



Building a Green Future

AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

Quality People. Quality Projects.



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Finding ways to stimulate demand for new, more environmentally friendly buildings, power facilities and factories will deliver significant environmental benefits. At the same time, investing in new public infrastructure will ease pollution-causing traffic congestion and ensure safe and healthy supplies of drinking water for decades to come. **You can't wish for a green future – you have to build it.**



Our nation's built environment sustains our quality of life and our economic productivity; our infrastructure and our lifestyles also directly impact the natural environment. Our buildings provide us shelter, vital services and comfort. Our roads, airports, ports and transit systems provide mobility and contribute to our economic prosperity. Our factories, power plants and power grids produce needed goods and power our lifestyles. Inefficiencies and disrepair in these systems only exasperate our pollution concerns, as well as put our communities at risk. This is especially true with older structures and poorly performing public infrastructure. We cannot, and should not, stop providing for our communities; however, there are steps everyone can take, including the construction industry, to lessen the environmental impact of our built environment.

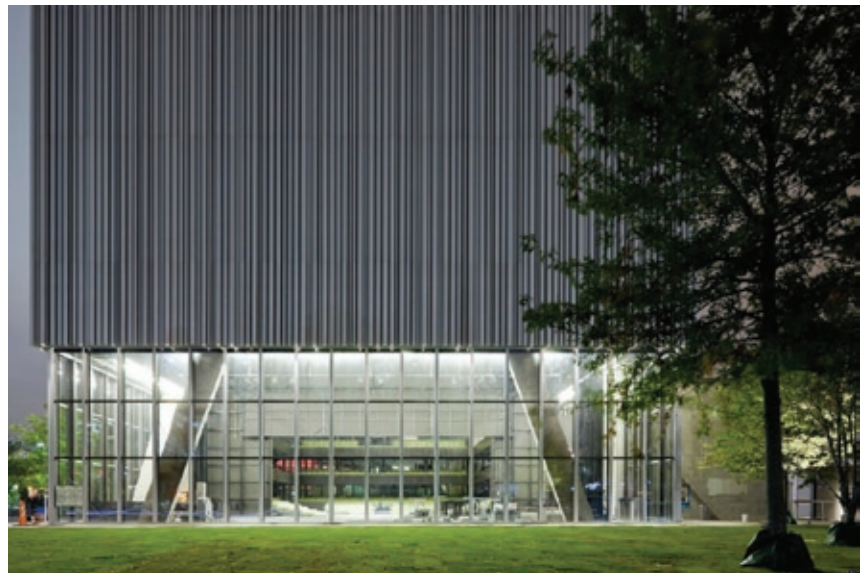
Contractors, and our partners in the building professions, have responded to the call to reduce the impact of our built environment on our natural environment. These "green jobs" apply to more than advancements in energy generation and reductions in greenhouse gas (GHG) emissions that seem to monopolize the media and policymakers' attentions. We have built green buildings. We have incorporated recycled materials into our roadways, bridges and buildings for more than half a century. We have created more efficient transportation systems that cut congestion and reduce wasted fuel. We have built and upgraded water treatment facilities, repaired

waterways and restored wetlands. And we have cleaned polluted sites and revitalized blighted areas.

As the nation strives to address concerns with pollution and the other important issues of the day, such as unemployment, energy independence and national security, it is increasingly clear we need a comprehensive and coordinated national strategy for literally building a greener future. The measures in this plan—if acted upon quickly—could do more to improve our environment and our communities than virtually any other plan currently being considered. And it achieves this goal without adding additional layer upon layer of regulation over every facet of our economy. In order to realize a green future, AGC of America suggests the following recommendations for federal, state and local governments, government agencies, developers and professionals in the design and construction fields to embrace. These recommendations include a host of common sense regulatory reforms, pragmatic tax incentives, reasonable owner and developer initiatives and easy-to-implement training programs.

MAKING BUILDINGS GREENER

The operation of our residential and commercial buildings consumes energy and materials, as does the construction of those structures; however, buildings also present a huge opportunity to realize significant reductions in pollution and increases in energy efficiency. In the U.S., we use nearly 40 percent of our nation's energy to power our buildingsⁱ—this includes lighting, heating and cooling, appliances and electronics. Accordingly, our buildings accounted for 35 percent of the nation's total manmade greenhouse gas (GHG) emissions in 2008.ⁱⁱ



Investing in infrastructure

not only improves our environment, it will provide a much needed boost to employment and the economy. Indeed, the economic benefits of this plan would go well beyond helping to address the immediate needs of the construction industry—which is facing near 25 percent unemployment and double-digit declines in construction activity—as demand for more efficient building systems, building materials, emissions reduction technologies and a host of related products and services would also soar. Construction and renovation ultimately are the most immediate and effective ways to improve the built environment and increase the energy efficiency of our vertical and horizontal infrastructure by:

- Improving the environmental performance and energy efficiency of existing and new buildings and industrial facilities;
- Reducing transportation congestion and pollution through expansion and improvements to these vital infrastructure and the construction of mass transit options;
- Cleaning up and protecting our communities through renewed commitments to water treatment, updating failing water systems and the remediation of contaminated sites; and
- Increasing the availability and efficiency of energy production through upgrades to existing power plants and the construction of new and diverse sources of energy that will also bring us to greater energy independence.



