Alternative Funding and Financing Mechanisms for Passenger and Freight Rail Projects (NCRRP 07-01)

Conference on Surface Transportation Financing: Innovation, Experimentation, and Exploration

Workshop #1: Communicating the What, Why, and How—Increasing Transportation Revenues, Part 1

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Irvine, CA

Project Context & Rationale

Many rail projects have a funding gap.

- Passenger Rail
  - Intercity rail, including High Speed Rail
  - Commuter rail
- Freight Rail
  - Some short lines
- Shared corridor, and corridor improvement projects

How to pay for these projects?

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NCRRP 07-01: Project Objective

To identify alternative financing and revenue generating methods for financing passenger and freight rail projects, including capital investment, operations and maintenance.

Output : **Guidebook** of Alternative Rail Funding and Financing Revenue Mechanisms

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Project Status, Timing, Disclaimer

Work underway (March 2013 start), but not complete.

Final Guidebook due early December 2014.

Disclaimer: Remarks based on initial research results, team's own opinions. They do not necessarily reflect final results, views of NCRRP 07-01 Panel, or TRB.

Overview

Basic Concepts

Funding Gaps

Alternative Revenue and Financing Mechanisms

Case Studies

Beyond Funding and Financing

Funding vs. Financing: Very Different Things

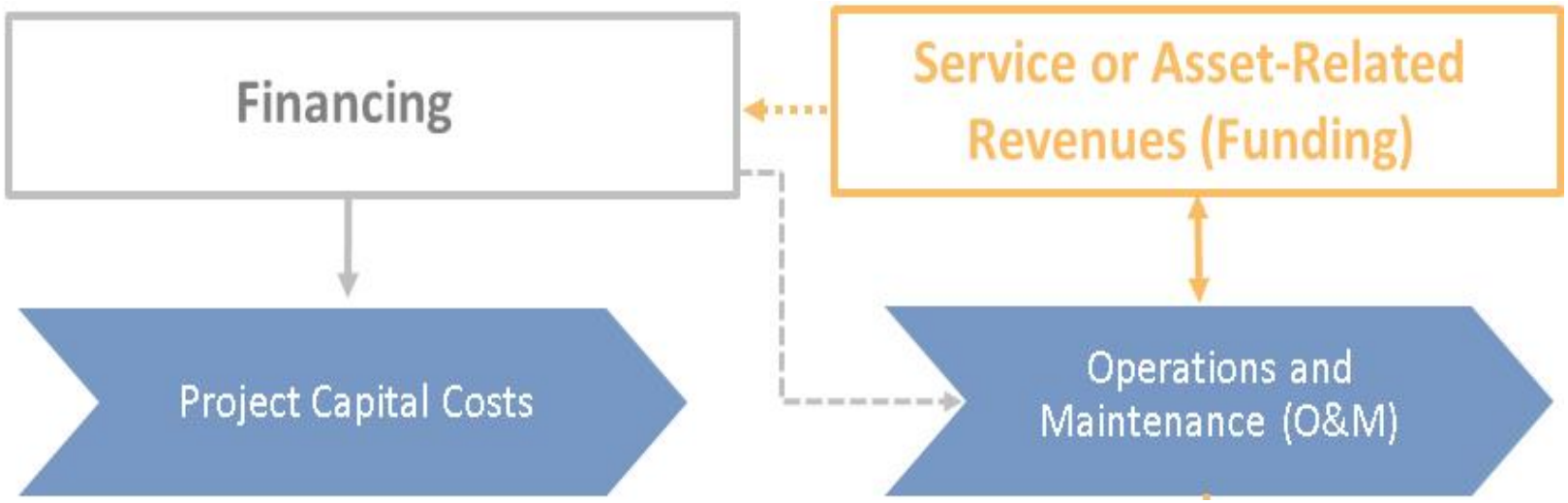
Funding refers to the sources of **revenue or other income** that can be used to pay for a project or service.

- Includes but not limited to:
  - Revenue streams from delivery of rail services, ancillary revenue
  - Other income from committed funding sources
  - Non-repayable government grants or subsidies

Financing refers to the financial tools that can be used to access money to pay for a project or service – based on income from revenue or other sources of income

- Includes but not limited to:
  - Various forms of debt, equity, capital leasing, etc.

