

Commonwealth of Virginia

Freight Impacts on the Environment and Energy Usage

August 2008

I. Introduction

Minimizing the environmental impacts of transportation is of particular concern in Virginia. One of the goals of the Virginia Long-Range Transportation Plan (VTrans)¹ addresses environmental quality and quality of life. The transportation system must be designed and operated in a manner that enhances communities and protects Virginia's natural and cultural resources. The environmental objectives involve maintaining and improving air and water quality; maintaining habitats and watersheds; connecting and preserving Virginia's rich cultural and historic resources and activity centers; and ensuring that transportation facilities and services are compatible with the communities and destinations they serve.

State and Federal regulations reinforce the need to consider environmental quality in the planning of transportation projects. The Federal regulations stipulate, "Each State shall carry out a transportation planning process that provides for consideration of projects and strategies that will protect and enhance the environment, promote energy conservation, and improve quality of life."²

The Texas Transportation Institute (TTI) monitors urban travel performance and publishes an annual report of travel-time and estimates of wasted fuel due to delay. TTI's 2007 Urban Mobility Report³ ranked the Washington DC metro area number fifth in the country in wasted fuel per traveler. Hampton Roads was ranked number 40 and Richmond 59. According to the TTI Study, the three urban areas combined wasted an estimated 114,351,000 gallons of fuel in 2005.

According to the Inventory and Projection of Greenhouse Gas Emissions (2000 – 2025), published by the Virginia Department of Environmental Quality transportation (mobile) sources of carbon dioxide emissions accounted for 31 percent of all emissions sources in 2005. In 2025, that percentage is expected to increase to 35 percent. This is representative of an increase in transportation emissions from 53.51 MMT (Million Metric Tons) in 2005 to 78.07 MMT in 2025.

Improvements have been made in emission-reduction fuels and vehicle technologies to reduce the negative impacts of transportation on the environment. The

¹ VTrans2025, December 2004, available at www.vtrans.org.

² Title 23, Chapter 1, §135(d)(E) available at http://www.law.cornell.edu/uscode/uscode23/usc_sec_23_00000135----000-.html

³ 2007 Urban Mobility Report, Texas Transportation Institute, David Schrank, Tom Lomax, available at http://tti.tamu.edu/documents/mobility_report_2007.pdf

DRAFT

federal government is requiring implementation of cleaner fuels and is also implementing programs to encourage voluntary deployment of technologies. The success of programs seeking voluntary participation largely depends on the transportation community's willingness to participate. Implementation can involve substantial costs, which affect competition in the freight transportation industry. However, any improvements in freight system efficiency will have the added benefit of reducing energy consumption.

Recommendations from Virginia Stakeholders

In September of 2007, the Virginia Freight Advisory Committee (VFAC) commissioned a subcommittee to discuss the environmental impacts of the freight transportation industry. The committee was made up of freight industry professionals, a representative from the environmental community, and public agency transportation officials.

The majority of the discussion focused on the impact of freight emissions resulting from growth in the freight transportation industry and the planned expansion of the Port of Virginia where container traffic is expected to quadruple by 2040. Additionally, the group discussed incentives for retrofit and idling technology programs and expressed concern about the lack of information available to make sound decisions among the strategies.

Although there are programs in place to improve environmental impacts of freight movement, more can be accomplished. The following discussion cites various government and private strategies to reduce the environmental impacts and includes recommendations that were a product of the discussion of the VFAC Subcommittee on Environmental Issues.

II. Federal Strategies for Emissions Reduction

The Federal government is the primary source of environmental standards and regulation, and the Environmental Protection Agency (EPA) has promulgated several requirements to reduce the air-quality impacts of freight movement. Emission standards which took effect for the model year 2007 involved use of high-efficiency catalytic exhaust emission control devices or comparably effective advanced technologies and improved fuels in new heavy-duty vehicles. The EPA also regulates the level of sulfur in diesel fuel to ensure the performance of the new emissions control devices. This new diesel is referred to as Ultra-Low Sulfur Diesel (ULSD). Use of ULSD significantly reduces the emission of sulfur dioxide, nitrogen oxides, and particulate matter when the diesel engine is fitted with the latest emissions controls.

