CHAPTER 3
Safety and Security Elements

Introduction
The previous transportation authorization, SAFETEA-LU, expanded the number of planning factors from seven to eight by splitting safety and security into two separate factors. The factors “increase the safety of the transportation system for motorized and non-motorized users” and “increase the security of the transportation system for motorized and non-motorized users” continued to be emphasized in MAP-21. MAP-21, the most recently approved transportation authorization, places additional emphasizes on safety with doubling funding for infrastructure safety, strengthening the linkage among modal safety programs, and creating an agenda to significantly reduce highway fatalities.

Safety
Safety has long been a primary concern of transportation system management, maintenance, and system expansion. Each State is required to identify key safety problems, establish relative severity, and adopt strategic and performance-based goals to maximize safety. In addition each State is required to develop a Strategic Highway Safety Plan (SHSP) which lays out strategies to address identified key safety problems. As projects are developed elements from the SHSP will be incorporated.

(*) Provisions that are included or supported in the LRTP

The key areas of emphasis are:

Drivers
• Graduated licensing for young drivers
• Ensuring drivers are licensed and fully competent
• Sustaining proficiency in older drivers
• Curbing aggressive driving
• Reducing impaired drivers
• Keeping drivers alert
• Increasing driver safety awareness*
• Increasing seat belt usage

Special Users
• Making walking and street crossing safer*
• Ensuring safer bicycle travel*

Vehicles
• Improving motorcycle safety and increasing motorcycle awareness
• Making truck travel safer*
• Increasing safety enhancements in vehicles

Highways
• Reducing vehicle-train crashes*
• Keeping vehicles on the roadway*
• Minimizing the consequences of leaving the road*
• Improving the design and operations of highway intersections*
• Reducing head-on and across median crashes*
• Designing safer work zones*

Emergency Medical Services
• Enhancing emergency medical capabilities to increase survivability*

Management
• Improving information and decision support systems*
• Creating more efficient processes and safety management systems

The goal of the Strategic Highway Safety Plan is to reduce the number of fatalities and to decrease the economic impact from highway related accidents. NCDOT along with the Executive Committee for Highway Safety set a goal to reduce annual fatalities each year over the next 20 years by 2.5%. The graph below from North Carolina’s 2012 Highway Safety Improvement Report shows a decline in annual fatalities starting in 2007.

FIGURE 3-1
NC Annual Fatalities

Bicycle and Pedestrian
The MPO has developed and updated a plan to address the infrastructure and safety needs for bicyclists and pedestrians through the Greensboro Urban Area Bicycle, Pedestrian & Greenway Master Plan (BiPed). This comprehensive plan developed in 2006 and updated in 2012 analyzed the area’s needs and included recommendations and action steps to enhance the safety of bicyclists and
pedestrians. Actions taken to date include implementation of prioritized sidewalk projects, a new bike map, Bike routes, bike and sidewalk improvements included in local and state roadway projects, detailed recording and analysis of bicycle and pedestrian accidents, and local government/MPO participation in bicycle and pedestrian safety education and outreach activities.

**City of Greensboro**

The Greensboro Department of Transportation conducts an annual Traffic Safety Program to identify problem roadway segments and intersections. The types of improvements implemented by the Safety Program vary from small scale steps such installation of signs and/ or markings to intersection improvements and roadway corridor projects. NCDOT implements a safety program as well, through coordination between Division 7, the office of the Area Traffic Engineer, law enforcement, and the City of Greensboro. Such improvements are reflected in the Transportation Improvement Program as well as in the day to day work of field forces.

**Congestion Management Process**

The Greensboro Congestion Management Process (CMP) examines the current and future planned roadway network, identifies causes of congestion, and explores options for reducing congestion. In addition to examining capacity constraints, methodologies for improving system efficiency and providing modal choices are identified. Safety is a consideration in the CMP, partly because roadway incidents are a significant source of traffic congestion. The CMP and LRTP recommend continued use of incident management patrols, coordination with law enforcement agencies and implementation of safety and mobility projects by the City and the NCDOT to respond to safety trends and issues. Additional, City and NCDOT strategies aimed at increasing the efficiency of the transportation system without adding additional capacity to the roadways include:

- Expansion of Transit Operations;
- Advance Traveler Information System (ATIS) and Variable Message Signs (VMS); and
- The new Greensboro Signal System (project U-4711).

Other than expanded transit systems and park and ride lots, the GUAMPO has not implemented any other transportation demand management strategies (TDM) to reduce the number of single occupant vehicles on the roads. However, PART, with state funding, has expanded its Transportation Demand Management Program. By taking cars off the road, this program contributes to enhanced roadway safety for everyone.

