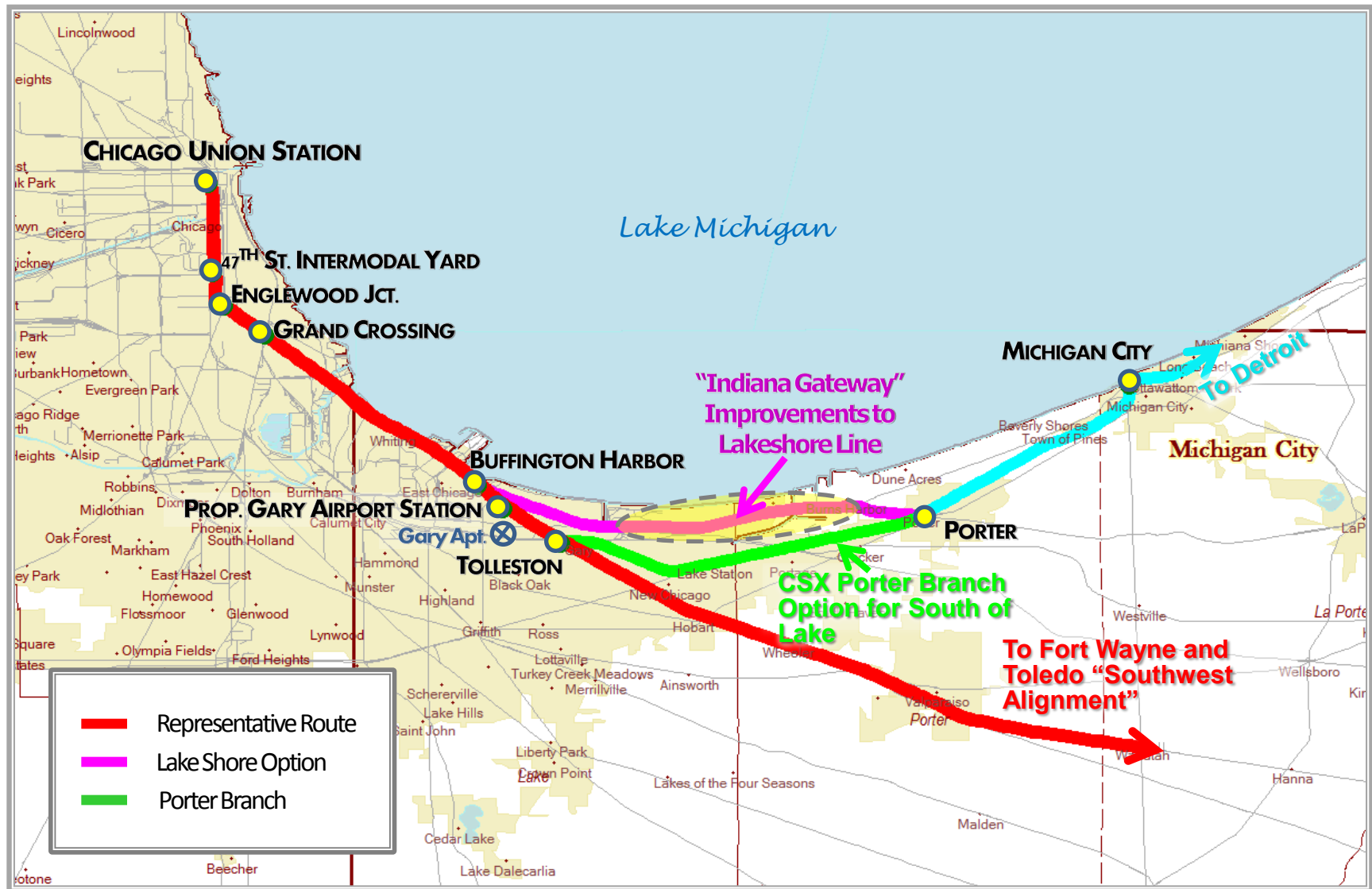
Regional Mobility

“Critical Link in Regional Transport Development”

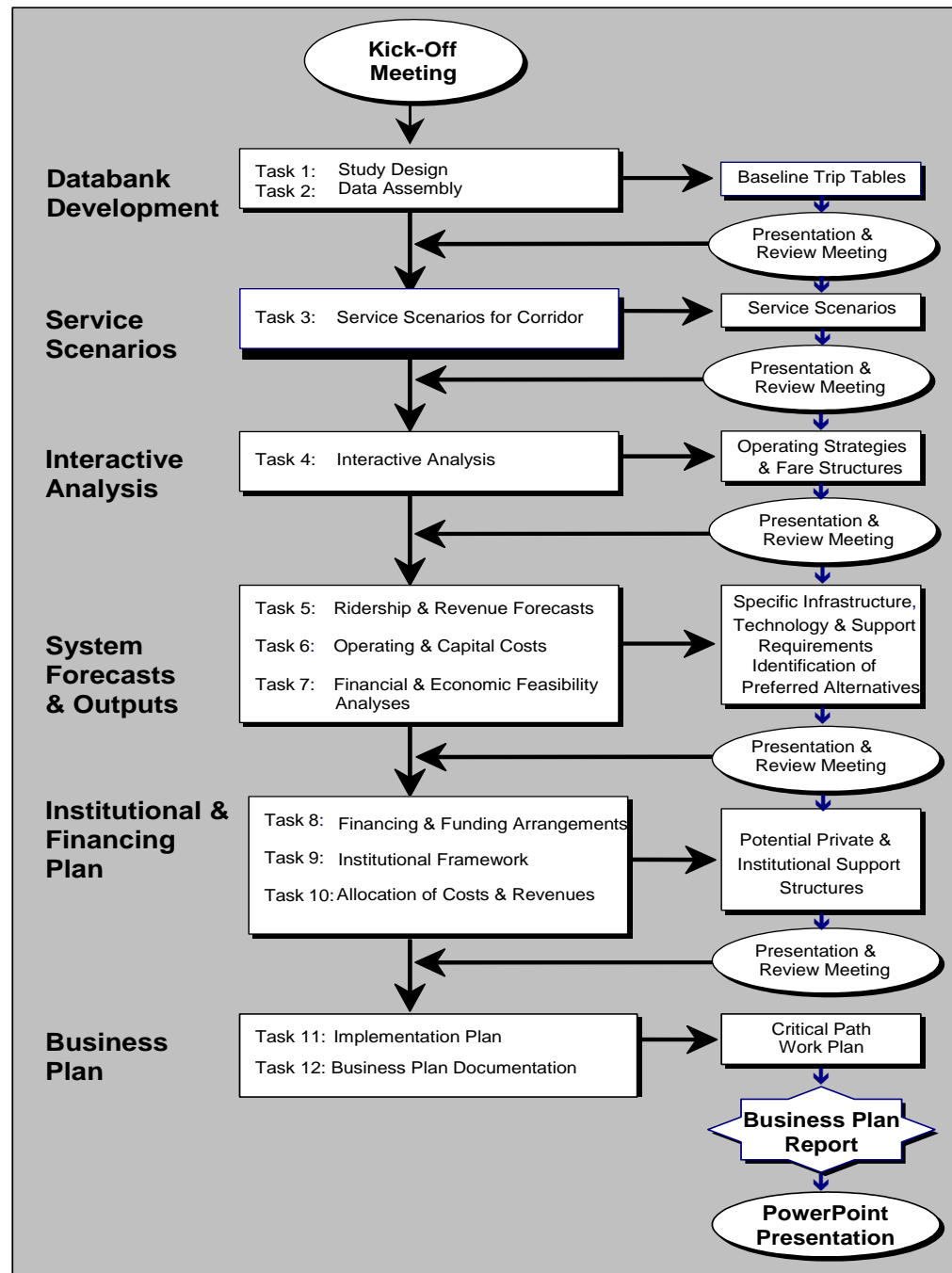
- Gary International Airport
 - \$166 million
- Indiana Gateway project
 - \$71 million
- Commuting from Valparaiso
- Grand Crossing Connection (CREATE Project)
- Englewood Jet Flyover (CREATE Project)



