

Infrastructure and Immigration Policy

Part 6

Infrastucture and immigration? An odd couple, to be sure. Immigration has divided the country for years, but the divisive questions usually involve its impact on government deficits, native wages, the environment, and whether immigrants are really needed to do the “jobs that Americans do not want to do.”

Immigration’s impact on public infrastructure is rarely discussed.

Until the Great Recession, infrastructure policy itself was on the back burner, surfacing when a bridge collapsed or a levee gave way, but otherwise only of interest to civil engineers and policy wonks.

How things change! Today infrastructure spending is seen as a key lifeline for a sinking economy. While still president-elect, Barack Obama announced a massive public works effort that he said “*will mean 2.5 million more jobs by January of 2011.*” Two years later there are no demonstrable economic benefits from Public Works I. So what does the president do? He rolls out Public Works II — a \$50 billion investment (on top of an estimated \$60 billion already allocated towards infrastructure) to rehabilitate roads, develop high-speed rails, and repair broken transit lines.

Insanity, someone once said, is doing the same thing over and over while expecting a different result. Obama is not insane. He knows that it takes years before a huge project puts a single construction worker to work. The first beneficiaries are inevitably lawyers, bureaucrats, and environmental impact consultants. Those are precisely the special interest groups that make up Obama’s political base.

Eventually a project jumps over the regulatory hurdles and federal money filters down to the states. Every state has a certain group of favored, i.e., politically well-connected contractors they work with that will bid on the infrastructure projects. But these companies already are working on existing projects, and have the equipment and the employees. They will schedule the

new project around existing projects. This may avoid job losses but will create very few new jobs.

In an economic emergency, any job creation is welcome. But the cost of generating jobs via infrastructure is so large it may well exceed any reasonable benefit. Infrastructure projects generate jobs in three ways:

1. Direct. Short-term construction jobs (building roads, rail lines, mass transit facilities, etc.) and longer-term occupational jobs such as bus drivers.
2. Indirect. Through material and capital purchases such as asphalt, construction equipment, and buses.
3. Induced. Increased consumer spending by construction workers and transit workers which lead to further hiring in the retail sector.

A recent analysis of job creation potential of road and highway construction reached the following formula: Each \$1 billion the federal government spends building roads creates 27,822 jobs.¹ If correct, then Public Works II will (eventually) generate about 1.4 million jobs. At this writing (September 2010) there are 14.8 million unemployed by the official count and another 12.6 individuals either working part time involuntarily or too discouraged to even look for jobs.²

Bottom line: A staggering \$940 billion of highway construction will be needed to put our unemployed, under-employed, and discouraged workers back to work. This, of course, assumes the job creation formula is valid — something for which hard evidence is lacking.

In pitching Public Works II, Obama noted the impact of poor infrastructure on the country’s economy: “*The average American household is forced to spend more on transportation each year than food.... Our roads, clogged with traffic, cost us \$80 billion a year in lost productivity and wasted fuel. Our airports, choked with passengers, cost nearly \$10 billion a year in productivity losses from flight delays.*”

He is right: Our infrastructure is in bad shape. The American Society of Civil Engineers (ASCE)'s *2009 Report Card* assigned an overall grade of "D" to 15 infrastructure categories.³ Grades were assigned on the basis of physical condition and capacity following a traditional grading scale (e.g., if 77 percent of our roads are in good condition or better, the roads would be given a grade of C).

ACSE estimates that it will cost a staggering \$2.2 trillion to restore the nation's aging infrastructure to acceptable levels. That is beyond the means of even a spendthrift federal government. And with state and local governments facing record deficits, there is no chance such funding will be forthcoming in the foreseeable future.

But if money was the problem, there would be no problem. Since 1982, capital spending on public infrastructure has increased by 2.1 percent per year above the inflation rate. Over this period, governments have spent more than \$3 trillion (in today's dollars) to build transportation infrastructure, and another \$4 trillion to maintain and operate it.⁴

Last year, we spent 50 percent more (inflation-adjusted dollars) on highway construction than we did a quarter of a century ago. Over this period, highway miles increased by only 6 percent while U.S. population grew by 31 percent — half of it due to immigration.

The "clogged" roads, "choked" airports, and "wasted fuel" invoked by the president to justify infrastructure spending arise mainly because population growth has overwhelmed the ability of government to productively spend the vast sums it already devotes to infrastructure.

All types of infrastructure are under pressure because of immigration.

Take public schools. Although immigrants account for about 13 percent of the U.S. population, they are 21 percent of the school-age population. In California, a whopping 47 percent of the school-age population consists of immigrants or the children of immigrants. Some Los Angeles schools are so crowded that they have allowed students more time between classes to make their way through congested halls. Los Angeles's school construction program is so massive that the Army Corps of Engineers was called in to manage it.