**Security Highway**

The Strategic Highway Network (STRAHNET) system of public highways provides access, continuity, and emergency transportation of military personnel and equipment. The 61,000-mile system, designated by the Federal Highway Administration in partnership with Department of Defense, comprises about 45,400 miles of Interstate and defense highways and 15,600 miles of other highways. STRAHNET is complemented by 2,000 miles of connectors—additional highway routes linking more than 200 military installations and ports to the network. Most large military convoys use the Strategic Highway Network. STRAHNET roadways are designated for use in times of rapid mobilization and deployment of armed forces. In the Greensboro Urban Area there are three STRAHNET routes and no connectors. The STRAHNET routes are I-40, I-85 and US 220 south from I-40/85 (see Map 3-1).

**City of Greensboro**

The City of Greensboro restricts access to design drawing plans, aerial photography, and similar documentation of public infrastructure to only those individuals and organizations that require this information, in the conduct of their business with the City and upon demonstration of such need. Public infrastructure includes water and sanitary sewer system, storm water systems, public buildings, roadways and roadway bridges, telecommunication and data communication networks, and public security plans. NCDOT observes a similar infrastructure data policy.

**Transit**

The Mobility Greensboro Public Transportation Master Plan, prepared for GTA in June 2004, reviewed the findings of previous studies, recent guidance from APTA, FTA and others to develop a series of recommendations to maximize transit security in Greensboro:

1. Review City of Greensboro and GTA and its contractor’s security plans to ensure compatibility and clarification regarding responsibility and procedures in the event of an incident. **Completed**
2. Review security measures against checklists developed by FTA and APTA. **Completed**
3. Contact the Greensboro Police Department to request random patrols of GTA headquarters, the Depot, and “hot spots” on Friday and Saturday evenings. **Implemented**

4. Contact the Greensboro Fire Department and Guilford County EMS regarding security and emergency preparedness plans, and ensure that all are familiar with bus basics and are aware of the Depot’s layout. **Completed**

5. Establish an ongoing means of communication with Greensboro’s Fire and Police Departments and the County EMS to ensure sharing of crime and security information among all concerned. **Implemented**

6. Defined GTA role in non-transit emergencies. **Completed**

7. Train all personnel in emergency response procedures and protocols, include annual refresher training. **Implemented**

8. Conduct at least one emergency exercise annually. **Incomplete**

9. Convert full time cameras from recorded mode to live feeds to security personnel. **Future Enhancement**

10. Install bike lockers at the Depot to meet the moderate to long-term needs of transit users. **Future Enhancement**

11. Continue coordination with GDOT regarding additional street lighting at bus stops. **On-going Enhancement**

Other GTA security measures completed/implemented:

- Cameras on buses (accident activated) prior to FY 09.
- Newer buses, started in FY 09, equipped with full time cameras.
- Newer buses, started in FY 09, equipped with Mobile Data Terminals.
- Security cameras installed at GTA offices and Depot. The Depot houses security personnel as well as a police substation.
- GTA offices secured with 24 Hour guards and card swipe locks.

**Secure Bicycle Parking**

The Greensboro BiPed Plan, under section 4.3.6 Ancillary Supportive Bicycle Facilities, identifies the need to establish safe and secure bike parking. Safe and secure bicycle parking is important not only to reduce theft and vandalism, but also to reduce the likelihood that loose bicycles or insecure bicycle parking could become a factor in terrorism or other criminal acts.

Since the establishment of the BiPed plan, bike racks have been installed in the Central Business District, in parks, at several of the nearby colleges/universities, and in the underground parking area of Greensboro’s Melvin Municipal Office Building for employees. GTA has been exploring ways to provide secured bike lockers to meet the needs of transit users and is encouraged to install bike lockers. Also the Greensboro Development Ordinance has been revised and offers developers the ability to reduce the number of vehicular parking spaces in exchange for secured bike parking. It is recommended that the City continue to implement bicycle parking and encourage its installation by developers, business owners, schools, and other institutions.

**Disaster Preparedness**

**Guilford County Office of Emergency Management**

The Guilford County Office of Emergency Management develops and maintains disaster plans for the area. It also works to prepare residents, businesses, industries, and governmental agencies for all types of hazards and emergencies.

Disaster plans for the area are developed in coordination with transportation, law enforcement, and operational agencies. These plans address issues such as evacuation, containment, and first responder actions, and are grouped under the heading of the Guilford County Multi-Jurisdictional Hazard Mitigation Plan.

