

By Staff Writers, with contributions from Michael R. Acosta, Greg Aregui and Tony Wile

Transportation Officials Outline Needs For

Linking *Modes* and *Nodes*

Port connections with road, rail and river are an increasing focus



The long-anticipated National Surface Transportation Policy and Revenue Study Commission's report to Congress on Jan. 15 confirmed what transportation experts already knew: that movement of freight nationwide, including improved infrastructure, will become a policy priority.

Due to trends in globalization and logistics and the planned \$5-billion expansion of the Panama Canal, movement of goods through the U.S. is increasing by leaps and bounds. A Government Accountability Office freight report in January estimates that total

shipments of about 15 billion tons in 2004 will double by 2035.

Scores of projects are on the drawing boards, from Atlanta's truck-only lanes study to Miami's \$1-billion port tunnel and everywhere in between, which aim to ease chokepoints between ports and intermodal connectors. But for many projects, funding is still questionable.

The commission's report echoes dozens of transportation experts' calls for intermodal planning and cooperation, and alternative modes of financing. Projects will need to do more than just expand traffic corridors. They will require a re-engineering of relationships between modes, vehicles and sources of capital.

Julie Nelson, deputy administrator of the U.S. Dept. of Transportation's Maritime Administration, says that once goods leave a port, "you get to the other side and goods are moved by train or truck. Roads are paid for by public funds or by tolls. Trains are run by private railroads. What happens to the connectors in between? That's where the congestion is happening."

Numerous new reports state that freight infrastructure must become truly intermodal, as well as part of a national critical-corridor approach. "Until recently, intermodalism was a rhetorical term," says Kenneth Orski, a veteran transportation consultant and publisher of *Innovation Briefs*. "The idea is taking hold because we are seeing definite benefits from using different modes for the transport of goods."

The Alameda Corridor is an early example of how intermodal infrastructure can be built through public-private cooperation (ENR 2/15/02 p. 21). But it was a hard-won success. Policy-wise, "we don't have the mechanisms available to work together yet," says Mortimer Downey, chair-



NELSON

man of Coalition for America's Gateways and Trade Corridors and president of PB Consult Inc., New York City. "We're not going to ask DOTs to be like railroads and trucking companies, but where there are interface facilities, we must figure out how to

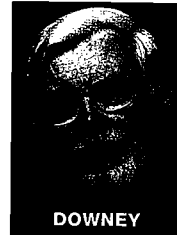
work together." Downey notes that trade corridor infrastructure is well-suited for public-private partnership funding since so many private interests benefit from it. The coalition, like the commission report, advocates a value-added tax on goods movements.

So does the American Road and Transportation Builders Association, which in November released a report to Congress proposing a 25-year federal initiative that would focus exclusively on freight infrastructure, called "Critical Commerce Corridors."

"This is the first time where we have called for a national freight program," notes Dave Bauer, ARTBA senior vice president of government relations. ARTBA suggests new freight-related user fees such as a bill of lading tax, weight-mileage user fee, federal customs fees or tolls.

Taxes and fees, of course, may be a tough sell. "Reassuring that any fees will

go directly into improving the infrastructure is a great start," says Stacey Jones, Long Beach, Calif.-based regional director with the U.K.'s Halcrow Group and a member of FuturePorts, a public-private group promoting freight infrastructure in Southern California. "The criteria will be