Simplified Representation of Funding and Financing
(Typical commercial project)



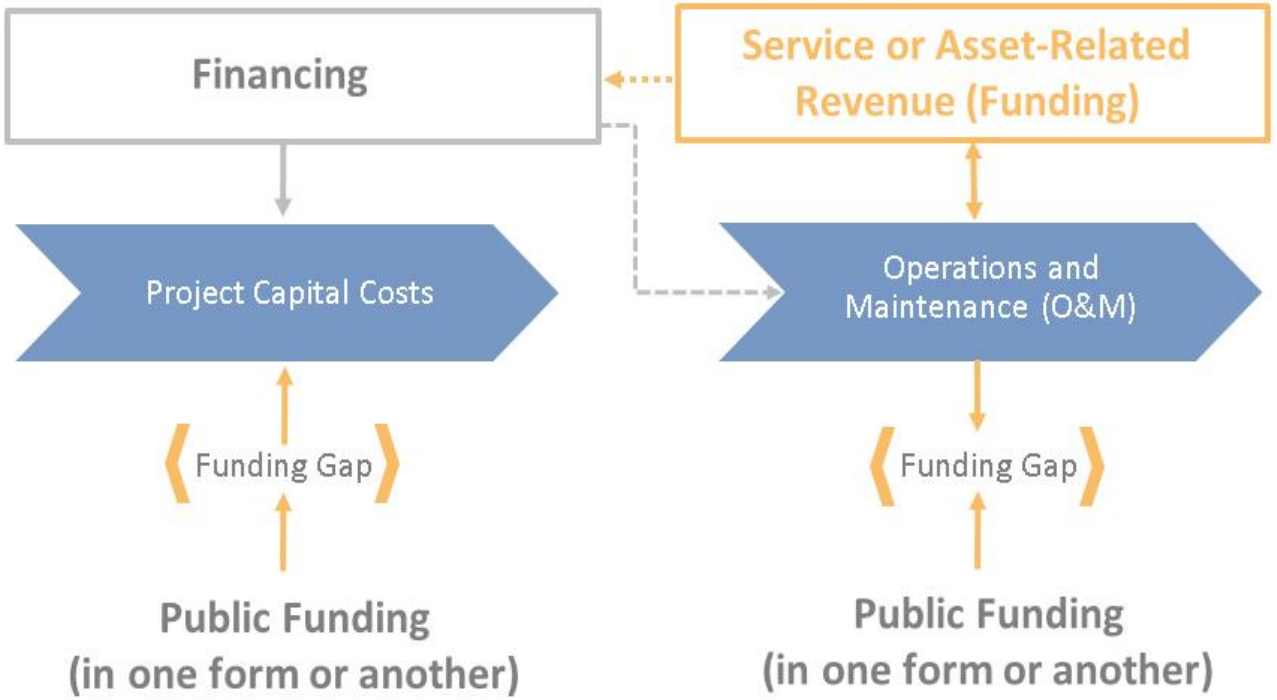
When revenues (i.e. funding) associated with a project or service are expected to be sufficient to cover the overall costs of the project or service, financing is relatively easy.

E.g. Class I freight railroads generally have no difficulty accessing financing for profitable projects.

Challenge When Revenue < Costs i.e. Funding Gap

There is but one solution to addressing a funding gap: **finding other sources of funding** (or forgoing the project).

There exist opportunities to increase *service or asset-related revenue* to narrow funding gap (covered in this research), but public funding support also typically required, particularly for passenger rail projects and services.



