

**RICHMOND AREA
METROPOLITAN PLANNING ORGANIZATION
2031 LONG-RANGE TRANSPORTATION PLAN**

PART 3

DATA COLLECTION AND ANALYSIS

Chapter 5 – Safety and Security

Safety Element

Background

This safety element is being included in the Richmond area 2031 LRTP in response to the requirements SAFETEA-LU federal legislation. SAFETEA-LU states (Sec. 450.322 (a) (h)) that the LRTP should include:

...a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects for the MPA contained in the Strategic Highway Safety Plan required under 23 U.S.C. 148, as well as (as appropriate) emergency relief and disaster preparedness plans and strategies and policies that support homeland security (as appropriate) and safeguard the personal security of all motorized and non-motorized users.

Safety Summary

Motor vehicle crashes affect our citizens, particularly our youth, more than any disease or crime. According to the National Highway Traffic Safety Administration's (NHTSA's) *Top 10 Leading Causes of Death in the United States*, for ages 4 through 34, crash deaths are first, taking more lives than heart disease, cancer, stroke, homicide, suicide, drowning, poisoning, falls, fire, HIV, or diabetes. Most crash victims are working-age adults whose families often are left without a primary source of financial support. Crashes substantially impact the local community in terms of medical costs, lost wages, insurance costs, taxes, police, fire and emergency services, legal and court costs, as well as property damage. Motor vehicle crashes rob families of their dreams and aspirations and replace them with unforeseen economic burdens, physical disabilities, and mental anguish. Truly, this is one of Virginia's top public health concerns.

In the context of the 2031 LRTP for the Richmond area, we look to Virginia's *Strategic Highway Safety Plan* for general and specific goals and strategies for improving the safety of our transportation system. Virginia's *Strategic Highway Safety Plan* recognizes that transportation safety is a personal and shared responsibility.

Reducing injuries and deaths on Virginia roads requires a commitment by multiple government agencies, industry, non-governmental organizations, and citizens statewide.

Virginia's Mission Statement

To save lives and to reduce injuries from motor vehicle crashes in Virginia through the integration of education, enforcement, engineering, and emergency response actions.

Virginia's Vision Statement

To make Virginia's surface transportation system the safest in the nation by 2025.

Virginia's Goal

To reduce from 2005 levels, the annual number of injuries and deaths due to motor vehicle crashes by 100 deaths and 4,000 injuries by 2010.

To help ensure that Virginia's highway facilities are among the safest in the country, three emphasis areas have been selected to direct the safety programs. The following emphasis areas provide the substance of the *Strategic Highway Safety Plan*:

1. Human Factors
 - Driver behavior
 - Special users
 - Pedestrian and bicyclist safety
2. Environmental
 - Intersection safety
 - Roadway departures
 - Work zone safety
 - Pedestrian and bicycle safety
3. Fundamental Emphasis Area
 - Traffic records
 - Transportation safety planning

As noted previously, reducing injuries and deaths on Virginia roads requires a commitment on a statewide level. In the context of the 2031 LRTP, efforts to improve safety can be focused on specific elements of the statewide plan. Data collection efforts will be required on a continuing basis, and as transportation improvements are proposed and evaluated for funding, the following safety factors should be carefully considered:

Pedestrian and Bicycle Safety

1. Identify and track locations with the potential for, or those actually having a disproportionately high number of bike and pedestrian crashes.
2. Target infrastructure improvements where there is existing non-motorized travel and high density such as: schools and community facilities, commercial development, mixed use development, and public transit stops.
3. Provide best practice information to local jurisdictions for methods to improve planning and designing for non-motorized mobility and accessibility.
4. Encourage project design that reduces bicycle and pedestrian exposure to vehicular traffic and vehicle speed through, for example:
 - Providing sidewalks, trails and bike lanes, or wide outside lanes
 - Installing or upgrading traffic and pedestrian signals
 - Improving signal timings and controllers/detectors to provide, adequate opportunity for pedestrians and bicyclists to cross
 - Installing intersection and roadway traffic calming devices to improve non-motorized vehicle safety including roundabouts, pedestrian refuge islands, and raised medians

