American Society of Civil Engineers

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Statement Of
The American Society of Civil Engineers*
Before the Subcommittee on Energy and Water Development
Of the U.S. Senate Appropriations Committee
On the Budget for
The U.S. Army Corps of Engineers
For the Fiscal Year 2006

The American Society of Civil Engineers (ASCE) respectfully recommends that Congress appropriate $5.6 billion for the U.S. Army Corps of Engineers Civil Works program, including a minimum of $2.55 billion for the inland waterways programs, in FY 2006. Congress should appropriate the entire balance of $307 million in the Inland Waterways Trust Fund and the entire current balance of $2.6 billion in the Harbor Maintenance Trust Fund for critical infrastructure projects maintained and operated by the Corps. Congress also needs to appropriate $150 million for beach nourishment investigations and construction in FY 2006.

A. Inland Waterways Trust Fund

The U.S. Army Corps of Engineers maintains more than 12,000 miles (19,200 kilometers) of inland waterways, and owns or operates 257 locks at 212 sites on inland waterways. These waterways—a system of rivers, lakes and coastal bays improved for commercial and recreational transportation—carry about one-sixth of the nation's intercity freight, at a cost per ton-mile about half that of rail, or one-tenth that of trucks. The physical condition of these waterways received a grade of D– from ASCE on our *2005 Report Card for America's Infrastructure* released on March 9, 2005.

Waterways are excellent ways to move large volumes of bulk commodities over long distances. The cargo capacity of a typical barge is equivalent to that of 15 large railroad cars, or 58 semi-trucks. A representative 15-barge tow on a main stem waterway moves the same cargo as 870 trucks stretching 35 miles on the interstate highway system. That same 15-barge tow would require two 100-car unit trains, extending nearly three miles in length.

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* ASCE was founded in 1852 and is the country's oldest national civil engineering organization. It represents 137,000 civil engineers in private practice, government, industry and academia who are dedicated to the advancement of the science and profession of civil engineering. ASCE is a non-profit educational and professional society organized under Part 1.501(c) (3) of the Internal Revenue Code.

Locks and dams affect the environment. They slow the natural velocity immediately upriver from their locations, so that organisms adapted to fast-flowing water are replaced by those adapted to slow-flowing water, and dams trap sediments that would otherwise flow farther downstream. Dredging is necessary to keep the navigation channels open.

The 12,000 miles of inland and intracoastal waterways, as do highways, operate as a system, and much of the commerce moves on multiple segments. They serve as connecting arteries, much as neighborhood streets help people reach interstate highways. These waterways are operated by the Corps of Engineers as multi-purpose, multi-objective projects. They not only serve commercial navigation, but, in many cases, also provide hydropower, flood protection, municipal water supply, agricultural irrigation, recreation and regional development.

Forty-one states, 16 state capitals and all states east of the Mississippi River are served by commercially navigable waterways. Domestic companies operating vessels on U.S. waterways increased 19.6% from 2002 to 2003.

Waterway usage is increasing, but the facilities are aging; many Corps-owned or -operated locks are well past their planned design life of 50 years. Of the 257 locks still in use in the United States, 30 were built in the 19th century, another 92 locks are more than 60 years old. In other words, nearly 50% of all Corps-maintained locks were functionally obsolete by the beginning of 2005. Assuming that no new locks are built in the next 20 years, by 2020, another 93 existing locks will be obsolete—rendering more than 8 of every 10 locks now in service archaic.

As the system ages, the infrastructure cannot support the growing traffic loads, resulting in frequent delays for repairs. At the same time, the repairs are more expensive due to long-deferred maintenance. We estimate that the inland waterways system requires $4 billion a year over the next five years to upgrade the system's locks and other facilities.

The Inland Waterway Trust Fund, created in 1978, pays half the cost of the construction and major rehabilitation costs for specified federal inland waterways projects. It receives money from a tax on fuel (currently set at 20 cents per gallon) on vessels engaged in commercial transportation on inland waterways.

In recent years, there have been a number of major inland waterway infrastructure failures—a few years ago, the entire Ohio River system was closed for a time due to infrastructure breakdowns.

The fund will earn $105 million in FY 2006, including $92 million paid by the barge and towing industry, and $13 million in interest. In FY 2005, the Corps of Engineers received $149 million for construction projects, leaving a balance of approximately $307 million. In FY 2006, the Corps is planning to spend $394 million on current maintenance projects, a sum that will not reduce the backlog of pending repairs that exceed $600 million.

The Corps estimates that it would cost more than $125 billion to replace the present inland waterway system.

- Congress should amend the Inland Waterways Trust Fund Act of 1978 to allow all funds collected to be used for repair and construction of dams and locks. Congress should then appropriate the full fund balance each year to pay for the cost of rehabilitating the nation's oldest locks. The government needs to set a priority system for restoring locks that have outlasted their design lives, with an initial focus on all locks built in the 19th century. The current federal budget process does not differentiate between expenditures for current consumption and long-term investment. This causes major inefficiencies in the planning, design and construction process for long-term investments.

- In the interim, Congress must appropriate at least $2.55 billion for inland waterways programs.
- ASCE supports the creation of a federal capital budget to create a funding mechanism that would help reduce the constant conflict between short-term and long-term maintenance needs. This would increase public awareness of the problems and needs facing this country's physical infrastructure, and would assist Congress in focusing on those specific programs that are necessarily devoted to long-term growth and productivity.

