CHAPTER 13 SAFETY & SECURITY





Introduction

Safety and Security Planning and Outcomes are the result of multiple plans addressing specific and unique safety and security concerns. Federal metropolitan planning regulation encourages MPOs to integrate goals, countermeasures, strategies, and projects for the metropolitan planning area contained in the Highway Safety Improvement Program (HSIP), including applicable emergency relief and disaster preparedness plans, in the Metropolitan Transportation Plan. The Greater Hickory MPO seeks to integrate Federal and State Highway Safety Plans, Safety Planning Initiatives within the Bipartisan Infrastructure Law, Transit Safety Planning, and Local Emergency Management Planning in the 2050 MTP.

FEDERAL AND STRATEGIC HIGHWAY SAFETY PLANS

The Bipartisan infrastructure act continues funding for the HSIP, a core program influencing highway safety, and introduces Safe Streets and Roads for All, as a part of the vision zero mission–the goal to eliminate fatalities and serious injuries on roadways.

The HSIP is a core federal aid program with the purpose of achieving significant reductions in fatalities and injuries on all public roads. This cascades down to a local level - a significant amount of the work that is conducted by the MPO is focused on achieving these goals throughout the region. Table (8-1) details transportation related fatalities in the region from 2011 to 2021. The MPO heavily weighs safety and crash data (where applicable) in prioritizing projects. A comprehensive profile of crash data for each county is found at the end of this chapter.

In support of the National Highway Safety Improvement Program, The North Carolina Executive Committee first developed North Carolina's Strategic Highway Safety Plan (SHSP) in 2004. This plan was updated in 2019 using the four E's approach to planning – Engineering, Education, Enforcement, and Emergency Services. The plan process was influenced by feedback from stakeholders representing each of the four E's. This plan is scheduled to be updated again in 2024. The plan update outlined 11 safety emphasis areas which the plan centered around.

- » Alertness
- » Emerging Issues and Data
- » Intersections
- » Lane Departure
- » Occupant Protection

- » Older Drivers
- » Motorcyclists
- » Pedestrians, Bicyclists, and Personal Mobility
- » Speed
- » Substance Impaired Driving
- » Younger Driver

The 2019 update of the plan also introduced five focus areas, which group together emphasis areas and create a roadmap for implementation.

- » Roadway Infrastructure
- » Human Behavior
- » All Users
- » Data and Evaluation
- » Safety Culture

All of the information derived from these emphasis areas (in addition to other local, state and federal data) provides the MPO with the necessary resources to prioritize projects in a manner that aligns with the state's comprehensive goal of achieving zero annual transportation-related deaths. Through the MPO's local prioritization methodology, every potential project – regardless of mode – is evaluated using safety data in some manner, possibly resulting in the reduction of accident-prone locations in the planning area.

Table 12-1: Fatalities by County: 10 Year Trend												
County	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10 Year Average	2021
Alexander	6	7	8	7	5	4	1	9	2	5	5	7
Burke	13	7	8	15	9	17	16	20	16	16	14	9
Caldwell	18	7	8	10	12	10	6	12	12	9	10	11
Catawba	17	19	19	24	26	18	20	14	20	26	20	39
Regional	54	10	10.75	14	13	12.25	10.75	13.75	12.5	14	12.25	16.5

SAFE STREETS AND ROADS FOR ALL

The Bipartisan Infrastructure Law introduced Safe Streets and Roads for All (SS4A), a grant program funding regional, local, and Tribal initiatives through grants to prevent roadway deaths and serious injuries. The following activities are eligible for the SS4A program:

- » Develop or update a comprehensive safety action plan (Vision Zero Action Plan).
- » Conduct planning, design, and development activities in support of an Action Plan.
- » Carry out projects and strategies identified in an Action Plan.

SS4A offers two types of grants, Action Plan Grants and Implementation Grants. Action Plan Grants are reserved for planning activities. Implementation grants are available for projects similar but not limited to, the following:

- » Applying low-cost roadway safety treatments system-wide, such as left and right-turn lanes at intersections, centerline and shoulder rumble strips, wider edge lines, high-friction surface treatments, road diets, and better signage along high-crash urban and rural corridors.
- » Identifying and correcting common risks across a network, such as improving pedestrian crosswalks by adding high-visibility pavement markings, lighting, and signage at transit stops, in a designated neighborhood, or along busy public transportation routes.
- » Transforming a roadway corridor on a High-Injury Network into a Complete Street with safety improvements to control speed, separate users, and improve visibility, along with other measures that improve safety for all users.
- » Installing pedestrian safety enhancements and closing network gaps with sidewalks, rectangular rapid-flashing beacons, signal improvements, and audible pedestrian signals for people walking, rolling, or using mobility-assisted devices.

П

» Carrying out speed management strategies such as implementing traffic calming road design changes, addressing speed along key corridors through infrastructure, conducting education and outreach, setting appropriate speed limits, and making strategic use of speed safety cameras.