Residential and nonresidential buildings also use approximately 13 percent of all potable waterⁱⁱⁱ and 40 percent of the non-food/fuel raw materials use.^{iv} One way to make significant changes in the buildings of today and the future is to incorporate green building practices. Green buildings often conserve raw materials, incorporate green products and reduce or recycle waste; they are designed to reduce stormwater runoff, use less energy and water, and use renewable energy sources. By one estimate, the landscape of our buildings will be altered 75 percent by the year 2035 through the typical pace of change: from new development, complete demolition and redevelopment to the major renovation of existing buildings.^v The amount of non-residential construction starts in the green market is expected to grow to 20-25 percent by 2013.^{vi} An estimated 15 million new buildings are projected to be constructed by 2015 alone.^{vii}

Currently, many market-based programs exist to facilitate the design, construction and operation of green buildings; yet “green” is still a developing field that requires research, development and training. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System^{viii}, Green Globes^{ix}, National Green Building Standard^x, Energy Star^{xi}, Standard 189.1^{xiii} and the International Green Construction Code^{xiii} are a few examples of market-based tools available to incorporate green attributes

into buildings. There are hundreds of international, national, and local programs and initiatives that focus on energy efficiency, materials, building and product life-cycle assessments, greenhouse gas reporting for products and services and more. Policymakers and industry need to support new research to further improve the environmental performance of our buildings and building materials and products.

- 1) **Provide Tax Incentives:** Expand the Energy Efficient Commercial Building Tax Deduction from \$1.80 per square foot to \$3.00 per square foot. Current law allows owners to deduct the cost of installing energy efficient systems, like new heating and cooling units, lighting or insulation, in commercial buildings. The amount of the deduction is up to \$1.80 per square foot for building investments that will see at least a 50 percent efficiency improvement. The market, especially in light of the current recession, requires additional incentives for developers and home owners to make their buildings greener. Likewise, Congress should convert the tax benefit into a tax credit, which will provide an even greater financial incentive to property owners to improve the efficiency of commercial buildings.
- 2) **Support Building STAR:** AGC supports the Building STAR rebate proposal that includes 17 incentives for efficient building equipment, materials and services. The “Building STAR Energy Efficiency Rebate Act of 2010” (S. 3079) would provide \$6 billion in federal investment through rebates and financing incentives to cover about 30 percent of the cost of installing energy efficient products and/or providing energy efficiency-related services (e.g., energy audits) during 2010 in commercial and multifamily residential buildings. It is estimated that funding for \$6 billion for the Building STAR program would spur \$18 to \$24 billion in total spending, creating up to 200,000 jobs in the construction, manufacturing and other related industries. Building STAR is a companion program to Home STAR and Industrial STAR that would provide rebates for energy efficiency upgrades in residential homes and industrial facilities, respectively.
- 3) **Modernize Government Buildings:** The U.S. Government Accountability Office has reported that the U.S. General Services Administration (GSA) has \$4 billion worth of unmet maintenance and modernization needs in over 900 federal buildings.^{xiv} Federal agencies, including GSA, already have adopted green guidelines and standards for new construction and major renovation. The American Recovery and

Reinvestment Act provided funding to GSA to renovate and construct Federal buildings, courthouses and land ports of entry as well as to convert Federal buildings into high-performance green buildings.^{xv} Federal buildings also include military facilities, prisons, border stations and embassy compounds. Modernizing the federal building stock will immediately introduce energy and water savings, and it will set a role model for local governments to incorporate green building practices into their public buildings.

- 4) **Establish Local Incentives for Green Buildings:** State and local governments can promote green building by providing incentives for public and private owners to pursue green building projects. Incentives could include expediting plan reviews and permitting, administrative variances for green technologies, tax benefits, financial assistance, and recognition.
- 5) **Preempt Clean Air Act for Greenhouse Gas Emissions:** Efforts to build green could be halted and delayed by heavy-handed regulation of buildings under the Clean Air Act through stationary source permitting programs that were never intended to address GHG emissions. The U.S. Environmental Protection Agency (EPA) acknowledges the administrative burden for permitting agencies that would have to process the millions of new permits a year that would result under the Act.^{xvi} GHG emissions from buildings are better addressed through the market-based programs and initiatives mentioned in this report.
- 6) **Fund Green Building Research and Programs:** Congress and government agencies should continue to support and participate in research and programs to support green and high performing buildings, such as the High-Performance Buildings Caucus of the U.S. Congress, the National Institute of Building Sciences (NIBS) Whole Building Design Guide^{xvii} and NIBS High Performance Building Council.^{xviii} High performing buildings often include green and energy efficiency attributes. The High Performance Building Council researching high-performance building attributes, identify high-performance goals, primary indicators, performance metrics, benchmarks and standards for verifying or validating these benchmarks. The U.S. EPA also works to provide resources and programs that address green buildings. Government support and participation in these initiatives, working with industry and other stakeholders, will help all stakeholders understand and promote investment and advancements in our nation’s building infrastructure.



