

Big Projects in America

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[An excerpted version of this essay appeared in the January 2004 *Trains* magazine]

Mark Hemphill's column, "Big Projects," in the November 2003 *Trains*, makes some very good points, but doesn't go far enough. The story of America throughout its history has been the story of big infrastructure projects, not just from 1930 to 1970, as Mr. Hemphill states.

Even before the Revolution, the colonies were improving ports and waterways, and taking the first steps at building roads. As the 19th century opened, so did the era of building canals and the less-recognized private toll roads, typically plank roads. This culminated a century later with perhaps the greatest single American infrastructure project, the Panama Canal.

Of course, railroads were the infrastructure highlight of the second half of the 19th century through World War II. As magnificent as the transcontinental railroad is, conceived at the darkest hour of American history, many individual projects including tunnels, cuts, fills, bridges and other works were "big projects" in and of themselves. This is brilliantly documented in William D. Middleton's book, "Landmarks on the Iron Road: Two Centuries of North American Railroad Engineering."

Shortly after the Civil War the grand era of bridge building began with the Eads bridge at St. Louis and the Roebling bridges at Cincinnati and Brooklyn, and continued into the twentieth century with the other celebrated New York bridges, the Golden Gate, the Mackinac, and the Sunshine Skyway in Tampa.

Then in the late 1800's cities began to build rail transit systems, trolleys, elevateds and later subways. Early in the twentieth century, interurbans proliferated until they represented a de facto connected, if not coordinated, national transit system competing with the steam railroads.

At the same time, the bicycle and the new invention of the automobile were moving people to advocate "Better Roads," and "Get Us Out of the Mud." The evolution from these first hard-surfaced highways to the federal-aid system, the state toll roads of the 1940's and '50's, and then the Interstate system, the largest public works project in history, is both direct, and probably inevitable.

Almost simultaneously, there were massive projects to electrify both urban and rural America, as well as to tie us together with telecommunications. Speaking of utilities,

cities built huge potable water and sewer works, beginning with wooden sewers and raising the streets in Chicago in the 1850's, and proceeding to the recent "deep tunnels" in Chicago and Milwaukee and the Boston Harbor project. And don't forget New York has been tunneling a new giant water supply for over three decades.

Then exactly a century ago, another new transportation mode, the airplane, burst on the scene. While initial aviation infrastructure might have been limited to chalk lines and kerosene lamps in park meadows, the course to O'Hare and Denver International was set.

The great public works projects of the 1930's were highlighted by the western dams, although it must be remembered that the nation's largest water project, the flood control works along the Mississippi River, began in the 1800's.

After the war, construction of the Interstates was accompanied by new urban transit systems in San Francisco, Washington DC, Atlanta, and other cities, together with renewals and extensions in New York, Chicago, and other "old" rail transit systems.

Today, in spite of the impacts of September 11 and the economy on air travel, there are a number of ambitious airport expansions going forward. Intermodal projects are also on the rise, exemplified by the Alameda Corridor. The railroads, left for dead by many in the 1970's, are enjoying a resurgence and are building infrastructure again, often putting back track and structures torn out years ago. There also appears to be an emerging consensus that private freight railroads need and deserve public funding assistance for key infrastructure improvements. The recently-announced Chicago area freight partnership proposal, and the idea being seriously floated in Congress by Rep. William Lipinski (D-Chicago) and others for a federal rail trust fund to aid freight rail projects nationally, shouldn't be overshadowed by the continuing Amtrak melodrama.

But Mr. Hemphill's concern is valid that big infrastructure projects are increasingly difficult to achieve, not to mention inordinately expensive and time-consuming. From NIMBY (Not In My Back Yard), to growing environmental concerns and overly complicated regulations, to litigiousness, to an unwillingness to tax ourselves for infrastructure exemplified by the current debate in Washington over indexing the motor fuel tax, big infrastructure projects are harder to plan, design, and build today than at any time in our history. And this is in spite of remarkable advances in their underlying technology. This is a policy problem, not a technical one.

But the reality is, in the increasingly competitive global marketplace in which we find ourselves, America still needs big infrastructure projects, road, rail, airport, transit, port, water, sewer, and other utilities. Let me cite five examples.

First, Mr. Hemphill is correct that high-speed rail represents a great opportunity to reduce the demand for short-haul air travel, perhaps have some impact on highway traffic, but most importantly tie cities and suburbs in the nation's emerging megalopolises more closely together while acting as a development spur for their downtowns. But we should recognize that "real" high-speed rail, as we see it in Europe and Japan, has already been

compromised in the US proposals. The Europeans and Japanese were and are willing to cut new high-speed rail alignments through their countries. But in the US, given the barriers big projects face here, we are settling for the Amtrak "incremental development" model of improving existing rights-of-way. The cost of this compromise will be paid in speed and freight interference, but that's what happens when a nation begins to lose its ability to think and build big.

Second, the August 14 blackout demonstrates the necessity to rebuild the national electricity grid immediately. Enough said.

Third, when the Interstates were built in the 1960's and '70's, they were designed to last forty years or so. Look at the calendar. We need a national effort to completely rebuild the original Interstate highway system, while making needed geometric and safety improvements to bring it up to current standards. To take an example in Kalmbach's backyard, the Milwaukee area freeway system now needs to be rebuilt with a price tag of \$5-6 billion. Current federal highway formula funding simply won't do it. Every urban area faces the same problem.

Fourth, as highways have become more congested and concern for the environment has grown, ideas for expanding rail transit have proliferated around the country. Take Chicago, where both the Chicago Transit Authority and Metra have more serious expansion and extension projects underway than at any time in their history, a situation mirrored in New York and elsewhere.

And fifth and finally, September 11 created two large new infrastructure needs, the need to secure (or "harden") current infrastructure, and the need to begin building more redundancy into infrastructure systems to make them more resistant to disruption. Engineers designed our infrastructure to be efficient on both the facility and system level, and now we're confronted with the need to make it robust as well.

Recapturing the vision that spanned both the Isthmus of Panama and the North American continent with the greatest infrastructure projects in history will not be easy. But given the economic and other realities of the world we live in, the alternative is unthinkable.