2009 IRC SUMMARIES

VIRGINIA SECTION - AMERICAN SOCIETY OF CIVIL ENGINEERS

The following summaries highlight that the infrastructure vital to Virginia's economy, public safety, and environmental wealth are in peril. Sustained investment is direly needed to maintain Virginia's competitive business edge and ensure our high quality of life. The 2009 grading of the 13 areas below averages out to a D+.

Component grades are based on review of current conditions and needs; levels of current funding; future needs; and identification of sustainable funding sources. Full reports on each of these categories will be posted on January 20th, 2010, please visit our website at www.ascevirginia.org for further updates, and let us know your perspectives via e-mail to infrastructure@ascevirginia.org. Thank you for your interest in improving Virginia's infrastructure.

AVIATION - Aviation infrastructure in Virginia rates a grade of C+. This passing grade is strongly influenced by 10 years of sustained infrastructure investment at Reagan National and Dulles International airports; investments which have significantly improved safety and efficiency for 40 million air travelers in Virginia each year.

This assessment indicates Virginia's airport infrastructure is slightly above the national average of a "D" however significant investments are required to address Virginia's higher level of safety incidents and air cargo service limitations. Over the next 15 years, Virginia's VTrans 2025 plan identifies $3.1 billion in aviation infrastructure investments required to support the 164,000 jobs and $10 billion in annual economic impact associated with air transport in Virginia.

BRIDGES – One in every four (26%) of Virginia's bridges and culverts are functionally obsolete or structurally deficient, (3,442 of the 13,417 structures listed on Virginia's National Bridge Inventory (NBI). VDOT manages an additional 7,462 structures not on the NBI, and six major road tunnels. 2008 industry statistics rank Virginia bridge conditions 32nd out of the 50 states, Virginia ranks 25th in the nation overall, (the 50th percentile of the NBI).

7,513 of Virginia's national bridge inventory assets have been in service for over 40 years and 4,428 of these are more than 50 years old. As these structures reach their design life over the next 15 years renovation and replacement is projected to require $30 billion to maintain current levels of service. This does not account for any capacity upgrades or new bridge installations required to support growth. Sustainable, long-term funding sources are required to maintain the functionality of these critical assets in Virginia.

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DAMS - The 2007 National Inventory of Dams lists 1,637 regulated dams in Virginia. New Virginia dam safety regulations enacted in 2008 are expected to add 1,400 dams to the state's dam safety program due to potential hazards these dams present to downstream communities. As many as 50,000 individuals live in the dam break inundation zones of noncompliant dams in Virginia.

The cost to improve Virginia's dams to meet minimum safety standards could be as high as $220 million, with an additional $25 to $30 million needed for definitively mapping dam break inundation areas. With the new regulations and additional dams subject to regulation, these costs could double. The Virginia Division of Dam Safety currently does not have enough staff or funding to manage the existing regulated structures; and the additional requirements of the 2008 regulations have only exacerbated this problem. Mandated life-safety improvements will require significant funding and more trained staff to effectively implement the state's dam safety program.

DRINKING WATER – As of 2009, there are 2,944 regulated public water supply systems serving more than seven million Virginians. USEPA's 2007 Drinking Water Needs Survey identified a need of $6.1 billion to maintain these systems over the next 20 years. Ninety-six percent of this need is related to replacement of transmission, storage and distribution components by 2030.

880 Safe Drinking Water Act violations were issued in Virginia in 2007. Of those violations, 430 were related to exceedances of maximum contaminant levels; affecting the drinking water of more than 900,000 Virginians. Considering the growing strains of population growth and emerging contaminants, sustained investments to improve the resiliency and efficiency of Virginia's waterworks is essential to protect public health and well-being.

This $6.1-billion requirement will be funded primarily by water users, through increased billing rates and user fees. The average billing rate in Virginia has already risen by 40 percent since 1999, including a 4.2 percent increase in 2008. Over the next 20 years, water rates will need to increase by 80 percent to maintain current levels of service.

ENERGY – Virginia's rising energy demand follows national trends. Generating capacity grew by 470 megawatts (MW) per year or 2.5 percent during the 1990s. From 2000 to 2007, capacity grew by 295 MW per year or 1.3 percent. At this rate, Virginia will need 2,950 MW of new capacity by 2017 just to keep up with increases in demand. Currently over 90 percent of Virginia's electrical energy is produced by coal and nuclear sources.

