It’s a weekend afternoon in downtown St. Louis. Amtrak’s Missouri River Runner slowly pulls out of the colorful, newly built Gateway Station and begins its 240-mile journey to Kansas City. It crawls past graffiti-painted walls and the shells of abandoned factories. Outside of town, the three-car train gains speed, with enough bumps, sways, and violent jolts to wake any sleeping passenger. Then, as the train runs alongside Interstate 44 for a few miles, I watch as a steady stream of traffic passes us up.

An hour into the five-and-a-half-hour trip, the train slows, pulls over onto a sidetrack, then stops dead. A long freight chugs by, headed in the opposite direction. After about 10 minutes, the River Runner starts moving again, only to pull over once more, this time at a crossing in the center of a small town. Five minutes pass, then 10, then 15. Finally, we are on our way.

These jumps and starts, I learn later, are typical of passenger train travel in the Midwest. It couldn’t be more different from what the Obama administration promises: high-speed trains coasting over improved or new tracks, at a speed of over 100 miles per hour, competing with the airlines for the fastest door-to-door travel.

High-speed rail is transportation’s Next Big Thing, a new way to whisk travelers between metro areas in big states like California and Florida, and across regions in the Midwest and Northeast. The president, leading congressmen, governors, state transportation secretaries—and Amtrak CEO Joseph Boardman—all consider this venture to be an epoch-defining investment. “I think it’s time for us to . . . do for this century what the canals and the transcontinental railroads did for the 19th century and highways did for the 20th,” Boardman told Congress earlier this year.

Everybody, it seems, wants in. Forty states are vying for the first federal monies. Dozens of communities have jump-started planning studies. And communities ranging from Niagara Falls to Albuquerque that weren’t included in the first 10 federally designated high-speed corridors are already jockeying for extensions. “Everywhere there have been faster trains, they’ve been successful,” says Richard Hamisch, executive director of the Chicago-based Midwest High Speed Rail Association, an advocacy group. “If we can get the trains fast enough, people will make trips on them that they wouldn’t otherwise.”

Fast enough?

Despite the hype, high-speed rail in much of the U.S. will be far slower than in France, Spain, Japan, or China—where electric-powered bullet trains zip along at speeds of 150 to 220 mph. In this country, after a decades-long lapse in rail maintenance and investment, high speed will likely top out at 110 to 120 mph, with only a few routes—in California, for instance—capable of reaching 220.

Still, the mere fact that powerful policy makers are on board is astonishing. Until this year, high-speed rail planning was pretty much limited to conceptual studies gathering dust in back offices. A few states were attempting to upgrade existing track,
The U.S. are plotting routes for high-speed rail lines. By Jeffrey Spivak

but without any federal funding. That’s why the $8 billion of stimulus funding included in the American Recovery and Reinvestment Act of 2009 has been greeted so enthusiastically. It won’t go far—just enough to get some higher speed track sections up and running—but more is on the way: at least another $1 billion in next year’s federal budget, plus as much as $50 billion in the transportation reauthorization bill now before Congress.

“We’re going to have high-speed rail. It’s the president’s dream,” U.S. Transportation Secretary Ray LaHood says. “It’s coming to America.”

So far, though, only a few of the 10 designated state and regional corridors are very far along in their planning. California, where voters approved $9.95 billion in seed money last year, is carrying out environmental studies for a new double-track line that would zip express riders between Los Angeles and San Francisco in two hours and 40 minutes at an average speed of 150 mph. And Florida, which once canceled high-speed rail plans because of funding concerns, already owns most of the right-of-way for its 120 mph, 95-mile, cross-state Orlando-Tampa route.

In the Midwest, where states formed a high-speed rail coalition way back in 1996, plans call for upgrading existing track to 110 mph standards. A recent conceptual study envisions something faster: a 220 mph, top-speed line that could zoom between Chicago and St. Louis in two hours.

Overall, state wish lists for federal high-speed grants have totaled $102 billion—a dozen times more than what’s available in the stimulus package. With the limited funds earmarked so far, state planners don’t expect to get the first high-speed trains rolling until 2012 at the earliest, and California’s true high-speed venture won’t be up and running until 2020.

A smart investment—mostly

Why the sudden rush to invest in high speed? Part of the reason is the growing recognition that the U.S. cannot keep building the bigger airports and wider highways needed to serve a burgeoning population.

