



UNION PACIFIC DELIVERS EMISSIONS REDUCTIONS

Lanny A. Schmid ~ Union Pacific Railroad Company

Faster Freight Cleaner Air 2004 Conference

Oakland, California

December 8-9, 2004

Union Pacific

Environmental Policy

Union Pacific Railroad is committed to protecting the environment for our customers, our employees, and the communities in which we live. We strive to meet the highest principles of environmental responsibility in our role as a leader in transportation.

“Environmental protection is the responsibility of every UP employee.”

JIM YOUNG

Union Pacific employees accomplish this through:

Stewardship

- ☑ Protecting the natural resources where we operate
- ☑ Promoting the efficient use of energy
- ☑ Conserving resources through waste minimization, recycling and reuse of materials

Relationships

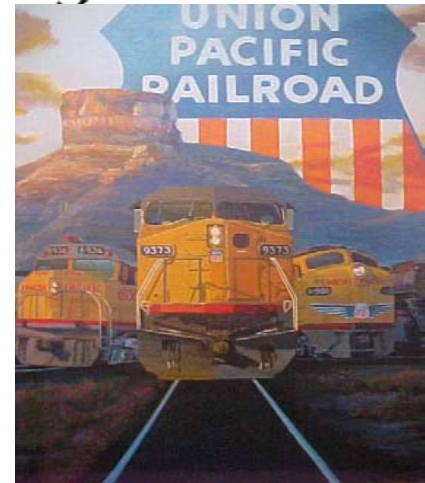
- ☑ Building relationships based on common safety and environmental goals
- ☑ Openly communicating with government agencies and communities

Process

- ☑ Assessing our environmental performance using measurable business objectives
- ☑ Using assessment results to guide environmental management improvement strategies

Results

- ☑ Meeting and exceeding compliance standards of environmental laws and regulations
- ☑ Supporting development of effective and balanced environmental laws and regulations
- ☑ Practicing and continually improving healthy work activities



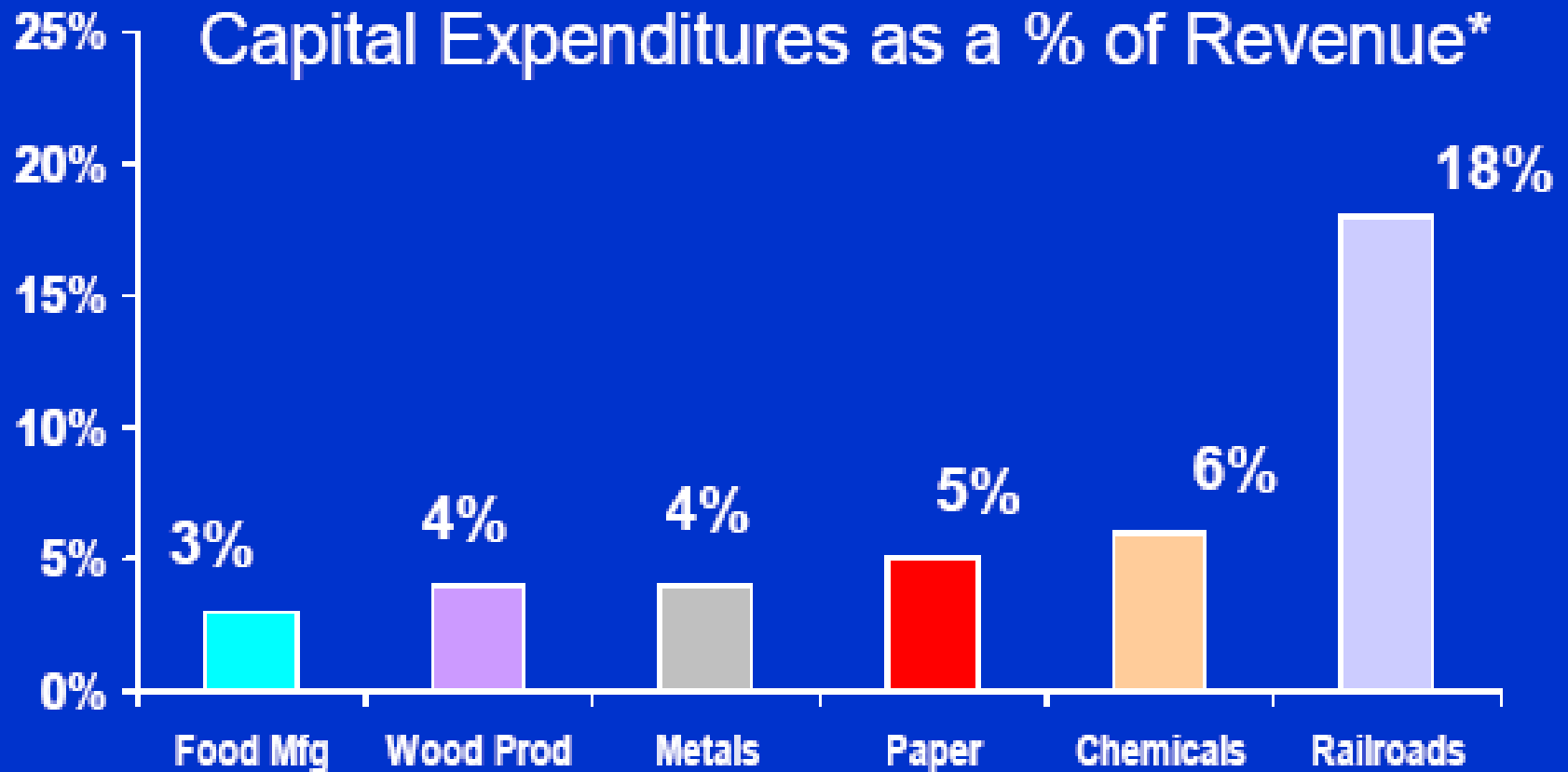
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U.S. Railroad Performance: 1964-2002 (Index 1981 = 100)



