

The Economy and Engineering

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Future economic growth requires building and maintaining a globally competitive workforce that can sustain tomorrow's infrastructure. While supply, demand and constantly changing market conditions can cause an ebb and flow in the need for engineers in any given field it is well documented that research and development lead to innovation and economic growth.

Transportation experts nationwide are in agreement that it is critically important for the United States to rebuild its national transportation infrastructure in order to bolster the country's long-term competitiveness and ensure economic growth.¹ In an effort to jumpstart the stalled economy, the Obama Administration has set forth an extensive stimulus plan which includes the development of high speed rail networks and mass transit systems and a greater emphasis on the transportation industry and related transportation infrastructure investments as a whole.²

Along with infrastructure investment, the Administration's plans to stimulate the economy also centers on revamping energy and environmental policies, advancing development of fuel infrastructure, cultivating commercial scale renewable energy, reducing greenhouse-gas emissions and creating additional jobs in a new "clean energy economy."³ With this renewed focus on innovation in energy and infrastructure development, undoubtedly additional opportunities for skilled engineers in all fields of discipline are emerging. In fact,

Historically, the highest areas for engineering employment have been California, New York, Texas, and New Jersey, where one-third of engineers were employed.⁴ However, as the new Administration follows through on its plans to increase transportation infrastructure investments, opportunities will begin to abound in alternative energy, mass transit systems, roads

¹ <http://www.barackobama.com/issues/economy/#invest-for-jobs>

² http://money.cnn.com/2008/11/24/news/economy/obama_economic_team/?postversion=2008112415

³ <http://www.barackobama.com/issues/economy/>

⁴ <http://www.todaysengineer.org/2009/Mar/outlook.asp>

and highways infrastructure, and environmentally related areas throughout the states. This will in turn require an infusion of additional engineers in the existing workforce.

According to the U.S. Bureau of Labor Statistics (BLS), the highest growth areas in engineering are projected to be: Environmental, Biomedical, Industrial and Civil Engineering specialties, ranging from 25 – 18 percent in the order specified. Additionally, employment for Electrical/Computer/ Electronic Engineers (in that order) will experience a 4-6 percent growth rate through 2016. Moreover, overall engineering employment should grow about 11 percent, due in large part to sharp growth in the environmental engineering sector.⁵

In 2006, engineers held roughly 1.5 million U.S. jobs, of which, about 20 percent were in electrical/electronic engineering. About 30-40 percent of those engineering jobs were in the manufacturing sector while another 20-30 percent was in the service area.⁶ In comparison, in 2008, engineers held about 1.6 million jobs, with civil engineers accounting for 278, 400 of that number.⁷ Additionally, in 2008, Federal, State, and local governments employed about 12 percent of engineers.

In conclusion, notwithstanding the current state of the economy, the overall job opportunities for engineers are expected to be good. As a group, engineers earn some of the highest average starting salaries among those holding bachelor's degrees.⁸ Although the exact measure of the economic benefit engineers generate towards the growing economy has not been quantified, engineering footprints can be seen in a myriad of projects, programs and policy initiatives throughout the nation. To that end, it is extremely important that engineers remain current on the latest technological advances and keep pace by earning advanced degrees, taking continuing education courses, and increasing their level of skill in their chosen engineering discipline.



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⁵ Id.

⁶ Id.

⁷ <http://www.bls.gov/oco/ocos027.htm>; Civil engineers are expected to have employment growth of 24 percent over the projections decade, much faster than the average for all occupations. Spurred by general population growth and the related need to improve the Nation's infrastructure, more civil engineers will be needed to design and construct or expand transportation, water supply, and pollution control systems, and buildings and building complexes. They also will be needed to repair or replace existing roads, bridges, and other public structures.

⁸ Id.