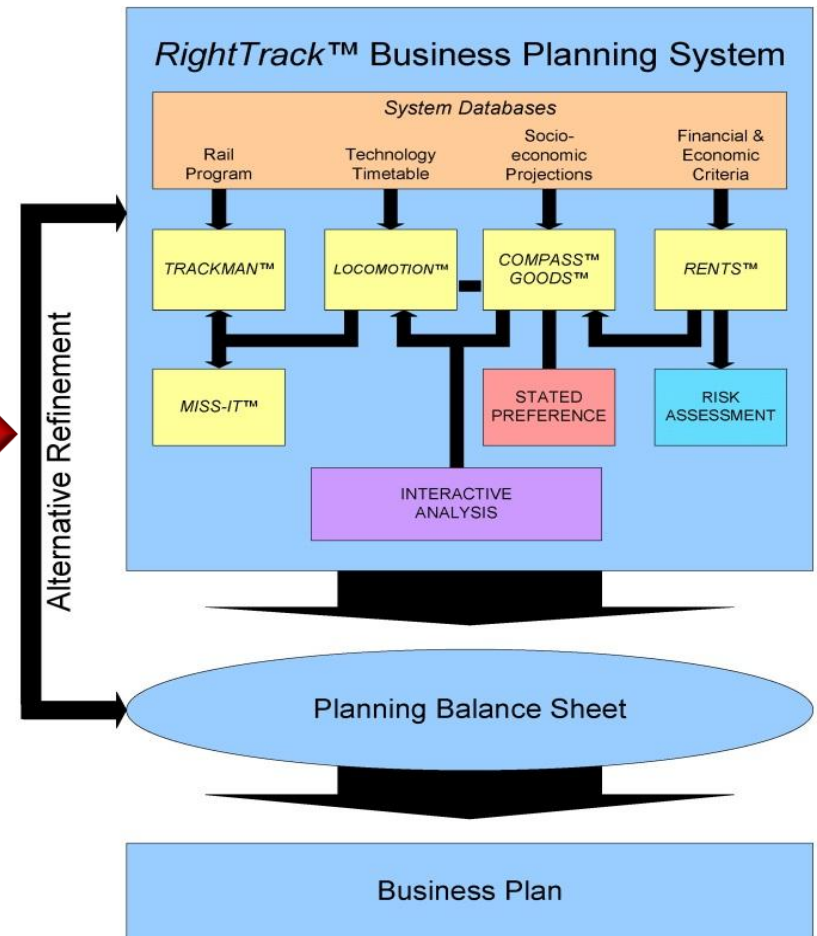
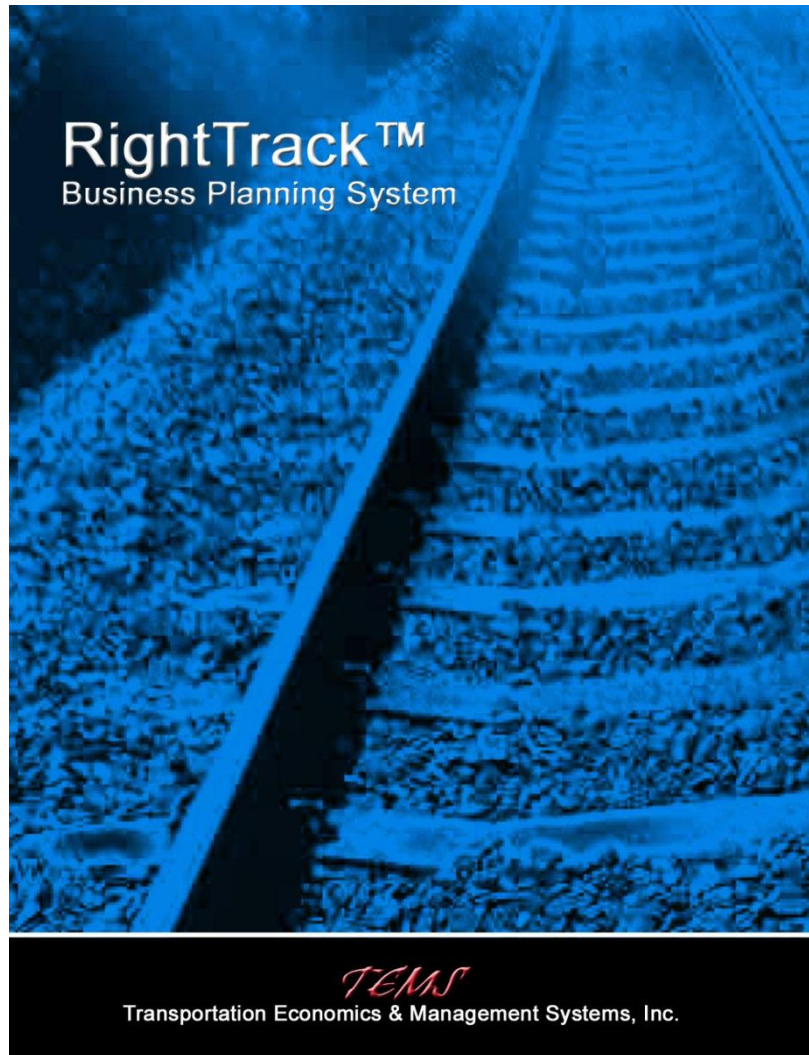
Detroit-Chicago and Indiana Gateway