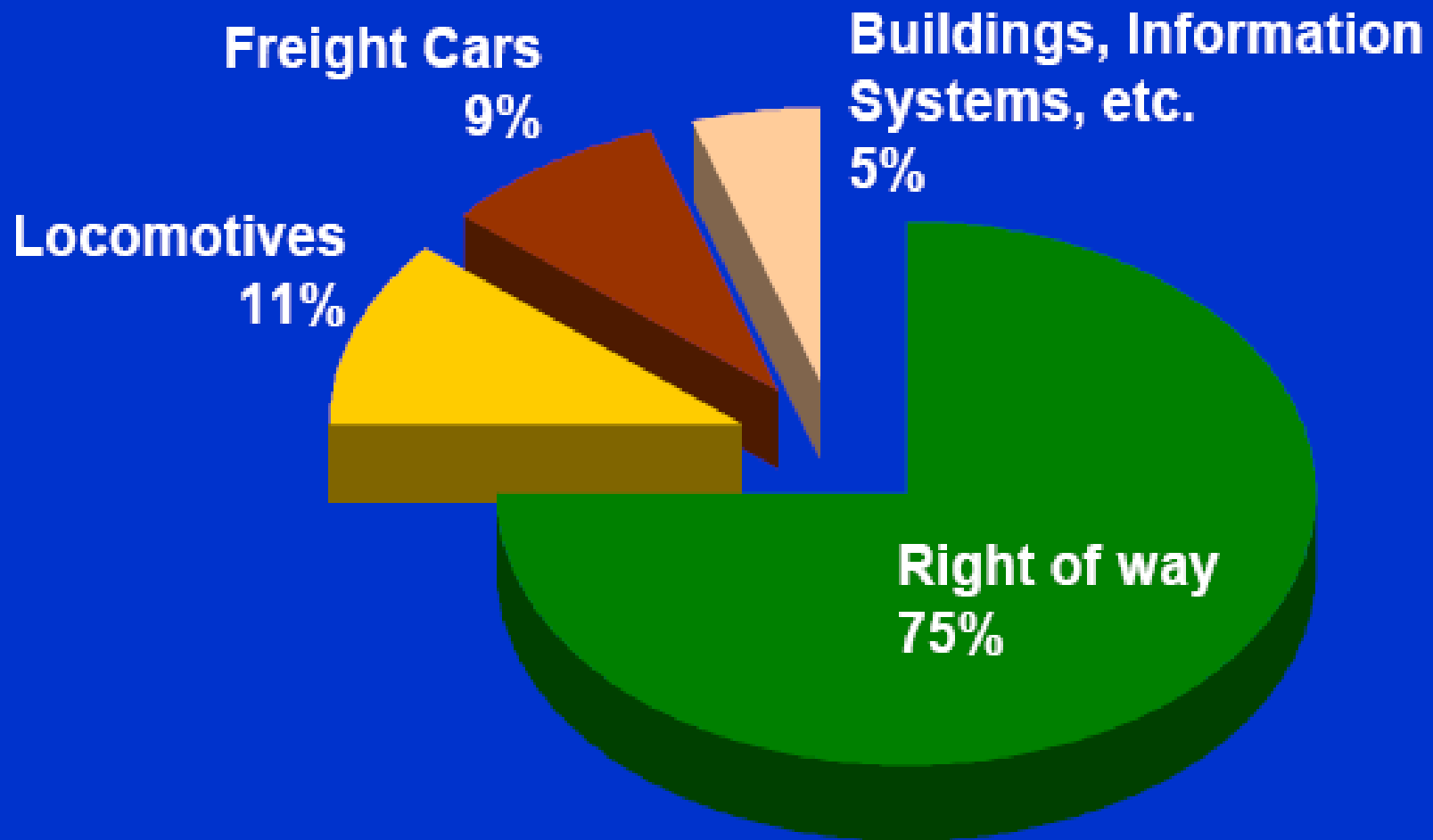
Source: AAR

Railroading is America's Most Capital-Intensive Industry



*2000, U.S. Bureau of the Census

Rail Industry Investments



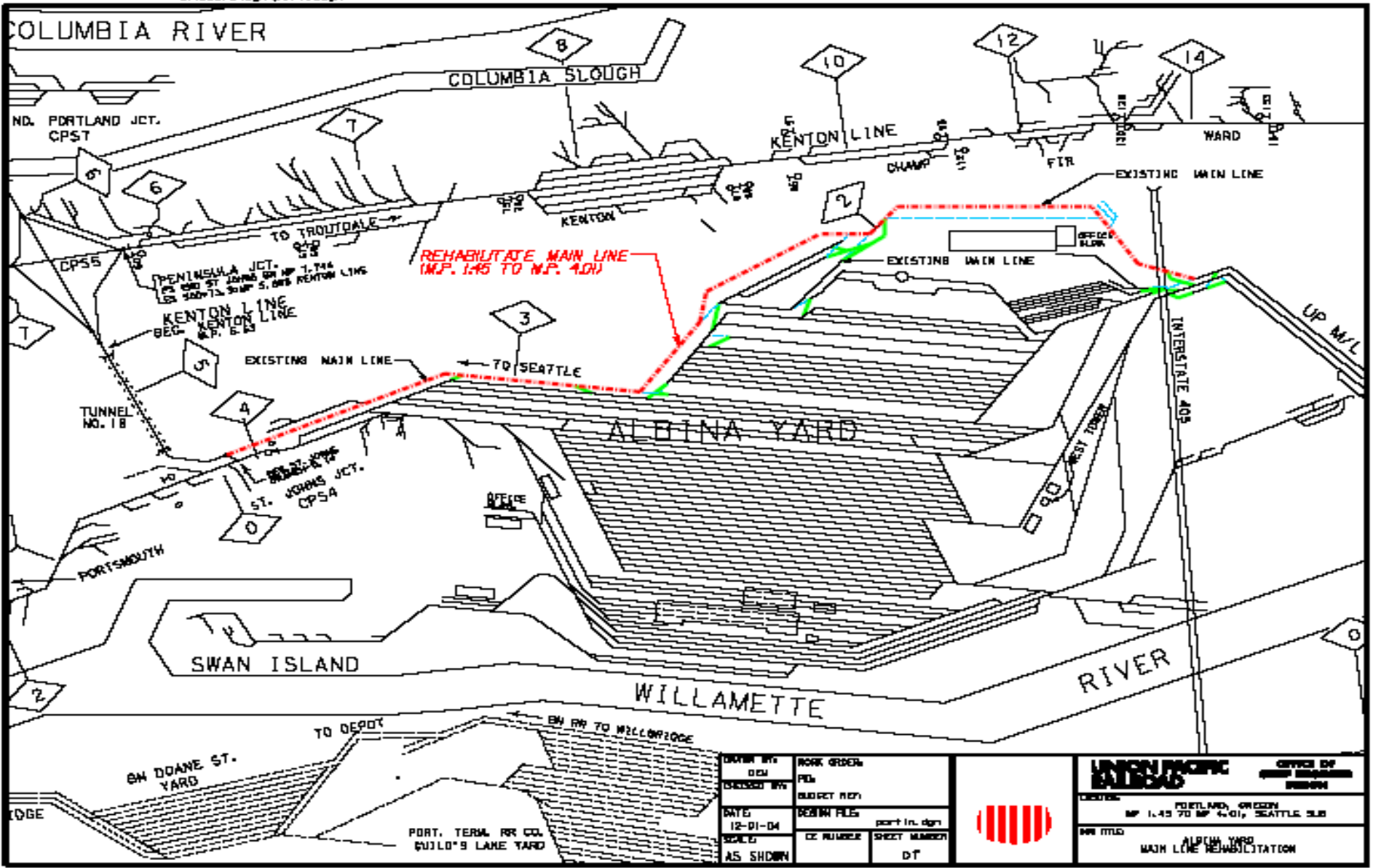
Source: Transmatch Consulting

PORTLAND, OREGON - Passenger Service

Partners	Oregon DOT and UPRR				
Project	Rehabilitate a 2.5 mile main track through Albina Yard. Reduces arriving/departing passenger train delays and UP operational delays and congestion.				
Result	Six passenger tns/day run on schedule; 20 UP 'through' tr/d clear at Albina 30 minutes (ave) quicker 8 fewer tns/d held & 4 hrs each at Brooklyn Yard				
Time Frame	Signed MOU in 2000; construction to be complete in 2005				
Cost	\$ 9 million, total project; funded by a state and federal funds				
Emissions	Calculations depict only emissions reductions realized by UPRR; Does not include reductions be realized to reduced commuter trips				
	Reduces locomotive fuel consumption by 230,000 gal per year				
	Parameter, tons/ year	NOX	CO	HC	PM
	TOTALS	56.3	7.1	3.2	1.8
Similar Projects	Denver North Yard Bypass Houston Katy Connection				



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REHABILITATE MAIN LINE
 (M.P. 1.45 TO M.P. 4.0)

DATE: 12-01-04	SCALE: AS SHOWN	DESIGNED BY: [blank]	CHECKED BY: [blank]	DATE: [blank]	SCALE: [blank]	PROJECT NO: [blank]	SHEET NO: [blank]
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UNION PACIFIC
 OFFICE OF
 PORTLAND, OREGON
 M.P. 1.45 TO M.P. 4.0, SEATTLE, WA
 ALBINA YARD
 MAIN LINE REHABILITATION