MAKING TRANSPORTATION GREENER

Americans choose to live and work in places that suit their lifestyles and needs; from densely populated metropolitan areas to suburbia, farmlands or mountains. Transportation is vital to connecting communities and our system accommodates many methods of travel—highways, bridges, waterways, rail, transit and air transportation. In fact, this infrastructure literally carries our economy through the transport of goods and people. Yet every single mode of transportation in the U.S. is suffering from budgeting shortfalls that prevent needed improvements. Disrepair introduces inefficiencies to the system that add hours and dollars to commuting and freight shipping through wasted fuel—at a cost to human safety, the economy and the environment.

The construction of new transportation projects would relieve traffic congestion and air pollution as well as provide communities with multiple options for mobility. Currently, transportation accounts for 27 percent of the total U.S. energy consumption^{xx} almost exclusively through the combustion of fossil fuels, and, in 2008, it contributed 27 percent of total manmade GHG gas emissions.^{xx} Traffic congestion wasted 2.8 billion gallons of fuel in 2007—approximately three weeks' worth of gas for every traveler.^{xxi} New research shows that the right mix of traffic congestion mitigation, speed management and traffic smoothing measures would lower total carbon dioxide (CO₂) emissions from vehicles by as much as 30 percent.^{xxii}

Transportation agencies and the construction industry are expanding efforts to increase transportation options while doing the right thing for communities and the environment. Over the past decade federal and state transportation agencies have funneled vast amounts of funding into research and environmental stewardship efforts. Some environmental efforts have been going on for six decades or more. For example, highways and roads incorporate a large amount of recycled and industrial materials (e.g., fly ash). New technologies, such as warm mix asphalt that requires less heat and energy to produce, are being researched and implemented. Measures also are being taken to reduce and filter the stormwater that runs off the roadway before entering surface waters. Wetlands are mitigated and landscaping placed to provide buffer zones between the roadway and the surrounding environment. Wildlife barriers and corridors help reduce the number of animals that are inadvertently injured trying to cross roadways. Construction techniques increasingly focus on mitigating environmental impacts.^{xxiii} These practices—and others—vary across the nation; and departments of transportation, industry and policymakers alike need to work together to ensure their continued use.

7) Double Investment Levels in Federal Highway, Transit, Aviation, Freight and Rail Programs:

By setting funding to \$120 billion a year, we can improve safety and help ease chronic traffic congestion that wastes fuel. Furthermore, any climate and energy legislation Congress is considering that would place new fees on transportation fuels should be dedicated to the Highway Trust Fund and invested with other surface transportation funds under a multi-year authorization bill. By increasing highway and road capacity and improving traffic flow at 233 bottlenecks nationwide, CO₂ emissions would be reduced by as much as 77 percent and conserve more than 40 billion gallons of fuel over a 20-year period.^{xxiv} This congestion relief will also lead to reduced levels of other air pollutants, since vehicles caught in stop-and-go traffic emit far more than they do operating without frequent braking and acceleration.

8) Right Size the Federal Gas Tax and Transition to Vehicle Miles Tax:

Congress should revise the current gas tax to restore its purchasing power to levels last seen in 1993 by setting the excise at a \$0.36 per gallon and indexing for future inflation. Without additional revenue the Highway Trust Fund will not be able to support increased investment in highways, bridges and transit. At the same time, Congress should transition to a vehicle miles traveled (VMT) method of collecting the

highway user fees to ensure continued financing of vital road, bridge and transit projects.

9) Make Use of the Harbor Maintenance Trust Fund:

Over the years, the Harbor Maintenance Trust Fund has accumulated a surplus that should be used for its intended purpose. Allowing this resource to sit idle leads to poorly managed waterways and freight delays. As we have read above, a delay in the transport of goods and people equates to wasted fuel and energy and the resultant air emissions.

10) Reform the Current “New Starts” Program:

The Federal Transit Administration’s New Starts program could be more effective. The process needs to be streamlined so that we can fast-track transit projects such as rapid rails, light rails, commuter rails, rapid bus lines, and high-occupancy vehicle lanes.