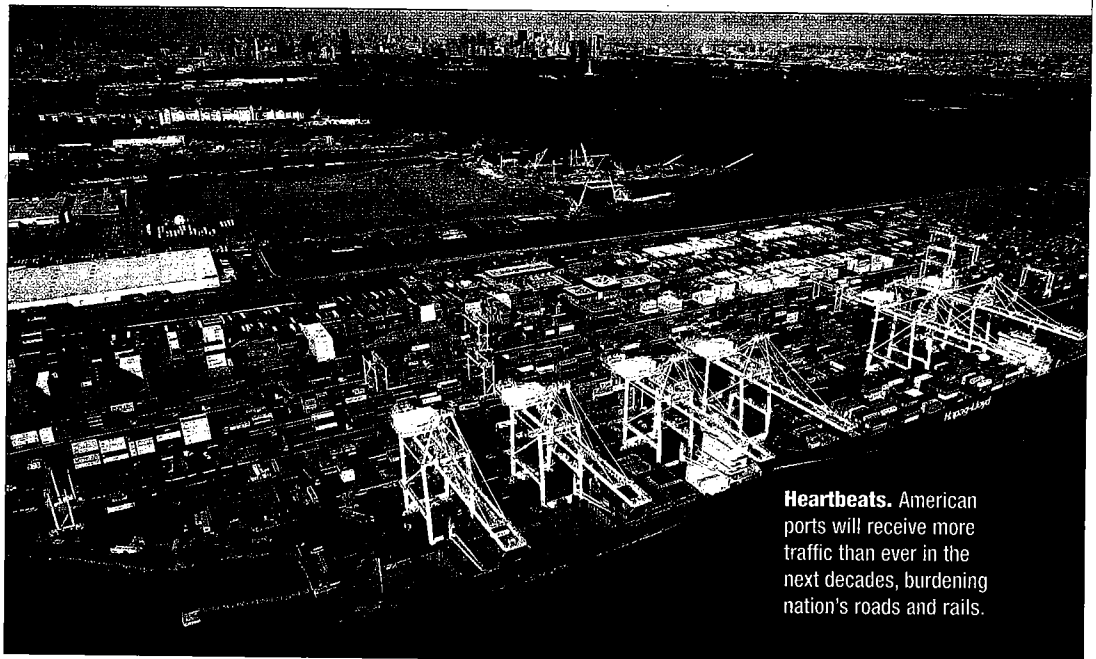


DOWNEY

important, as will the actual value of the fee itself. The freight fee is theoretically to be passed onto the ultimate consumer. What can the market bear?"

Until and if the commission's sweeping recommendations are implemented, officials will continue to seek intermodal funding through existing federal programs like "Corridors of the Future" and "Projects of Regional and National Significance." The latter has been criticized for questionable earmarks and both are limited in budget.

So officials will also seek opportunities through PPPs. Engineering firms are preparing for the trend. "Strategically, AECOM views the PPP market for goods-movement-related projects as a significant growth sector over the coming years," says Regis Damour, president of AECOM Enterprises, New York City. Vahid Ownjazyeri, senior vice president



Heartbeats. American ports will receive more traffic than ever in the next decades, burdening nation's roads and rails.

with DMJM Harris, a unit of AECOM, adds that “we see more willingness on the part of the railroads to get involved in projects.” He cites a planned intermodal facility in Oakland, where “we’re looking at a possible PPP with the railroads.”

Workhorse Corridor

At least one Corridors of the Future-funded project hopes to use PPPs. The 1,380-mile-long, north-south Interstate 5 corridor from San Diego to the Canadian border is “a workhorse for commerce,” says Gregg Albright, deputy director of planning and modal programs for the California Dept. of Transportation. California, Oregon and Washington will get \$15 million to develop ways to reduce congestion and to involve the private sector in funding construction.

The first project will focus on the Columbia River Crossing between Portland and Vancouver, Wash. The twin lift bridges carry more than 260,000 vehicles a day, with delays of up to five hours. Traffic is projected to increase by 40% over the next 20 years. Possible replacement bridges could include bus rapid transit or light rail. Travis Brouwer, federal affairs advisor for Oregon DOT, says the project could cost between \$3.1 billion and \$4.2 billion.

California’s wish list includes \$7.7 billion for its 800 miles of I-5, says Albright. He says about \$6.8 billion would be for new lanes and the rest would involve all “solutions for mobility,” including freight rail and passenger rail.

Halcrow’s Jones adds that a bond proposition in California sets aside \$2 billion for projects enhancing trade. Nominated projects will be picked for funding by the California Transportation Commission in April.