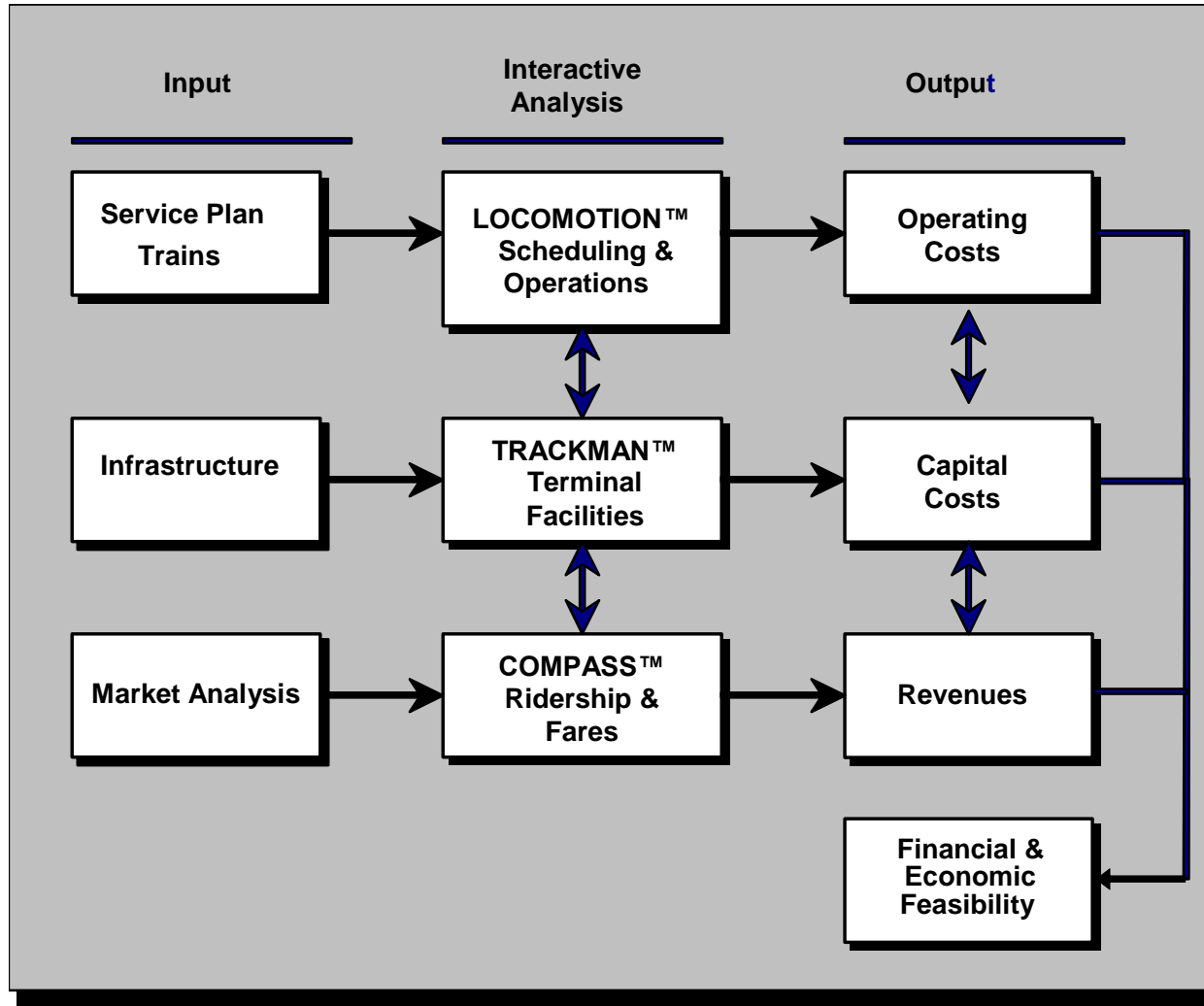
Business Plan Process: Chicago, Gary, Ft. Wayne, Lima, Columbus Corridor



RightTrack™ System

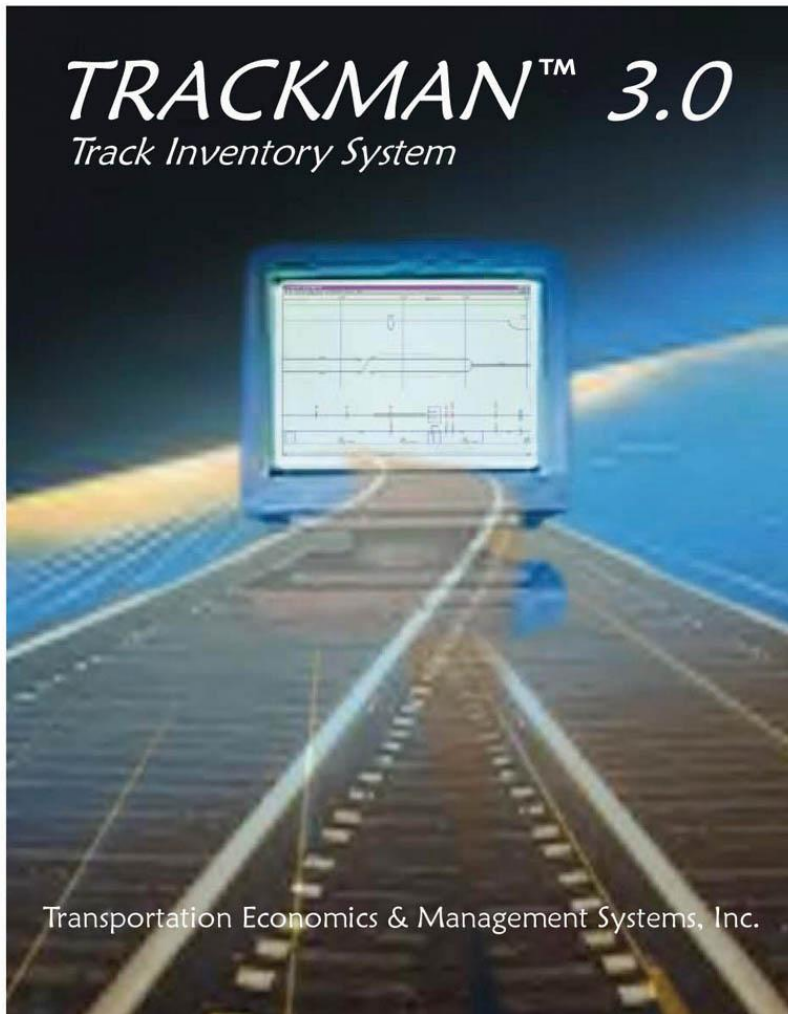


Interactive Analysis



TRACKMAN™

Track Inventory and Cost Management System



- Provides graphical database of track infrastructure
- Prioritizes time saved per dollar invested
- Optimizes engineering speeds
- Itemized capital budget

Proposed Train Technology

Loco-Hauled Bi-Level Coaches

**79
mph**



DMU



Talgo T21

**110
mph**

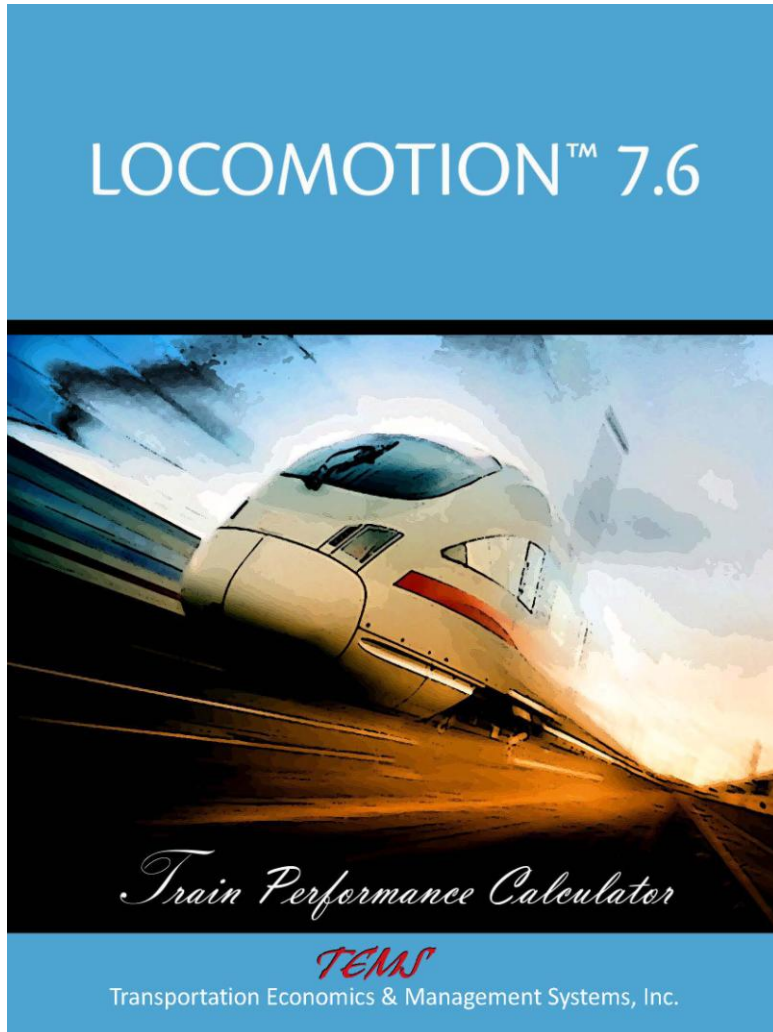


Jet Train



LOCOMOTION™

Train Performance Calculator



- Optimizes travel time
- Optimizes schedules
- Calculates rolling stock requirements
- Outputs string-line diagrams
- Estimates train operating costs

LOCOMOTION™ Speed Table Sample

LOCOMOTION - Train Performance Calculator

(c) 1990-1995, Transportation Economics & Management Systems, Inc.