11) Streamline Environmental Reviews for Infrastructure Projects:

Thirteen years for a new highway or twelve years for a new transit project to receive federal approval, and then the time spent to build the project, is too long to wait for relief of pollution causing congestion. Every effort should be made to streamline the environmental review process while protecting the environment. This can be accomplished by designating lead federal agencies, establishing and meeting clear timelines, simplifying analysis requirements and placing a statute of limitations on claims.

12) Preserve the U.S. Department of Transportation’s Authority for Transportation Planning:

Recent climate and energy legislation gave a share of transportation planning authority to the U.S. EPA, setting up a redundancy and inefficiency in the project delivery system. Any final legislation should preserve the U.S. Department of Transportation’s authority in transportation planning decisions.



systems.^{xxv} Leaking pipes alone are responsible for billions of gallons of lost water every day^{xxvi} and, in many parts of the country, wet weather events regularly lead to overflowing systems that release waste and chemicals into the environment—damaging aquatic ecosystems and causing human illness.

Many communities also rely on individual (property-specific) septic tanks and fields, which need regular maintenance and upgrades to reduce leaks that contribute to groundwater and surface water pollution. This is a major concern for some of our most important watersheds, such as the Chesapeake Bay and Puget Sound. Efforts to connect these communities to new wastewater treatment facilities and advanced de-centralized treatment approaches need to be supported. In addition, the current Administration’s focus on revitalizing downtown neighborhoods, which have existing aging water infrastructure, needs to be accompanied by efforts to ensure those facilities can handle the increased populations and stress on water distribution and treatment systems.

13) Reauthorize and Expand the Federal Contribution to State Revolving Loans:

Until recently, Congress has steadily cut funding to the Clean Water and Drinking Water State Revolving Fund programs, but current legislation supported by AGC reauthorizing these programs will authorize funding to a level that will ensure consistency and give communities the ability to leverage federal dollars and plan long-term capital improvements—such as connecting communities to new wastewater treatment facilities and updating aging water infrastructure to meet current and future demands. Congress should reauthorize and fully fund the Clean Water State Revolving Loan fund and the Safe Drinking Water State Loan Funds to ensure consistency and the increased capacity to fund this critical infrastructure.

MAKING WATER AND LAND RESOURCES GREENER

An investment in communities and their sustaining infrastructure is an investment in the future, and that includes protecting our water and land resources to make our communities greener—and safer.

Our nation’s drinking water and wastewater infrastructure, particularly the aging network of systems that convey this precious resource, are in critical need of attention. According to U.S. EPA and the Congressional Budget Office estimates, an investment gap between \$450 and \$600 billion exists over the next twenty years for the construction of new treatment facilities, replacement and rehabilitation of pipes, and replacing sanitary and combined sewer

14) Establish a Dedicated Trust Fund for Water Infrastructure: With annual appropriations for the Clean Water and Safe Drinking Water State Revolving Loan Fund (SRF) programs diminishing year after year, AGC supports the creation of a long-term, sustainable, off-budget source of funding for water infrastructure, such as a trust fund to finance construction and maintenance of this critical infrastructure.^{xxvii} Establishing a stable revenue stream to supplement federal funds helps guarantee funding for critical projects making it easier for officials to plan for, and finance, multiyear infrastructure projects. Such an approach is preferable to the current budgeting process that discourages good long-term asset management by focusing on funding short-term needs only. At the federal level, trust funds are widely used to tackle problems too big for states to handle alone and we need a dedicated “user fee” -based, stable source of funding for our nation’s water infrastructure that is free from political interference and partisan squabbles. Current proposed legislation would be budget neutral and responsible for its own revenue generation. The sooner water is depoliticized, the sooner we can ensure access to this critical resource for all Americans.

Our nation’s dams, levees and pumping stations are an important source of energy generation, water storage for drinking and irrigation, and flood control; yet they are increasingly unsafe and unreliable.^{xxviii} Even without the current political focus on climate change and adapting communities to withstand extreme weather patterns—from droughts to monsoons, blizzards to heat waves—as well as severe storms, these infrastructure are vital to sustaining our communities. In addition to the human and property costs, the damage wrought by storms and breaches of flood controls exact a huge environmental toll.

15) Increase Funding for Water Resources Programs of the U.S. Army Corps of Engineers and the Bureau of Reclamation: The inability of our nation’s aging infrastructure to meet the needs of our growing population threatens our environment and our economy. The Civil Works Fund must be increased to at least \$7 billion and the funding for Bureau of Reclamation to at least \$1.2 billion to avoid costly “crisis” repairs and to make significant progress in environmental restoration, irrigation structures, water recycling and rural drinking water systems. This funding will help rehabilitate dams across the nation and provide assistance for states’ water resources planning and adaptation (e.g., water storage) measures.