In a few cases, work is steaming ahead. Double-stacked containerized rail freight from Virginia’s Hampton Roads ports will, after 2010, travel a more direct route

to the Midwest thanks to a \$309-million public-private partnership.

The Heartland Corridor collaboration between U.S. DOT, Virginia, West Virginia, Ohio and Norfolk Southern Railroad will enlarge tunnels and remove overhead obstructions along a 670-mile route between Portsmouth, Va., and Columbus, Ohio, eliminating detours of up to 200 miles.

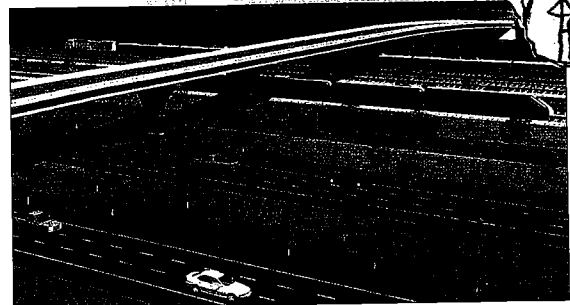
The Heartland Corridor marks the first time that a private railroad and the federal government have teamed up to develop and finance a rail improvement program. Norfolk Southern, invest-

ing about \$81.4 million in Heartland Corridor projects, brought the proposal to DOT in 2001. Results of feasibility studies led to the allocation of \$140 million in federal funds, plus funds from state agencies.

“Norfolk Southern would not be able to justify a capital project of this magnitude on its own,” says NS spokesperson Robin Chapman. “A partnership in which the railroad and the public entities each contribute in proportion to the benefits they receive—expanded capacity in a crucial corridor, economic development opportunities and reduced highway conges-

tion—makes it possible.”

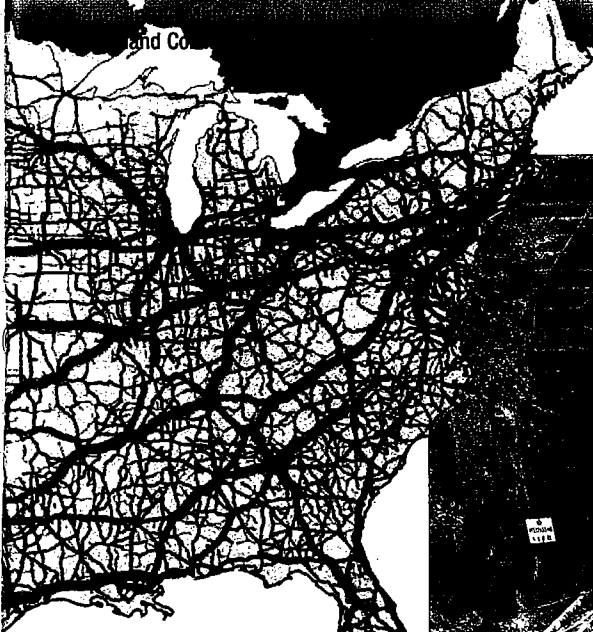
The three-year, \$151-million centerpiece focuses on raising the vertical clearances of 29 tunnels totaling more than 30,000 ft in the mountains of Virginia, West Virginia and Kentucky to a minimum of 20 ft., 9 in. Options include



MAP TOP COURTESY OF CREATE CHICAGO PROJECT; PHOTO LEFT BY AP/WIDEWORLD



Corridors of the Future. I-5 corridor improvement plan in Oregon (top) and I-70 truck-only



Units		
2004	2035	
—	—	100,000 to 1 million
—	—	1-4 million
—	—	4-8 million
—	—	8-12 million
—	—	More than 12 million



realigning tracks, lowering track beds, notching corners into arched ceilings and excavating and replacing liners. The overburden of one 174-ft tunnel in West Virginia may be removed.

"We looked for cost-effective opportunities to minimize or avoid having to make structural modifications wherever possible," says Frank Frandina, executive vice president for Hatch Mott McDonald (HMM), Milburn, N.J., Norfolk Southern's design engineer. HMM principal project manager Richard Buck notes that a lack of as-built data on older tunnels challenged the investigation and design

phases. "What we saw was what we had," Buck says.