This is also a boom time for hospital construction. Sixty percent of hospitals are either building new facilities or planning to do so. But we have a two-tier hospital system. The lower tier — hospitals in poor areas that primarily serve uninsured immigrants and Medicaid patients — cannot afford to upgrade their plant. Sixty

California hospitals have closed their emergency rooms to avoid the uncompensated costs of their largely illegal alien caseloads.

Immigrants probably do not use any more water than other people. But they disproportionately settle in parts of the country where water is in short supply — and their sheer numbers have overwhelmed conservation efforts. Cities like San Antonio, El Paso, and Phoenix could run out of water in 10 to 20 years.

The prognosis is not good. *If immigration policy is not changed, U.S. population is projected to be 439 million in 2050 — 42 percent above current levels. New immigrants and their U.S.-born children will account for more than 80 percent of the increase, according to the Census Bureau.*

We cannot afford to keep pace with that kind of population growth. The traditional "supply-side" response to America's infrastructure shortage — build, build, build — is dead, dead, dead. Demand reduction is the only viable way to close the gap between the supply and demand of public infrastructure.

An immigration moratorium can close the gap.

Roads and highways

High gasoline prices and a weak economy have not altered a long-standing trend in American life: Roads are more crowded than ever, and we spend record amounts of time stuck in traffic. Congestion has reached the point where drivers spend 4.2 billion hours a year stuck in traffic at a cost of \$78 billion a year in wasted time and fuel costs — \$710 per motorist. More than 40 percent of vehicle miles traveled in large urban areas occur under congested conditions.⁵

The cause? Supply and demand.

Demand, as measured by vehicle miles traveled on public roads in the United States, doubled between 1980 and 2008, according to the Department of Transportation Statistics.⁶ But the supply of highways and roads, as measured by lane miles, rose by just 7 percent during that period. After expanding rapidly in the 1950s and 1960s, highway construction hit a wall in the mid-1970s. Few new roads are being built today. More importantly, the nation is having trouble maintaining its existing road and bridge infrastructure.

At its most basic level, congestion is the result of population growing faster than highway capacity. America has about 80 million more people than it did in 1980, but the carrying capacity of our road and highway system, as measured by lane miles, has increased by a little more than 7 percent over that period.

And the gap between population growth and road

capacity will only get worse: The U.S. Department of Transportation (DOT) estimates that the demand for ground transportation — either by road or rail — will be 250 percent greater by 2050, while highway capacity is projected to rise by only 10 percent during that time.⁷

Immigration is the most important factor driving population growth — and commuter traffic — in urban areas. Immigrants are more likely than natives to live in metropolitan areas (90 percent do), and within metropolitan areas, in central cities over suburbs (55 percent versus 45 percent).⁸

Recent immigrants are less likely to own automobiles and more likely to commute to work via mass transit. Carpooling, like transit, is also much more common among immigrants — nearly 22 percent for those here less than 5 years versus less than 11 percent of U.S.-born. Over time, however, the travel patterns of immigrants resemble those of the U.S.-born. For those here over 20 years, there is practically no difference.⁹

explaining changes of density between 1982 and 1997 was the share of 1990 residents who were foreign born. Los Angeles, as a major immigrant port of entry, ranks near the top of their list of the United States’ densest urban areas, and the top 20 are dominated by western urban areas like Phoenix, Modesto, California, and Fresno, California. Fulton et al. (2001) point as a counterexample to low-density Atlanta, where only 4.1 percent of the residents were foreign born in 1990.¹⁰

As density increases, so too does congestion, in part, because it is hard to add more street space in areas that are already heavily developed. Most new lane mileage is built on the urban fringe. Finding a parking space is also more time consuming — not to mention expensive — in dense urban cores.

Immigration and urban sprawl

We drive more today because the area in which we live, work, and shop is larger and more spread out. Sprawl occurs when rural land, which had been undeveloped or used for agriculture, is developed for residential or commercial use. At the most basic level, there can be only three reasons for such sprawl: A rise in per capita land consumption, a rise in population, or a rise in both.