Project Rockford Chicago O'Hare
Corridor Rockford Airport to Chicago O'Hare
Technology F40M
Investment Metra Stock

Date 25-Aug-97

Time 11:15 AM

Maximum Train Speed 79 mph

Acceleration Distance 3 miles

Deceleration Distance 2 miles

Station Dwell Time 2 min

Recovery Time 0 min

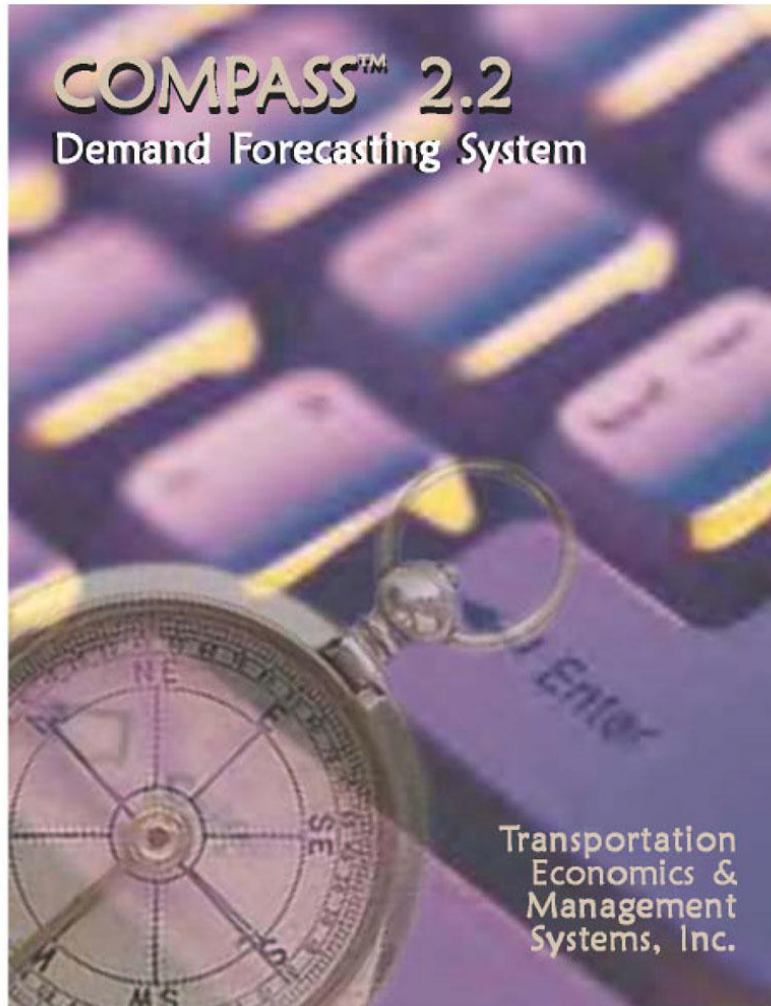
Total Journey Time 3:44 hours

Total Journey Length 81.0 miles

Station	Mile	Speed	Train	Schedule	Depar	Engineering
City	Post	Restriction	Speed	Time	Arriv	Description
Rockford Airport	0	75	0.0	0:00	Dp	
	1	75	55.5	0:02		
	2	70	70.0	0:03		Airport junct
	3	79	77.9	0:03		
	4	79	79.0	0:04		
	5	79	79.0	0:05		
	6	79	79.0	0:06		
	7	79	79.0	0:06		
	8	79	79.0	0:07		
	9	79	63.0	0:08		
	9.1	60	60.0	0:08		Davis junct-Start
	9.6	60	60.0	0:09		Davis junct-End
	10	79	67.3	0:09		
	11	79	76.7	0:10		
	12	79	79.0	0:11		