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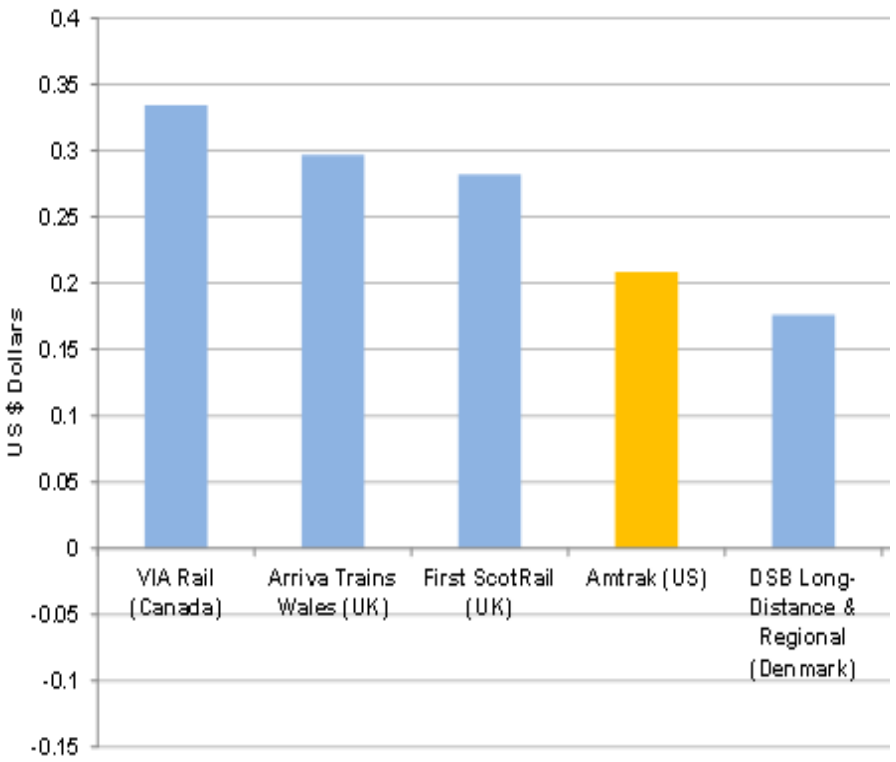
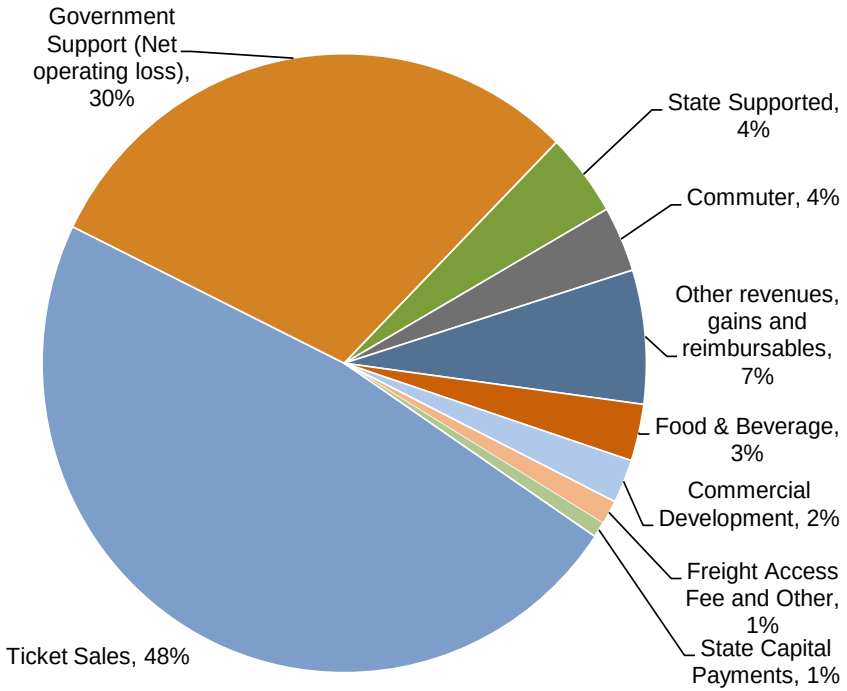
Passenger Rail Generally Needs Public Funding Support

Government Subsidy Per Passenger-Mile, Intercity Passenger Rail



Sources: VIA Rail Annual Report 2012. Office of Rail Regulation (UK) National Rail Trends Data Portal, data from 2011-2012. Amtrak Annual Report 2012 and Amtrak Monthly Performance Reports 2011-2012. DSB Denmark Annual Report 2012.

Amtrak Operating Revenue Source (2012)



Source: CPCS Analysis of Amtrak Annual Report, 2012

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Ditto for High Speed Rail Projects, which are Very Expensive

For example, California HSR project capital cost could be over $75 billion…

Currently, about $5.9 billion is available but under litigation ($2.6 billion from Proposition 1A and $3.3 billion from ARRA funds and other US DOT sources). Project will also get 25% of cap-and trade funds generated: amount unknown (probably $1-2 billion/yr).

Where will the other funding come from???

Source of map: 2014 Business Plan (www.cahsr.ca.gov)