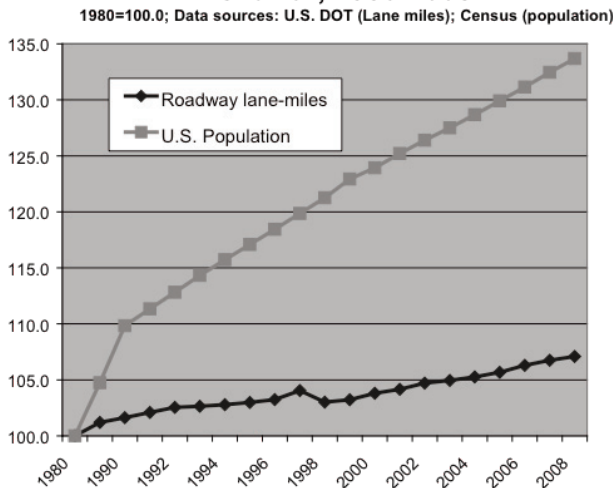
The relative importance of these factors is quantified in a 2003 study by Roy Beck, Leon Kolankiewicz, and Steven Camarota.¹¹

This is what they found:

- Nationally, population growth accounted for 52 percent of urban sprawl between 1982 and 1997, while increases in per capita land consumption accounted for 48 percent.
- The more rapid a state’s population growth, the more a state sprawled. For example, states that grew in population by more than 30 percent between 1982 and 1997 experienced a 46 percent rise in urban sprawl. In contrast, states that grew in population by less than 10 percent sprawled only 26 percent on average.
- On average, each 10,000-person increase in state population resulted in 1,600 acres of undeveloped rural land being developed, even controlling for other factors such as changes in population density.

For decades, immigrants and their U.S.-born children have been responsible for more than half of

Roadway Capacity and Population Growth, 1980-2008
1980=100.0; Data sources: U.S. DOT (Lane miles); Census (population)



Even in the short-run, immigrants add to traffic congestion woes. Cities with large immigrant populations experience larger increases in suburb-to-core commuter traffic — with many of the new suburban commuters having lived in urban cores until displaced by immigrants.

More importantly, immigrants increase population density in metropolitan areas:

...For economic reasons, immigrants often live with more people per dwelling unit than do native-born residents; when Fulton et al. (2001) conducted a study on sprawl for the Brookings Institution, they found that the single most important variable in

U.S. population growth. Less widely appreciated is the impact they have had on urban sprawl. The conventional wisdom is that immigrants live in the densely populated centers of metro areas, often in crowded conditions. That may have been the case in the early twentieth century. Contrary to the common perception, about half the country's immigrants now live in the nation's suburbs.

The pull of the suburbs is even greater in the second generation. Of the children of immigrants who have settled down and purchased a home, only 24 percent have done so in the nation's central cities.¹²

The suburbanization of immigrants and their children is a welcomed sign of integration. But it also means that they contribute to sprawl just like other Americans.

Indeed, controlling urban sprawl will be difficult — or even impossible — unless immigration is also controlled.

The Los Angeles effect

As people get richer, they want to live in larger houses with more land, further removed from crowded city centers. Over time, this trend increases per capita land consumption, thereby contributing to urban sprawl. You would think that metro areas that manage to reduce per capita land consumption would be winning the anti-sprawl battle, with salutary impact on commuter times.

Think again!

Los Angeles, California (LA) should be a poster child for anti-sprawl efforts. Unlike most U.S. metro areas, LA stopped per capita sprawl dead in its tracks. In 1970, the average Los Angelino took up 0.12 acre of land — one of the densest living conditions in America.

Most cities with LA's low per resident land use experienced significant growth in per capita consumption by 1990. But in LA, per capita land use actually declined. By 1990, LA had achieved the "Smart Growth" goal of becoming the most densely populated urban area in America. In no other city did residents live in closer proximity to one another.¹³

Yet commute times increased at well above the national average. The culprit was population growth: LA's population grew 36.5 percent, swamping the 8.4 percent decline in per capita land consumption. As a result, the city continued to sprawl: 394 square miles of former orchards, farmland, natural habitat, and other open spaces was taken for residential or commercial development between 1970 and 1990.

LA is the most congested city in the United States. Miami, Phoenix, and San Jose are also included in the top ten most congested places by the Texas Transportation Institute. Like LA, these cities have large and rapidly

growing immigrant populations. And like LA, they are among the worst offenders in terms of urban sprawl and traffic congestion.

Beyond our means

ASCE's latest appraisal of U.S. infrastructure says \$930 billion is needed to upgrade existing roads and highway to acceptable levels. *Our job is to ask: How much will we need to spend in 2050, when 129 million more people are added to the population under current immigration policy?*

Investment Needed to Restore Highway Infrastructure to Acceptable Levels

2009	\$930 billion
2050 projections (a)	
Current immigration policy	\$1.3 trillion
Moratorium	\$978 billion

a. Assumes per capita spending requirements remain at 2009 levels.

Data sources: American Society of Civil Engineers (investment needs); Census Bureau (population).