Tunnel features such as clearance and concrete thickness can be easily verified, but pervasive random seams of loose material can escape detection by even the most meticulous geotechnical probing. "We're always uncertain of those conditions until we start demolition and see what's actually there," says Jim Carter, NS chief engineer for bridges and structures. "That's when we'll see if the borings are correct."

The first year-long project, replacing the liner on the 3,302-ft Cowan Tunnel

in southwest Virginia, began in October. Modifications to four tunnels near Roderfield, W.Va., began this month. Another four-tunnel contract is being finalized. Other contracts will be awarded in phase. Projects include constructing three intermodal terminals and modifying the upper bracing of eight railroad truss bridges.

Despite concerns over the availability of qualified contractors, "we have had some encouraging interest in future contracts that lead us to remain optimistic about meeting our schedule at this point," Carter says.

FHWA's Eastern Federal Lands Highway Division was chosen as the federal partner in part for its ability to foster collaboration, says FHWA spokesperson Ron Zeitz. While Zeitz says it is too early to fully assess the success of using the PPP approach for other freight corridor projects, the initial results are promising. "I can see it being encouraged in the future," he says. "Railroads have historically been reluctant to work with the federal government, which results in them missing opportunities to team up on capacity improvements. The Heartland Corridor may well help change that mindset."

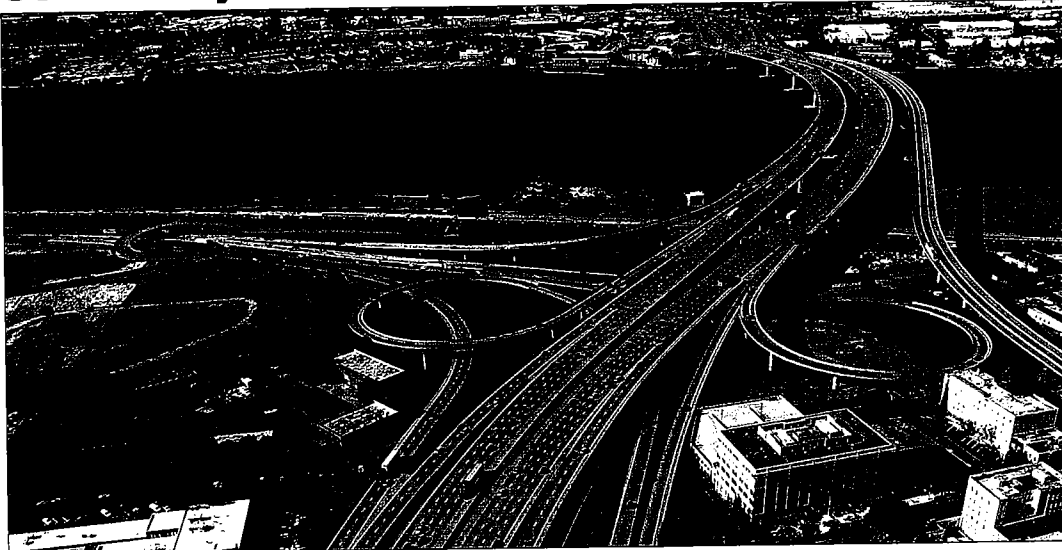
Developing Scene

Other projects partly funded by Corridors of the Future are in gestation. "When we look at the challenge of growing freight numbers, we have to think multimodal," says Scott Varner, deputy director for Ohio DOT. Ohio has an initiative with Indiana, Illinois and Missouri to relieve congestion on I-70. The plan is to construct two dedicated truck lanes in each direction along a 750-mile segment from the I-435 beltway in eastern Kansas City suburbs to Bridgeport, Ohio.

Average daily traffic through the corridor is about 45,000 vehicles, but can exceed 250,000. Average daily truck traffic is about 11,000, and up to 26,000. The projected 2030 average daily traffic will exceed 100,000 vehicles, including over 25,000 trucks.