SmartWay Transport. In January 2003, EPA launched SmartWay Transport Partnership, a voluntary program that encourages the freight transportation providers to improve environmental stewardship through partnership with the EPA. The program

DRAFT

provides incentives for fuel efficiency improvements and greenhouse gas emission reductions. By decreasing all unnecessary engine idling and increasing the efficiency and use of rail and intermodal operations, between 33 and 66 million metric tons of carbon dioxide (CO₂) emissions and up to 200,000 tons of nitrogen oxide (NO_x) emissions per year could be reduced by 2012. At the same time, the initiative will result in fuel savings of up to 150 million barrels of oil annually.

Clean Cities. The Department of Energy created a program to facilitate the identification of grant opportunities to reduce idling and promote alternative fuel use for coalitions of state and local governments, non-profits, and private companies.⁴

Rail and marine emissions. In May 2004, as part of the Clean Air Non-road Diesel Rule, EPA finalized new requirements for non-road diesel fuel that will decrease the allowable levels of sulfur in fuel used in locomotives and boats by 99 percent. In March 2008, EPA finalized a three-part program that will dramatically reduce emissions from diesel locomotives of all types, including line-haul, switch, and passenger rail. The same program applies to marine vessels as well. The rule will cut particulate matter (PM) emissions from these engines by as much as 90 percent and NO_x emissions by as much as 80 percent when fully implemented.

This final rule sets new emission standards for existing locomotives, and for existing marine diesel engines, applying to engines larger than 600kW, when they are remanufactured, to take effect as soon as certified systems are available, as early as 2008. The rule also sets Tier 3 emission standards for newly built locomotives, provisions for clean switch locomotives, and idle reduction requirements for new and remanufactured locomotives; and newly built marine engines that will phase in beginning in 2009. Finally, the rule establishes long-term, Tier 4 standards based on the application of high-efficiency catalytic after treatment technology, beginning in 2015, for newly built locomotive engines and for newly built commercial marine diesel engines above 600kW, based on the application of high-efficiency catalytic after treatment technology, phasing in beginning in 2014.

III. Other Programs for Emissions Reduction

State Programs

Although the federal government regulates emissions and emissions control devices, some states have created programs that encourage environmental stewardship. These programs typically provide funding in the form of grants or loans and sometimes work in partnership with federal programs. The following is a selection of those programs and activities.

⁴ DOE, CLEAN CITIES FACT SHEET (March 2007) available at <http://www.eere.energy.gov/cleancities/pdfs/41126.pdf>

DRAFT

California's Carl Moyer Program offers grants to private companies and public agencies to "to clean up their heavy-duty engines beyond that required by law through retrofitting, re-powering or replacing their engines with newer and cleaner ones." New forms of natural gas combustion engines that emit significantly lower amounts of noxious gases are eligible for grants administered through local air-pollution control districts. The program is funded by fees on new tire purchases (\$1.75 per tire), vehicle registration fees, and smog abatement fees (\$12 per new vehicle). Local air districts must match one local dollar for every two state dollars.⁵

Oregon offers a tax credit for 35 percent of the cost of installing diesel emissions controls.⁶ The state also sells truck auxiliary power units, which trucking companies can purchase with a low-interest loan. The state bought the units with a grant from EPA's SmartWay program.⁷

Pennsylvania has a program that provides matching grants of up to \$5,500 to small businesses for purchase of pollution prevention equipment. Truck owner-operators and small trucking companies are eligible for the grants.

Wisconsin will pay up to 70 percent of the cost of installing idling reduction equipment, pending funding in the new state budget.⁸

Arkansas and Minnesota both have small business loan programs that can be used to purchase truck emissions control systems.⁹

Port Programs

While not owned or operated by the state, the combined ports of Los Angeles and Long Beach provide useful examples of emissions reduction strategies. Last year the ports began a \$2 billion effort to curb pollution, called the San Pedro Bay Ports Clean Air Action Plan (CAAP), adopting the strictest air quality plan in the nation with the aim to cut emissions in half by 2010.¹⁰ The following is a list of strategies:

- Incorporation of environmental protections in all new or modified leases with shipping companies, each of which would include some or all of the measures below.
 - Slower speeds for ships within 40 miles of shore.