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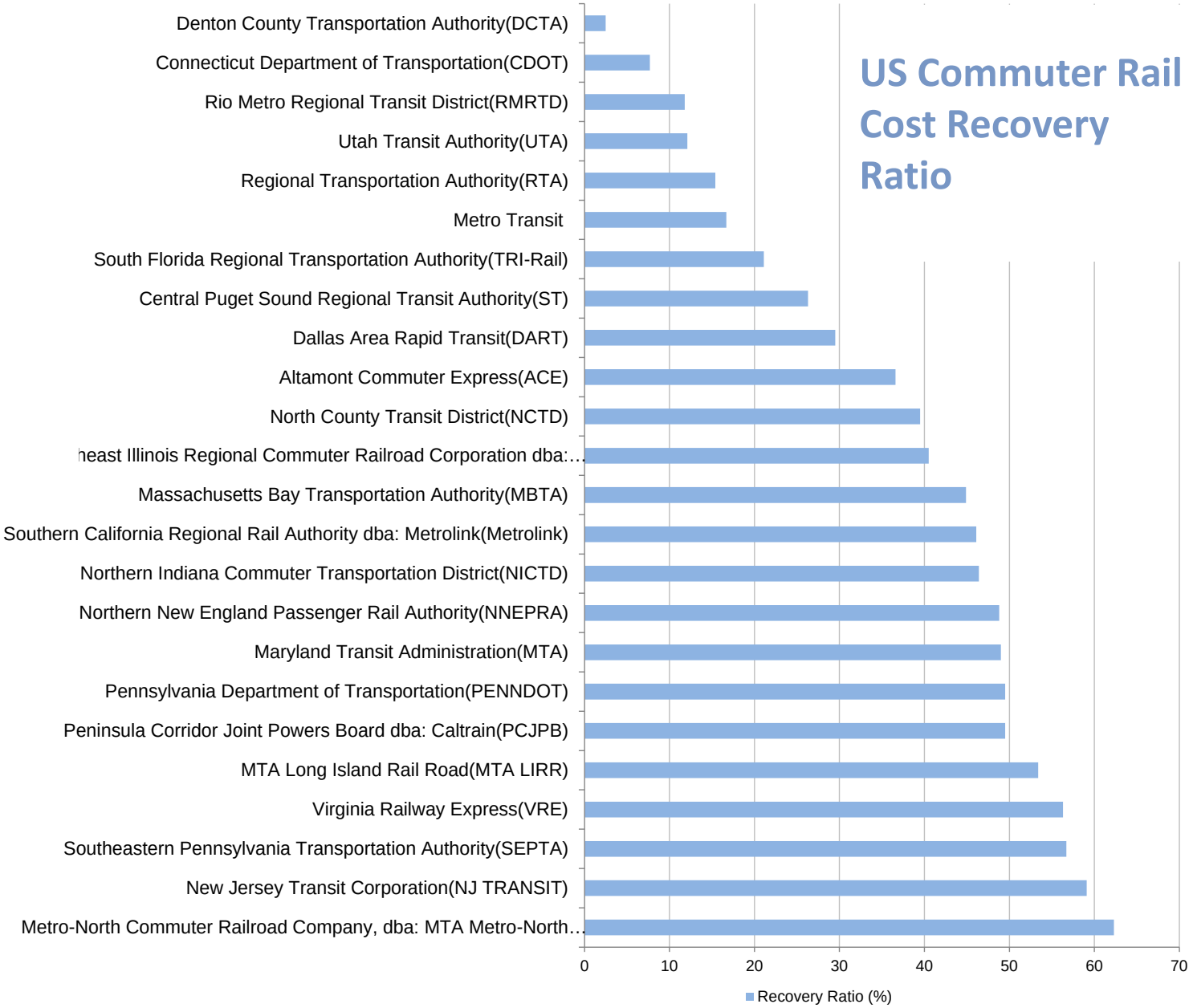
Commuter Rail Needs Public Funding Support



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Source: CPCS analysis of Federal Transit Administrations' 2011, National Transit Database (NTD), 2011 NTD Data Tables, "Fare Per passenger and Recovery Ratio".