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ROSEVILLE, CALIFORNIA - ICD Grant

Partners	Sacramento Metro Air Pollution Control District (SMAPCD) & UPRR										
Project	Retrofit 20 existing LHP locomotives with Idle Control Devices (ICD's – AKA auto start stop equipment). Reduces emissions due to unnecessary idling.										
Result	These locomotives idle approximately 2500 hours (dependent upon job assignment, weather, etc.) each per year more on average than necessary. Agreement requires 1000 hours per year of reduced idle from use of these locomotives in the district.										
Time Frame	Discussions and permitting began in 2000; Contract signed 2003; completed in February 2004										
Cost	\$300k, total project; funded SMAPCD with Moyer funds Actual UPRR expenditure is nearly twice the grant amount										
Emissions	Reduces locomotive fuel consumption by about 8,000 gal per year <table><thead><tr><th>Parameter, tons/ year</th><th>NOX</th><th>CO</th><th>HC</th><th>PM</th></tr></thead><tbody><tr><td></td><td>50</td><td>6.0</td><td>2.0</td><td>2.0</td></tr></tbody></table>	Parameter, tons/ year	NOX	CO	HC	PM		50	6.0	2.0	2.0
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Similar Projects	Houston, Texas; Fort Worth, Texas										
Unique Aspects	<ul style="list-style-type: none">• Demonstrates willingness to be a part of the solution• Assumed to be relatively simple to meet the minimum obligation• Reality was that it was not simple given normal operations• Experienced malfunctions, vandalism, and use outside the district• Created need to carefully and routinely track performance• Learned to manage assets differently – may require more locomotives to do the same amount of work due to loss of flexibility										



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SACRAMENTO, CALIFORNIA - Yolo Causeway

Partners	Sacramento Metro Air Pollution Control District (SMAPCD) & UPRR										
Project	Retrofit 20 existing LHP locomotives with Idle Control Devices (ICD's – AKA auto start stop equipment). Reduces emissions due to unnecessary idling.										
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ADDITIONAL UPRR PROJECTS

Partners	UPRR efficiency driven initiatives – no outside funds		
Project	Similar efforts that generally result in smoother flow of trains and cars into, through, out of and around our yards and across the 23,000 mile system		
Result	More productive and efficient use of the rail system capacity.		
Time Frame	Varies from one project to the next Can take from 1 to 2 years to more than 10 years (start to finish) Dependent upon permitting process, site conditions, obstructions		
Cost	Variable from \$100k to over \$100 million; funded solely by UPRR		
Emissions	Calculations are dependent upon reduced delays or avoiding extra work in moving trains and handling cars.		
Similar Projects	Roseville, Ca	Rebuild of the J. R. Davis Yard	\$140million
	Chicago, Il	Build Global II Intermodal Yard	
	Livonia, La	Build service facility and switch yard	GT \$100 million
	Memphis, Tn	Build rural Intermodal facility	