COMPASS™

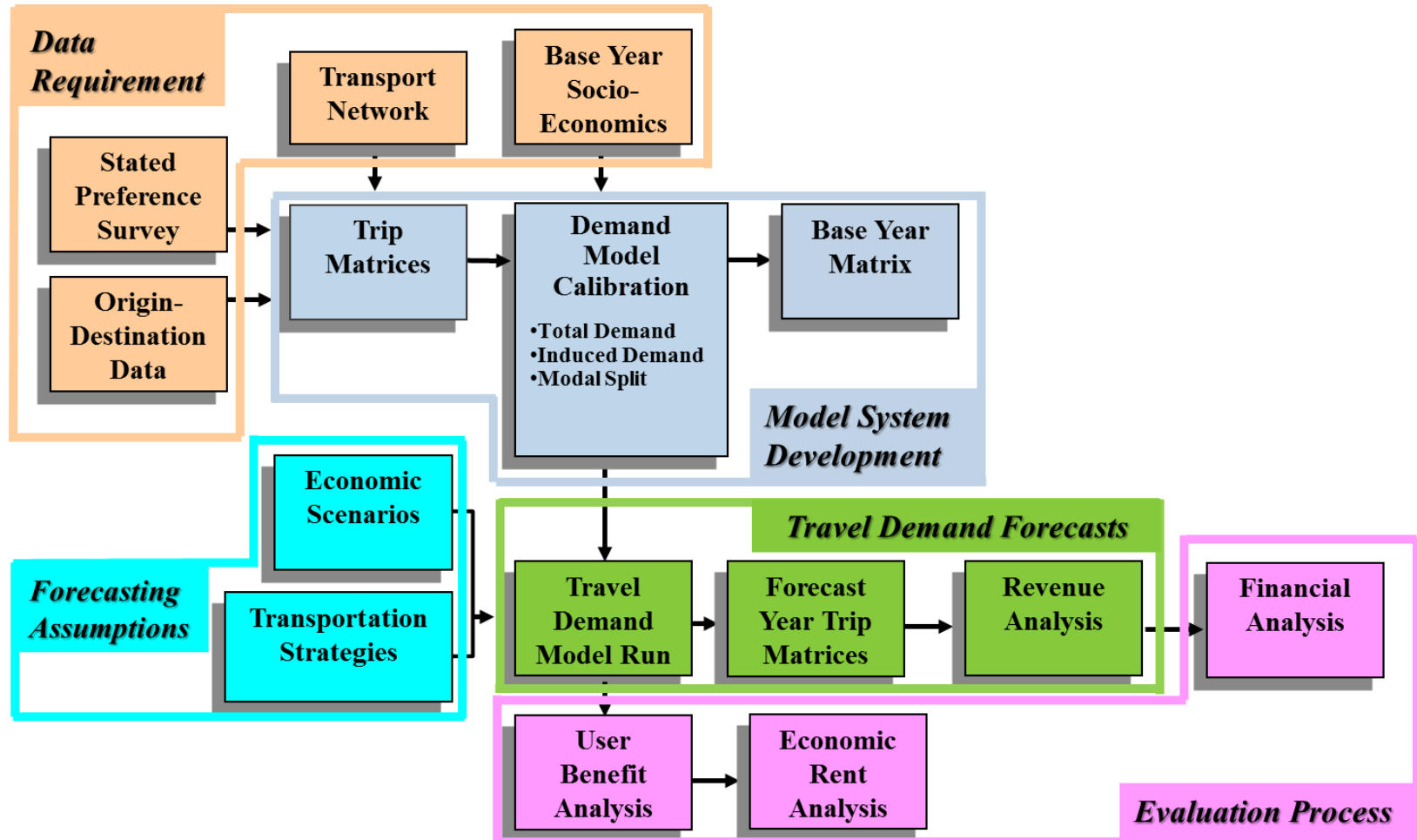
Passenger Demand Forecasting System



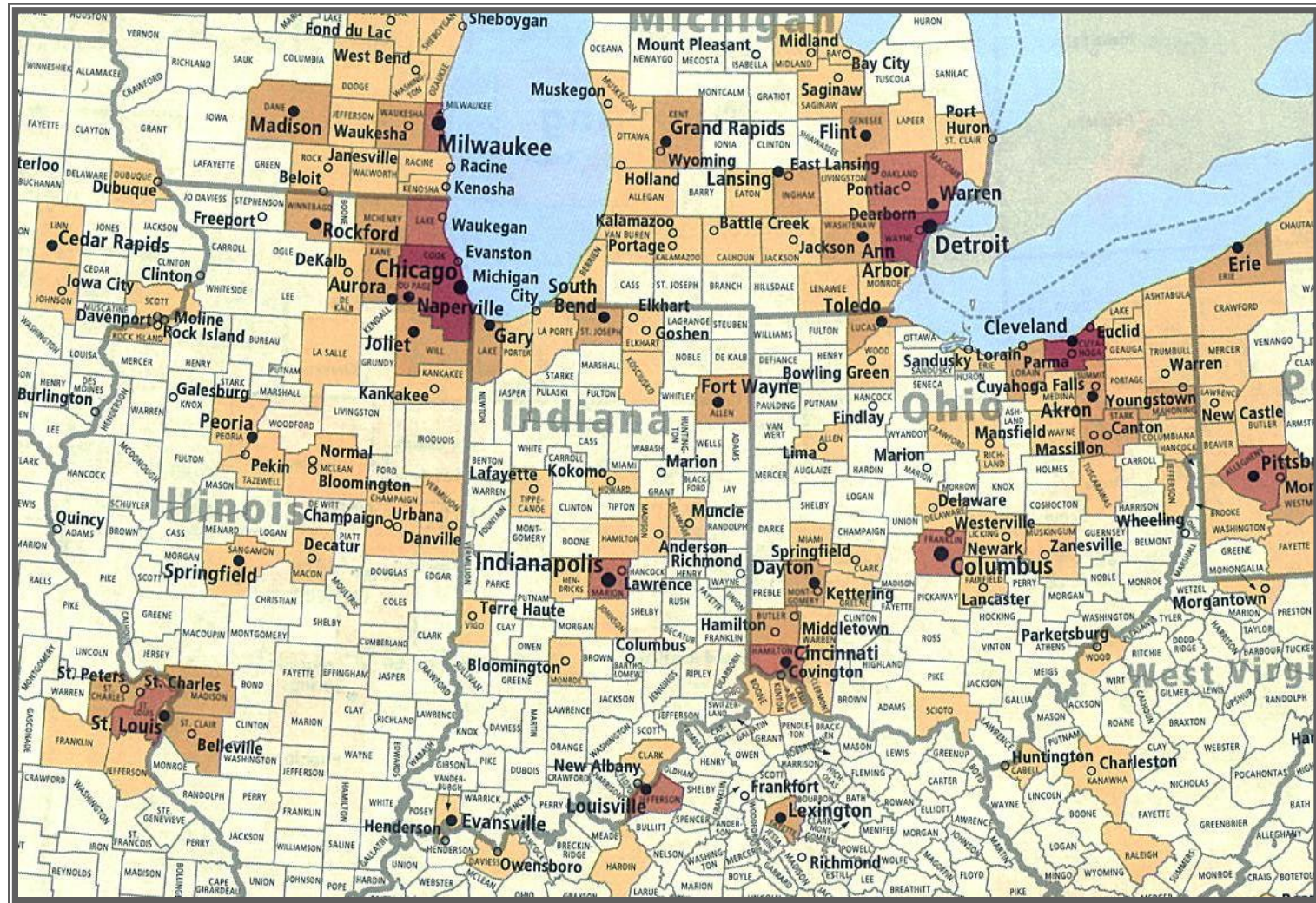
- Used to model passenger movements
- Regional or Urban level of analysis
- Calibrated models replicate Base Study Year patterns
- Total Demand Model reflecting socio-economic trends and network impacts
- Hierarchical Model for Mode Choice or Route Choice
- Forecast Reports for Aggregate Market Share, Corridor Trips, and Link Loading