Other Rail Project/ Operations Needing Public Support

Short lines – where not commercially viable…

- …but economically important to a region

Corridor improvement projects…

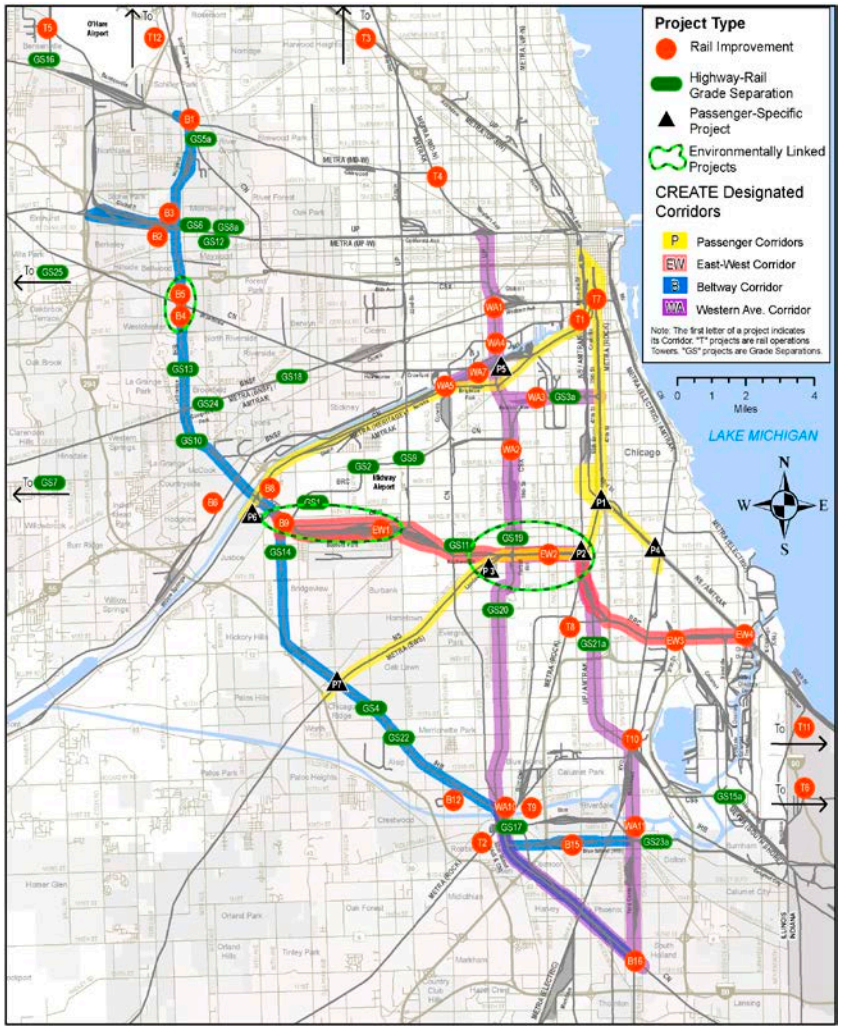
- Where public benefits, but no commercial business case…or put differently, where public benefits exceed private benefits(e.g. road/rail crossings)

Corridor Improvement Projects with Funding Gap

Example: Chicago's CREATE projects have total cost of close to $4 billion…but only about $1 billion have been funded to date.

Breakdown of Funding Received by CREATE as of 2011

Partners	Funding (millions)
Private Railroads	$116
Chicago DOT	$4.2
Illinois DOT	$210
Federal Sources	
American Recovery and Reinvestment Act High Speed Rail	$133
TIGER Grants	$100
SAFETEA-LU Projects of National and Regional Significance	$100
Federal Rail Line Relocation Funds	$1.9
Pre-CREATE funding (various sources)	$286.5
Total	**$951.6**



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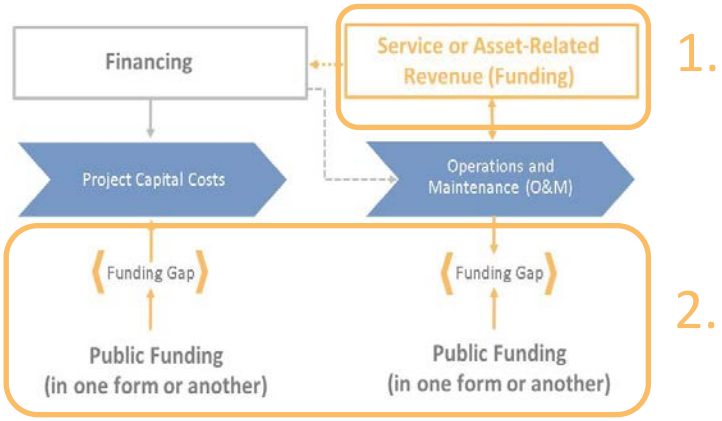
Where to From Here?

Research Considers Two Types of Alternative Funding Mechanisms

1. Service or Asset-Related Revenue (Funding) Mechanisms
   - i.e. opportunities to increase revenues from rail operation, project, or related assets themselves.
2. Public Funding Mechanisms
   - Grants, one-off subsidies
   - Dedicated income sources…
   - Other funding sources



1. Service or Asset-Related Revenue (Funding) Mechanisms

Service or Asset-Related Revenue-Generating Mechanisms	Freight	Passenger	CAPEX	OPEX	Magnitude of Funding Potential ($=low, $$$=high)
Market Pricing to Maximize Fare Box Revenues		✓	✓	✓	**$$** (potential to increase revenue ~ 10% to 20%)
Premium Services to Increase Service Revenues		✓	✓	✓	**$-$$** (potential to increase revenue ~ 5% to 10%)
On-Board and In-Station Retail Concessions			✓	✓	**$** (potential to increase revenue ~5%)
Track Access Charges	✓	✓	✓	✓	**$** (potential to recover marginal cost +) **Can be more than marginal (e.g. freight)**
Selling or Leasing Access to Railroad Rights of Way (Note that the operator and the owner may be different, which is often true of passenger operators. The benefits go to the owner.)	✓	✓		✓	**$-$$** (based in large part on the value of the land adjacent to the right-of-way corridor)
Commercial Property Development / Joint Development	✓	✓	✓	✓	**$-$$** (extent of revenues depends on the size and type of the development)
Branding, Sponsorship and Naming Rights		✓	✓	✓	**$-$$** (from $200,000 to $2m per year per rail station in major urban areas)