B. Harbor Maintenance Trust Fund

ASCE believes Congress must commit the entire current balance of $2.6 billion in the HMTF in FY 2006 to port and harbor improvements. Growing traffic volumes and ever- larger ships are expected to strain U.S. port facilities in the first half of the 21st century. In a 2002 study for the U.S. Army Corps of Engineers on U.S. harbor needs through 2020, analysts concluded that foreign commerce now makes up about 27 percent of the U.S. Gross Domestic Product (GDP) and is worth roughly $1.5 trillion. Forecasts indicate that foreign cargo traffic will more than double by the year 2020. By 2040, imports and exports are expected to increase eightfold.

There are about 9,300 commercial harbor and waterway piers, wharves and docks in the United States. Of these, 150 deep-draft ports account for more than 99 percent of foreign waterborne trade entering the U.S. Moreover, about 75 percent of international tonnage and almost 90 percent of international cargo value flows through only 25 U.S. ports. Increasingly, the cargo traffic entering U.S. ports is being carried on a new class of "mega ships."

Containerships are growing in terms of both fleet capacity and vessel size. Their share of the world fleet's cargo-carrying capacity increased 8.8 percent per annum from 1985 to 1999 making containership fleet capacity the fastest growing for any type of vessel. Containerships are also becoming increasingly larger. Containership size is generally measured by the number of containers that a vessel can carry expressed in twenty-foot equivalent units (TEUs). In the 1980s, containerships of 2,000 to 3,000 TEUs were considered the norm. Since then, deregulation of the transportation industry, consolidation among containership companies and growing volumes of container trade have spawned a race among major carriers to build larger vessels in pursuit of lower costs and increased competitiveness.

Today, companies are introducing "mega ships" that range from 6,000 to 7,500 TEUs, and plans are under way for vessels of 10,000 to 12,000 TEUs. Fully loaded by weight, mega ships require channels of 50 feet or more in depth. In the U.S., only a handful of ports currently meet this requirement.

Major port development is responding to growth in container shipping and larger containerships, as well as growth in dry and liquid bulk shipping. Ports are investing heavily in dockside infrastructure, such as expanded berths, newer and larger cranes, improved intermodal capabilities, and deeper channels. U.S. ports appear to be keeping pace with their foreign counterparts with regard to dockside infrastructure. Many major container ports in the U.S. are developing new terminals and implementing massive projects to reduce port congestion and accommodate mega ships that are wider, longer, and deeper, and that require quick turnaround times to remain profitable. But the federal government's effort to provide navigable waterways is falling behind the need. Ports are investing their funds with the understanding that the federal government will meet its responsibility in maintaining required water depths.

Vessel demand on the nation's ports is escalating, as commodity flows increase. The total number of annual vessel calls to and from the U.S. is expected to more than double by the year 2020 from about 114,500 in the year 2000 to approximately 261,000 in the year 2020. Between 2000 through 2020 containership calls are projected to increase at a 5.5 percent annual rate and grow from about 42,000 to almost 121,000.

The ultra-large crude oil tankers, the largest vessels in the world fleet, have vessel drafts of more than 70 feet. The average draft of the largest dry bulk vessels is almost 60 feet. The largest container vessels now have design drafts close to 50 feet, with the average design draft for the largest ones (more than 5,000 Twenty-foot Equivalent Unit container capacity) being more than 45 feet.

Congress enacted the Harbor Maintenance Tax (HMT) and established the Harbor Maintenance Trust Fund (HMTF) in the Water Resources Development Act of 1986. The HMTF pays one hundred percent of the Corps' eligible Operations and Maintenance expenditures for commercial harbors and channels. Section 201 of the Water Resources Development Act of 1996 expanded the use of HMTF to pay federal expenditures for construction of dredged material disposal facilities necessary for the operation and maintenance of harbors.

Total HMTF revenues for fiscal year 2005 were $1 billion. The total Fund balance, however, was approximately $2.6 billion as of September 30, 2004. But the President's budget for fiscal year 2006 calls for spending only $665 million from the Fund on port and harbor construction and maintenance. Congress must appropriate the full balance in the HMTF in FY 2006 to pay for critically needed port and harbor improvements. The huge investment gap in our port and harbor infrastructure can be overcome by spending down the annual HMTF balances for the purposes the monies were intended.

C. Beach Nourishment Program

ASCE recommends that Congress appropriate $150 million for studies and beach restoration projects throughout the nation. We encourage Congress to (1) continue to fund periodic beach renourishment, (2) fund new beach nourishment studies and construction starts, and (3) permit projects to move seamlessly from study to design to construction.

The $150 million for beach nourishment investigations and construction in FY 2006 equals a one-third increase over the FY 2005 enacted level. The $49 million request for beach restoration in 2006 is wholly inadequate. It is only one-third the amount requested in 2005, and it is nearly two-thirds lower than the $111.7 million that Congress enacted for 2005. That means there will be less money to repair erosion and to restore critical coastal habitat, which represents a real threat to America's economy.

With 20,506 miles of eroding shoreline (and 2,672 miles critically eroding), beach attrition is a serious threat to the nation's tourism, which represents a significant threat to the national economy. Federally funded beach restoration projects return $1 to $7 on the initial investment.

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