- Installing and maintaining shoulders in rural areas
- Standardizing bike and pedestrian signing and marking
- Providing speed management technology in higher risk areas such as near schools and elderly living facilities
- Eliminating screening of non-motorized facilities by physical objects
- Lighting sidewalks, roadways, and crossings
- Enhancing crosswalk and bike lane conspicuity and visibility for motorists

Intersection Safety

1. Identify and track locations with a disproportionately large number of crashes.
2. Encourage project design that explicitly incorporates safety review considerations such as:
 - Using alternative designs and technology to reduce conflicts such as restricting left-turns, using roundabouts, directional openings, and jug-handle designs
 - Focusing capacity and traffic control upgrades on high-crash intersections in each jurisdiction each year
3. Improve driver compliance with traffic control devices by incorporating Intelligent Transportation System (ITS) techniques such as:
 - Providing intersection warning devices at public railroad crossings at high crash and high risk locations
 - Upgrading signal identification to assist enforcement of red light running at appropriate intersections
 - Deploying enhanced technology at intersection approaches, particularly those with high posted speed limits
 - Using automated methods to monitor and enforce intersection traffic control where appropriate

Roadway Departures

1. Identify and track locations with a disproportionately large number of roadway departures.
2. Encourage project design that reduces the likelihood of vehicles leaving the travel lane(s) by:
 - Deploying centerline, edgeline, and shoulder rumble strips
 - Improving, expanding, and maintaining roadway delineation and visibility features and devices
 - Upgrading and improving shoulders where possible and maintaining shoulders to reduce edge drop-offs
 - Installing signing and marking of passing zones on two-lane roads

3. Encourage project design that minimizes adverse consequences of leaving the roadway at high crash and high risk locations by:
 - Reviewing and improving roadside safety devices as part of restoration, rehabilitation, and reconstruction projects
 - Modifying roadside clear zones particularly in the vicinity of obstacles
 - Removing, relocating, shielding, or delineating trees, utilities, and other fixed objects
 - Installing appropriate medians and median barriers in narrow widths where left-side roadway departure crashes occur

Transportation Safety Planning

1. Coordinate transportation safety planning efforts with the state and local levels through ongoing communication, research and training, and the adoption of consistent goals, policies, and procedures.
2. Coordinate with local and state partners to pursue effective access management and land use strategies that strengthen relationships between land development and the transportation system, and thereby enhance the safety of all transportation modes.

Security Element

In the context of the Long-Range Transportation Plan for the Richmond area, we look to Virginia’s *Secure Commonwealth Initiative Strategic Plan* for general and specific goals and strategies for improving the security of our transportation system. The guiding principles for the *Secure Commonwealth Initiative Strategic Plan* are the pillars of:

- *Deterrence.* Actions to reduce or eliminate threats against physical, economic and societal security.
- *Prevention.* Actions to avoid an incident or to intervene to stop an incident from occurring that would harm lives and property.
- *Response.* Actions addressing short-term, direct effects of a disaster, to include the execution of emergency operations plans and of activities to limit the loss of life, personal injury, property damage and other unfavorable outcomes.
- *Recovery.* The development, coordination, and execution of service- and site-restoration plans for impacted communities and the reconstitution of government operations and services through individual, private-sector, nongovernmental and public assistance programs.

These guiding principles are addressed across all levels of government and private industry and the citizenry. Emergency preparedness plans are based on needs assessments and are developed in collaboration with state and local emergency management officials and fire, law enforcement, emergency medical services, and public health services. Maximum coordination and utilization of resources requires integration of resources available at the local, state *and* federal levels. It should be noted, however, that elected officials have the legal responsibility under the Virginia code for “local disaster mitigation, preparedness, response, and recovery” to protect the health and safety of all citizens.

