

America's Public Infrastructure

America's public infrastructure includes roads, bridges, public transportation and airports, drinking water and wastewater treatment systems, solid waste services and facilities, and other important utilities essential to a functioning community. These tangible assets and services help sustain community life, safeguard the environment, protect our health, support the economy, and allow people and goods to move safely and efficiently.

The American Public Works Association (APWA) presents the following facts and figures about the benefits, condition, and needs of America's public infrastructure.

Transportation Infrastructure

America's transportation system is one of the world's most extensive, and includes highways, roads, airports, railways, and waterways. Public Works Departments maintain our transportation infrastructure so that people and goods can travel with ease.

Characteristics:

- America's transportation system is one of the world's most extensive, with a network of four million miles of public roads, and roughly 594,000 bridges. Transit systems operate approximately 226,400 directional route miles, of which 216,620 are non-rail and 9,800 are rail route miles.
- Local governments own 75 percent of the nearly four million-mile roadways network about half of the nation's bridges and manage 90 percent of the transit systems.
- Seventy-five percent of highway miles are in rural areas.

Condition and Performance:

- About one in four bridges is rated as deficient and in need of repair or upgrade.
- Traffic congestion continues to worsen, costing the U.S. economy \$87 billion annually in the form of lost hours and 2.8 billion gallons of wasted fuel.
- Between 1995 and 2004, highway mileage grew at an average rate of 0.2 percent, while vehicle miles traveled increased at an average rate of 2.5 percent, leading to greater congestion.
- In 2008, 10.7 billion trips were taken on U.S. public transportation, the highest number in more than fifty years.

Funding and Finance:

- The Congressional-chartered National Surface Transportation Policy and Revenue Study Commission found the nation needs to increase investment to at least \$225 billion annually for the next 50 years to bring the transportation system into good repair. The nation currently invests less than 40 percent of that amount.
- State and local highway and transit programs are funded through the Federal Highway Trust Fund, which consists of a highway account and a transit account.
- Highway Trust Fund revenues are derived from motor fuel taxes and truck-related taxes (tire tax, truck and trailer sales tax, and the heavy vehicle use tax). The federal gasoline tax is 18.4 cents per gallon and the federal diesel tax is 24.4 cents per gallon.
- Fuel taxes represent about 90 percent of total revenues to the Highway Trust Fund.
- Transportation-related goods and services contributed to 10 percent of U.S. GDP in 2006, which is roughly \$1.4 billion.
- Every \$1 billion invested in roads and bridges generates approximately 34,700 jobs.

- Every dollar taxpayers invest in public transportation generates up to \$6 in economic returns, which translates into higher revenues for cities and states.

Safety:

- In 2007, there were more than 41,000 highway fatalities, of which more than 24,140 were the result of road departure, more than 8,650 were intersection related and more than 4,600 were pedestrians.
- The total economic cost of motor vehicle crashes in 2000 was \$231 billion. Lost market productivity accounted for \$61 billion, while property damage accounted for \$59 billion. Medical expenses totaled \$33 billion and travel delay accounted for \$26 billion.

Environmental Infrastructure

The nation's community drinking water systems supply drinking water to more than 250 million Americans, and municipal wastewater treatment systems each year prevent billions of tons of pollutants from reaching our rivers, lakes, streams and coastlines. By keeping water supplies free of contaminants, these water utilities protect human health and preserve the environment. Clean water supports a recreational and tourism economy that generates billions of dollars annually. Municipal Solid Waste (MSW), more commonly known as trash or garbage, consists of everyday items such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries.

Characteristics:

- Americans generate about 4.5 lbs of municipal solid waste per person per day.
- 268 million Americans get their drinking water from a community water system.
- Water utilities treat approximately 34 billion gallons of water per day.
- In 2005, there were 88 energy recovery combustors in the U.S. able to burn up to 99,000 tons of MSW per day.

Condition and Performance:

- In a survey of city mayors, the number one priority for water systems was aging infrastructure (listed by 60.6% of respondents).
- There are 1,237 contaminated sites on the National Priorities List, with a possible addition of 10,154. In 2003, there were 205 cities with "brownfields" sites awaiting cleanup that would generate an estimated 576,373 jobs and \$1.9 million annually if redeveloped.
- Nationally, states have disposal capacity for another 19-20 years, though a number of states are nearing the end of their ability to manage waste within their borders and their equipment is at capacity and aging.
- The "Superfund" program has completed over 7,000 emergency cleanups since its inception.
- About 850 billion gallons of untreated sewage and stormwater are discharged each year as combined sewer overflows.