2. Public Revenue (Funding) Mechanisms

Public Revenue (Funding) Mechanisms	Freight	Passenger	CAPEX	OPEX	Magnitude of Funding Potential ($=low, $$$=high)
Incremental Property Tax Revenues (for Tax Increment Financing)	✓	✓	✓		$$ (depends on the actual increase in property values generated by project – will vary considerably by case)
Special Assessment District Fees		✓	✓		$$$ (contribution varies depending on the overall capex requirements for the project and the benefits expected to be generated by project)
Impact Fees Charged to Property Developers		✓	✓	✓	$$ (highest in strong real estate markets)
Station Parking Charges		✓	✓	✓	$-$$ (potential to generate 5% to 10% in additional revenue)
Road Tolling / Congestion Charging	✓	✓	✓	✓	$$ (more typically used to fund transit but can be applied locally for joint road/rail facilities)
Heavy Goods Vehicle Charges	✓		✓	✓	$$$ (depends on level of charges and amount of traffic – European examples in the $ billions)
Gas Tax	✓	✓	✓	✓	$$$ (total funding potential very large)
Car Registration Plate Auction		✓	✓	✓	$$-$$$ (funding potential very large)
Motor Vehicle Registration Fees		✓	✓	✓	$$$ (in UK, £6 billion ($10 billion) each year from motor vehicle registration fees)
Payroll Taxes Used for Transport		✓	✓	✓	$$$ (depends on the extent of the program: geographic size of the taxation zone, tax rate, etc.)
Sales Tax	✓	✓	✓	✓	$$$ (total funding potential very large; sometimes a share of sales taxes is assigned to transport projects and can be used to improve rail and road improvement projects from a general fund)
Carbon Credits (Cap-and-Trade)	✓	✓	✓	✓	$$$ (in California, 1 cent/gallon would yield around $170 million/year and 20 cents/gallon would finance the entire HSR program without any other sources. The Cap-and-Trade program in California may raise as much as $4 billion annually. The Governor has proposed that one-third of the receipts should go to financing the HSR program.

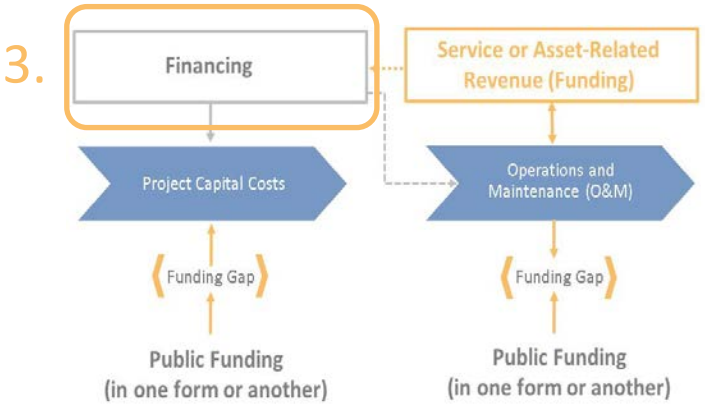
One-Fourth was agreed

Research Considers Two Types of Financing Mechanisms

3. Financing Mechanisms

- Private sources of financing (e.g. commercial banks, investors, such as pension funds, hedge funds, common investors)
- Public sources of financing (e.g. state infrastructure banks, government loan program (TIFIA, RRIF, TABS, etc.)

The terms and cost of financing can vary greatly, depending on the creditworthiness of the project proponent or service provider, and the extent to which the financing has recourse to assets that are fungible (i.e. can be resold).



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2. Financing Mechanisms

Financing Mechanisms	Freight	Passenger	CAPEX	OPEX	Magnitude of Financing Potential and Cost
Public Private Partnerships (PPPs)	✓	✓	✓	✓	Can potentially finance entire project if future revenue streams sufficient and predictable.
Equipment Trust Certificates (available to private companies)	✓		✓		Amounts available range from about $20 million to $200 million, with interest rates equivalent to a federal rate plus 2% to 5%.
Operating Lease Certificates (available to private and public companies)	✓	✓	✓	✓	Could range from $1 million to billions, cost varies by asset: Market prices – annual lease usually 10% to 25% of new asset price per year.
Finance or Capital Leasing (private and public companies)	✓	✓	✓	✓	Finance leases depend on the creditworthiness of the lessee and can be used to finance many different types of assets.
Bonds with Public Sector Backing		✓	✓		Could be significant. Cost typically 25%-30% below prime rate.
Corporate Bonds (available for private entities)	✓		✓		$25 million to $1 billion+. Federal Rate +1% to +5%; Interest taxable to recipients.
Mezzanine Financing (available to both private and public companies/authorities)	✓	✓	✓	✓	$100s of millions for large railroads; $10-$100 million for smaller ones. Prime; Prime +1%-5%.
Short-Term Corporate Line-of-Credit Financing	✓		✓	✓	$20 million to $100 million. Prime rate to prime rate +5%; initiation charge.
Sale of Stock (Ownership Stake)	✓	✓	✓	✓	$100s of millions for large railroads; $10-$100 million for smaller ones. Cost typically in range of 12% to 20%.
Tax / Investment Credits	✓		✓		Varies significantly on a case-by-case basis and on state and federal tax codes.