⁵ California Air Resources Board, Carl Moyer Memorial Air Quality Standards Attainment Program, <http://www.arb.ca.gov/msprog/moyer/moyer.htm>

⁶ OREGON DEQ, FACT SHEET: CLEAN DIESEL RETROFIT TAX CREDIT (Oct. 2003) available at <http://www.deq.state.or.us/aq/factsheets/03-AQ-007CleanDiesel.pdf>

⁷ EPA SmartWay Transport Partnership, Idling Reduction: Innovative Funding and Incentive Opportunities, <http://www.epa.gov/smartway/idle-fund.htm#epafund>

⁸ Wisconsin Diesel Truck Idling Reduction Grant Program, <http://www.commerce.state.wi.us/BD/BD-CA-Diesel-Grant-Program.html>

⁹ EPA SmartWay Transport Partnership, Innovative Financing for Fuel-Efficient Technologies, <http://www.epa.gov/smartway/financing.htm>

¹⁰ *Nation's strictest air quality rules for LA-LB*, WORLD TRADE, Aug. 1, 2006.

DRAFT

- Increased use of alternative marine power (AMP), which allows ships to turn off diesel engines while at dock and plug into electrical power. Los Angeles was the first port in the world to use AMP for container ships. All major terminals at the two ports are to be equipped for AMP by 2010.
- Use of low-sulfur fuel at port, rather than the usually used bunker fuel.
- Use of technologies that reduce emissions, such as fuel emulsification, slide valves and cylinder lubricating systems.
- Use of green ships, which combine a number of environmental technologies.
- Re-powering and retrofitting harbor craft and equipment to control emissions or use alternative fuel. Within five years, all equipment will meet or exceed the highest EPA emissions standards.
- AMP for tugboats.
- Replacing dirty locomotives with clean diesel locomotives.
- Reducing truck emissions by replacing older trucks; underwriting programs for independent truckers. Within five years, the entire fleet of trucks will be replaced.
- Truck idling limits.
- Fines for failure to comply with any agreement or requirement.
- Ambient air quality monitoring in and around the ports; air emissions inventory.
- Cooperative environmental programs with the Port of Shanghai.

The Ports of Virginia.

The Port of Virginia is the largest intermodal facility on the East Coast and significant growth is anticipated. The Port has taken several steps to minimize the impact of this growth on the environment.

Environmental Management System (EMS). The Port has developed an Environmental Management System (EMS) that targets air and water quality improvements and energy efficiency at Newport News Marine Terminal, Norfolk International Terminals, and Portsmouth Marine Terminal. The EMS provides a framework by which the Port will establish measurable goals for pollution prevention, compliance and continual improvement.

Air Quality. The Port has implemented several strategies specifically targeted at reducing emissions.

- **Equipment Procurement:** The Port's equipment procurement policy requires procurement of new cargo handling equipment that uses the lowest emitting engine available on the market.
- **SmartWay Plus Program:** The Port and the EPA have jointly developed a low interest or extended-term loan program encouraging the purchase of new or retrofitted low emission trucks by local drayage truckers. This is the first voluntary retrofit program of its type at a U.S. port.
- **Early Conversion to ULSD:** In July 2007, Virginia International Terminals, Inc. instituted the use of ultra-low sulfur diesel (ULSD) fuel port-wide. This voluntary conversion occurred 3 years ahead of Federal mandate and has

DRAFT

resulted in a 36 percent reduction in particulate matter emissions and the elimination of sulfur oxide emissions from cargo handling equipment.

Water quality. Through a series of structural controls and terminal master planning, the pollutant removal from storm water discharges at the Virginia Port Authority's three marine terminals exceeds state removal requirements by 50 percent. Where feasible, treatment devices, structures, or ponds are designed to exceed pollutant removal requirements for specific drainage areas on the marine terminals, this compensates for areas on the marine terminals that are not slated for redevelopment or areas where installation of storm water treatment controls are not practical and storm water runoff is not treated.