Funding and Finance:

- EPA's 1999 Drinking Water Infrastructure Needs Survey found that \$150 billion would need to be invested over 20 years to keep drinking water safe and clean.
- A small majority of surveyed cities (52.3%) relied on a single source for water infrastructure financing in the first half of the decade, but a small majority of cities (53.5%) plan to use multiple sources over the next five years.

- Federal funding for cleanup of the nation's worst toxic waste sites has steadily decreased since 1998, reaching its lowest level since 1986 in fiscal year 2005.
- The Water Infrastructure Network (WIN), a national coalition which includes organizations representing elected officials, public agencies and private sector companies, found that over the next 20 years, America's water and wastewater systems will need \$23 billion annually more than current investment to meet national environmental and public health priorities. Of this total, water systems account for \$11 billion a year and wastewater systems account for \$12 billion a year.

Safety:

- In a 2003 GAO study, 75% of experts identified the distribution system as one of the most vulnerable aspects of drinking water systems.
- Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the United States--from major industrial plants to local dry cleaning establishments or gardening supply stores.

Homeland Security and Emergency Management

Protecting our Nation's communities is a cornerstone of a public works department's daily responsibilities. Public works personnel are committed to protect critical infrastructure before disaster strikes, and work tirelessly to respond to and recover from emergencies.

Characteristics:

- Public works departments are vital to keeping our communities safe by maintaining critical infrastructure such as the transportation, water supply, sewage and refuse disposal systems, and public buildings.
- When disaster strikes, public works are on the scene responding to and recovering from minor local disasters and emergencies, and high profile events such as earthquakes, tornadoes, floods or terror attacks.
- Public works departments provide essential emergency response services such as assessing damage to buildings, roads, and bridges; clearing, removing and disposing of debris (ex: snow and ice, fallen trees or power lines); restoring utility services; and managing emergency traffic.
- A pandemic influenza outbreak can have a severe impact on the levels of illness, death, social disruption and economic loss. During a pandemic, public works plays a key role providing continuity of operations for critical infrastructure services, such as water treatment and distribution systems, power generation and distribution systems, and communications systems.
- Statewide mutual aid agreements facilitate and provide for the sharing of public works resources across jurisdictional lines in situations in which incidents require assistance from one or more public works entities.

Condition and Performance:

- The Federal Emergency Management Agency's (FEMA) Public Assistance program is designed to provide assistance to State, Tribal and local governments, and private nonprofit organizations so that communities can quickly respond to and recover from major disasters or emergencies declared by the President. Through the Public Assistance Program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of

disaster-damaged, publicly owned facilities and the facilities of private nonprofit organizations.

- From 1999 to 2008:
 - The average number of Presidential declarations for FEMA's Public Assistance Program are a little under 50 for major disasters (any natural catastrophe that warrants significant disaster assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act and a little under 17 for emergencies (an occasion where Federal assistance is needed to supplement State and local efforts). The Stafford Act constitutes Federal disaster response activities pertaining to FEMA programs.
 - The average number of Public Assistance applicants (which include governmental and private-non profit entities) per declaration have been a little under 144 for major disasters and a little under 164 for emergencies.
 - The average total financial Public Assistance obligation for Presidential declarations is \$2.88 billion for major disasters and \$153.29 million for emergencies.
- Over 5 million people currently hold flood insurance policies in more than 20,100 communities across the U.S.
- Approximately 38 percent of all National Flood Insurance Program (NFIP) claims are repetitive loss claims.
- Communities that participate in the Community Rating System—a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements—may receive up to a 45 percent premium discount on their flood insurance policies.

Funding and Finance:

- Up to 90 percent Federal cost-share funding for projects approved in States, Territories, and Federally-recognized Indian tribes include a strategy for mitigating existing and future property loss.
- Through the implementation of local floodplain ordinances alone, approximately \$1.1 billion in flood damages are prevented annually.
- The average annual U.S. flood losses in the past 10 years (1994-2004) were more than \$2.4 billion.