The project has received about \$5

PHOTO TOP COURTESY OF OREGON DOT; RENDERING MIDDLE COURTESY OF MISSOURI DOT; PHOTO BOTTOM COURTESY OF NORFOLK SOUTHERN



▲ **Relief.** Projects like the I-5 corridor on the West Coast aim to relieve congestion caused in part by trucks.

million in federal funds for feasibility and environmental work. The feasibility study, conducted by HNTB Corp., Kansas City, includes potential intermodal links to airports and waterways.

Funding the full project is a question mark. "Right now, all possibilities are on the table," including fuel and sales taxes and tolls, says Jeff Bridges, a spokesman for Missouri DOT. "Ultimately, any such funding would be up to the approval of the state legislature and the voters," he adds. Brian Weiler, Missouri DOT's multi-modal director, says that as projects focus more on logistics centers that bring rail, trucking and ports together, robust private participation may increase "if the public sector can demonstrate value and efficiency to improve freight flow."

In Chicago, Project CREATE plans to improve freight flow through a sweeping overhaul of rail lines. Chicago receives 37,500 rail freight cars a day, which is expected to increase to about 67,000 in 20 years. The \$1.5-billion, six-year project will create five rail corridors, including one for passenger trains, plus 25 new grade separations.

CREATE so far has a federal commitment of \$100 million and private railroad contributions of \$212 million. "In the past, transportation thinking has been along modal lines without really considering the impact on the overall picture," says Tom White, spokesman for the Association of American Railroads, a CREATE participant. "We need to think

on a broader level."

That is happening in Kansas City. "Rail, truck and maritime shipping aren't the best of friends, but they are working together today more seamlessly than they ever have," says Chris Gutierrez, president of Kansas City SmartPort, a not-for-profit transport organization. Funded 75% privately and 25% by the Missouri and Kansas DOTs and the local airport authority, it has developed an 800-acre facility at Kansas City International Airport; a 2,200-acre NS facility; and the New Century Air Center, a 2,500-acre facility with two runways and access to rail and Interstate highways.

Other states are just getting started. Arizona DOT is creating a multiagency Freight Advisory Committee with the aid of FHWA "to help Arizona learn more from similar committees in other states, including Oregon and Colorado," says spokesman Doug Nintzel.

Looking Ahead

For now, the transportation world must wait to see what results are reaped from the experts' recommendations. One was by J. William Vigrass, a project manager with Hill International Inc., Marlton, N.J., who advised the congressional commission. He proposes, based on industry feedback, a network of east-west and north-south exclusive freight corridors with nodal exchange points. Freight could be moved by magnetically levitated rail at specific sites. "I proposed frequent

container trains on freight networks running on commuter-like schedules," he adds. He also proposes electrifying heavily used corridors.

HDR's Lewis recommends using PPPs to invest in Intelligent Transportation Systems for freight. "Just-in-time production and distribution management has changed the role of the transporta-

tion system. This has special significance for intermodal facilities," he says. "They embody the latest engineering designs, technologies and business processes."

The "silo" nature of the modes—highways, rail, marine—needs to be broken down for intermodalism to be truly integrated. The congressional report proposes to do that by streamlining all current federal programs into 10 priority points, one of which is freight. It dovetails with other priorities like congestion relief and environmentalism.

The federal office of intermodalism was submerged into the Research and Innovative Technology Administration in 2005, which PB Consult's Downey, former U.S. DOT deputy secretary, says was disappointing. "There is no longer a place to say, 'I have an intermodal project, how can we make it happen?'" he says. But there is hope. MARAD's Nelson notes that multimodal, multi-agency teams have been set up in southern California to do concurrent reviews of projects. She says that efforts like these, the Corridors of the Future program and others "need to be more routine."

Orski is optimistic. "If you take a historic view over the past 30 years, we have made tremendous progress in the intermodalism notion," he says. "That notion will continue to gain supporters. There are some deeply ingrained attitudes—modal attitudes—and it will take time to overcome them. It won't happen in one reauthorization cycle." ■

With Greg Aragon and Tony Illia