A key element of the Port's Water Quality Master Plan is an innovative under-wharf stormwater detention basin located at Norfolk International Terminals. Combined with several manufactured treatment devices, the under-wharf detention design eliminates the need for a conventional treatment pond while maximizing the land area available for cargo operations.

Open Space Preservation and Wetlands/Habitat Creation. The Port of Virginia has undertaken several projects to preserve open space and create wildlife habitats, and has been recognized by several groups for its work to preserve the environment.

- In 2004, the Virginia Port Authority, in collaboration with the City of Norfolk, preserved 5 acres of open space, removed 500 tons of debris from the Elizabeth River and restored 1 acre of tidal wetlands with the creation of Plum Point Park along the Elizabeth River in Norfolk.
- In 2003, 1.6 acres of non-tidal wetlands were created within a storm water pond at Norfolk International Terminals. This project provided valuable wildlife habitat without sacrificing valuable cargo storage area.
- In 2002, 1.5 acres of oyster reef was constructed in the Elizabeth River adjacent to Portsmouth Marine Terminal. To date, the reef is one of the more populated man-made reefs in the Chesapeake Bay.
- In 2002, a 2.0-acre forested riparian buffer was planted along the shoreline of the Elizabeth River between Norfolk International Terminals and the adjacent residential community. The forested area provides a visual and sound screen between terminal operations and waterfront residents, as well as 2 acres of native habitat/open space for various species of wildlife. The buffer also serves to reduce impacts to water quality from shoreline erosion. Over 700 trees were planted.

IV. Opportunities for Reducing the Environmental Impacts of Freight in Virginia

The Virginia Freight Advisory Committee's Subcommittee on Environmental Issues reviewed federal and state initiatives, as well as the literature on the topic. The following is a compendium of the discussion and the resulting recommendations.

DRAFT

Implementing regulatory and enforcement strategies. The subcommittee discussed various regulatory and enforcement related strategies to reduce the environmental impact of freight movement.

Speed limits. High speeds are negatively associated with fuel economy. For a typical long-haul truck, reducing highway-driving speed from 70 mph to 65 mph could save nearly \$1,500 in fuel costs and eliminate nearly ten metric tons of greenhouse gas emissions each year. Many freight transportation providers are promoting lower driving speeds for their fleets to reduce operating costs. According to the EPA's SmartWay Program, truck fuel economy drops significantly as speeds rise above 55 mph. By limiting top highway speeds, trucks can save fuel, reduce emissions, and prolong engine life.

The relationship between speed and emissions varies for the different pollutants.

- Nitrous Oxide (NO_x) emissions are typically at a minimum at 35 mph (on average) and are a function of temperature. The hotter the engine, the more NO_x is emitted.
- Volatile Organic Compound emissions (VOC) typically decrease as speed increases.
- Particulate Matter (PM) emissions increase with acceleration and speed.
- 55 mph seems to be the speed at which fuel economy is maximized.
- Carbon Dioxide (CO₂) output is generally proportional to fuel economy.

Speed limits were lowered to 55 mph nationwide in 1974, in part, to reduce gasoline consumption. While the speed limit reduction did produce significant energy savings, it was repealed for rural interstates in 1987 and the remainder in 1995. The subcommittee agreed that a reduction in traffic speeds from 65 to 55 miles per hour would produce the most environmental benefit for the cost. While the subcommittee did not address whether the speed reduction would apply to both trucks and passenger vehicles, speed limit differentials between commercial and passenger vehicles have been associated with decreased safety. A change in maximum speeds could also reduce fuel costs to the industry.

Some trucking firms choose to employ governors to keep their fleets operating at lower speeds to maximize operational economy; however, increased speed limit enforcement would be an effective governmental strategy. The costs associated with enforcing the existing maximum safe speed limit would come from increased funding of state police.

Recommendation 1: The Commonwealth should consider lowering the maximum safe speed limit for trucks on Virginia's interstate system statewide. It may be desirable to reduce speeds for all vehicles. A feasibility study should be conducted to determine the air quality benefits associated with speed reduction and any implementation issues.

DRAFT

Responsible Party: Virginia Department of Transportation, Department of Environmental Quality

Recommendation 2: The Commonwealth of Virginia should increase enforcement of the maximum safe speed limit.

