

# **Infrastructure's Critical Role in Our Economic Recovery**

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**BARRY R. McCAFFREY  
GENERAL, USA (RETIRED)**

# BIOGRAPHY OF GENERAL BARRY R. MCCAFFREY, USA (RET.)

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Barry McCaffrey served in the United States Army for 32 years and retired as a four-star General. At retirement, he was the most highly decorated serving General, having been awarded three Purple Heart medals (wounded in combat three times), two Distinguished Service Crosses (the nation's second highest award for valor) and two Silver Stars for valor.

For five years after leaving the military, General McCaffrey served as the Director of the White House Office of National Drug Control Policy (ONDCP). Upon leaving government service in 2001, he served as the Bradley Distinguished Professor of International Security Studies for five years at the United States Military Academy at West Point, NY. He continues as an Adjunct Professor of International Affairs.

General McCaffrey has been elected to the Board of Directors of: HNTB Corporation, DynCorp International, CRC Health Corporation, McNeil Technologies, and the Atlantic Council of the United States. He is also: a member of the Council on Foreign Relations; an Associate of the Inter-American Dialogue; Chairman of the Vietnam Veterans Memorial Education Center Advisory Board; and is a member of the Board of Advisors of the National Infantry Foundation

Currently, General McCaffrey is President of his own consulting firm based in Arlington, Virginia [www.mccaffreyassociates.com](http://www.mccaffreyassociates.com). He also serves as a national security and terrorism analyst for NBC News.

General McCaffrey graduated from Phillips Academy, Andover, Mass., in 1960; and from West Point with a BS in 1964. He earned a master's degree in American Government from American University and attended the Harvard University National Security Program as well as the Business School Executive Education Program. In 2007 he was inducted into the US Army Ranger Hall of Fame at the US Army Infantry Center, Ft. Benning, GA. In May 2010, he was honored as a Distinguished Graduate by the West Point Association of Graduates at the United States Military Academy.

General McCaffrey is married to Jill Ann McCaffrey, with whom he has three children and six grandchildren. Their son, Colonel Sean McCaffrey, is currently serving as an Army Infantry Brigade Commander at Ft. Benning, GA.

# THE US ECONOMY IN TURMOIL - 2010

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- The US economy will recover significantly in the coming 24 months despite the ongoing recession caused by:
  - The credit market meltdown. (US spending 106% of what we produce past 20 years)
  - The collapse of the housing bubble.
  - Trade export-import balance deficits.
  - Tax revenue vs. expenditure shortfalls.  
((\$66 trillion unfunded liability plus \$2 trillion stimulus)
  - A grossly weakened US currency. (Federal Gov. debt \$4.6 trillion 1994 to \$15.1 trillion 2011)
  - Oil price fluctuations.
  - Incompetence in US economic regulatory mechanisms.
  - Corruption in senior financial community leadership.
  - Massive loss of jobs (9.7% unemployment – March 2010) particularly in the industrial base.
    - Florida is even higher at 11.2%

# THE POWERFUL US GLOBAL ECONOMY

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- 2008 global GDP was \$60 trillion +
  - US contributed 25% (\$14 trillion)
  - China only contributed (\$4 trillion+)
- US Defense spending 4.7% of GDP. (Includes war direct expenditures).
- US tops the World Economic Forum global competitiveness report.
- US attracted \$2 trillion + in foreign direct investment in 2007. (UK – Hong Kong – France next top three each @ \$1 trillion)
- US has manufacturing lead in pharmaceuticals and aerospace.
  - 25% of the world's total output.
- Giant US GDP:
  - Brazil GDP = Florida + Illinois GDP
  - Russia GDP = Texas GDP
  - India GDP = ½ of California GDP
- Leading global exporters -- US, China, and Germany all export over \$1 trillion each.

# SEVEN ENGINEERING CHALLENGES

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- 1<sup>st</sup> : Fix America's Infrastructure
- 2<sup>nd</sup> : Secure Critical Infrastructure
- 3<sup>rd</sup> : Develop a Robust Domestic Freight Infrastructure
- 4<sup>th</sup> : Modernize the Transportation Infrastructure that Supports International Trade
- 5<sup>th</sup> : Address Traffic Congestion Problems
- 6<sup>th</sup> : Expand our National Aviation Infrastructure
- 7<sup>th</sup> : Develop Tomorrow's Industry Leadership

# FIX AMERICA'S INFRASTRUCTURE

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- The American Society of Civil Engineers (ASCE) gave our nation's infrastructure an overall grade of D citing airports, bridges, dams, drinking water, transit, hazardous waste, navigable waterways, and schools.
- ASCE estimated our nation needs to spend \$2.2 trillion over the next five years to alleviate these problems.
- As leaders of the engineering community we must make the case to our Federal, state, and local political leadership that when we skimp on infrastructure – we are eroding the foundation that is essential to long-term economic success and competitiveness.
- State and local governments are looking at alternative ways to fund transportation by passing legislation allowing creative public-private partnerships and more tolling alternatives. The Obama Administration is beginning to voice its support for these innovations.