16) Support Long-Term Investment for Water Resources Navigation, Flood Control and Environmental Restoration: Congress should reauthorize the Water Resources Development Act (WRDA) and take steps to empower the Corps to effectively manage sediment and beaches. WRDA protects the nation from floods and keeps our waterways open to navigation. Flood damage reduction projects alone have prevented an estimated \$706 billion in damages.^{xxix} WRDA provided the Corps with a regional sediment management authority; however, it is limited and hamstringing the Corps from reducing coastal hazards, coordinating water resource projects and even taking steps that would reduce harmful impacts on environmental resources. Likewise, funding for beach nourishment projects along with a reporting requirement would enable the Corps to prioritize beach nourishment projects that take into account public safety, sea level rise and environmental resources.

Dotting our neighborhoods and communities are contaminated sites and brownfields that may expose the public and the surrounding environment to hazardous or toxic wastes and materials. The longer these areas are left blighted, the longer a valuable resource—land—is not available for use. Currently, developers seeking opportunities to build are not incentivized to focus on these challenging properties and are more likely to look to previously undeveloped land (*i.e.*, greenfields). Cleaning up contaminated sites reopens existing areas to new development, helps revitalize downtown neighborhoods, and brings back employment opportunities and revenue streams into the community. Training and funding for these programs need to be available to communities.

17) Reform and Expand Current Laws That Address Contaminated Sites: The current laws that address contaminated sites and brownfields need to be reformed to promote cleanup and reduce contractor liability. Innocent owners and cleanup contractors need to be protected from legal liability to ensure these sites are cleaned and available for use. Congress should add an Innocent Contractor Provision that addresses the liability of a contractor who does not have ownership of a property, has no knowledge of the site’s previous uses and is onsite on a contractual basis. AGC encourages Congress to extend these same protections to contractors who remediate petroleum-contaminated sites, which make up approximately half of the nation’s brownfields.^{xxx}

18) Continue To Support Jobs Training for Environmental Cleanups: Through the Brownfields Training Program (began in 1998), U.S. EPA recently has awarded \$2 million in grants to support green job training programs that focus on providing skills to new workers in the environmental cleanup field. In 2004, the U.S. EPA estimated that over the next 30 years, more than \$200 billion in economic activity will result from the cleanup of approximately 294,000 waste sites.^{xxxii, xxxiii} Important training programs such as these deserve the continued support of the Administration.

MAKING POWER GENERATION GREENER



Emissions from electricity generation account for 34 percent of GHG emissions in 2008.^{xxxiii} Whereas improvements can be made by the end users of electricity to improve efficiency, we can implement technologies and efficiencies at the source of power generation to reduce waste and emissions. New developments in those technologies require continued research and support. In addition, only 20 percent of our energy consumption came from sources other than fossil fuel combustion in 2008.^{xxxiv} There is vast need and interest to diversify and expand our energy portfolio to maximize other energy sources such as hydropower, biomass, nuclear, wind, solar and geothermal energy. Permits for new plants and upgrades to existing plants need to be streamlined and given top priority to reduce delays that can set back the nation's energy needs by decades.

“Across the country, contractors are finding new work installing wind turbines, drilling for geothermal, ‘plant-ing’ solar farms and connecting new sources of power to existing grids. These projects aren’t just a great source for renewable energy; they are a promising opportunity to renew our industry.” — *Ted Aadland, AGC President*

19) Develop a Comprehensive National Energy Plan:

Safe construction of additional production and transmission networks is necessary for increasing the efficiency of the existing infrastructure and connecting new sources of energy to the grid. Clean power from renewable energy sources such as wind, solar, geothermal and hydroelectric power will help diversify the nation's energy sources. Congress should encourage the allowance of market forces for the expansion of alternative energy. Streamlining the permits for new energy sources and upgrades to existing plants will alleviate bottlenecks and increase efficiency in the delivery of these projects.

20) Accelerate Licensing of New Nuclear Power Plants:

Congress and the Administration need to act on the 30 pending nuclear power plant applications^{xxxv} that have been submitted to the U.S. Nuclear Regulatory Commission. Constructing a nuclear plant takes years; needless permitting delays will only increase our national reliance on foreign sources of energy and the related GHG emissions.

MAKING CONSTRUCTION GREENER

AGC recognizes that the construction process affects the environment. Construction contractors are the most visible participants in real estate development, and construction (by its very nature) alters the environment. Careless practices can lead to unnecessary pollution. AGC challenges, and is committed to helping, contractors to minimize and mitigate the environmental impacts of their activities.

Below are some of the steps contractors can take to “green” their practices and ways government programs and incentives can help support those efforts instead of setting up roadblocks.

Invest in construction equipment.