Our answer: *If per capita highway expenditures remain constant — and immigration policy stays as it is in 2010 — an additional \$1.3 trillion in highway and road expenditures will be needed that year. A moratorium would reduce those outlays by one quarter, to \$978 billion.*

These projections are undoubtedly too conservative. Accommodating 129 million more people and their vehicles will require more than just an upgrade or expansion of existing highway infrastructure. New roads and highways built on undeveloped tracts of land will be required. Otherwise, already-congested highways will get worse, perhaps to the point where, like it or not, and despite our affection for the automobile, we will increasingly have to turn to public transportation to get to work and to do our shopping.

To a considerable extent, America's quality of life is dependent on the ability to get around when and where one likes. That flexibility will not be possible in 2050 unless we either: (1) spend trillions constructing new highways, or (2) impose a moratorium on new immigration.

Clearly, ASCE thinks the expenditure is worth it. We are not surprised. The engineering society is funded by companies who plan and construct highways and other public infrastructure. They are among the special

interest groups that benefit handsomely from gargantuan public works projects. For the rest of us, however, taking on this expense at this time is not a good idea.

We simply cannot afford it.

The Highway Trust Fund is the funding source for most federal spending on surface transportation infrastructure. About 90 percent of the fund’s revenues are from motor fuel taxes. There are two such taxes: The tax of 18.4 cents per gallon on gasoline and gasoline-ethanol blends currently accounts for about two-thirds of the trust fund’s total revenues. The levy of 24.3 cents per gallon on diesel fuel accounts for about one-quarter more.

Motor fuel tax rates have not changed since 1993. The Congressional Budget Office (CBO) projects that, over the coming decade, revenues credited to the trust fund will rise at an average annual rate of about 2 percent — or below the expected inflation rate. Motor fuel tax collections are expected to decline as a share of GDP — from 0.28 percent in 2007 to 0.20 percent in 2018.

CBO estimates the gasoline tax rate would need to be about 30 cents per gallon — about 63 percent above its current rate — to match 1993 purchasing power.¹⁴ That is a non-starter politically. Indeed, the trust fund was depleted in 2008 and required a transfer of \$8 billion from general revenue funds by act of Congress.

Gas taxes are levied on a per gallon rather than a per dollar of gasoline basis. As gas mileage increases, revenues fall. As hybrid electric vehicles displace conventional autos, gas tax receipts will decline further.

There is another problem with the Highway Trust Fund: Motor fuel revenues go to the general treasury but are credited to the fund. Congress has sticky fingers; it often diverts gas tax collections to mass transit or to non-infrastructure purposes. There is no assurance that the taxes paid by motorists will benefit motorists.

In the long run, the supply side response to highway congestion — building new infrastructure — is not sustainable. Curtailing demand via an immigration moratorium is the rational alternative.

Mass transit

Except in New York, Chicago, Boston, and perhaps San Francisco, mass transit has traditionally been regarded as a service used primarily by the poor, immigrants, and others on the fringes of society. That perception changed dramatically in 2008. As gasoline prices crossed the \$4.00 mark, middle-class commuters left their cars for bus and rail lines. Cities with long-established public transit systems saw their ridership go up 5 percent or more over the prior year. But the biggest

surges — of 10 percent to 15 percent — occurred in metropolitan areas of the South and West where the driving culture is strong and bus and rail lines are more limited.¹⁵

Despite the surge of middle-class strap hangers, mass transit is still largely the province of minorities and immigrants. They are far more likely to use mass transit systems:

Recent Latino immigrants use public transportation at seven times the rate of other Californians and are more than twice as likely to carpool than whites and other Latinos....

Based on census data, the statewide study suggests Latino immigration has put pressure on public transport, but has not aggravated congestion on freeways or highways....¹⁶

No one who has ridden recently on a packed New York subway or bus needs to be told: public transit ridership has exploded over the last few years....

It does not mean, however, that the roads are any less jammed with cars or will be any time soon. In the 1990’s, the study found, the number of cars owned by city residents still increased, by 6 percent. But the growth in subway ridership vastly outpaced this, increasing 34 percent over 10 years, in part because of the booming economy and booming immigration....¹⁷

Transit use increased 25 percent between 1995 and 2005, faster than any mode of transportation. Increased transit ridership has pushed many cities to a “tipping point” where adding new mass transit infrastructure makes economic sense. It also has increased the rate at which existing transit infrastructure is deteriorating.