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We tested each alternative funding and financing mechanisms against specific projects:

- California High Speed Rail (High-Speed Rail)
- Amtrak Virginia (I-81/US-29 Corridor) (Inter-City Passenger Rail)
- Virginia Rail Express (Commuter Service)
- Chicago CREATE (Shared Corridor/ Improvement)
- New Orleans Rail Gateway (Shared Corridor)

Case studies also basis for identifying barriers to using alternative mechanisms.

Key Lessons From Case Studies

Private financing is usually not the full solution to a funding gap.

- In most cases, the only way to plug a funding gap is with public funding, in one form or another.
- Public revenue (funding) mechanisms have the potential to raise significantly more money to pay for rail projects than revenue mechanisms relating to the rail project or rail assets and services themselves – but there are more barriers (often political) to obtaining such funding.
- In most cases, it is necessary to draw on multiple sources of funding ("all of the above strategy"), many of which are currently underutilized or not utilized at all.

Key Lessons From Case Studies (II)

Good news (sort of) – huge pool of funding out there

…But willingness to increase taxes?

- For commuter rail, and other local projects, public funding through local specific taxation has the highest potential for funding and often has local political support.
- For more expensive passenger rail projects like high-speed rail, local specific funding has more limited application as it is difficult to "ring-fence" a project and raise revenue from those who gain from the project (other than the passengers themselves). Such projects must have broader political support for general tax funding.

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Approach to Project Evaluation, Policy Considerations

NCRRP 07-01 Research addresses the question – *how* to fund and finance rail projects? A perhaps more important question is – ***why*** should the public sector fund rail projects that have a funding gap?

Two opportunities to better address this in the US:

- Need for better, more systematic basis for assessing full range of rail project benefits and
- Need to anchor public funding for rail projects to broader transport policy objectives…

What is the long term transport policy?

How to prioritize projects, funding? Need clear policy direction.

Encourage use of personal cars?

Maintain/expand highway capacity

Subsidize use of cars (via roads)

Encourage use of rail?

Build rail. Subsidize use of rail. High frequency.

Road user charges / Discourage air travel

Integrate rail in transport plans

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Long Term, Sustainable Funding Source

There is currently no **dedicated**, long-term, nationwide funding program for passenger rail in the US, which makes planning and programming challenging for rail owners and operators.

- Opportunity to increase size, scope of Highway Trust Fund
- Opportunity for a new, dedicated (multimodal) Transportation Trust Fund

Other "Beyond Funding/Financing" Considerations

Many large-scale/shared corridor or corridor improvement projects don't fit neatly into funding stovepipes.

- Opportunity to strengthen multi-modal funding programs (e.g. TIGER Grant program)
- Likely that future rail projects will need to tap into multiple sources of funding

Public/private rail projects are complex…

- Develop standard practices, model agreements
- Expertise and resources available at the national level

Improve Insurance Market for Shared Corridors

There has been a clear trend by freight railroads to demand the highest possible coverage and the maximum degree of transfer of liability to the non-Amtrak passenger operator whenever possible.

The net result in the US is that adequate coverage seems costly, and is not always available in the desired amounts.

- Federal government to cover liability above a cap (as is already done in nuclear power plan operations)
- Pooled insurance scheme

Making Rail Passenger Projects Financeable: Basic Conditions

- Better benefit-cost analysis including both public and market impacts so that all parties are on the same page
- Clear risk analysis: what are the risks, who is best equipped to bear them, what is the value of transfer from one party to another?
- Creating winners by balancing net benefits

