

CAPACITY IMPROVEMENTS

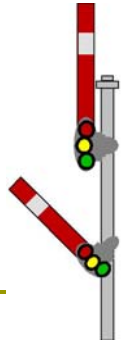
Who pays and when?

Creating Capacity Conference

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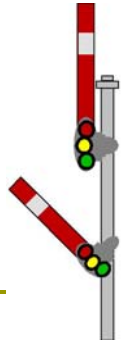
Today's Presentation



- ❑ What is capacity? What consumes, creates it?
- ❑ Who should pay for capacity improvements and who does?
- ❑ When?
- ❑ Useful Precedents
- ❑ Conclusion



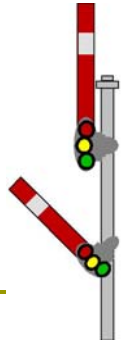
What is Capacity?



- Theoretical maximum number of trains
- Practical maximum on a line-specific basis
 - Configuration – track, signals, speeds, topography, tunnels, restrictive bridges
 - Traffic handled
 - MOW, weather, track outages, mechanical and operating delays
- Practical capacity recognizes the “tradeoff between capacity and reliability/robustness”

(Abril et al, 2007)

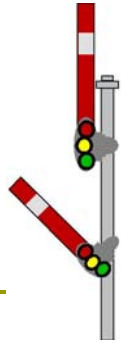
What Consumes Capacity?



- Existing trains
- New trains
- Operating activities and characteristics
 - Station stops
 - Switching, pickups, setoffs
 - Slow trains, fast trains
 - Long trains

Trains which differ from the line's most prevalent trains consume lots of capacity

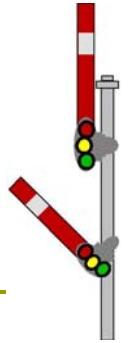
What Consumes Capacity? (cont'd)



- Unevenly spaced (timed) demand
- Scheduling needs and practices
- MOW Activities
- Suboptimal quantities of motive power, crews, yard capacity

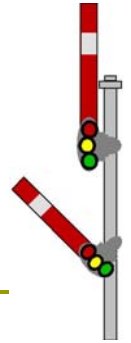
*Missed Train slots waste capacity;
a path missed is forever lost*

What Creates Additional Capacity?



- Adding main tracks, crossovers, sidings
- Improving signaling – up to Positive Train Control
- Increasing payload per train (slot)
- Altering customer requirements:
 - Changing switching time or frequency
 - Moving switching off the main line
 - Shifting demand to off-peak days/times

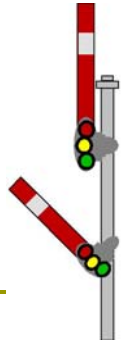
What Creates Additional Capacity? (cont'd)



- ❑ Scheduled railroad
- ❑ Operational discipline – perform to plan
- ❑ Powering up slow trains to match average speeds (i.e., CP coal trains in BC)
- ❑ Infrastructure, motive power, crews and operating strategy are key capacity drivers (McClellan)
- ❑ Reduction/shift of MOW track time
- ❑ Reduction of delays – reliability!

Key takeaway: it's not just infrastructure

Who Should Pay for Capacity Improvements?

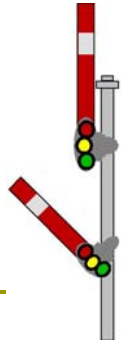


It's always about the money!

- ❑ The owner
- ❑ The tenant(s), especially new tenants
- ❑ All users
- ❑ Whoever uses up the next increment of capacity
- ❑ Whoever uses up the last bit of capacity

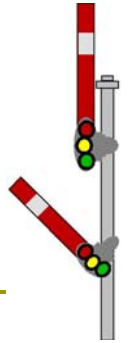
Pay on the basis of what consumes capacity?

Who Does Pay for Capacity Improvements - Historic?