More information regarding SS4A is available on the USDOT website: https://www.transportation.gov/grants/SS4A

TRANSIT SYSTEM

The Western Piedmont Regional Transit Authority's (WPRTA) mission is to develop and maintain an effective, efficient, and safe system of public transportation services within Alexander, Burke, Caldwell, and Catawba Counties.

The WPRTA offers interactive training programs to educate its employees. Each employee must follow the "Western Piedmont Regional Transit Authority: Operators Handbook." The handbook describes how personnel should perform during the course of their normal duties and during emergencies—such as crashes. WPRTA employees are also provided with informational guides and booklets published by the Federal Transit Authority regarding workplace violence, transit system security, and the recognition of and proper reaction to terrorist activity.

Incidents and accidents are reported to the Transit Board of Directors on a monthly basis, and to the Transportation Advisory Board on a quarterly basis. MPO staff are actively involved on both boards, providing information and staying up to date on all matters. MPO staff have also coordinated with WPRTA to establish safety performance data for the 2050 MTP Update.

SECURITY AND EMERGENCY MANAGEMENT

The National Guard maintains a database of state and local emergency responders called the Regional and State Online Resource for Emergency Management. The Regional and State Online Resource for Emergency Management consists of a searchable database and mapping system that includes the locations of every fire station, police station, hospital, and EMS provider across the country. There are five (5) Army National Guard facilities in the area. These bases provide supplementary forces for the regular armed forces and participate in other community assistance operations during national emergencies and declared states of emergency.

Alexander, Burke, Caldwell, and Catawba County have all adopted the Unifour Regional Hazard Mitigation Plan. This plan, in conjunction with locally adopted ordinances, provides guidelines for evacuations, containment, and first responder actions, as well as actions to mitigate natural hazards. The plans are developed in coordination with transportation, law enforcement, planning, and other operational agencies. All four counties in the region

operate emergency 9-1-1 communications systems. These systems provide citizens with the ability to report emergencies, and enable local governments to dispatch first responders. It is critical for counties and municipalities to communicate with one another in order to prevent the occurrence of street naming and addressing conflicts. Such conflicts can severely impact emergency response times.

WINTER WEATHER PROTOCOL

NCDOT maintains nearly 80,000 miles of road, and 13,500 bridges, making it the second-largest state-maintained highway system. When it comes to clearing roadways of snow and ice, the N.C. Department of Transportation's primary responsibility is interstates and four-lane divided primary routes essential to the movement of intrastate and regional traffic.

Other types of roadways are then prioritized based on the following criteria:

- » Connectivity
- » Traffic volume
- » Trucking routes and major business avenues
- » Importance to hospitals and emergency routes

NCDOT crews have designated snow and ice removal routes that they must follow. Trucks traveling on roadways but not treating them are likely headed to their designated route.

NCDOT does not remove snow and ice from sidewalks, nor does it clear driveways or driveway entrances.

511 INFORMATION LINE

Motorists traveling in North Carolina can call 511 from any telephone for the latest road conditions and other important information, including:

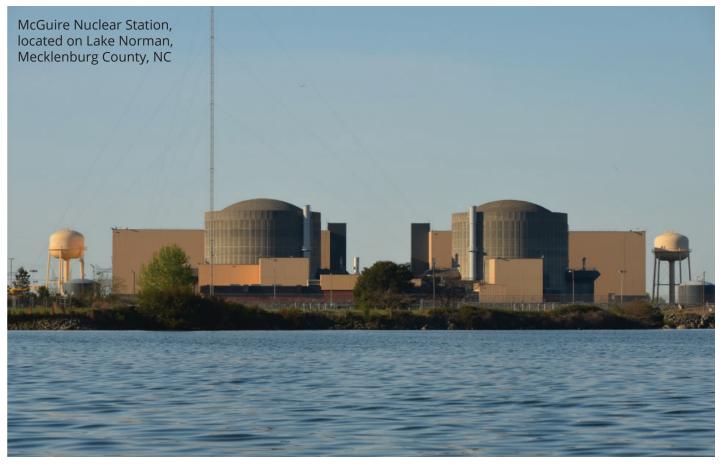
- » Traffic incidents, road closures, and construction on interstates, U.S. and state routes
- » Amber Alerts and Silver Alerts
- » Transfers to neighboring states' 511 systems

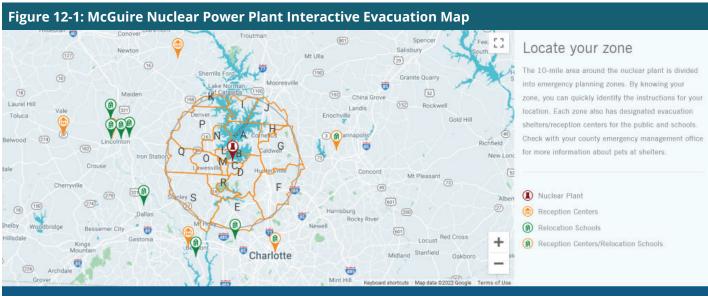
BICYCLE AND PEDESTRIAN

The National Highway Traffic Safety Administration has determined pedestrian crashes are more likely to occur during peak travel periods in the morning and afternoon. Most crashes involving pedestrians will occur in urban areas where pedestrian and vehicular traffic volumes are high; however, rural areas can also be dangerous for pedestrians due to the lack of sidewalks, paths, wide shoulders, and crosswalks. Driver behavior is also a factor; speed and alcohol involvement has an impact on many crashes with pedestrians. (An extensive analysis of bicycle and pedestrian-related accidents can be found in the county profiles section at the end of this chapter). American roadways, which were primarily designed to serve only automobile traffic, create dangerous conditions for bicyclists. Slight increases in automobile speeds can severely affect the likelihood of a cyclist's ability to walk away