Federal air standards have become increasingly more stringent; states are likewise looking for ways to reduce air emissions, and as states do so, they are taking a

harder look at emissions from off-road construction equipment. The U.S. EPA has set stringent engine emissions standards (Tier IV) to significantly reduce emissions from new off-road equipment that when fully implemented will reduce emissions by more than 90 percent.^{xxxvi} However, much of the equipment in the current off-road diesel fleet will continue to operate for many years to come and the Clean Air Act generally prohibits state and local governments from setting their own engine emission standards for off-road diesel equipment (including diesel retrofit requirements)—a concept called federal preemption. Therefore, contractors who voluntarily reduce emissions from the legacy construction equipment fleet not only make construction greener today, they also are able to plan for and make customary business investments in the equipment of the future.

Construction professionals can voluntarily take steps to decrease their fuel consumption, which reduces energy consumption and air emissions. As a first step contractors can perform routine equipment maintenance and operator training to ensure equipment is running at peak efficiency. Some contractors also adopt “no idling” policies to avoid fuel waste and emissions from equipment that is running yet not immediately needed for a task. Some contractors opt to use alternative low-carbon fuels (like biodiesel or ethanol) that may significantly reduce GHG and other emissions when compared to petroleum diesel. (The U.S. EPA estimates that the construction industry emits around 1 percent of the total U.S. manmade GHG emissions.^{xxxvii}) Even diesel itself has superior engine efficiency and higher energy content, so diesel equipment can do the same amount of work while burning less fuel than their gasoline counterparts, typically resulting in fewer emissions.

Installing diesel particulate filters or other aftertreatment devices on diesel engines and/or the process of replacing an older diesel engine with a newer one (i.e., “repowering”) are also options to improve a machine’s fuel economy and reduce its overall emissions.^{xxxviii, xxxix} However, the costs of “retrofitting” or replacing equipment are high and prohibitive, especially for the many small businesses that make up the construction industry. Financial assistance is needed to facilitate such an initiative. Therefore, AGC urges Congress to provide financial and technical assistance to construction equipment owners and operators to retrofit or replace their existing diesel powered equipment.

21) Avoid Mandates That Devalue Equipment Currently Legal To Operate and Restrict Competition in the Marketplace by Discriminating against Contractors Based on Their Equipment:

Contractors invest considerable resources in equipment on the understanding that it will perform and last long enough to have a return on investment. As such, government mandates to modify equipment already in use or to replace such equipment (via either regulation or contractual requirement) have the potential to render a company’s fleet prematurely obsolete and wipe out much of a company’s net worth. AGC opposes such mandates as they deprive a company of its ability to bond or bid work, or to borrow money. Instead, AGC makes the recommendations below as an alternative.

22) Invest in Diesel Retrofit and Reduction Methods as Part of Contract Change Orders for Transportation Construction Projects:

AGC and the Clean Air Task Force (CATF) have agreed on “Clean Construction Principles” to require reductions in diesel emissions from federally-funded transportation projects via contract change orders that cover 100 percent of the costs to retrofit equipment. CATF represents leading environmental groups and targets diesel emissions reductions nationwide. Under the agreement, states would first require successful bidders for federally-funded transportation projects to identify the off-road diesel equipment they plan to use on designated projects. States would then give priority to projects located in areas with poor air quality. After exploring U.S. EPA-approved options for reducing diesel emissions, states would issue change orders requiring contractors to pursue the best of those options. The change orders would entitle contractors to recover 100 percent of their costs. AGC recommends that Congress set aside a portion of funds that Congress has historically provided for the Congestion Mitigation and Air Quality (CMAQ) Program to cover the cost of the change orders.

23) Provide Tax Credits for Contractors that Voluntarily Invest in Cleaner Diesels:

To reduce the cost of developing and manufacturing diesel-powered equipment to comply with new emission requirements and incentivize construction companies to purchase cleaner more efficient diesel powered equipment, AGC supports a temporary 30 percent investment tax credit for: 1) the manufacturers of new diesel-powered equipment that meets the new emission standards and 2) construction companies to purchase new diesel-powered equipment or to make improvements

to existing diesel-powered equipment to achieve emission reductions.

24) Continue Funding for Grant Programs to Reduce Emissions from Diesel Equipment:

A recent report from the U.S. EPA detailed the health, environmental and economic benefits of the Diesel Emission Reduction Program. The program, funded at \$50 million in 2008, allowed EPA to fund the purchase or retrofit of 14,000 diesel-powered vehicles and pieces of equipment.^{xi} AGC chapters competed for the grants in 2008 and 2009 (including those funded through the American Recovery and Reinvestment Act). These competitive grant programs successfully partner industry and non-profit organizations to reduce emissions from existing diesel equipment and should continue to be funded. Congress should continue and expand the level of DERA funding, considering the huge demand and bipartisan support for diesel retrofit grants.