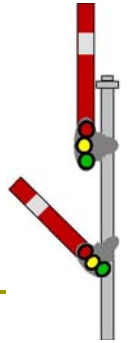
- ❑ Single user – allocate among services?
- ❑ Joint ownership – contractual arrangement
- ❑ Owner-tenant (trackage rights) – owners often unwilling to expand
- ❑ Amtrak
- ❑ Commuter – formerly owner-operated

Who Does Pay for Capacity Improvements - Contemporary?



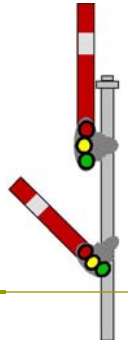
- Owner
- Freight/freight agreements – aligning ownership and benefits
- Freight/passenger agreements – price of admission
- Public-Private Partnerships
- Freight customers
 - Build robust new facilities not switched on the main line
 - Included in transportation charges
- All are negotiated outcomes

And When do they Pay?



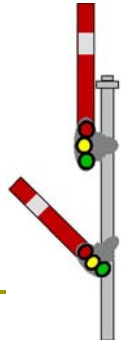
- Under a master plan, anticipating the future rather being overtaken by it
 - Construction according to an agreed expansion plan
 - Payment required as individual projects are constructed
- What has changed is the ability of both owners and tenants to plan future configuration and expenditures

Useful Precedents



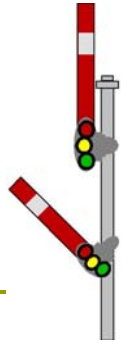
Amtrak and host railroads	Incremental user (Amtrak) pays for necessary capacity improvements.
Amtrak and host railroads	Incentive payments: a non-infrastructure approach to paying for capacity?
Virginia-CSX (DC-Richmond)	Infrastructure improvements linked to additional passenger train slots.
ATSF & Metrolink sponsors (San Bernardino Sub)	Input from all parties regarding future volumes. Agreed volume steps and improvement package based on simulation.
Capitol Corridor (CA) – UP	Negotiated improvements in exchange for service increases. Constructive approach.

Useful Precedents (cont'd)



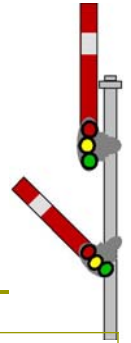
<p>Washington DOT – BNSF (Cascade Corridor)</p>	<ol style="list-style-type: none">1. Improvements necessary to add future train trips are specified.2. RR to achieve defined operating benefits (performance) once improvements are made.
<p>State of Minnesota – BNSF (Northstar)</p>	<ol style="list-style-type: none">1. Specified future access fee associated with service increases.2. Public-funded improvements associated with each service level.3. On-time performance commitment by RR.

Useful Precedents (cont'd)



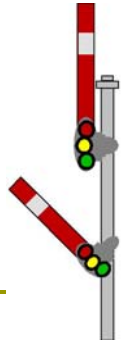
Central Florida – CSX (Proposed)	Creating dedicated (nearly) freight and passenger corridors; public investment on freight corridor to create passenger capacity.
NJT – Conrail/CSX/NS (River Line)	New yard built and loco provided in order to reschedule freight service and create temporal separation.
New Mexico – BNSF (Road Runner)	Line purchase sets the stage for capacity improvements.
CP-CN Co-Production Agreement (Fraser River Canyon, BC)	Creating capacity at minimal cost through paired track operation.

Useful Precedents (cont'd)



Heartland Corridor, other proposed PPP projects	States pay for public benefits.
Alameda Corridor	Railroads repay based on use and pass charges on to shippers.
CREATE – Chicago area Public Private Partnership	Multiple railroads and public entities pursuing a joint agenda.
NS-Pan Am and NS-KCS Corridors	Creating a mechanism to invest in another carrier's line.
Port Authority of NY/NJ – CSX & NS	Port-funded capacity improvements to bolster freight service.

Who Pays: Conclusions



- ❑ Precedents exist
- ❑ No one size fits all
- ❑ Train performance commitment in exchange for investment
- ❑ Agreements should address key drivers that create and consume capacity
- ❑ Opportunity exists to further address the non-infrastructure components of capacity
- ❑ *Expect a negotiated outcome rather than a formulaic one*