ASCE’s infrastructure report card for 2009 dropped its mass transit grade to a D. The engineering group

Investment Needed to Restore Mass Transit Infrastructure to Acceptable Levels	
2009	\$256 billion
2050 projections (a)	
Current immigration policy	\$379 billion
Moratorium	\$279 billion

a. Assumes per capita spending requirements remain at 2009 levels.
 Data sources: American Society of Civil Engineers (investment needs); Census Bureau (population).

estimates that \$265 billion must be spent over a five-year period to bring transit infrastructure to acceptable levels.

By 2050, this becomes a mass transit infrastructure bill of \$379 billion (current immigration policy), or \$279 billion under a moratorium (see table on page 36). These figures are for infrastructure only. They do not include the tax-financed subsidies, which cover two-thirds of the cost of operating mass transit. Fare revenues account for only 33.2 percent of operating funds.

The public wants it

When given a chance to vote, the public usually supports new infrastructure. For the past seven years, ballot measures to fund new mass transit systems or expand existing ones have passed about 70 percent of the time — though some of the electoral triumphs involved second attempts that the voters initially rejected. “*Often, if that same [ballot] question comes back, it meets with more success,*” explains Art Guzzetti, vice president of the American Public Transit Association (APTA), adding that “*once you get a system in place in a community and people can see the benefits, they are inclined to support extensions.*”¹⁸

While new infrastructure projects are often approved, the taxes needed to maintain and operate them often lag behind. A weak economy has reduced local sales tax receipts available to support mass transit. The largest single funding source — the federal gasoline tax — is also down, the result, ironically, of the stampede to mass transit from private automobiles. At the same time, the costs of fuel and power used by mass transit systems are about three times those of four years ago. Rising steel prices have pushed transit infrastructure costs up more than anticipated.

So while the public’s desire for mass transit systems is up, the reliability of the infrastructure is on the decline. Sixteen percent of the buses in the nation’s bus fleet are operating beyond their expected service lives, and 54 percent will reach the end of their expected service lives over the next six years, according to a 2007 investment analysis. Corresponding figures for the nation’s railroad rolling stock are 35 percent and 18 percent.¹⁹

We may have created a mass transit “bubble” that strongly resembles the real estate bubble. In both cases people have made financial commitments that they cannot or will not pay for. The economic consequences of both have yet to be fully felt.

Mass transit benefits

Public transportation is one of the safest modes of travel

in the U.S. According to the National Safety Council, transit bus riders and commuter rail riders are both 25 times safer than people traveling in private automobiles.

Mass transit uses considerably less gasoline per passenger mile than private autos. A single bus filled with 80 people, for example, uses only slightly more fuel than does a single private automobile. On average, mass transit consumes one-half the gasoline used by cars per passenger mile, and one-third of that used by SUVs and light trucks.²⁰

If Americans used public transportation at the same rate as Europeans, scientists estimate that our imports of foreign oil would decline by more than 40 percent.

Mass transit systems also take up much less space than highways. For example, a subway system operating on two tracks 36 feet wide can transport 80,000 passengers per hour. By comparison, an 8-lane freeway 125 feet wide can carry only 20,000 passengers per hour. In some cities, streets, highways, bridges, overpasses, and parking lots occupy as much as a third of the available land area.

The daily transit pass may be the most powerful weapon in the war against global warming. When a commuter switches from driving to public transportation, his or her household carbon footprint falls by 4,800 pounds per year, or 10 percent.

The bottom line

Other things equal, mass transit is safer, cheaper, uses less fuel, emits fewer greenhouse gases, and takes up less space than private automobiles. But things are not equal. The very factor stimulating most of the renewed interest and investment in mass transit infrastructure — population growth — undermines those gains.

We support mass transit, and believe a larger share of American commuters and consumers should use it. But population growth must not be allowed to undo the environmental benefits of mass transit.

A moratorium will do that.

Water and wastewater infrastructure

By global standards, the U.S. is water rich. It has 4 percent of the world’s population but 8 percent of its fresh water.²¹ But at approximately 1,500 gallons per person per day, Americans also consume more water than any other people on earth. Immigration-driven population growth has made it difficult for many areas of the U.S. to meet demands placed on their water systems.

To satisfy water demand, ground water is being pumped faster than it is being replenished. Underground aquifers, the source of about 60 percent of the U.S.’s

fresh water, are being depleted, and surface water in lakes and rivers is endangered by our increasing population demands. Many towns are halting development because of a lack of affordable fresh water.