Reduce waste from construction and demolition.

Recycling and reuse of materials is a way to reduce waste from construction and demolition that produces many environmental benefits: the conservation of natural resources; a decrease in the use of land resources for landfill space; and the reductions in air emissions as seen in the overall life of a new material from “cradle to grave” when compared to that of a recycled or reused material. Growing trends in green buildings and green highways promote recycling and foster local markets for recycled materials. Recycling and reuse directly contribute to points in achieving green-building certification. In addition, some debris can be reused in construction or other applications in the agricultural and manufacturing industries.

The construction industry recycles more material than any other industry—though the practice is highly dependent on local markets for recycled materials. Asphalt, steel, metals and concrete are recycled or reused in significant volumes in the U.S. mainly because there are established secondary markets for these used materials. According to U.S. EPA estimates, wastes from new commercial and residential building construction, renovation, and demolition projects generate about 25 percent of the total U.S. solid waste volume. The U.S. EPA estimates that 170 million tons of building-related construction and demolition materials were generated in the U.S. in 2003. Of that quantity, as much as 48 percent was diverted from landfills.^{xii} U.S. EPA has not published estimates of waste generation and recycling on highway projects; however, informal estimates have indicated that

highway contractors recycle and reuse large amounts of asphalt and concrete associated with their projects. On highway and road projects, in particular, these materials often are processed and reused on the very same job site.

The recycling of construction and demolition debris is an area where contractors can see success in reducing air emissions through a lifecycle approach. A significant amount of energy is expended (and associated air pollutants are released) during the harvesting, manufacturing and transportation of materials used in construction. Emissions are expended during the process of recycling and reusing materials; however when these materials are reused or recycled, the emissions that would have occurred during virgin material harvesting, processing and manufacturing are avoided. The U.S. EPA estimates that for every ton of asphalt recycled from construction an associated 0.03 metric ton of carbon dioxide (CO₂) emissions are avoided. Since approximately 139 million ton/year of asphalt are recycled in the U.S., the result is 4.2 million tons of CO₂ emissions avoided. Likewise for concrete, 0.01 metric tons of CO₂ are avoided for every ton recycled. About 140 million tons per year of concrete are recycled, which equals 1.4 million tons of CO₂ emissions avoided. For steel the amounts are even greater as 1.79 metric tons of CO₂ are avoided for each ton recycled. The U.S. recycles about 40 million tons of steel each year, which amounts to 71.6 million tons of CO₂ emissions avoided.^{xiii}

25) Foster Local Markets for Recycling and Reuse:

The environmental benefits of recycling and reuse are drastically diminished when there is not a local market for those materials and contractors are then required to dispose of the waste in a landfill or ship the material long distances to recycle. Local governments can foster the market for recyclables (including reuse stores) and provide incentives for bringing those key businesses into their communities.

26) Support Recycling and Reuse Research and Programs:

The U.S. EPA’s Office of Resource Conservation and Recovery works with industry, educational institutions and other government agencies such as the U.S. DOT to research and implement practical solutions to manage waste from construction and demolition projects. This research explores ways to reuse the material and foster markets as well as to identify and overcome barriers nationwide that work against the ultimate goal of reducing waste. This effort requires continued support by the Administration and commitment by all involved stakeholders.

Increase use of recycled materials and industrial materials in construction.

The construction industry is increasingly using more recycled materials and industrial materials. Programs that promote green buildings and green highways help to further these practices. Recycled materials make up a huge portion of credits that contractors can help achieve towards green building certifications. The industrial materials contractors use in construction run the gamut from tires to coal combustion waste.^{xiii} In fact, the construction industry has used coal combustion waste, primarily fly ash, since the 1950s in the building of roads and highways as fill and base material.^{xiv} Coal combustion wastes also have a use in building materials and construction. Fly ash can be found in mortars, grouts, stucco, cultured stone, masonry blocks, wallboard, ceiling tiles and concrete foundations.^{xv} In 2003, EPA estimated that 13.4 million tons of coal ash are used in concrete or cement production annually. EPA estimates that the amount of GHG emissions from cement manufacturing that are avoided by using fly ash equals approximately 5 million tons each year.^{xvi} However, recent regulatory developments may jeopardize the beneficial use of fly ash.

27) Protect and Promote the Beneficial Use of Industrial Materials: Coal combustion waste is the second largest industrial waste stream. Power plants generate this waste by the burning of coal and by the processes they use to clean their air emissions, per Clean Air Act requirements. Should EPA determine that coal combustion waste is hazardous—in some applications—then it may effectively end the beneficial use of that material and remove a valuable resource from the market. Educating state departments of transportation, contractors, and other stakeholders about the beneficial use of industrial materials will go a long way to improving their acceptance in the market.

Incorporate environmental stewardship into day-to-day operations.