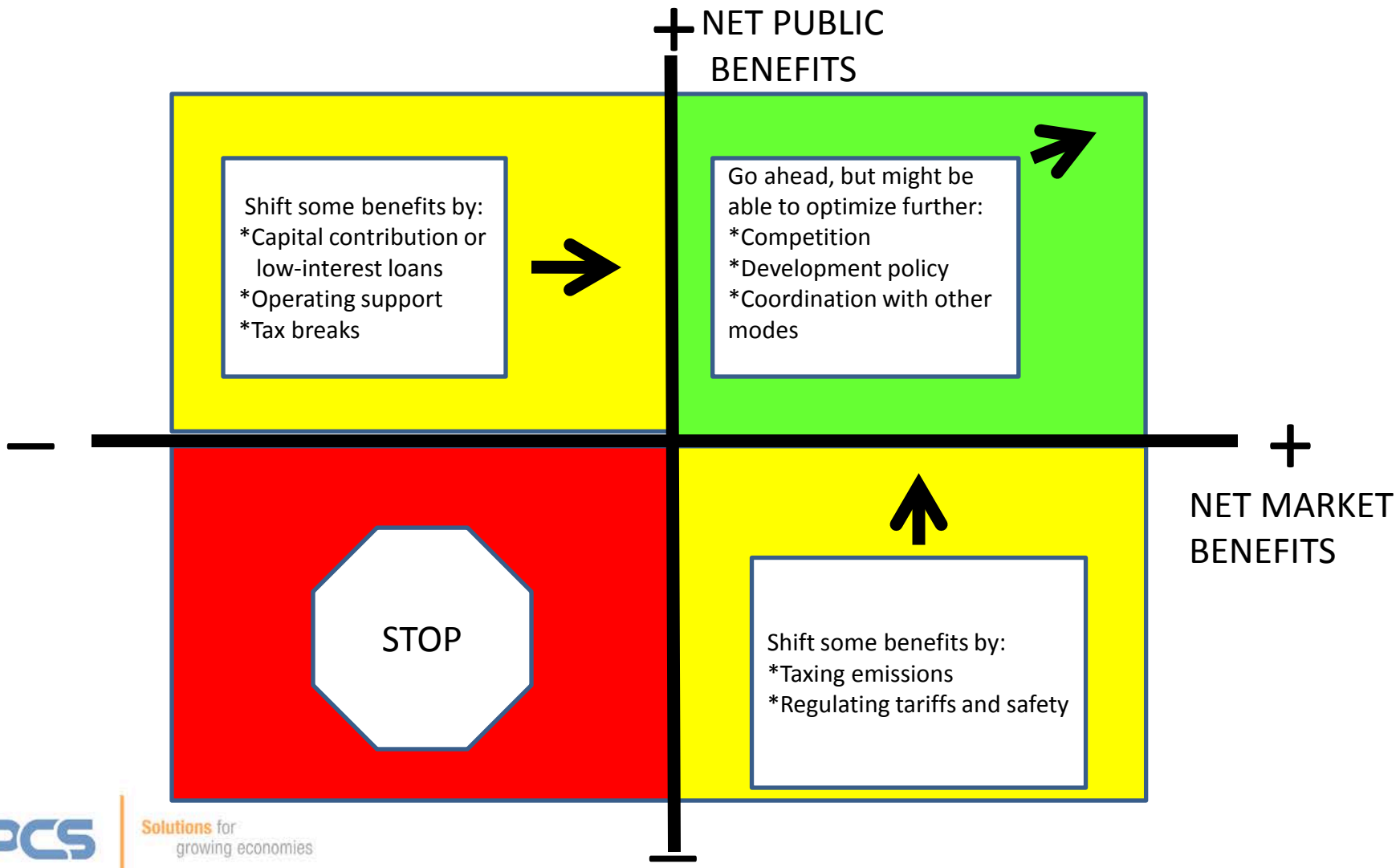
Benefit-Cost Analysis for Rail Passenger Projects

- Market:
  - Benefits: Revenues, station revenues including parking, real estate development, branding. Some can't be quantified, but at least should be defined
  - Costs: capital costs, financing costs, operating costs
- Public:
  - Benefits: net emission (pollution and GHG) reduction, net safety enhancement, reduced noise impact, investment in air or highway avoided
  - Costs: operating subsidies, financing support, land use, visual intrusion, increased access capacity

Rail Passenger Project Risks: Measurement, Mitigation and Transfer

- Risks – benefits fall short or costs rise:
  - Project scope, schedule or cost not met
  - Performance falls short
  - Demand forecasts not met
- Measurement – use probabilistic approach (Monte Carlo) rather than single point or “low-medium-high” estimates
- Mitigation – independent reviews, design-build contracting, operator involvement in design and forecasting
- Transfer – guaranteed loans, investment sharing, hi/lo demand collars, insurance and performance bonding

Creating Rail Passenger Project Winners



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Note: In yellow zones, the net positive benefits of one party are > the net negative benefits of the other party

Questions and Discussions

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