COMPASS™

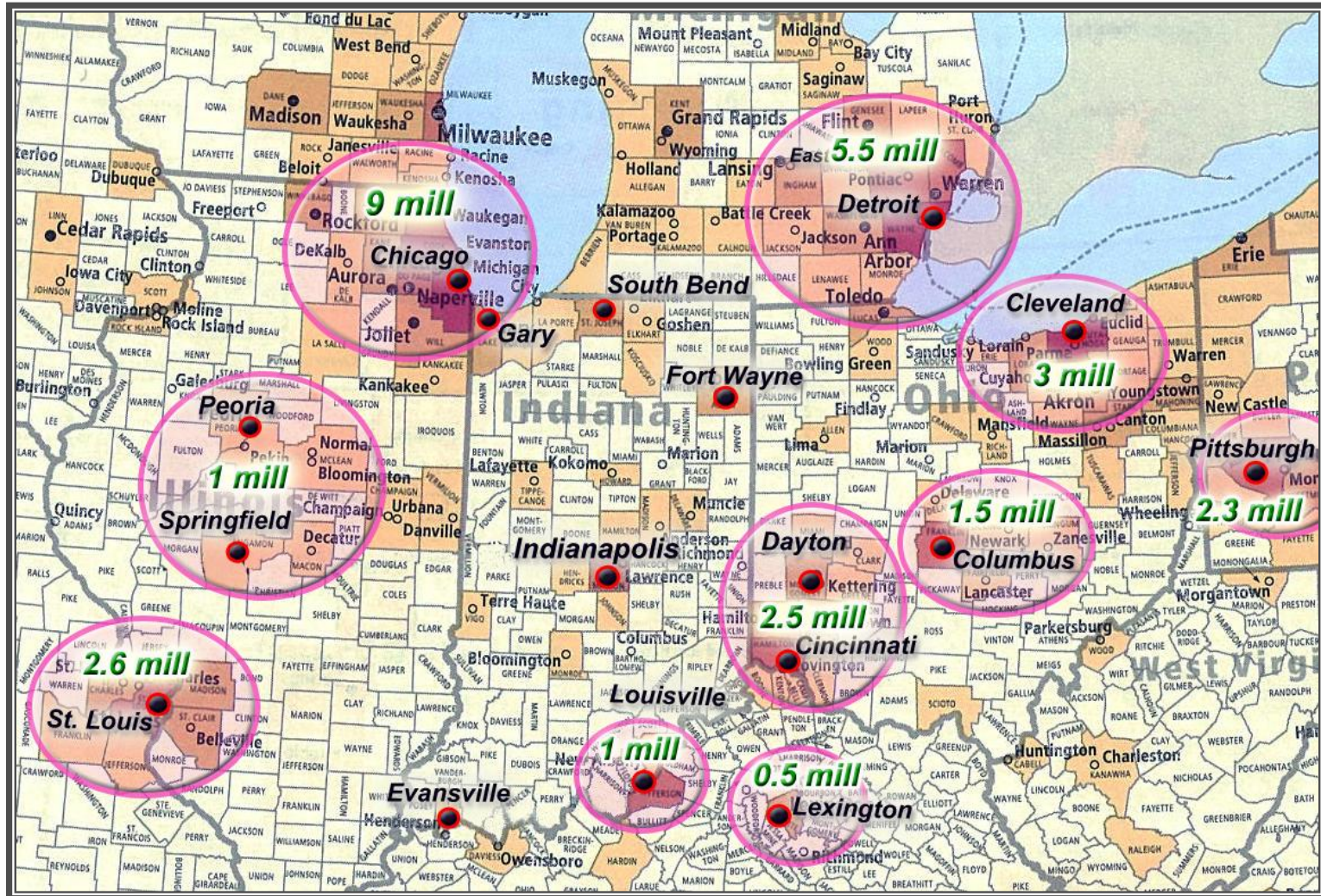
Forecasting Process



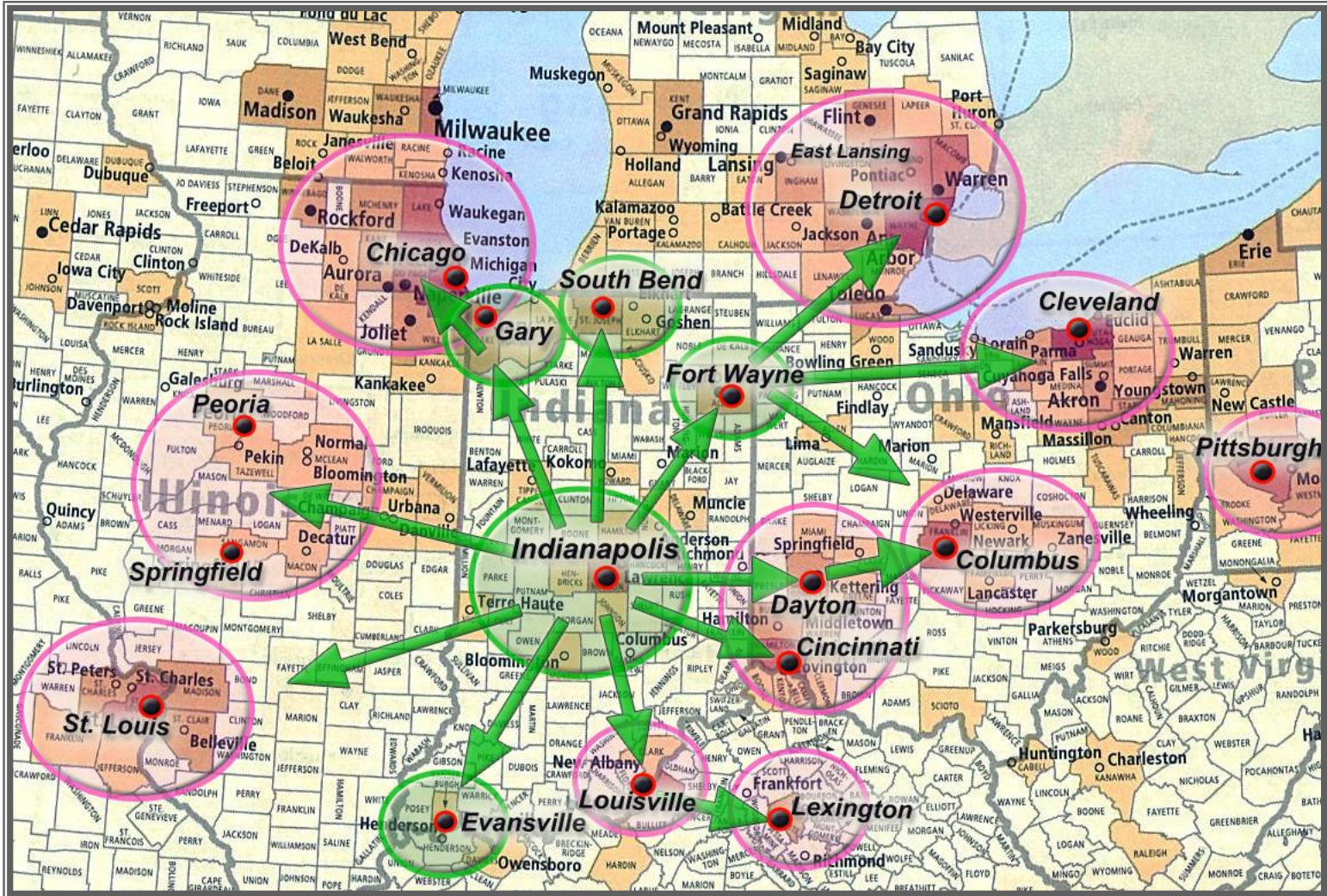
Midwest Market Centers



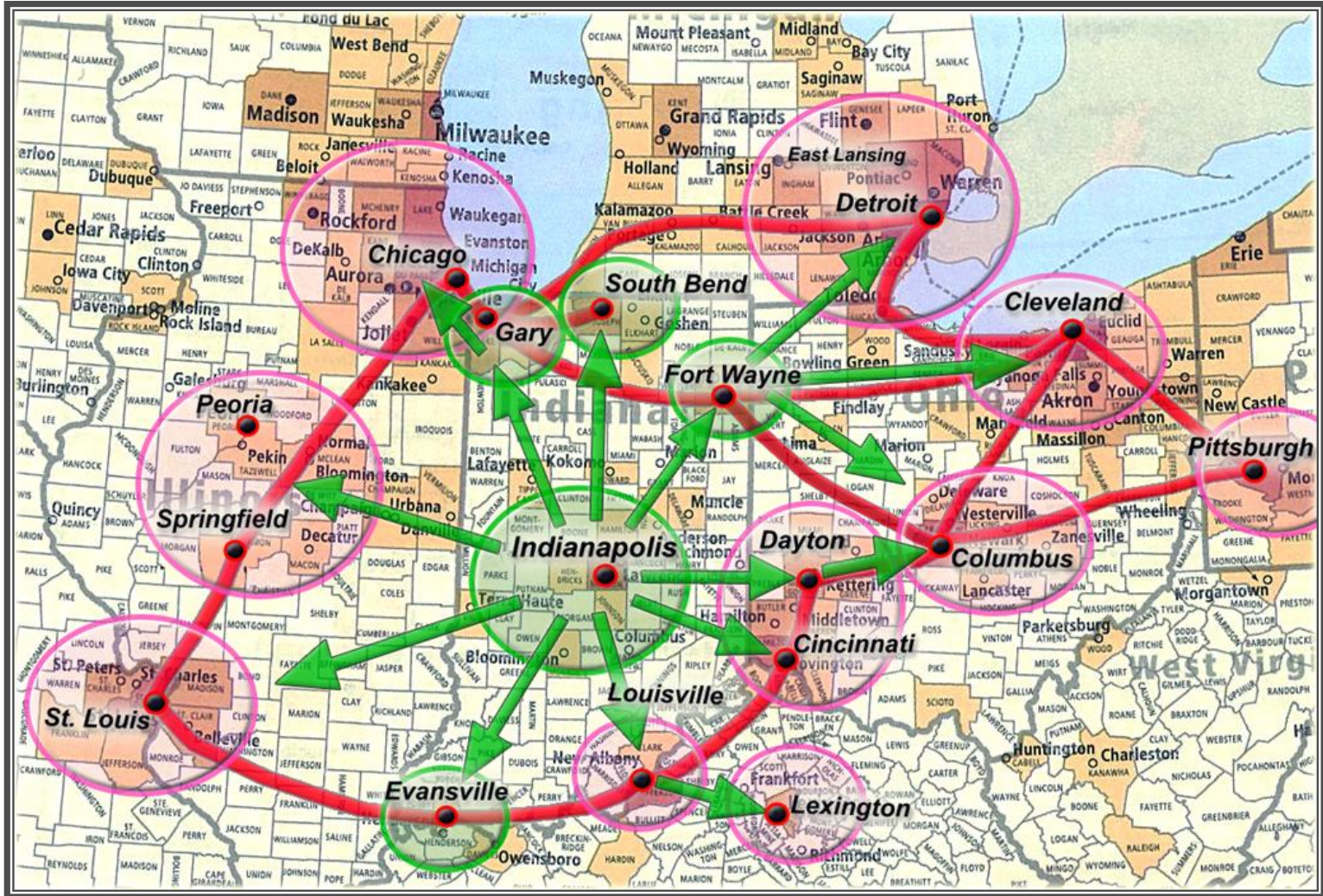
Out-of-State Markets = 30+ million



Indiana Market Connections

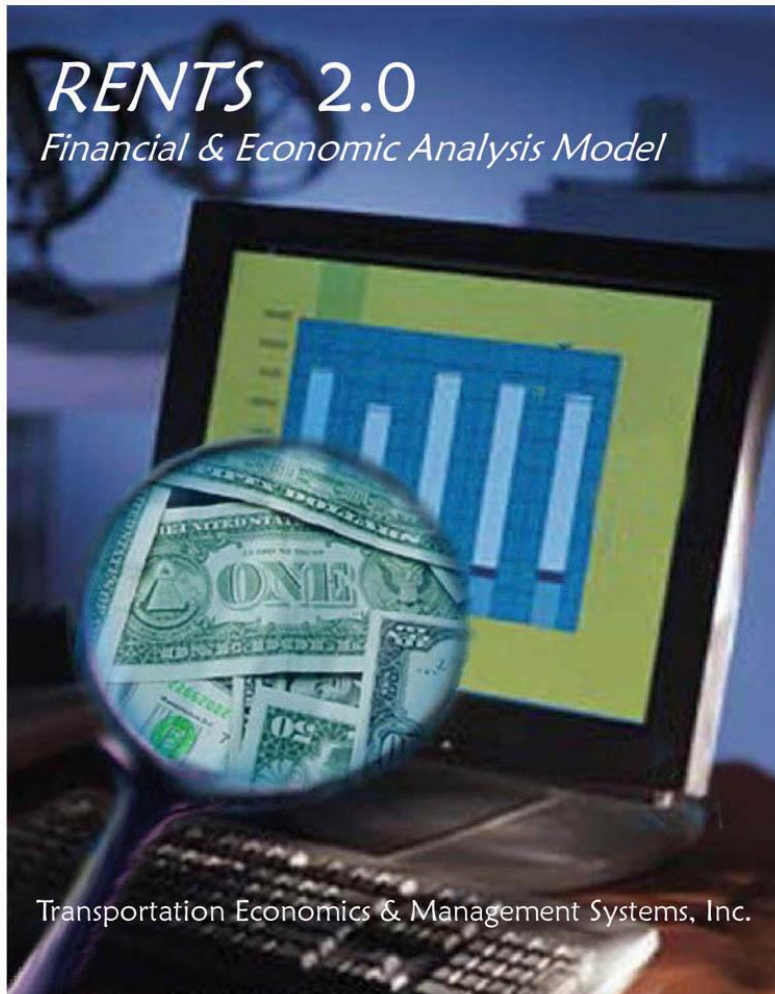


Out-of-State Market Connections



RENTS™

Financial and Economic Analysis



- Analysis of net cash flow projections
- Comparison of Public versus Private financing
- Evaluation in terms of Internal Rate of Return (IRR) and Net Present Value (NPV) methods
- User Benefits based on Consumer Surplus evaluation
- Community Benefits based on Economic Rent