All construction professionals are facing environmental challenges. Increasingly complex environmental laws, escalating compliance costs, and the financial impact of a violation can affect a company's growth and profitability. These challenges, as well as rising public demand for environmental stewardship, are leading construction companies to consider new ways to manage their environmental responsibilities and enhance their competitiveness. Construction companies have developed an environmental policy statement and plan. Some construction companies

have found that an environmental management system (EMS) is one way to remain competitive. An EMS is a company-wide, systems-based approach to managing environmental risk and voluntarily improving environmental performance. EPA compliance assistance tools and recognition programs help in these efforts and lead companies to take environmental responsibility beyond legal compliance and voluntarily reduce the impact of their operation on the environment while, at the same time, tackling some of our nation's most challenging environmental concerns.

28) Establish Public Policies and Programs That Reward Good Performance: Government initiatives that provide regulatory and enforcement relief to top environmental performers reward companies with proven records of compliance and commitments to continual environmental improvement. These good performers should be granted administrative benefits, such as streamlined reporting and permitting requirements, exemptions from routine jobsite inspections and the "right to cure" minor violations for first-time offenses. Good performance also should be a discretionary factor in the assessment of penalties—in the event an enforcement inspection results in a notice of violation. Government should focus its limited resources on bad actors and should facilitate environmental innovation by top performers.

29) Bring Onsite Environmental Compliance Assistance to More Construction Jobsites: AGC supports confidential technical assistance without the threat of enforcement. Most of the regulated community is afraid to request compliance assistance for fear of being cited for a violation. To enhance environmental protection, the U.S. EPA could initiate onsite compliance assistance—including a "right to cure" initiative. By working with industry organizations, U.S. EPA will gain new ways to better connect construction companies with the construction-specific environmental assistance materials currently available. In addition, U.S. EPA should allow for industry self-policing programs without threat of penalty and develop self-audit incentives and opportunities to earn exemption from routine inspections. The adoption of innovative ways to offer compliance assistance and to encourage voluntary self-audits would increase the efficiency of the agency's existing programs.

Participate in green jobs training.

Training funds spent on traditional construction industry apprenticeship and training programs—in both the union and open shop sectors—constitute one of the nation's most cost-effective and beneficial routes to increasing the number of green collar workers in America, and AGC advocates investment in training programs for all construction industry workers.

Currently, AGC and its nationwide network of chapters offer educational programming for general contractors interested in green training. AGC also partners with the National Center for Construction Education and Research to help train workers at the craft level. To date, eight AGC chapters and their members have partnered with other groups to win training grants recently awarded through the “Pathways Out of Poverty,” “Energy Training Partnership” and “State Energy Sector Partnership” programs. The number of chapters who formed successful partnerships for these grant programs would have increased, had the provisions of the Green Jobs Act been changed according to the Green Jobs Improvement Act to allow for broader participation without partnering with labor-management organizations.

30) Change Green Jobs Act to Allow Broader

Participation: AGC recommends changes to the Energy Independence and Security Act of 2007, which includes plans to establish an energy and renewable energy worker training program through a provision known as the Green Jobs Act. The Green Jobs Act limits training grant funding to entities that coordinate with labor organizations. AGC is supportive of the grant program as part of an effort to create an efficient and renewable energy skilled workforce. However, the opportunity to apply for such grants should be open to all contractors, both union and open shop, that have accredited training programs. In both the 110th and 111th Congress, the Green Jobs Improvement Act was introduced on the House side that would open the Green Jobs Act to allow any accredited training program, regardless of labor posture, to compete for grants under the Green Jobs Act. AGC supported this bill and would like to see it passed.

THE GREEN POTENTIAL

Given the significant inefficiencies in the country's inventory of existing buildings and infrastructure, it is hard to overstate the environmental potential of this plan. Cutting the amount of energy consumed by older buildings and wasted on crowded roads, aging power lines and dated water systems will result in significant cuts in emissions, new protections for the environment and immeasurable energy savings. As important, increasing demand for green buildings, efficient infrastructure and greener construction practices will provide a much-needed boost for the hard-hit construction industry. Indeed, this plan has the potential to deliver the kind of green jobs that, to date, are all too elusive.

But as encouraging as current trends in green construction are, more must be done if we are truly going to be able to build a greener future. The recommendations outlined in this report provide a single, cohesive blueprint for increasing demand, permitting and funding for green construction projects. It also provides the steps needed to make sure that the processes our industry uses to build that greener future are as environmentally friendly as possible.

The measures outlined in this report may not be easy. But, unlike other options currently being debated for improving America's environmental performance, these measures harness limited government investments to leverage significant new environmental, and economic, opportunities. Ultimately we need to decide whether we as a nation want to continue talking about the promise of a greener future, or whether we're ready to build that future, now. For its part, the construction industry is ready.

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