Increasing global concerns about the impact of coal use is expected to significantly impact Virginia's ability to meet energy demands. Investment in providing alternative energy sources to consumers is critical to sustaining Virginia's future demands. With 80 percent of our electricity generated in-state, loss of in-state generating capacity will require significant transmission grid improvements to enable cost-effective delivery to consumers. Funding of these alternative sources and grid improvements is projected to increase electrical rates by 5 to 7 percent annually, representing a 50 to 70 percent increase in electrical power rates over the next 10 years.

PARKS AND RECREATION – Virginia has made sustained long-term commitments to preserving and promoting public access and stewardship of our natural, cultural and scenic resources. This responsibility grows more critical each year as population growth, land development and habitat changes affect our natural resources and the state's recreation and tourism economy.

In 2006, Virginia's national parks brought in 14 million visitors and $263 million in annual spending, providing 6,100 jobs statewide. Virginia's 1.6-million acres of national forests drew another 1.37 million visitors. Attendance at Virginia state parks exceeded 7 million people; 40 percent of these visitors came from out of state and generated $157 million for the state's tourism industry. This is the principal economic engine of many rural communities near these recreational areas. Based on current levels of visitors, the Virginia Department of Conservation and Recreation projects 12,000 additional acres of parkland will be needed by 2010 to meet the high demand for public access. Sustaining this stewardship and relationship with the land is a continuing challenge for Virginia.

PORTS AND NAVIGABLE WATERWAYS – In 2006, Virginia economic activity produced or facilitated by port operations exceeded $41.1 billion, including in-state employee compensation of $13.5 billion to 343,001 employees. In turn, this generated state and local sales, income and property taxes amounting to more than $1.2 billion.

Virginia enjoys significant competitive and economic advantages as a major transportation hub of the Mid-Atlantic region due to our geographic location, multi-modal capabilities and extensive network of navigable waterways. This advantage is threatened by increasing roadway congestion and a lack of funds for necessary rail, road and inland navigation improvements. Ports remain relatively well capitalized as they are primarily self-sustaining; however security and infrastructure upgrades are projected to create a $400-million funding shortfall over the next 15 years. In order for port facilities to grow with increasing global demand, which is projected to outpace current capacity by 2020, the supporting road and rail network must be adequately funded to sustain this vital sector of Virginia's economy.

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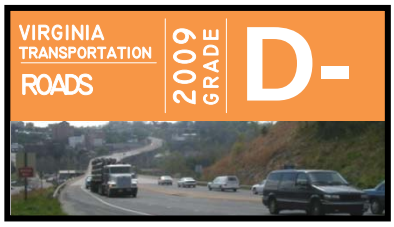
RAIL AND TRANSIT – Twelve freight and two passenger railroads operate over 3,400 miles of railway in Virginia. Over the next two decades, the Virginia Department of Rail and Public Transport expects freight rail traffic to double. Currently, over 178 million tons of frieght is moved by rail in Virginia, and the recently completed Heartland Rail Corridor project will signifcantly increase this volume.

Coupling this with an increase of 20 percent in public transit ridership, or 30 million additional bus, rail and subway trips between 2002 and 2006, growth in mass transit operations within Virginia is significantly above the national rate of 4 percent. Average per trip operating cost in Virginia is also 15 percent less than the national average, representing better transit operating efficiencies. Rail and transit have significant benefits as they replace vehicles miles traveled, reduce congestion, reduce greenhouse gases, promote urban land use, save and reduce foreign dependency on fuel. They also are a key part of the comprehensive solution of a multi-modal transportation system. The VTrans 2025 plan identifies a $30.7 billion funding shortfall for rail through 2025. In order to maintain system efficiency and safety a sustainable source of funding needs to be identified for new or expanded rail and transit services that maintain the vitality of Virginia's economy through effective multi-modal transportation.



ROADS –Virginian's manage the 3rd largest road system in the country, with over 70,000 miles of roads. Currently over 30 percent of interstate and primary road lane miles are providing deficient levels of service. This is projected to grow to 79 percent by 2025, with 96 percent of our urban interstates failing to meet standards by 2025, representing a $74 billion backlog of maintenance needs.

In 2009, Virginia diverted $400 million in annual new construction funds to address these maintenance needs. Following this trend all matching federal highway new construction funds will end in 2014; by 2018 maintenance activity will consume all state road funding. Currently, trucking delays due to inadequate roads in Virginia have a $100 million annual cost. Commuter delays in northern Virginia average 38 hours annually, while delays in the Hampton Roads region are rated as the 2nd worst in the nation for recreational travelers. Adequate levels of service from our roadways are vital to sustaining Virginia's economy; inefficient travel impinges on all components of business from tourism to heavy freight transfer; poor road conditions increase the cost of goods and services and negatively impact the environment. Sustained and increased investment in Virginia's road network is an economic imperative that can no longer be ignored.