Government studies have found that for trips of 100 to 500 miles, high-speed rail could overcome air travel’s speed advantage, when airport parking costs, waiting times, and ever-increasing trip delays are factored in. And the California High-Speed Rail Authority, the state’s planning agency, suggests that building a new rail system would relieve the need to build a few thousand miles of new freeways in the state.

Smart growth advocates see the federal government’s commitment to high speed as a sign of a shift to more energy-efficient policies. According to the most recent edition of the U.S. Department of Energy’s Transportation Energy Data Book, Amtrak’s diesel-powered trains consume 17 percent less energy per passenger mile than domestic airlines and 28 percent less energy than cars. The 110 mph trains would use similar diesel locomotives, while higher speed systems would be electric-powered.

Others laud high-speed rail as an in-
vestment targeted toward city centers. Christopher Leinberger, a metropolitan land-use strategist and visiting fellow at the Brookings Institution in Washington, D.C., sees high speed as a catalyst for downtown-oriented development. “It’ll become the new fireplace of downtowns,” he says, “the thing you orient everything else around.”

A recent economic forecast for the nine-state Midwest rail initiative predicted that the 3,000-mile system linking Chicago with Indianapolis, Detroit, Milwaukee, St. Louis, and other cities would stimulate $4.97 billion in redevelopment around train stations. Of course, transportation forecasts tend to be “significantly optimistic,” in the words of one federal study. Nevertheless, this one, by the Washington, D.C., consulting firm Transportation Economics & Management Systems, asserted that the project would foster the growth of new businesses across the Midwest because of the improved access between communities.

But the total price tag is steep. California’s high-speed corridor, stretching from Sacramento to San Diego, is estimated to cost $52 billion, which would make it the most expensive single infrastructure project in U.S. history. For a national system, the Passenger Rail Working Group, a coalition of state transportation and railroad officials, came up with a $357 billion estimate in 2007 dollars, a figure that includes stations and new cars.

So skeptics ask: Is it worth it? High-speed rail may be popular in Europe and Asia, but it’s unproven here, where the landscape is more spread out and people are used to flying and driving. “At best, high-speed rail creates redundancy in the system, not added capacity,” concludes Samuel Staley, director of urban growth and land-use policy for the Reason Foundation, a libertarian think tank based in California.

Even the federal government’s own General Accountability Office has questioned the premise. A GAO report earlier this year noted that no goals had been established for the upgraded rail service. Nor has the Obama administration figured out how it will raise money for future years of rail construction.

Concerns like these led Harvard University economics professor Edward Glaeser to reflect on an episode of The Simpsons. “There is powerful magic in the president’s vision of fast, sleek trains carrying Americans at dazzling speeds,” he wrote online for the New York Times this past summer. “But if benefits do not exceed the costs, then America will just be living through a real-life version of Marge vs. the Monorail.” That’s the episode in which Springfield residents “were foolishly infatuated with a snazzy rail project,” Glaeser recalled.

**Slow orders**

Another Amtrak trip, this time leaving from Kansas City, served as a reminder of rail travel’s overlooked benefits. I parked in a lot adjacent to the beautifully restored Union Station. No need to wait for an airport shuttle bus. Inside the station, there was no line to go through security screening—because there was no screening. No emptying pockets, no taking off shoes, no going through metal detectors and being frisked. No need to arrive an hour or more before departure. A fellow passenger, Mary Brooks, a health-care consultant in Kansas City, summed it up: “This is so nice and easy. It takes some of the stress out of traveling.”

Still, passenger rail travel today comes up short in the most important attribute of all: speed. U.S. trains are actually slower now than a half-century ago, according to old timetables displayed on a website.
called Streamliner Schedules. In 1956, the Milwaukee Road's Olympian Hiawatha made the trip between Chicago and Minneapolis in six hours, 45 minutes. Today, Amtrak's Empire Builder makes the same trip in eight hours, 15 minutes, an average of barely 50 mph.

In fact, most of our passenger trains are limited to a top speed of 79 mph. That's because railroad companies in the 1950s refused to invest in new signal control systems, which would have allowed higher speeds. Only three rail corridors today have such safety systems. One is Amtrak's flagship service, the Acela Express, which is capable of reaching 150 mph for a stretch between Boston and New York, but ends up averaging 63 mph because of numerous crossings and curves. The Wolverine, which runs between Chicago and Detroit, gets up to 95 mph on a 60-mile stretch in Michigan—where signs label the tracks "high-speed rail."