California water officials warn that population growth is outrunning the state’s water supply. They predict that California will be short between 2.4 million and 6 million acre-feet of water (an acre-foot is about enough water to supply two typical families for a year) by 2020. Every newcomer to the state adds a demand of about 140 gallons of water every day to the already depleted supply.²²

The provision of drinking water requires a massive complex of piping, pumps, and water purification works. After it is used drinking water enters the wastewater (sewer) system for treatment prior to being discharged into local rivers or lakes. In fact, the Environmental Protection Agency (EPA) estimates that 850 billion gallons of untreated wastewater is discharged into U.S. surface waters each year. These discharges cause thousands of gastrointestinal illnesses per year just at coastal and Great Lakes beaches, according to the EPA.²³

Also, according to the EPA, the majority of the nation’s sewer pipe network was installed after World War II and is reaching the end of its useful life. Similarly, many of the wastewater treatment plants that were upgraded in the 1970s to comply with the Clean Water Act are aging and will need to be upgraded or replaced in the future.²⁴

ASCE assigns a grade of D — to both water and wastewater infrastructure — among the lowest grades on their 2009 Report Card. The engineering group says \$255 billion is required to bring these systems to acceptable levels. By 2050, this becomes a \$365 billion project, assuming per capita expenses stay as they are today:

Investment Needed to Restore Water Infrastructure to Acceptable Levels	
2009	\$255 billion
2050 projections (a)	
Current immigration policy	\$365 billion
Moratorium	\$268 billion

a. Assumes per capita spending requirements remain at 2009 levels.
Data sources: American Society of Civil Engineers (investment needs); Census Bureau (population).

The water crisis has triggered desperate measures in high immigration areas. San Diego’s response is typical. Ninety percent of the city’s water is pumped in

through hundreds of miles of pipeline originating in the Colorado River and northern California. Those supplies are soon to be off limits, as neighboring states enforce their water right claims and federal-state agreements to preserve wildlife habitat are implemented. Pacific Ocean desalinization, once thought to be the city’s best alternative, foundered on the rocks of technical and cost considerations.²⁵

So in late 2007, San Diego’s city council authorized — over the Mayor’s veto — a pilot project to test the feasibility of pumping highly treated wastewater into one of the city’s drinking water reservoirs. Council President Scott Peters explains: “*We’re not really in a position to turn our noses up at any potential source of water.*”²⁶

San Diego is one of a small but growing number of communities that are turning to a once-unthinkable option for drinking water. Just north of San Diego, in Orange County, toilet water is sent through \$490 million worth of pipes, filters, and tanks for purification. The water then flows into lakes in nearby Anaheim, where it seeps through clay, sand, and rock into aquifers in the groundwater basin. Months later it travels back into the homes of Orange County residents, to be used for drinking, showering, and cleaning.

San Diegans are drinking water that they flushed down the toilet. The Orange County Water District insists it’s a smart idea. The “Groundwater Replenishment System” water is about 35 percent to 75 percent cheaper and will consume about half the energy of water produced by seawater desalinization.

But San Diego and Orange County are acting out of desperation. Studies show that most Americans reject the notion of a “toilet-to-tap” water system. At one time, it would have been unthinkable. Today it is but one of many desperate measures imposed by immigration-led population growth in southern California.

Can’t we cut water usage?

Daily indoor per capita water use in a typical American single family home is 69.3 gallons. An even larger volume of residential water consumption is used outdoors. These figures do not include water used in businesses and stores.

Overall, per capita water consumption in the U.S. is about twice as high as in Europe. Can we keep costs down – and avoid the massive infrastructure bill — by cutting back on water usage?

The nation’s crumbling water infrastructure does not seem to be the result of profligate water use. Take Los Angeles, for example. Per capita water usage in Los

Angeles has declined, keeping overall water demand flat for the past two decades. *“The problem,”* according to Steven Erie, an expert on water supply issues in Southern California, *“is that we’re now talking about adding two and a half new Chicagos to Southern California. Just the sheer numbers are going to drive up demand even with all the conservation that we’ve had.”*²⁷

At one time, water was virtually free to the typical American household. Water bills were trivial, averaging only a few dollars per month. Today, in many parts of the country, water rivals electricity as a monthly expense. We have responded by fixing leaky faucets, using smaller toilets, and watering the grass less frequently.

Per capita water use is down, but population growth has overwhelmed our conservation efforts. And by 2050, there will be 126 million additional water consumers, more than 80 percent of them immigrants or the children of immigrants. It is highly unlikely that the resulting infrastructure costs can be offset by new technology or heightened conservation efforts. Higher water bills are also unlikely in this economic climate. The most likely scenario: Cuts in other vital public services will be needed to pay for water infrastructure.

Unless we reduce immigration.

Public school buildings

At least 19 percent of public school enrollment is the result of immigration, i.e., either immigrants themselves or the U.S.-born children of immigrants. Without them, school enrollment would not have risen at all in the past decade. They are concentrated in the least affluent school districts where school infrastructure is most in need of repair.