# SECURE CRITICAL INFRASTRUCTURE

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- Protecting America's critical infrastructure and key assets is a formidable challenge. Our open and technologically complex society presents a huge array of targets.
- The macro numbers are enormous: 87,000 communities; 1,800 federal reservoirs; 2,800 power plants and 104 commercial nuclear power plants; 5,000 airports; 120,000 miles of railroads; 590,000 bridges; 2 million miles of pipeline; 80,000 dams.
- 85% of our critical infrastructure is privately held. Critical Infrastructure Protection (CIP) must be a public-private enterprise. Owner-operators must protect their resources.
- It is impossible to defend everything against every conceivable threat. We must move beyond gates, guards, and guns. We need to design security features into new infrastructure. We need new technology to protect potentially high-casualty targets.
- Federal Government support is vital in the transportation sector. Transportation choke points are a particular concern. We must develop a coordinated mechanism for assessing vulnerabilities and evaluating risk mitigation activities.

# DEVELOP ROBUST DOMESTIC FREIGHT INFRASTRUCTURE

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- Our lack of investment in freight and bimodal infrastructure is choking our highways and bridges. The metro New York area is the largest consuming region in the country. Almost 320 million tons of freight is shipped across the Hudson River every year.
- There is no fixed rail freight infrastructure across the Hudson River within 140 miles of New York City. Less than 2% of all freight enters the East-of-Hudson region by rail. Because of this rail route inefficiency – 30,000 trucks a day clog key crossings like the George Washington and Verrazano-Narrows bridges. It is time for a new cross-harbor rail freight tunnel.
- In Chicago, through which 40% of the nation's freight passes, it often takes longer for a freight train to cross through the city than it does to travel the remaining distance between origin and destination.
- Miami is the largest container port in Florida and 9<sup>th</sup> largest in the nation. Like Chicago, it has the ability to handle incredible volumes, yet congestion on vital roadways unnecessarily delays shipping. Port tunnel project will help, but more is needed.

# SUPPORT INTERNATIONAL TRADE

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- International trade is becoming increasingly important to the economic well being of the United States. However, we are not investing adequately in the ports of entry and domestic distribution systems.
  - Panama Canal expansion project will be finished in 2014. With 14 deepwater seaports, some of which are the closest to the canal, how will Florida maintain this strategic advantage.
- Trade with Mexico, now our #2 trading partner, has tripled since the signing of NAFTA. Yet our border infrastructure has not expanded accordingly. We have the same situation along the border with Canada. Just one bridge – the 70 year old Ambassador Bridge – handles 42% of the commercial trade between our two nations. Imagine the disruption to our economies if this bridge is take out of commission. Delays at the U.S.-Canadian border account for 10% of transportation costs for our trade with Canada.
- 95% of our nation's overseas trade tonnage moves by water. Container ports are key gateways for our nation's imports and exports. Ten ports located in 6 metropolitan areas (Charleston, SC; Seattle/Tacoma, WA; Los Angeles/Long Beach, CA; San Francisco/Oakland, CA; Houston, TX; and New Jersey/New York) collectively handle two-thirds of the containers moving in and out of the country each year.
- International trade is projected to double in the next 15 years. We need the infrastructure at the border and at our sea ports and the connecting highway and rail corridors to move this trade.
  - Florida was 8<sup>th</sup> in exports in 2005, with values over \$33 billion.
  - A 1% increase in capturing this trade will vault Florida to 4<sup>th</sup> largest in the nation.
- We need new integrated transportation systems within the North American continent to ensure that commerce can move along the most efficient routes from any port of entry to consumers. We need the technology and systems - like electronic seals and smart containers - to keep out contraband and the instruments of terror.