SCHOOLS –A Virginia General Assembly commission in 2005 noted local government had programmed $4.76 billion in K-12 school construction between 2003 and 2008, with $2.6 billion "unfunded and unmet" after 2008. Construction statistics show actual expenditures for new schools and renovations from 2003 to 2008 totaled $3.5 billion, indicating deferral of up to $1.2 billion, increasing this unmet requirement to $3.8 billion currently.

With 46 percent of Virginia's school facilities over 40 years old, over three quarters of Virginia's K-12 school districts cite prohibitive school repair costs as reasons for programming new school construction. School enrollments have also increased by 10 percent over the last decade, to over 1.2 million students in 2008 exacerbating this need. Bridging this gap with over 6,000 portable and temporary classrooms reduces the quality of public education in Virginia and is an unsustainable approach. Innovative public-private financing of school construction and effective low-interest revolving loan programs have been helpful, however Virginia's localities are faced with a rising backlog of school maintenance and replacement needs backed by swelling student populations; making sustainable funding of our K-12 schools critical to maintaining Virginia's competitive edge in today's global marketplace.

SOLID WASTE – In 2008, there were 197 waste management facilities operating in Virginia, including composting sites, transfer stations, incinerators and landfills. In 2008, these facilities processed more than 22 million tons of waste. Approximately 15.4 million tons was generated within Virginia and 6.6 million tons was imported from out of state, ranking the state as the second largest importer of refuse in the country.

Based on current landfill rates, Virginia's existing solid waste landfills will be at capacity within 20 years. Closure costs for these facilities alone are expected to exceed $175,000 per acre, with replacement landfill construction costs projected at $250,000 per acre. To sustain this loss in capacity, landfill replacement cost will likely drive disposal fees from a statewide average of $40 per ton to more than $80 per ton within the next 20 years. At current instate generation rates, this equates to an increase of more than $600 million in annual waste disposal costs for Virginians. Clearly more cost effective and sustainable means of waste management are needed to conserve Virginia's limited fiscal resources.

STORMWATER – Stormwater drains from Virginia's urban areas via a $20-billion network of ditches, pipes, culverts and treatment ponds, prior to being released to natural waterways. This water collects a multitude of pollutants which significantly impact the environment, particularly the Chesapeake Bay, a vital regional economic resource. This non-point pollution affects all Virginians, impacting recreational and commercial fishing, increasing water treatment costs and closing swimming areas.

Localities are faced with severely inadequate funding to maintain and improve stormwater conveyance and treatment facilities. With 34 percent of stormwater systems in the state more than 50 years of age and 29 percent between 25 and 50 years of age, the cost to maintain and replace existing systems that are reaching the end of their design life exceeds current funding. These existing systems are projected to require an ongoing annual investment of $200 million to simply maintain current functionality, yet localities are only investing 25 percent of this amount to correct deficiencies. Recent water quality mandates focused on more intensive water quality and runoff volume controls are projected to increase this annual operations and maintenance cost. In order to address these economic limitations, we must manage our watersheds more effectively and implement sustainable funding mechanisms to operate and maintain our stormwater infrastructure.

WASTEWATER – There are approximately 740 municipal wastewater treatment facilities serving more than two million households in Virginia. Wastewater discharged from sewage treatment plants (STP) is the second largest source of nitrogen pollution in the Chesapeake Bay, significantly contributing to the bay's 150-mile "dead zone" that stretches from Baltimore to the York River.

Of the 81 STPs discharging more than 0.5 million gallons per day in Virginia, 59 facilities were ranked as unsatisfactory based on total nitrogen discharge concentration in 2008. By 2020, an estimated 45 percent of water and sewer pipes in Virginia will require major renovation or replacement. Improvements to these systems will be funded by increases in sewerage rates. Average rates increased by 9.5 percent from 2007-2008, and there has been a 65 percent increase in average rates since 1999. The 2004 EPA Clean Water Needs Survey Report identified Virginia had a $4.4-billion need for wastewater infrastructure in 2004; a 20 percent increase from the 2000 report, the 2008 report is currently being finalized. Aging infrastructure, mandates for greater nutrient reductions, burgeoning growth demands and construction cost increases are expected to drive this unfunded requirement above $5.0 billion in 2009.