Despite Amtrak's generally uninspiring speeds, rail ridership hit a record level in 2008, up 13 percent from 2005. The Downeaster, between Boston and Portland, Maine, saw a 73 percent surge in passengers during that time. And Acela's share of the combined rail and air passenger traffic between New York City and Washington, D.C., grew to 63 percent, up from 50 percent four years earlier.

"We've seen Amtrak and commuter rail service go crazy all across the country, and we know gas prices are only going up over the longer term," says Rod Diridon, chair of the American Public Transportation Association's high-speed rail committee and a board member of the California High-Speed Rail Authority. "People will be drawn to high-speed rail. Even 110 mph is a whole lot better than having to limit speeds under 80."

Yet, just getting to 110 will take $1 billion to $2 billion on some corridors, mostly for upgrading existing tracks. My Missouri journey showed why: Double-tracked corridors are gone in most places, leaving single tracks for miles, including across bridges. Passing tracks are limited. Amtrak passengers routinely tell stories about sitting for an hour or more while a mile-long freight passes.

"There has been almost zero investment in the line to benefit passenger rail in the past 30 years," says Rod Massman, the Missouri Department of Transportation's railroad administrator. His agency is using a combination of state and federal funds to build new sidetracks between Kansas City and St. Louis. "We're really having to play catch-up," he says.

Getting to 220 mph—as proposed for California and possibly for Texas and the Midwest's Chicago-St. Louis corridor—is even more complex. Current Federal Railroad Administration track standards don't even exist for speeds exceeding 200 mph. Yet true European-style high-speed requires:

- Completely new double-track corridors, with stronger cross-ties made from concrete instead of timber.
- Wider rights-of-way, with track running in trenches or on embankments.
- Long straightaways with limited curves.
- Grade-separated bridges to replace road crossings.
- Overhead electrical wires to power new and lighter locomotives—lighter than the Federal Railroad Administration currently allows.
- Positive Train Control wireless communications systems to automatically slow or stop trains.

The one place where these improvements are being made is California—but at an immense cost. The federal GAO estimates that the Los Angeles-San Francisco high-speed corridor would cost $65 million per mile, as much as light rail. Property acquisition is a major hurdle. So is environmental permitting. The difficult process of finding a suitable operator is another issue. (Amtrak isn't assured of operating higher speed services).

There are also routing challenges, already an issue in California where the proposed high-speed lines generally follow existing rail corridors that run through town centers. In the San Francisco Bay Area, a proposal to elevate the tracks on an embankment has drawn protests from residents who fear that physical barriers will divide neighborhoods as the interstate highways did in the 1960s and '70s. In August 2008, two Bay Area cities, along with several environmental and transit advocacy groups, sued the California High-Speed Rail Authority to change the proposed routing.

**Making good time**

No freights sidelined my Kansas City-St.
Louis train, so we rolled into the Gateway Station a good 20 minutes early. "This impressed me," said Harry Grider, a retiree using a rail pass on vacation. "They all used to come in late from Kansas City."

In the futuristic vision of high-speed rail, arrival times will be hours earlier than today's, not minutes, offering a truly competitive option for inter-regional trips. In the Midwest, according to one study, a boost in top speeds from 79 mph to 110 would drop off one-quarter to one-half of the travel time in many corridors. A Chicago-Detroit trip, for instance, would take just under four hours, two hours less than today—slower than a nonstop flight but faster than driving.

In California, a proposed express train between San Francisco and Los Angeles would take two hours and 41 minutes if stops were kept to a minimum, according to a consulting study done for the high-speed rail authority. While the time on the train would be twice as long as a current nonstop flight, door-to-door time would be nearly the same because of the extra time spent at airports, according to the authority.

Another way high-speed rail planners expect to lure passengers is with cheaper fares. California's LA to San Francisco plan is counting on rail fares that would be one-half to three-quarters of the current $130 nonstop air fares. The Midwest consulting study forecast a $36 round-trip fare between Chicago and Milwaukee, compared to airfares of $200 or more. Tampa-Orlando was anticipated at $50 by rail, compared to over $200 by air. In an online public opinion poll conducted this year for HNTB, the transportation engineering firm I work for, the number one reason given for possibly choosing high-speed rail in the future was cost.

"There is a niche cost advantage for rail," says Frank Busalacchi, secretary of Wisconsin's transportation department, who studied high-speed rail as part of the Passenger Rail Working Group. "I'm a highway guy, but if you make it convenient for them and if you make it on time, people will ride it."