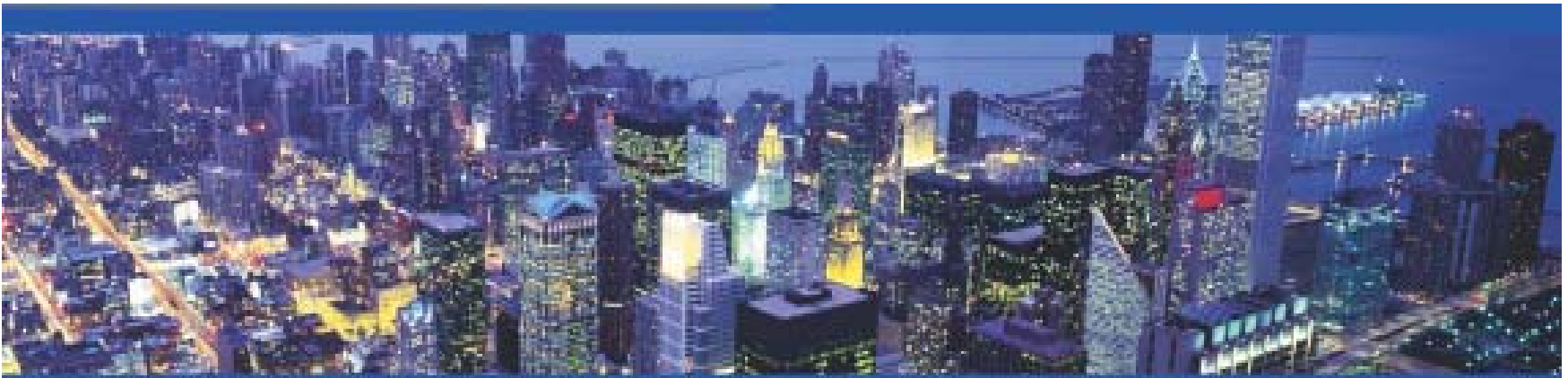
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CHICAGO, ILLINOIS - Create Project

Partners	Illinois and Chicago DOT and North America Freight Railroads
Project	Rehabilitate a 2.5 mile long main track through the yard at Albina. Reduces delays to passenger trains arriving and departing Portland. Reduces delays to UPRR's normal operations; eliminates and avoids congestion.
Result	The 6 passenger trains/day can run on schedule; 20 UP 'through' tr/d clear the yard at Albina 30 minutes (ave) quicker 8 fewer tns/d held at the UP Brooklyn Yard for 4 hrs each
Time Frame	Begin Engineering 2003 Start construction 2005 Ten year build out
Cost	\$1.5 billion, total project \$212 million funded by freight railroads \$20 million by METRA Federal \$ from Surface Transportation Funding Reauthorization State \$ from "Opportunity Returns" Program Philosophy - capital contributions will be commensurate with benefits
Benefits	\$3.9 billion, total project \$1.1 billion in air quality improvements \$392 million in avoided motorist and commuter delays \$203 million in accidents and highway construction costs \$2.194 billion in wages, materials
Emissions	Not detailed here