Do foreign students impose disproportionate strains on school infrastructure? Probably. Principals and administrators spend their summers anticipating the number of classrooms needed based upon the number of students from the previous year. In some districts, September brings an unwelcome surprise — a flood of new students whose illegal alien parents have not bothered to pre-register. No one had any idea these students were there, but by federal law, school districts must admit them and provide them with classrooms, teachers, aides, basic English language instruction, special needs assistance, counselors, extra classified personnel, school supplies, and (often free) breakfast and lunch.

Schools can always hire more teachers and order supplies for unexpected enrollees. Classroom space is harder to come by. While some districts can quickly afford to acquire trailers or off-campus facilities, the less

affluent ones must make do with existing infrastructure. The resulting wear and tear accelerates the deterioration of already decrepit facilities.

Assessing the overall condition of public school infrastructure is not easy, however: *“Currently, there is no reliable measure of how much money is needed to provide children with adequate public school facilities.... No public agency is monitoring school conditions nationally and many states do not have a way to evaluate the extent or level of need at the state level.”*²⁸

There have been no comprehensive federal reports on school facilities since the Department of Education’s *Condition of America’s Public School Facilities: 1999*. That survey found one in four school buildings were in “less than adequate condition.”²⁹

There is slightly more transparency regarding construction *spending*. The Department of Education’s website posts construction spending amounts through 2002. The data reveal a startling rise in construction expenditures throughout this period. In fiscal years 1990 to 2002, inflation-adjusted spending to acquire or construct public school facilities increased from \$19.5 billion to \$43.0 billion, a 121 percent increase. This dwarfed the rise in public school enrollment, which grew by 17 percent over the same period. Spending accelerated dramatically after 1995.³⁰

Not surprisingly, the well-heeled suburban districts were the major beneficiaries of the school construction boom. Older urban districts — the ones most likely to house large immigrant populations — lag behind:

Another major concern is that despite increases in spending for school facilities earlier in this decade, the money has disproportionately gone to the nation’s wealthiest school districts while the neediest students continue to endure the most decrepit facilities. A report by Building Education Success Together noted that over the decade of 1995 to 2004, public school districts built more than 12,000 new schools and managed more than 130,000 renovation and improvement projects. However, the least affluent school districts made the lowest investment (\$4,800 per student) while the most affluent districts made the highest investment (\$9,361 per student).³¹

Data from non-federal sources show a significant decline in school construction outlays during the recession:

While detailed conditions and needs numbers do not exist, we do have up-to-date numbers on spending levels. According to the American School and University's *34th Annual Official Education Construction Report*, school construction completed in 2007 (which included both new construction and renovations) totaled more than \$20.2 billion. That is down from a peak of \$29 billion in 2004. The downward trend is expected to continue: \$52.7 billion in funding is projected between 2008 and 2010...³²

While acknowledging the absence of reliable data on school infrastructure conditions, ASCE nevertheless comes up with an estimate — \$160 billion — of the amount we should spend on school construction and renovations:

Lacking a national assessment of school infrastructure conditions, it makes sense to look at local snapshots assembled by ASCE and the Federation for American Immigration Reform (FAIR):

Nevada — Nevada's school enrollment grew a whopping 54 percent between 1995 and 2004 — more than that of any other state, and over five times the U.S. average, 10 percent. Clark County schools are so crowded that students complain that they can't find available restrooms in between classes. The district (which includes Las Vegas) projects that it will add 10,000 to 15,000 students every year. The average student-teacher ratio in the district's secondary schools is 32 to 1; some classes have more than 40 students.³³

California — A Rand Corporation report concluded that California has made progress in addressing K-12 public infrastructure needs. "Progress" is a relative term, of course. California schools are the most crowded in the nation, classes often exceed 35 students per teacher (18 is considered ideal). Lack of space forces some students to attend class on school stages or in the gym. Yet the state is still adding 100,000 new students each year.

California's Class Size Reduction program calls for adding thousands of new K-3 teachers, but finding classroom space has proved impossible in some areas. Playgrounds are being transformed into parking lots for portable classroom trailers. [FAIR]

Florida — Public school enrollment grew 23 percent between 1995 and 2004, faster than any state east of the Mississippi. Florida's schools are so overcrowded that legislators are considering paying students to go to private schools instead of public ones. In Miami-

Dade County, 4 percent of schools are at least 150 percent over capacity, and locker rooms and custodial closets have been converted into classrooms. In Sarasota, some classrooms have more than 40 students at a time. In Manatee County, lunch lines are sometimes so long that students don't have time to eat unless they miss class. Pasco County has opened six new schools in the last three years, has three more scheduled to open in the upcoming months, and still projects that by 2005, two high schools each will receive 700 more students than they have room for. No affordable land is available for further school construction. [FAIR]

Florida's high immigration rate means that population growth often exceeds projections. As a result, the state's school funding formula frequently underestimates actual enrollments, "leaving school districts scrambling to provide additional personnel and programs without fresh infusions of cash."