In fact, high-speed ridership forecasts dwarf Amtrak's current numbers. The Chicago-Detroit service is predicted to result in a fourfold ridership increase. And for the LA to San Francisco line, consultants estimate 34 million to 71 million passengers a year—more than Amtrak's 28.7 million riders nationwide last year.

Cities come out ahead
The last time the U.S. embarked on a new national transportation network—the interstate highway system—it ushered in the era of sprawl. Over decades, urban residents, attracted by lower cost suburban housing, commercial centers, and job opportunities, drifted farther and farther away from city centers. The pattern continues today. A Brookings Institution report this year found only three of 98 downtowns added to their share of metropolitan jobs between 1998 and 2006.

It's unlikely that the proposed new national transportation network—high-speed rail—will drastically affect these trends. But according to some experts, it can reinvigorate downtowns. "It'll reinforce the core of cities," says Robert Lang, codirector of the Metropolitan Institute at Virginia Tech in Alexandria. "There will be a shift in national focus and resources to the center."

The economic analysis for the Midwest rail initiative anticipates that shift. With a fivefold to tenfold increase in rail trips, the analysis forecasts upward of $150 million in new retail and commercial development around high-speed stations in Cincinnati, Indianapolis, and other cities, and $250 million in development adjacent to St. Louis's new Gateway Station. "The potential and the expectations are pretty..."
On Track in Salt Lake City

Forget the stereotype of the Mountain West as unwelcoming to transit. Salt Lake City’s FrontLines 2015, a $2.5 billion project now under construction, will add four light-rail lines to the city’s 20-mile TRAX system and extend the 44-mile-long FrontRunner commuter line from downtown Salt Lake City to Provo, 45 miles to the south.

The Utah Transit Authority is eying other new lines and extensions, along with streetcars through several neighborhoods. TRAX, which connects the downtown with the University of Utah and four other municipalities, now carries some 42,000 weekday riders. FrontRunner, which cuts through three counties and has stations in eight communities, attracts 5,900 riders daily.

The long-term goal “is to have every resident of the Wasatch Front—the heavily urbanized area of north-central Utah—within a mile of a major transit stop by 2030,” says UTA spokesman Gerry Carpenter.

Things have changed since the early 1990s, when voters rejected a sales tax referendum to fund the rail projects. UTA tapped federal funding and other resources to build the first 15-mile TRAX line, which opened in late 1999. Its popularity led to the passage of subsequent funding measures. The university line was built in time for the 2002 Winter Olympics, and in 2006, voters approved the sales tax increase that is funding FrontLines 2015.

It helps that the Wasatch Front is squeezed in by a natural “urban growth boundary” of lakes and mountains. According to the governor’s office of planning and budget, the region is expected to grow from the 1.6 million people it had in 1995 to five million by 2050. Currently, says Salt Lake City planning director Wilf Sommerkorn, “travel demand is increasing about four percent each year.” By 2030, the number of daily vehicle trips will double.

In 1997, a group of business, environmental, and government leaders formed Envision Utah and developed the Vision 2040 plan, which has served as a blueprint for regional development. The group was headed for a time by Jon Huntsman Jr., who later became governor. The group’s leaders “decided what they wanted the region to look like,” and what they needed to do to achieve their goals, says Robert Puente, a transportation expert at the Brookings Institution in Washington, D.C. The new rail lines are proof that their tactics worked.

Alternative Fuel, More Sprawl

The conventional wisdom is that the inevitable increase in the price of oil will lead to ever higher driving costs. As a result, people will drive less, public transportation will become a viable option, and sprawl will be limited. I think the opposite is true: The worldwide auto industry is launching a slew of hybrid and all-electric cars that will drastically decrease the cost of driving—with dramatic environmental and land-use consequences.

Policy makers have generally ignored this possibility. Yet, according to land-use experts, sprawl gets worse as the cost of automobile transportation goes down. Even now, with gas at $2.50 per gallon or more, a car that gets 25 miles to the gallon makes living in distant exurbs financially feasible. Think about what will happen when millions of efficient and affordably priced Priuses—and thousands of other models that use no gas at all—hit the roads. We may be about to witness an explosion in the number of miles driven by Americans.

All this suggests that there is an urgent need to address the land-use implications of the nation’s shift to alternative fuels. We need far stronger policies—federal, state, and local—to limit sprawl, including policies to charge drivers for the amount of driving they do and that encourage local governments to coordinate land-use planning and regional planning.