Responsible Party: Virginia State Police

Idling laws. Reducing engine idling is another way to reduce air pollutants and energy consumption. The need for engine idling arises where there are no alternatives to maintain comfortable cabin temperatures so truckers can sleep in their cabs on long-haul trips. As of December 2006, thirteen states had statewide anti-idling laws that limit how long trucks or buses may idle and about twenty city and county governments had local anti-idling laws. Virginia has an anti-idling law that limits idling time to three minutes in commercial and residential urban areas. Idling for ten minutes is allowed only as an exception.¹¹ The law is posted at many of Virginia's truck stops but is difficult to enforce. Currently, it is believed that the idling law is locally enforced only when there is a complaint.

One of the problems with idling laws, as indicated by subcommittee members, is that the idling limits are not consistent across state boundaries. This leads to confusion. In 2004, the EPA conducted a workshop with the trucking industry to determine the best approach to regulating idling. EPA published a report from the workshop which proposed a model idling law for states and cities to consider. The model limits idling to five minutes and provides an exception for cabin comfort under a sunset clause to allow the industry time to phase in idle reduction technologies. The subcommittee made reference to this report as source of guidance for amending Virginia's existing idling laws.

Recommendation 3: The Commonwealth should consider amending the state's current idling regulation according to the EPA Model State Idling Law published April 2006.

Responsible Party: Virginia Department of Environmental Quality, Secretary of Natural Resources

Reducing emissions with technology. Technology is a significant strategy for lowering emissions in the freight industry. Advanced catalytic converters, idling reducing alternative power units, and aerodynamic improvements have the potential to make significant improvements if the industry widely adopts these technologies. However, there is still a significant number of older trucks in service owned by small trucking companies that are operating on thin profit margins. The challenge is encouraging the adoption of the best technologies with the best incentive programs. Each technology has a different level of benefit. In order to make the most significant impact on emissions,

¹¹ 9VAC5-40-5670

DRAFT

financial assistance and rewards could be made to vary according to the benefits of the different technologies. This approach could encourage the adoption of the best existing technologies, or even encourage the development of new, better technologies.

Older equipment. While the use of ultra-low sulfur diesel (ULSD) will reduce sulfur dioxide emissions in trucks, it will not reduce other emissions, such as particulate matter and nitrogen oxide, if the diesel engine is not fitted with the latest emissions controls. Many older model trucks were manufactured before the EPA implemented more stringent emission-control requirements and remain in use. The full effect of the new requirements will not be achieved until the fleet turns over or unless significant numbers of older trucks are retrofitted.

Idling. Many freight transportation providers are working to reduce engine idling to achieve cost-reductions. However, the cost of retrofitting trucks may include losing a week of productivity. EPA has a small business program which provides funds for idling reduction technologies. This program is still active; however, it needs additional funding.

New technologies are being marketed which make at least some extended idling unnecessary. Some systems that allow truckers to access an external power source to operate heating, air conditioning and computer systems without keeping the engine running and thereby reducing emissions by up to ninety percent. These systems require special adapters and are available at some locations for an hourly fee. Truck electrification systems, such as IdleAire and Shurepower, are becoming more common at truck stops.

Some states have used federal CMAQ funds to install IdleAire technology at truck stops. Since 2003, three Virginia private truck stops have added IdleAire equipment to their long term parking areas. Two of those are in the I-81 corridor (Glade Springs and Troutville) and one is in the I-95 corridor (Doswell). Members of the subcommittee indicated that although this technology could be effective, there is not enough presence of it in Virginia to make a difference. On-board diesel generators and new battery technologies may be more successful because they do not require adoption by both truck stops and truckers.

Information on technologies and incentives. The subcommittee believes that it is important to weigh the relative merits or impacts of new technologies and strategies. They suggested that an outcome-based approach would broaden the adoption of the technologies by the industry. They felt that grant programs that focus on a particular technology are problematic because new and better technologies are always being developed. A special taskforce could evaluate the various idling and emissions reducing technologies currently available, determine their potential impact, and recommend appropriate strategies.

Currently, there is a tax exemption in the Code of Virginia for expenditures for certified pollution control equipment and facilities. The appropriate state authority must

DRAFT

certify to the Department of Taxation that the property, equipment or facilities are in conformity with the abatement program.