"Our anticipated gains in the number of foreign-born students alone will require us to build one elementary school a month just to keep up," Miami-Dade school superintendent Roger Cuevas says. Every year since 1994, between 12,000 and 20,000 new foreign-born students have enrolled in the district's schools. [FAIR]

New York — Three years ago a court-appointed panel found that \$9.2 billion in new classrooms, laboratories, libraries, and other facilities were needed in order to relieve crowding, reduce class sizes, and give the city's 1.1 million public school students adequate school facilities. In May 2008, a report by the City Comptroller's office stated that "There are too many neighborhoods with overcrowded schools, elementary schools in particular, and no relief for years to come."³⁴

School infrastructure needs:

Current policy vs. moratorium

ASCE assigns a grade of D to school infrastructure. The engineering group says \$160 billion of additional school construction spending is needed to bring school buildings to acceptable levels. This implies added school construction spending of \$520 per capita is needed to bring existing school buildings to acceptable condition.

By 2050 U.S. population is projected to be 439 million if current immigration policies remain in effect, versus 323 million under an immigration moratorium. Using the same \$520 per capita amount, school infrastructure spending requirements in 2050 will be as follows:

A 40-year immigration moratorium will reduce school infrastructure spending requirements in 2050 by

26 percent — from \$229 billion to \$168 billion.

ASCE acknowledges the uncertainty of its school infrastructure figures. There has been no comprehensive survey of the condition of America’s school buildings for more than a decade. Absent such information the true extent of current needs cannot be known.

Investment Needed to Restore School Infrastructure to Acceptable Levels	
2009	\$160 billion
2050 projections (a)	
Current immigration policy	\$229 billion
Moratorium	\$168 billion

a. Assumes per capita spending requirements remain at 2009 levels.
 Data sources: American Society of Civil Engineers (investment needs); Census Bureau (population).

Similarly, the ability of school districts to maintain existing schools and build new ones as enrollments rise is not known. It depends on revenue growth, interest rates (for school construction bonds), and the willingness of taxpayers to pay for new structures.

One thing is certain: If immigration continues at current rates the condition of school buildings will likely deteriorate. Classrooms will likely be overcrowded well into the future, and efforts to reduce class size will be doomed to failure. A moratorium on immigration could be the only way out. ■

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The Minneapolis Bridge: A Case Study of Infrastructure Costs



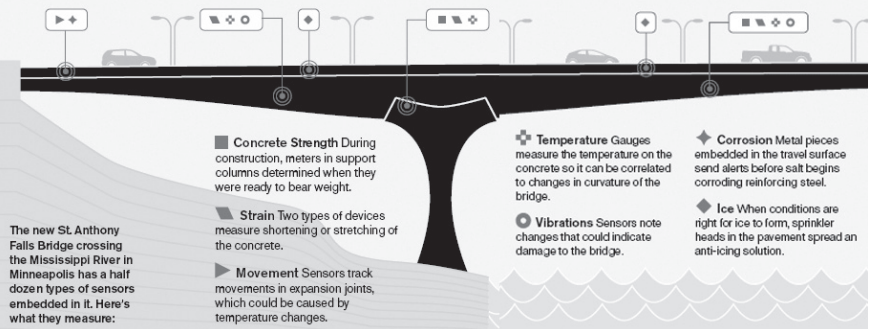
The collapse of the 8-lane I-35W Mississippi River Bridge in Minneapolis during rush hour on August 1, 2007, killing 13 motorists and injuring another 145, cost an estimated \$400,000 per day in monetary values associated with unavailable auto travel time (commercial and commuter), according to an initial analysis by the Minnesota Department of Transportation (MDOT). “The average daily net economic impact is a \$113,000 reduction in the state’s economic output ... or about \$17 million in 2007 and \$43 million in 2008,” according to MDOT. The new 10-lane Minneapolis bridge, the I-35W Saint Anthony Falls Bridge (see following page), opened 3 months ahead of schedule on September 18, 2008 and below the estimated \$300-\$350 million cost.



The New Minneapolis Bridge: The I-35W Saint Anthony Falls Bridge



What Makes America's Smartest Bridge So Smart



The new St. Anthony Falls Bridge crossing the Mississippi River in Minneapolis has a half dozen types of sensors embedded in it. Here's what they measure:

