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Is Our Infrastructure Crumbling?[1]

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Congested and deteriorating roads and corroding bridges are costing the nation billions in lost productivity and unnecessary repairs to cars and trucks. A recent study by the American Society of Civil Engineers (ASCE) has given the nation a barely passing grade of "D". The Society argues that "[t]he nation is failing to maintain even the current substandard conditions, a dangerous trend that is affecting highway safety and the health of the economy. While passenger and commercial travel on our highways has increased dramatically in the past 10 years, America has been seriously under-investing in needed road and bridge repairs."

Roads and bridges are perhaps the most visible stock of our nation's infrastructure and as such, usually draws the most attention. But there is a huge stock of public infrastructure that is less visible and falls subject to the old adage "out of sight out of mind". Take for example the 54,000 drinking water delivery systems across the US. The ASCE observes that many of the nation's systems are at or beyond their engineered design lives and are in need of replacing. In 2001, the U.S. Environmental Protection Agency (EPA) concluded that approximately $151 billion would be needed over 20 years to repair, replace and upgrade the nation's 55,000 community drinking water systems. Given the Bush Administration proposal of $850 million for FY 2006, the ASCE has given the nation's drinking water infrastructure an academic grade of "D-".

Since the Clean Water Act of 1972, the nation has invested more than $72 billion in the construction of over 16,000 public wastewater management systems. The ASCE estimates that due to congestion and leakage, aging wastewater management systems discharge billions of gallons of untreated sewage into U.S. surface waters each year. Like the drinking water delivery infrastructure, the ASCE gave the nation's public wastewater system a "D-". A more recent report from the staff of the House Transportation and Infrastructure Committee, stated the issue bluntly: "Without increased investment in wastewater infrastructure, in less than a generation, the U.S. could lose much of the gains it made thus far in improving water quality, and wind up with dirtier water than existed prior to the enactment of the 1972 Clean Water Act."

But, the nation's infrastructure is much broader than roads, bridges and sewer lines. The ASCE notes that since 1998, the number of unsafe dams has risen 33 percent to more than 3,500. They note that while federally owned dams are in good condition and there have been modest gains in repair, the number of dams identified as unsafe is increasing at a faster rate than those being repaired. Over the next 12 years $10.1 billion will be needed to address all critical non-federal dams--dams that pose a direct risk to human life, should they fail. Again, the ASCE gave our nation's network of dams a scarcely passing grade of "D".

When thinking about our nation's stock of infrastructure we seldom think of our investment in parks and recreational infrastructure such as public pools. This is unfortunately because much of the current research on community economic growth and development emphasize the importance of recreational

[1] This essay is drawn from the ASCE 2005 study located at: http://www.asce.org/reportcard/2005/index.cfm

opportunities within the community. The ASCE maintains that many of our nation's public parks, beaches and recreational harbors are falling into a state of disrepair. Much of the initial construction of roads, bridges, utility systems, shore protection structures and beaches was done more than 50 years ago. These facilities are anchors for tourism and economic development and often provide the public's only access to the country's cultural, historic and natural resources. The National Park Service estimates a maintenance backlog of $6.1 billion for their facilities. While the ASCE rates these infrastructure networks with a “C-“ there is great need for maintenance, replacement and construction of new infrastructure in our nation's state and municipal park systems.

Our infrastructure problem has four root causes. First, much of the stock of infrastructure has been in place for decades and is reaching, or is beyond, their engineered designed lives. In short, much of our infrastructure is getting old and needs to be replaced. Second, routine maintenance of our stock of infrastructure is often the first budgetary items to be reduced or delayed during periods of fiscal stress, such as today. Delaying maintenance is often seen as a quick fix to short-term budgetary pressures. Unfortunately, delayed maintenance programs almost always results in more costly reinvestment programs in the long-term. Engineering studies have shown repeatedly that the cost of maintaining a high quality stock of infrastructure, such as a stretch of road, is much lower than maintaining a deteriorated stock. Third, as our economy grows, the demands for additional infrastructure also grow. Highways need to be expanded, as do airports. New bridges need to be put in place to support increased traffic loads and travel time demands. We demand more of our stock of infrastructure. To satisfy the new demands, limited dollars are diverted from maintenance budgets to new construction budgets.

From a community development perspective, this leads to the fourth cause; the spatial location of the investments of limited infrastructure dollars. As our economic grows, it tends to be in very specific geographical locations, often at the edges of cities or clustered in high amenity areas. As a community grows spatially, the visible demands for infrastructure investments are associated with those areas were the growth is occurring. New roads, sewer and water lines must be laid, new schools and police/fire stations may be needed, or the community may even invest in a new park. Given limited public resources, dollars are often diverted away from the maintenance, repair and/or replacement of older existing infrastructure. New roads are built on the edge of town while the roads downtown crumble.

What can be done to address the “slow death” our nation’s infrastructure is facing? The ASCE provides several options, but most focus on fully funding and/or expanding federal programs. But what can local officials do to minimize this growing problem? Several things can be offered up. First, maintain fiscal discipline and avoid delaying routine maintenance schedules to minimize higher long-term costs. Second, put in place, monitor and fully fund, capital improvement plans. Careful planning can avoid expensive “surprises” and put in place cost-savings preventive programs. An ounce of prevention is worth a pound of cure. Third, careful land use planning can focus growth in ways that make the most effective use of limited dollars for infrastructure investments. Planners often point to cluster developments as an example to consider. Fourth, avoid offering expensive investments in new infrastructure as a “lure” for economic development. In the new “war between the states” communities are under the false impression that they must cater to the whims of businesses when it comes to investments in public infrastructure. Communities must be more effective in thinking about economic development, encourage the reuse of existing facilities and be willing to advance the idea of development impact fees to help offset expensive infrastructure investments.

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