Publicity steps are targeted to residents, business, and various agencies and include information about evacuation but also preparation. Individuals and families should be prepared for self-sufficiency for at least three days including providing for one’s own shelter, first aid, food, water, and sanitation. Also, it is estimated that a company can lose up to 2% of its total annual revenue per week due to hazardous weather situations. Business and Industry should take every opportunity to make sure that the company is prepared with Business Continuity and Emergency Plans as well as ensuring their workers are prepared themselves.

**Guilford Metro 9-1-1**

Guilford Metro 9-1-1 was established in 2004 to serve the community and local government agencies with effective
communications services and to serve as a facilitator of communications for Public Safety agencies in Guilford County. To be effective, Guilford Metro 9-1-1 utilizes all available resources to support the mission of subscriber agencies. Operations and Safety Engineers from the City and the NCDOT coordinate with law enforcement agencies and Metro 9-1-1 to support effective functioning of the 911 system.

**Freight Safety and Security**

Increasing safety and security are two important factors the MPOs must consider while evaluating and developing future recommendations. Two goals identified by the Triad MPOs regarding safety and security specifically for freight include: 1) addressing roadway operational issues on routes receiving significant freight movement, including roadway geometry, intersection configurations and capacity; and 2) working closely with the NCDOT Rail Division on planning studies and project development activities for rail safety projects, including rail grade separations at targeted locations.

However, multiple areas should be considered when studying safety and security issues in the freight movement sector. These range from standard practices of governing the speed that a heavyweight vehicle travels, the physical weight of the vehicles load, the physical proper operation of safety devices such as brakes, signaling devices, etc., as well as the routes that these vehicles take to and from locations. The North Carolina’s weigh stations and the NC Highway Patrol’s Motor Carrier Enforcement teams work to ensure that the trucks using our highways operate safely. In addition, the federally mandated Compliance, Safety and Accountability initiative (CSA) is working towards removing unsafe trucks from the road, removing truck drivers that have a history of unsafe driving, and closing down trucking operations that have a history of non-compliance or high accident histories.

This shows that the state and national governments understand that safe freight transportation is an important piece of economic viability. However, we cannot leave the safety and security of our regions businesses nor the citizens solely in the hands of government agencies. We need to maintain a proactive stance on any issues concerning freight movement and safety and work agencies and industries that are impacted by this economic sector.

An area that requires additional attention is the consistent availability of truck stops on major highways leading into and out of the study area. The map below (Figure 3-2), shows nine major truck stops leading into the Piedmont Triad. All but 1 of these is a type “A” facility that could be considered a full service “port of call” for the trucking industry. The remaining truck stop is a type “B” stop that as provides most, but not all, services. However, there are no types “A” or “B” facilities on routes leading into the region from the north on I-785/US29/70 on US 421 entering the Triad from the west. The primary significance here is that as Virginia develops the Berry Hill Mega Park at the north east corner of Rockingham County, there will not be a good opportunity for truckers to stop fuel and rest before entering the region. Because truck stops are always provided by the private sector, adding one depends on the amount of freight traffic and demand from the trucking industry. As such, we need to support the existing facilities and ensure that the owners of these facilities understand the importance we place in them for the greater good of the freight movement to and through the area.

Although there are many additional fueling facilities in and leading into the region, these additional facilities are not locations where a tired truck driver may stop, fuel, eat, shower and sleep before entering our region. It is best for truck drivers to have stopped and be fully rested “before” entering the region than being in a rush to get to a full service truck stop that has the facilities required. This is especially important as our region copes with the expected growth. The increased freight traffic from economic development projects that have been secured or are being planned will only further increase the traffic congestion we currently experiencing. As well, as the region’s major interstates are part of a major traffic corridor, other regions and states that increase their economic development activity will further impact our future congestion challenges.
An additional area that would have major impact to freight movement safety and security would be a “Share the Road” campaign, similar to the NC State bicycle program, that would alert the citizens of our region to the growing importance of the freight movement industry and how to better operate a motor vehicle safely while sharing the road with heavy freight vehicles. The industry would happily receive a safety campaign like this because it shows that local leaders understand the importance of the industry and value the economic contribution of moving freight.

Safety and security in transportation and logistics includes international cargo movements as well as domestic cargo movement. Since the capture area of the Long Range Transportation Plan(s) in the nation’s core freight movement corridor it is important to security as it applies to cargoes moving through the region.

The supply chain, and its freight movement component, is owned by a variety of private sector interests and regulated by multiple international, national, state, and local government jurisdictions. As such, those involved in local and regional transportation planning should become as familiar with the freight transportation industries efforts as possible. The following comments are contained in the Strategy to Enhance International Supply Chain Security – published in July 2007:

Supply Chain Node: One of 13 standard security control points that provide the foundation to assess and model intermodal container threats, vulnerabilities, and security countermeasure and protection mechanisms. The better we understand the threat potential, the more prepared we become and the better we are able to plan our freight movement strategies around them.

The 13 standard nodes are:

1. Supplier
2. Factory/Packaging
3. Empty container storage/dray
4. Drayage\(^1\) of cargo to consolidator (if stuffing is not at factory)
5. Container stuffing/sealing (consolidation)
6. Container storage (foreign)
7. Drayage to terminal (from factory or consolidator)
8. Foreign terminal
9. Ocean commerce
10. United States terminal
11. Inland drayage or rail transfer/transport (United States)
12. Deconsolidation (United States)
13. Business processes/information transmission, in particular, the process for booking and transferring containers

Each of the control points faces different security threats, a one size fits all strategy is not appropriate.

**State and Local Government**

State and local governments under the National Incident Management System (NIMS) principles have responsibility for incident management response and recovery efforts immediately after an incident. To manage their responsibilities, many of these government agencies currently have pre-established emergency response plans in place. However, recovery plans, especially for maritime infrastructure recovery and restoration of cargo flow, are not as prevalent. Many States engage individual task force groups to manage a myriad of disaster scenarios and response situations.

Due to the fact that the responsibilities, capabilities and organizational structures vary from agency to agency, it is difficult to establish specific functional responsibilities.

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\(^1\)Drayage is the transport of goods over a short distance, often as part of a longer overall move and is typically completed in a single work shift. Some research defines it specifically as “a truck pickup from or delivery to a seaport, border point, inland port, or intermodal terminal with both the trip origin and destination in the same urban area.”
that each may be able to provide for recovery from a transportation disruption. However, to coordinate the Federal, State, and local government relationships, the following generic list of functional responsibilities for recovery that State, local, and tribal governmental agencies may perform was developed for the Maritime Infrastructure Recovery Plan, and is applicable for those portions of the international cargo supply chain falling within State and local government jurisdictions.

**State Governments**

- Coordinate State resources to address recovery;
- Make, amend, and rescind orders and regulations under certain emergency conditions in support of recovery efforts as appropriate;
- Communicate to the public recovery aspects of an emergency within State jurisdiction;
- Assist people, businesses, and organizations of the State cope with the consequences of recovery;
- Encourage participation in mutual aid and implement authorities for the State to enter into mutual aid agreements with other States, tribes, and territories to facilitate resource-sharing;
- Coordinate requests for federal assistance when it becomes clear that State or tribal capabilities will be insufficient or have been exceeded or exhausted;
- Engage in voluntary exchange of information with other Federal, State, local and tribal government agencies;
- Participate in various advisory committees and task forces regarding recovery management;
- Assist in the assessment of the economic impact created by a security incident;
- Assist in the identification of recovery resources and assets; and
- Provide resources as requested and as appropriate.

**Local Governments**

- Perform emergency first-responder activities as appropriate;
- Coordinate local resources to address recovery;
- Suspend local laws and ordinances, (dependent upon State and local law), under certain emergency conditions in support of recovery efforts as appropriate;
- Communicate to the public any type of declared emergency within local jurisdiction;
- Assist people, businesses, and organizations in the local area to cope with the consequences of any type of declared emergency and its recovery considerations;
- Negotiate and enter into mutual aid agreements with other jurisdictions to facilitate resource-sharing;
- Request State and, if necessary, Federal assistance through the governor of the State when the jurisdiction's capabilities have been exceeded or exhausted, or otherwise as appropriate;
- Engage in voluntary exchange of information with other Federal, State, local and tribal government agencies;
- Participate in various advisory committees and task forces regarding recovery management;
- Assist in the assessment of the economic impact created by a security incident;
- Assist in the identification of recovery resources and assets; and
- Provide resources as requested and as appropriate.

**Private Sector**

As the owners and operators of the vast majority of the infrastructure, assets, commodities, etc., of the international cargo supply chain, the private sector plays the most important role, in ensuring its overall security. During normal operations, while government entities legislate, regulate, validate and inspect, the private sector must operate the supply chain safely, securely, efficiently, and at a profit.

As a component of their business, private sector entities have responsibility for planning, operations, and advisory aspects relating to recovery of cargo movement and trade flow, and the restoration of passenger flow.

Following an incident that triggers implementation of this strategy, the Federal government will facilitate the restoration of commerce and recovery of the marine transportation in concert with private sector contingency planning.

To assist the private sector prepare for this role, the DHS advocates the following:

- Private sector owners and operators of vessels and facilities subject to United States government regulation are encouraged to expand their business
continuity plans to include recovery operations as part of required planning pursuant to federal regulations, if such planning has not already been completed;

• Owners and operators of vessels and facilities not subject to United States government regulation are encouraged to establish recovery operations and business continuity plans, in coordination with appropriate trade partners;

• All private sector recovery operations plans should include (1) a plan for evacuation, (2) adequate communications capabilities, and (3) a plan for business continuity;

• All private sector recovery operations plans should consider the existing American National Standard on Disaster/Emergency Management and Business Continuity Programs (NFPA 1600), which contains minimum criteria for disaster management and guidance in the development of a program for effective disaster preparedness response and recovery;

To assist in the development of recovery operations plans and other contingency planning, Business Roundtable guidance documents are recommended for private sector continuity of operations plan development.

It is anticipated that the private sector will implement business continuity plans/recovery operations plans on their own accord, based on incident information provided by the Federal government. Information that may influence the decision to implement contingency plans and divert or redirect cargo and/or the conveyances include: national priorities; military requirements; MTS restrictions; and the expected duration of those restrictions.

To facilitate restoration of the flow of commerce, the following list of functional responsibilities that the private sector may perform was developed as part of the Maritime Infrastructure Recovery Plan, and is applicable within the overall cargo supply chain:

• Engage in voluntary exchange of information about recovery operations plans with other potentially affected private sector entities and the Federal government to mitigate potential congestion at non-incident site ports following the diversion of vessel traffic;

• Participate in various maritime industry stakeholder professional organizations and advisory committees such as the AMSCs regarding recovery management and contingency planning;

• Assist in the assessment of economic impact;

• Assist in the identification of recovery resources and assets;

• Provide resources to assist in recovery, as appropriate;

• When requested by the National Maritime Security Advisory Committee (NMSAC) during planning for recovery or the Sector Specific Agency (SSA) during actual recovery management operations, provide experts for advising on recovery management, especially regarding maritime salvage capability;

• Participate in pilot programs to test the effectiveness of the Federal government to communicate recovery activities to the private sector;

• Using existing information-sharing mechanisms such as the National Infrastructure Coordinating Center (NICC), AMSCs, Transportation Sector Coordinating Councils and Information Sharing and Analysis Centers (ISAC), communicate situational and operational information as well as physical asset capabilities for mitigation management (Strategy to Enhance International Supply Chain Security – July 2007).

The Local Government section and the Private Sector section are most important for this planning effort. In order to ensure and maintain a proper safety and security component within the region it is suggested that local government entities hold, at a minimum, annual meetings with jurisdictions and municipalities and private industry concerns operating in our area. The purpose of these meetings is to discuss and coordinate safety and security challenges and to better understand the responsibilities of all parties that would be involved. In addition, the discussion of a regional response team made up of joint members of this group would alleviate any confusion over jurisdiction and would create a strong team effort as it pertains to freight movement. Organizations that would be best prepared to coordinate meetings of this nature would be the regional MPO’s. As they are already involved in day to day and long range regional planning efforts, an additional responsibility of this nature would make sense.

**Recommendations**

1. Continue and explore efforts to reduce the number of fatalities and to decrease the economic impact from highway related accidents;
2. Continue to encourage City and NCDOT implementation of bicycle and pedestrian improvements, services, and programs;

3. Encourage local government and continue MPO participation in bicycle and pedestrian safety education and outreach activities;

4. Continue use of incident management patrols, coordination with law enforcement agencies, and implementation of safety and mobility projects by the City and the NCDOT to respond to safety trends and issues;

5. Address roadway operational issues on routes receiving significant freight movement, including roadway geometry, intersection configurations and capacity;

6. Work closely with the NCDOT Rail Division on planning studies and project development activities for rail safety projects, including rail grade separations at targeted locations;

7. Encourage GTA to secure funding for live monitoring of full time cameras on all buses;

8. Encourage GTA to continue efforts to secure funding for AVL system;

9. Encourage GTA to continue contact with the Greensboro Fire Department and Guilford County EMS regarding security and emergency preparedness plans, and ensure that all are familiar with bus basics and are aware of the Depot’s layout;

10. Encourage GTA to continue to execute at least one emergency exercise annually;

11. Encourage the City to continue to implement bicycle parking and encourage its installation by developers, business owners, schools, and other institutions;

12. Encourage Transportation and Operational agencies continue to coordinate with the Guilford County Multi-Jurisdictional Hazard Mitigation Plan;

13. Encourage Transportation and Operational agencies continue to work closely with Guilford Metro 9-1-1.