RENTS™

Sample Financial Analysis Output

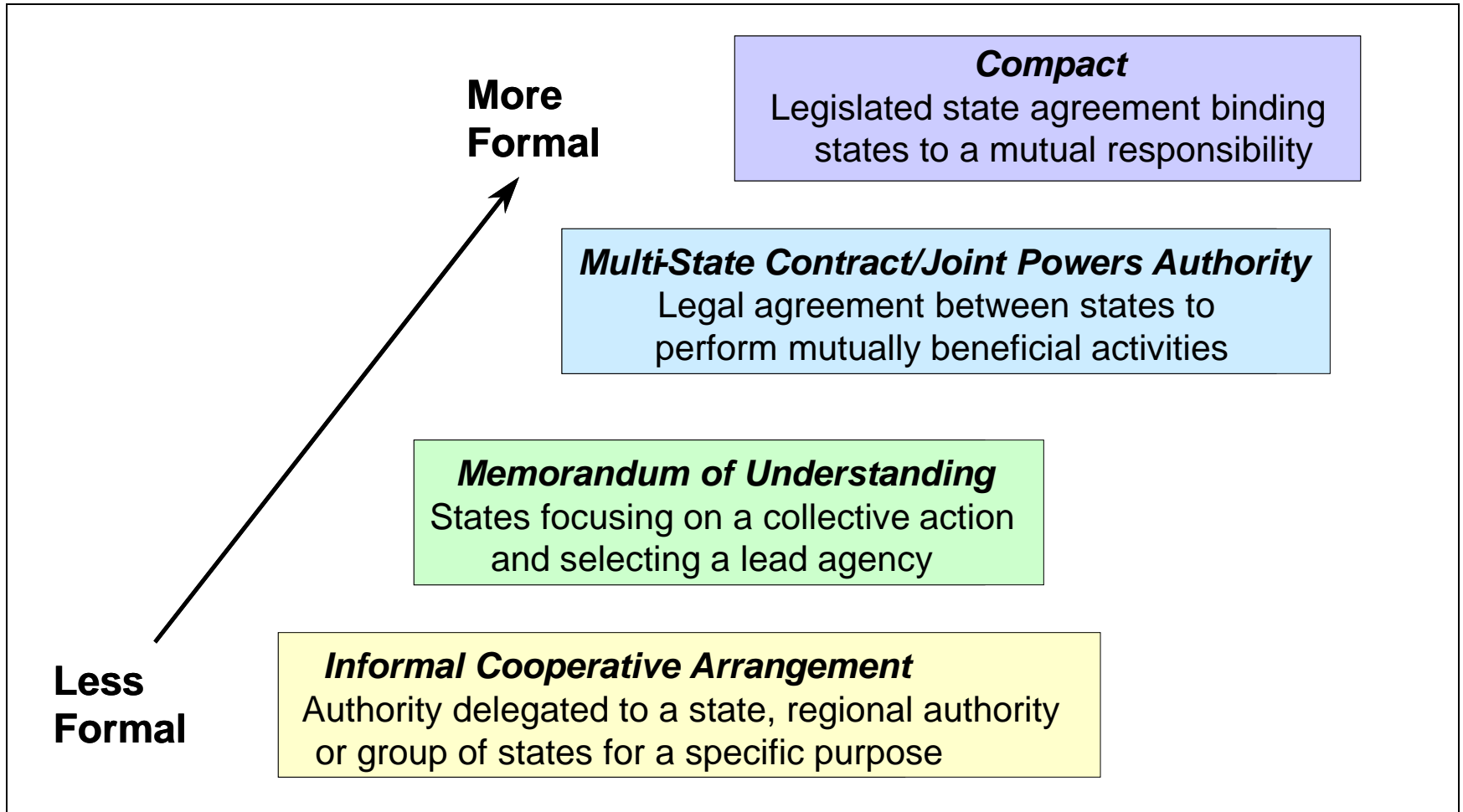
RENTS - [REPORT]													
File Edit Window Help													
All monetary values in million dollars													
	Total 2012 NPV	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2
Benefits to Users													
Ticket Box Revenue	8204.75	0.00	0.00	0.00	0.00	0.00	364.19	368.95	373.78	378.67	383.45	388.29	393
Parking Revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Ancillary Revenue	82.04	0.00	0.00	0.00	0.00	0.00	3.64	3.69	3.74	3.79	3.84	3.89	3
Peak/Off-Peak Pricing Incremental Revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Consumer Surplus	3731.94	0.00	0.00	0.00	0.00	0.00	163.84	166.11	168.42	170.76	173.04	175.36	177
Impact of HSR on Rail	989.27	0.00	0.00	0.00	0.00	0.00	43.91	44.49	45.07	45.66	46.24	46.82	47
Total User Benefits	13008.00	0.00	0.00	0.00	0.00	0.00	575.58	583.24	591.01	598.88	606.57	614.35	622
Benefits to Public Community													
Highway Congestion Delay Saving	2338.25	0.00	0.00	0.00	0.00	0.00	93.07	94.99	96.95	98.95	100.99	103.08	105
Highway Pollutants Emission Saving	779.35	0.00	0.00	0.00	0.00	0.00	34.57	34.98	35.40	35.83	36.22	36.62	37
Highway Congestion Fuel Saving	1014.94	0.00	0.00	0.00	0.00	0.00	33.24	34.06	34.90	35.76	36.78	37.84	38
Airport Operational Delay Saving	862.69	0.00	0.00	0.00	0.00	0.00	39.32	39.78	40.25	40.73	41.19	41.65	42
Airport Passenger Delay Saving	1465.00	0.00	0.00	0.00	0.00	0.00	66.77	67.56	68.35	69.16	69.94	70.73	71
Airport Pollutants Emission Saving	68.38	0.00	0.00	0.00	0.00	0.00	3.12	3.16	3.19	3.23	3.27	3.30	3
Public Safety	2129.11	0.00	0.00	0.00	0.00	0.00	94.51	95.74	96.99	98.26	99.50	100.76	102
Total Community Benefits	8657.72	0.00	0.00	0.00	0.00	0.00	364.60	370.28	376.05	381.92	387.90	393.98	400
Total Benefits	21665.72	0.00	0.00	0.00	0.00	0.00	940.18	953.52	967.06	980.80	994.46	1008.33	1022
Operating and Maintenance Costs													
Train Crew Cost	95.65	0.00	0.00	0.00	0.00	0.00	4.20	4.25	4.31	4.37	4.43	4.49	4
On-Board Service Cost	47.83	0.00	0.00	0.00	0.00	0.00	2.10	2.13	2.16	2.19	2.21	2.24	2
Equipment Maintenance Cost	269.73	0.00	0.00	0.00	0.00	0.00	11.83	11.99	12.16	12.32	12.49	12.66	12
Fuel and Energy Cost	298.43	0.00	0.00	0.00	0.00	0.00	13.09	13.27	13.45	13.63	13.82	14.00	14
Administration and Management Cost	76.52	0.00	0.00	0.00	0.00	0.00	3.36	3.40	3.45	3.50	3.54	3.59	3
Insurance Cost	86.35	0.00	0.00	0.00	0.00	0.00	3.79	3.84	3.89	3.95	4.00	4.05	4
Call Center Cost	22.20	0.00	0.00	0.00	0.00	0.00	0.97	0.98	1.00	1.01	1.03	1.04	1
Credit Card and Travel Agency Commission Cost	58.24	0.00	0.00	0.00	0.00	0.00	2.57	2.61	2.64	2.68	2.71	2.75	2
Station Operating and Maintenance Cost	1962.21	0.00	0.00	0.00	0.00	0.00	104.51	104.51	104.51	104.51	104.51	104.51	104
Guideway Maintenance Cost	768.85	0.00	0.00	0.00	0.00	0.00	40.95	40.95	40.95	40.95	40.95	40.95	40
Fixed Administration and Management Cost	64.59	0.00	0.00	0.00	0.00	0.00	3.44	3.44	3.44	3.44	3.44	3.44	3
Other Operating Cost Cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Total Operating and Maintenance Cost	3750.60	0.00	0.00	0.00	0.00	0.00	190.79	191.37	191.95	192.54	193.13	193.73	194
Capital Costs													
Guideway Construction/Upgrading Cost	3299.37	415.00	1128.00	1343.00	400.00	177.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Station Construction/Upgrading Cost	511.63	64.00	175.00	209.00	62.00	27.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Vehicle Purchasing/Upgrading Cost	298.19	37.00	102.00	122.00	36.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Maintenance Base Construction/Upgrading Cost	168.65	21.00	58.00	69.00	20.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Impact on Other Transportation Modes	253.47	0.00	0.00	0.00	0.00	0.00	13.50	13.50	13.50	13.50	13.50	13.50	13
Total Capital Cost	4531.31	537.00	1463.00	1743.00	518.00	229.00	13.50	13.50	13.50	13.50	13.50	13.50	13
Total Cost	8281.91	537.00	1463.00	1743.00	518.00	229.00	204.29	204.87	205.45	206.04	206.63	207.23	207
Benefit Less Cost	13383.81	-537.00	-1463.00	-1743.00	-518.00	-229.00	735.89	748.65	761.61	774.76	787.83	801.10	814
Benefit Cost Ratio	2.62												

Institutional Arrangements: Partners

- Federal: Oversight and Funding
- State/Regional: Planning and Funding
- Private Sector:
 - Business Opportunities – train operations, joint development, ancillary services
 - Build Operate Own-Transfer and Funding (BOOT-F) – Florida Model



Institutional Arrangements: Legal Framework



Funding: Two Options

- Government: Classic Infrastructure Development
 - Federal – 80%
 - State – 20%
- Public/Private Partnership (PPP): Creative Financing Infrastructure Development
 - Federal – 60-80%
 - State + Private – 40-20%



Program and Study Timetable

- Business Plan – Jun 2012 – Dec 2012
- Service Development Plan – Jan 2013 – Jun 2013
- Programmatic Tier I EIS – Oct 2013 – Jun 2015
- Tier II EIS – Jun 2015 – Jun 2018
- BOOT/Final Design – Oct 2018
- Implementation – 2020

Thank You

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