One of the most critical areas of the region’s infrastructure is the elaborate transportation system. An intricate system of highways, bridges, and tunnels allows commuters and commerce to move efficiently from one place to another. The Richmond area’s transportation system is a fundamental resource that enables this region to prosper—which is why its protection is paramount.

The Richmond area transportation system consists of a number of key modes: aviation, maritime traffic, rail, highways, trucking, busing, and public mass transit. Together the various transportation modes provide mobility for our population and contribute to our individual freedom. Interdependencies exist between transportation and nearly every other sector of the economy. Consequently, a threat to the transportation sector may impact other industries that rely on it. Information about threats affecting transportation modes must be adequately addressed through communication and coordination among multiple parties who use or rely on these systems.

In the context of the Richmond area 2031 LRTP, efforts to improve security can be focused on specific elements of the statewide plan. As transportation improvements are proposed and evaluated for funding, the following security factors should carefully be considered:

- Ensure conformity of proposed transportation improvements with written policies and procedures pertaining to the protection of critical transportation infrastructure.
- Ensure conformity of proposed transportation improvements with the current Continuity of Operations Plan that is in place in the Emergency Management Division of the Virginia Department of Transportation.
- Evaluate proposed transportation improvements with reference to the Virginia Department of Transportation's geospatial database documenting critical transportation infrastructure and key assets.
- Evaluate proposed transportation improvements with reference to the port security plans applicable to the Port of Richmond.
- Evaluate proposed transportation improvements with reference to the Airport Security Audits/Plans applicable to the Richmond International Airport and other general aviation facilities in the region.

Emergency Preparedness

The negative effects on Virginia's residents and its economy of natural disasters such as hurricanes, floods, winter storms and wildfires are increasing due to increased urban development in vulnerable coastal areas, industrial expansion, traffic congestion and widespread use and transport of hazardous materials. These factors also increase the risk of man-made emergencies such as hazardous materials accidents, gas pipeline accidents, power failures, resource shortages and environmental contamination. In addition, the terrorist attack on the Pentagon in Arlington County in 2001 made the threat of terrorism more prominent in the list of potential human caused disasters in Virginia.

In Virginia, counties and independent cities have the primary responsibility for emergency operations and will commit all available resources to save lives and minimize property damage. Should local emergency response capabilities be overwhelmed, outside assistance is available, either through mutual aid agreements with nearby jurisdictions, members of the Commonwealth's Statewide Mutual Aid Program or from the state through the Virginia Emergency Operations Center (VEOC). When state resources are overwhelmed, the Governor may request federal assistance under a Presidential disaster or emergency declaration. A planned and coordinated response on the part of federal, state and local officials in support of responders in the field can save lives, protect property, and more quickly restore essential services.

The Virginia Department of Emergency Management maintains the Commonwealth of Virginia Emergency Operations Plan (COVEOP) and presents the plan to the Governor for adoption at least once every four years. In January 2007, the Governor issued Executive Order 44 establishing preparedness initiatives in state government, and directing all executive branch agencies to include preparedness planning, including continuity of operations planning, in their core missions and strategic plans.

The Commonwealth of Virginia Emergency Operations Plan (COVEOP) is an all-discipline, all-hazards plan that establishes a single, comprehensive framework for the management of statewide incidents. It provides the structure and mechanisms for the coordination of state support to impacted local governments and affected individuals and businesses. It is compatible with the National Response Plan framework and provides the structure for coordinating with the federal government in the delivery of federal disaster assistance. The COVEOP assists in the important Commonwealth Preparedness mission of preventing or reducing the threat of terrorist attacks within the Commonwealth; reducing the vulnerability to all natural and manmade hazards; and minimizing the damage and assisting in the recovery from any type of incident that occurs.

This plan is available and accessible to the general public on the state emergency management website, www.vaemergency.com.