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KEEPING THE GO IN CHICAGO

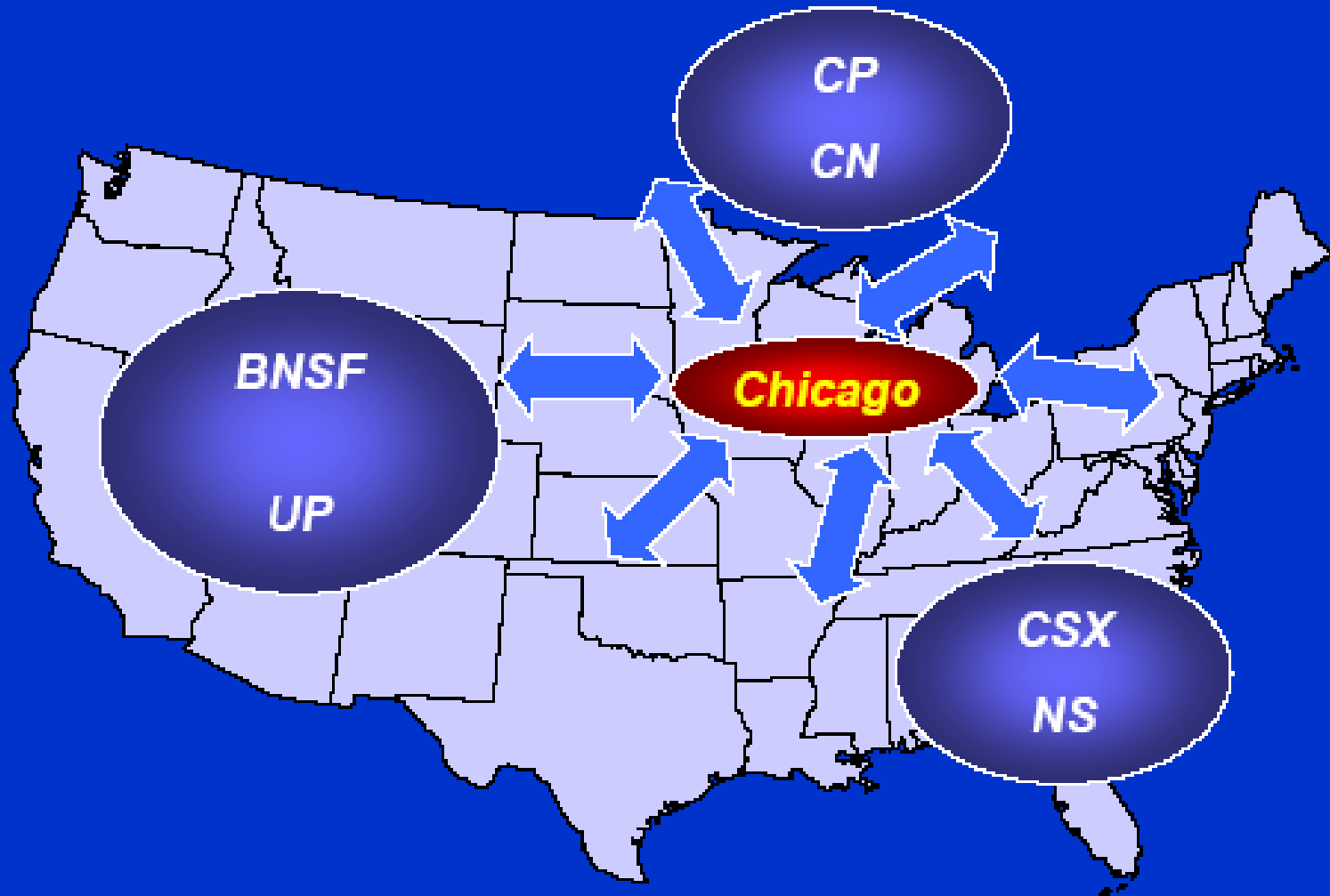


ILLINOIS DEPARTMENT OF TRANSPORTATION
CHICAGO DEPARTMENT OF TRANSPORTATION
NORTH AMERICA'S FREIGHT RAILROADS



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Chicago is North America's Rail Hub



ILLINOIS DEPARTMENT OF TRANSPORTATION
CHICAGO DEPARTMENT OF TRANSPORTATION
NORTH AMERICA'S FREIGHT RAILROADS



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Chicago's Rail Operations and Infrastructure are Complex

- 1,200 daily trains
- 12 commuter rail routes
- 18 intermodal hubs
- 70 yards and terminals
- 2,800 track miles (excluding yards)
- 900 highway-rail grade crossings
- 132 rail-rail grade crossings

CREATE Program

- Focuses operation on 5 key corridors
- Builds 6 passenger/freight rail flyovers
- Builds 25 road/rail separations
- Viaduct improvement program
- Grade crossing safety enhancements
- Improves train control system
- Automation of 14 interlockings
- 50 miles of new track on existing right-of-way
- 364 new switches



ILLINOIS DEPARTMENT OF TRANSPORTATION
CHICAGO DEPARTMENT OF TRANSPORTATION
NORTH AMERICA'S FREIGHT RAILROADS



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New or Improved Connection Locations

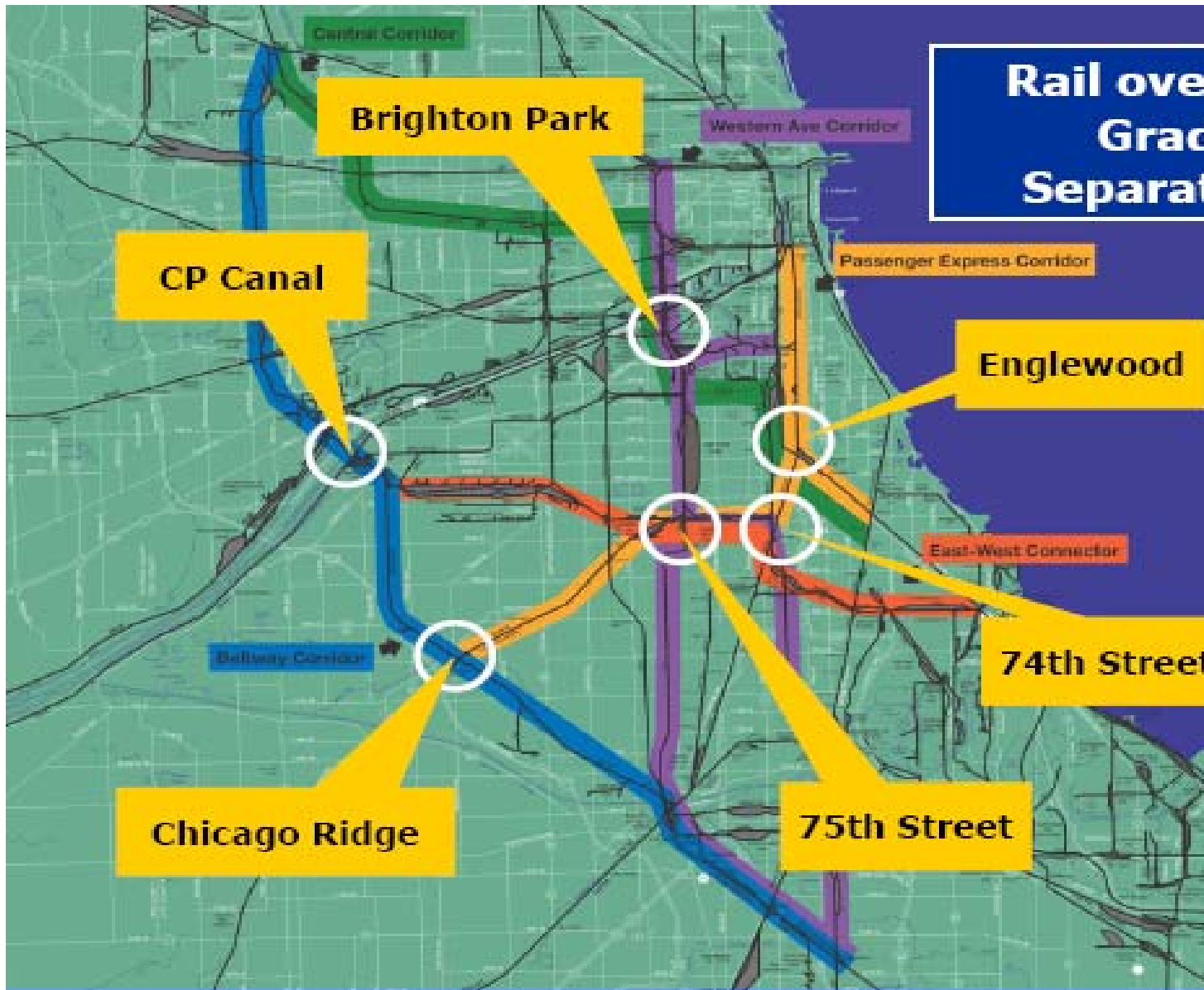


ILLINOIS DEPARTMENT OF TRANSPORTATION
CHICAGO DEPARTMENT OF TRANSPORTATION
NORTH AMERICA'S FREIGHT RAILROADS



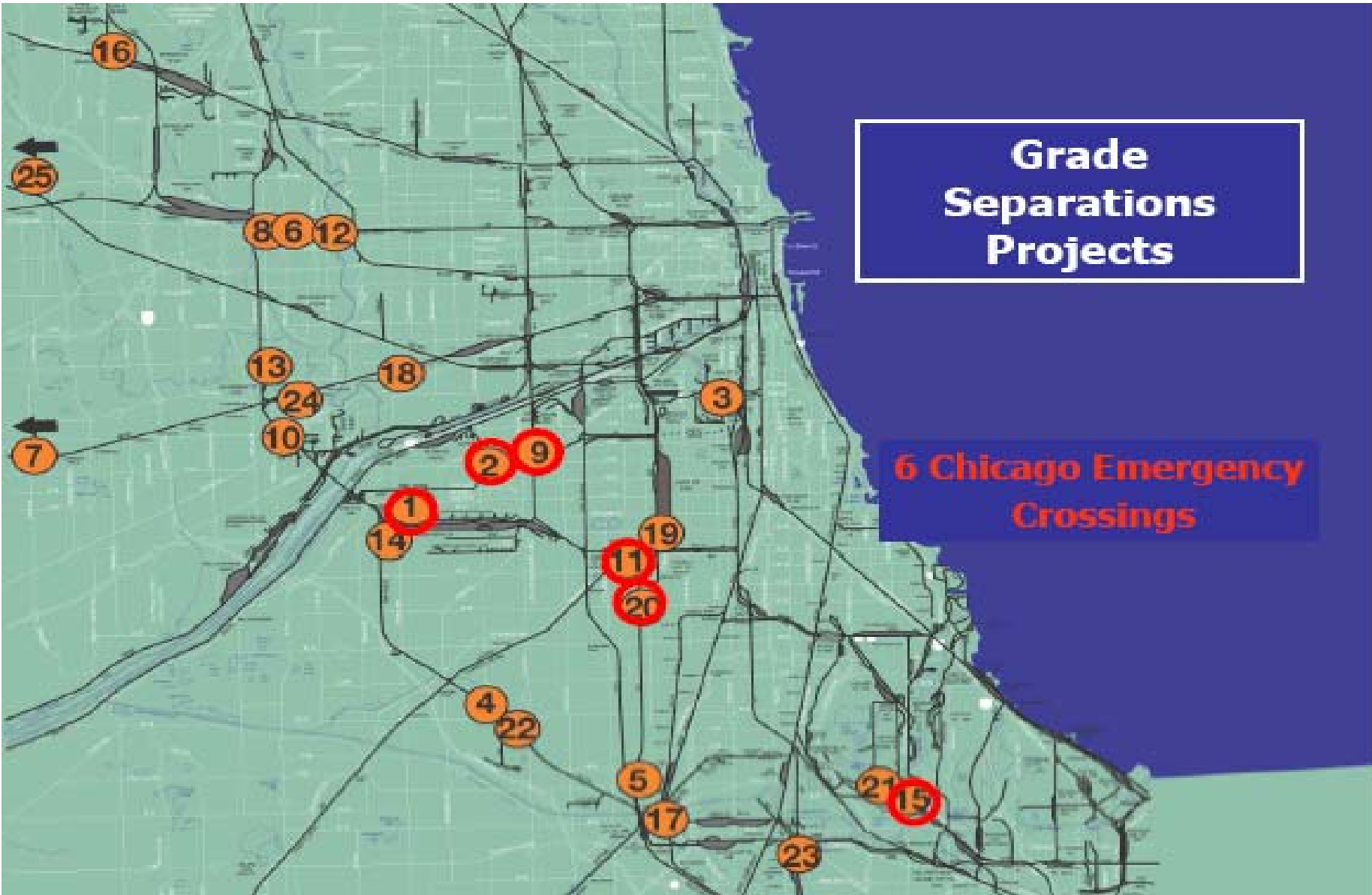
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Rail over Rail Grade Separations



Grade Separations Projects

6 Chicago Emergency Crossings



The National Council for Public-Private Partnerships

MISSION

The mission of The National Council for Public-Private Partnerships is to advocate and facilitate the formation of public-private partnerships at the federal, state and local levels, where appropriate, and to raise the awareness of governments and businesses of the means by which their cooperation can cost effectively provide the public with quality goods, services and facilities.



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The National Council for Public-Private Partnerships - continuation

OBJECTIVES

1. To serve as an advocate of public-private partnerships.
2. To provide complete, objective, timely and useful information on the utilization of public-private partnerships to provide services and facilities to the general public.
3. To facilitate communications between public- and private-sector members with respect to issues related to the implementation of public-private partnerships.
4. To conduct educational, training and other activities on public-private partnerships.
5. To provide input to the public dialogue in support of the use of public-private partnerships and removal of impediments to their implementation.
6. To facilitate an international dialogue on public-private partnerships in support of the foregoing objectives.



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The National Council for Public-Private Partnerships - continuation

KEY VALUES

1. Full and open participation by public and private members and encouragement of frank communication between the public and private sectors.
2. Assistance to both the public and private sectors in public-private partnership analysis and implementation.
3. Promotion of member teamwork in fulfilling the Council's mission and achieving its objectives as a non-profit, non-partisan organization.



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UPRR Delivers Emissions Reductions

- Active participation w/ multiple regulators in several different states
- Investment in/upgrade of equipment
- Creative public/private partnerships
- Continue to 'go beyond' regulatory requirements
- Open to discussing new ideas & concepts



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Questions & comments

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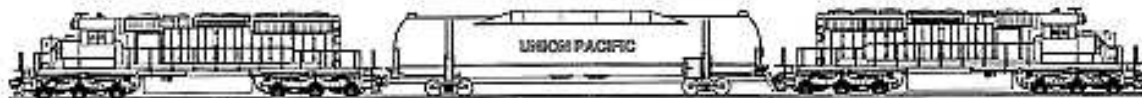
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