The subcommittee felt that, where there is no immediate economic benefit to the shippers for investing in environmental upgrades, incentives should be developed. Many existing programs to provide assistance and incentives do not have a significant impact because they frequently target small companies, which have fewer vehicles and are the least able to take advantage of them. Tax incentives or economic development grants like Opportunity Fund grants may provide a more effective incentive.

Incentives to use alternative fuels should also be considered. In addition to benefiting the environment, alternative fuels can reduce dependence on foreign oil.

Recommendation 4: The Commonwealth should investigate new emissions reducing technologies, including alternative power technologies for vehicles, to determine the best technologies available and form a special taskforce to research current technologies alongside specific environmental objectives and recommend appropriate cost-effective programs and incentives. The results of the taskforce should be reported to the Secretary of Natural Resources and the Secretary of Transportation.

Responsible Party: Virginia Department of Transportation and Virginia Department of Environmental Quality

Recommendation 5: The Commonwealth should consider offering incentives to expand the retrofitting of older model trucks as well as encouraging freight carriers and terminal operators to invest in technologies that reduce emissions. These programs should focus on the desired outcome instead of any particular technology in order to ensure implementation of the most environmentally sound technologies.

Responsible Party: Virginia Department of Transportation and Virginia Department of Environmental Quality

Improving logistics. Trucking logistics software is becoming increasingly more sophisticated, allowing better coordination of routes and pickup times, etc. This software can help prevent trucks from idling in long lines and make trips more efficient. While most trucking companies use logistical planning, there may be room for improvement.¹² Programs such as on-street dispatch systems eliminate the empty truck or container backhaul and thereby reduce fuel consumption and improve operational efficiency. Programs that provide real-time road conditions to truckers or dispatchers improve routing and help trucks avoid congested areas, thereby reducing air pollution and energy consumption.

¹² EPA SMARTWAY TRANSPORTATION PARTNERSHIP, IMPROVED FREIGHT LOGISTICS (Fed. 2004) available at <http://www.epa.gov/smartway/documents/loadmatching.pdf>; see also David Diamond, *The Trucker & the Professor*, *Wired* (Dec. 2001) available at http://www.wired.com/wired/archive/9.12/sheffi_pr.html.

DRAFT

The Virginia Port Authority has begun an effort to make improvements in this area with a program called Off-Terminal Container System (OTCS). For a small fee, drayage companies have access to a time-sensitive database of off-terminal empty container moves. Empty containers can be shuttled from one customer to another in a geographically similar region instead of to and from the Port. In this way, Port congestion is reduced, and the number of miles driven with empty containers is significantly reduced. A recommendation was made previously by the VFAC Subcommittee on Freight Technologies to promote OTCS.

Truck size and weight. There have been discussions at the federal level concerning the truck size and weight rules. There are advantages associated with relaxing the size and weight rules particularly in regard to freight movement efficiency. However, there are also disadvantages related to infrastructure costs, pavement wear and bridge damage. Impacts on safety work both ways: by reducing the number of trucks, crashes should decrease; however, with heavier trucks, the crashes could be more serious. Additionally, there is limited knowledge about the relationship between truck size and weight and air quality. The subcommittee referred to TRB's 2002 Publication 267, which addresses the issues surrounding the regulation of truck size, length and weight. This study referenced a previous study by the USDOT saying, "Present emission models provide no information on the effect of changing weight limits on heavy-duty vehicle emissions." More information is needed on the impact increased truck size and weight would have on emissions. Furthermore, the TRB study did not address the market impacts of a change in the size and weight of trucks. Such a change could alter the competitive dynamics between the truck and rail industries, effectively moving more freight to trucks.

Recommendation 6: The Commonwealth should encourage EPA to study the impacts of vehicle weight on emissions output and should engage in discussions about truck size and weight at the federal level.

Responsible Party: Virginia Department of Transportation, Virginia Department of Environmental Quality

Increasing share of alternate transportation modes. In 2004, about 74 percent of freight tonnage in Virginia moved by truck. Greater use of rail and waterborne modes, which tend to be more fuel-efficient, could provide significant environmental benefits. Improvements in rail and cargo ship engines also offer significant environmental benefits.