# TRAFFIC CONGESTION PROBLEMS



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- Florida will be investing \$1.4 billion in new roadway construction in 2010/2011 – in turn creating 39,200 jobs.
  - In 2009, Florida had the highest pavement ratings on major roads in the United States.
    - Two of the top three facilities (I-10, I-75) made the list.
    - As of late 2009, over 80% of Florida major roads are in good condition or better.
  - In 2008, highway congestion caused passengers 360,000 hours of travel delay in Florida and 240 million gallons of wasted fuel. The estimated cost of this congestion is \$7.47 billion.
    - Over 70% increase in delay since 1995 on Florida's most critical roadways
  - The average annual delay for every person using motorized travel in the peak periods in 85 key urban areas climbed from 14 hours in 1982 to 36 hours in 2007.
  - Projects that use tolls or pricing incentives can be tailored to meet both transportation needs and economic equity concerns. High Occupancy Vehicle (HOV) lanes in Washington, for example, carry one-third of the peak direction passenger load, providing significant passenger movement at much higher speeds and with more reliable travel times than the congested main lanes.
  - The forthcoming High Occupancy Toll (or HOT) lanes in Northern Virginia will sell the available capacity in the HOV lanes to other users for a fee – while guaranteeing a minimum travel speed.
  - Freeway Incident Management Systems (which integrate surveillance, response, and intelligent transportation systems) have been demonstrated to reduce delays by as much as 10 percent. They will be very helpful during a mass evacuation.

# EXPAND OUR NATIONAL AVIATION INFRASTRUCTURE

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- Our US aviation system handles more than 200,000 take offs and landings every day, moving over 700 million passengers every year.
  - Florida had over 61 million passengers, equal to approximately 8.7% of national traffic
- We need to focus on the 31 huge airports which account for approximately 70% of total enplanements. Persistent delays at key airports such as La Guardia, Newark, Kennedy, Los Angeles, San Francisco, and Philadelphia cause bottlenecks that slow air traffic moving throughout the system.
- Throughput at airports can be increased by building more runways and taxiways, shortening turn around time, adding additional gates and terminals, and deploying new technologies.
  - The reduction of weather-related delays, which account for 70% of delays, is very promising. Additional navigational aids (e.g. satellite navigation systems that allow instrument landings in all conditions), and monitoring systems to increase runway use during periods of limited visibility could make a big difference without requiring new infrastructure.
- We should consider adding new capacity - not by adding runways to existing capacity-constrained airports - but rather by building entirely new airports or using other nearby airports that have available capacity.
- We should consider ways to manage and distribute demand within the system's existing capacity including limiting the number of takeoffs and landings during peak periods, charging hefty fees to leave at prime time, and limiting use of especially crowded or sensitive airports to airline traffic
- Finally, we should develop other modes of intercity travel such as high-speed rail where metropolitan areas are relatively close together.

# DEVELOP TOMORROW'S INDUSTRY LEADERSHIP

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- Today, some 227 institutions offer undergraduate degrees in engineering. Over the past 20 years there has been a 40 percent drop in the number of engineering degrees issued.
- We must intervene in elementary and middle school. If you don't take calculus in high school - you will likely never enter these fields. And you won't get to take calculus in high school if you don't complete algebra by 8th grade.
- We must help confront our diversity problem. Collectively, African-Americans and Hispanics constitute about 25% of our population. However, less than 6 % of American engineers are of these ethnicities. We need to support organizations which conduct outreach in schools, recruit talented youth to our fields, and recognize outstanding achievement.
- Finally, we must identify high-performing young engineers with the potential to rise into leadership positions and provide them challenging professional and educational opportunities that allow them to learn all facets of our business.

# THE WAY AHEAD



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- 1<sup>st</sup> : Great leaders come from inside the company – not celebrity leaders who ride in to the rescue.
  - 2<sup>nd</sup> : Compensation is needed to get high talent leaders into the company – money has little subsequent impact on performance.
  - 3<sup>rd</sup> : Great companies focus on what to do (not necessarily the strategy) – as well as what not to do and what to stop doing.
  - 4<sup>th</sup> : Technology can accelerate a transformation but technology cannot cause a transformation.
  - 5<sup>th</sup> : Leadership not mergers and acquisitions ignites transformation.
  - 6<sup>th</sup> : A culture of discipline (not motivating people, managing change, and creating alignment) creates transformation to a "Great Company."
  - 7<sup>th</sup> : "Good To Great" companies frequently appear in terrible industries. Greatness is not a function of circumstance – it turns out to be largely a matter of conscious choice.

(Source: Jim Collins - *Good to Great*)