EPA has finalized new diesel emission standards for trains and ships that would reduce nitrous oxide emissions by 80 percent and particulate matter by 90 percent. The standards would be phased-in starting in 2009.¹³ According to the EPA, even a dirty locomotive is cleaner than a truck when compared on a ton-mile basis.¹⁴ Rail and barge have the additional advantage of reducing highway congestion.

¹³ 73 Fed. Reg. 25098 (May 6, 2008)

¹⁴ 62 Fed. Reg. 3268 (1997)

DRAFT

Virginia's Rail Enhancement Fund and Rail Preservation Fund are important rail investment strategies. Continued and increased investment in these programs is an effective way to enhance the rail system and increase interest in rail freight transportation. Congestion Mitigation and Air Quality (CMAQ) funds can also be used to fund alternate-mode freight projects in certain locations and under particular circumstances. Recently, the Richmond Metropolitan Planning Organization provided \$2,250,000 to fund a freight barge service between Hampton Roads and Richmond.

Recommendation 7: The Commonwealth should increase investment in projects that enhance intermodal connectivity and encourage use of more fuel-efficient modes, like rail and water.

Responsible Party: Virginia Department of Transportation, Department of Rail and Public Transportation, and Virginia Port Authority

Land use and zoning. The subcommittee noted that zoning laws in some localities make freight access challenging. In some cases, freight transportation industries are precluded from building terminals in areas that would make travel more efficient and environmental consequences less severe. Understandably, local zoning decisions must frequently balance competing interests.

Recommendation 8: Encourage localities to consider how zoning regulations impact efficient freight movement.

Responsible Party: Virginia Department of Transportation

Other strategies for discussion. The subcommittee also discussed a number of other strategies and recommendations for reducing the environmental impact of freight. The Port of Virginia's Environmental Management System received an official certification by the International Standards Organization this year. The certification is a significant achievement by the Ports and establishes measurable goals and objectives that will be regularly monitored through a defined process.

Recommendation 9: The Port of Virginia should develop an annual environmental report communicating its commitment to environmental stewardship and reporting the goals, objectives, and progress of the Environmental Management System and the Port's Environmental Programs. The report should outline the progress of the past year and outline initiatives for the coming year. The report should be provided to the Secretary of Transportation.

Responsible Party: Virginia Port Authority

Education. The federal government has been engaged in the discussion of the environmental impacts of the freight industry and involving the industry in the development of environmental regulations. It is the opinion of the subcommittee that the Commonwealth's decision makers would benefit from the sharing of information on

DRAFT

these issues through the Commonwealth's transportation and environmental agencies. One opportunity to share this information is with the Commission on Climate Change, recently formed by Governor Kaine. It is important to ensure that the impacts of the freight industry be accurately represented in these discussions.

Recommendation 10: Provide information to the General Assembly and Governor on the freight-related environmental issues, including information on any freight related changes to environmental regulations. One potential opportunity is the Governor's Commission on Climate Change.

Responsible Party: Secretary of Transportation

Coordination. Freight carriers are impacted by state laws. In some cases, it would be beneficial for those laws to be more uniform across state boundaries. If the Commonwealth of Virginia were going to develop goals and measures with respect to the environmental performance of the freight industry, it would be prudent to coordinate goals with other states to guard against unnecessary inconsistencies. Including freight shippers in that process is also essential to effect reasonable goals and expected outcomes.

Recommendation 11: The Commonwealth of Virginia should coordinate with nearby states and the federal government when developing regulations and goals that pertain to idling laws, idling technologies and developing emissions data. The Commonwealth should also include stakeholders in the discussion to provide input to the development of regulations.

Responsible Party: Virginia Department of Transportation, Virginia Department of Environmental Quality

The Virginia Freight Advisory Committee's Subcommittee on Freight Technologies addressed issues pertaining largely to system efficiency, which has the potential for significant environmental benefits. The Subcommittee on Freight Technologies also made recommendations regarding idling reduction technologies and other emissions reduction technologies. For information, refer to the White Paper on Freight Technology.