from an accident unscathed. Wayfaring and awareness signage, and pavement markings such as sharrows, are examples of relatively low-cost solutions that can be used to improve bicycle and pedestrian safety. Local public education sessions focused on safe bicycling practices (for children and adults) should be combined with increased enforcement activities. Other NCDOT safety programs, including "Safe Routes to School," and "Complete Streets," can also be integrated into local education efforts to help maximize bicycle and pedestrian network safety.





Alexander County

	20	17	20	18	20	19	20	20	20	21	5 Yea	ar Avg.
<u>Reportable</u>	Crashes	Injuries	Crashes	<u>Injuries</u>	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries
Fatal	1	1	9	9	2	2	5	5	6	7	5	5
Non Fatal Injury	190	287	157	257	152	237	180	268	180	265	172	263
PDO	441		419		360		428		455		421	
Total	632	288	585	266	514	239	613	273	641	272	597	268
Alcohol Relate	d Crasi	<u>hes</u>										
Fatal	0	0	1	1	0	0	1	1	1	1	1	1
Non Fatal Injury	16	25	12	28	18	25	12	17	24	32	16	25
PDO	14		18		19		15		23		18	
Total	30	25	31	29	37	25	28	18	48	33	35	26
Percent Alcol	hol Relate	ed										
Fatal	0.0%	0.0%	11.1%	11.1%	0.0%	0.0%	20.0%	20.0%	16.7%	14.3%	13.0%	12.5%
Non Fatal Injury	8.4%	8.7%	7.6%	10.9%	11.8%	10.5%	6.7%	6.3%	13.3%	12.1%	9.5%	9.7%
Total	4.7%	8.7%	5.3%	10.9%	7.2%	10.5%	4.6%	6.6%	7.5%	12.1%	5.8%	9.7%
Pedestrian Cra	<u>ashes</u>											
Fatal	0	0	0	0	0	0	1	1	0	0	0	0
Non Fatal Injury	2	2	4	4	3	3	3	3	2	4	3	3
PDO	0		0		0		0		0		0	
Total	2	2	4	4	3	3	4	4	2	4	3	3
Bicycle Crashe	es es											
Fatal	0	0	0	0	0	0	0	0	0	0	0	0
Non Fatal Injury	1	1	0	0	1	1	0	0	1	1	1	1
PDO	0		0		0		0		0		0	
Total	1	1	0	0	1	1	0	0	1	1	1	1
Motorcycle Cr	<u>ashes</u>											
Fatal	0	0	2	2	0	0	0	0	1	1	1	1
Non Fatal Injury	9	11	10	13	13	14	8	13	18	20	12	14
PDO	6		5		2		3		2		4	
Total	15	11	17	15	15	14	11	13	21	21	16	15

County Ranking	91	80	83	65	71

			Ranking \$\$ Comprehensive Crash Cost \$\$ 120 2021 (Based on a 3 Year Average of All Reported Crashes in 2020 Dollars)				king <u>2021</u>
Population (2020) Registered Vehicles (2020) Estimated Avg. Annual Miles Traveled (100 MVMT) (2019) Crash Rates (Based on a 3 Year Average of All Reg	36,372 46,750 2.61	64 60 80	67 61 80	Average Annual Cost Average Cost Per Crash Average Cost Per Person Average Cost Per Vehicle Average Cost / 100 Miles Traveled	\$90,552,867 \$124,557 \$2,490 \$1,937 \$34.73	75 32 85 94 12	77 46 90 96 28

Total Crash Rate (/100 MVMT) 278.87 36 Fatal Crash Rate (/100 MVMT) 1.66 17 37 Time To Next.... Non Fatal Injury Crash Rate (/100 MVMT) 67.00 35 27 Crash 12.0 Hours Crash Injuries Per 1000 People 7.31 87 87 Fatal Injury 1,877.1 Hours Fatal Crash Injuries Per 1000 People 0.13 70 77 32.9 Hours Injury Crashes Per 1000 Reg. Veh. 15.55 93 91 **Crash Cost Per Hour** Fatal Crashes Per 1000 Reg. Veh. 0.09 94 **Percent Alcohol Related Crashes** 5.6% 32 17

23

5.02

Severity Index

40

20

Back to Table of Contents

\$10,337

Burke County



	20	17	20	18	20	19	20	20	20	21	5 Yea	ar Avg.
Reportable 1 4 1	Crashes	<u>Injuries</u>	Crashes	<u>Injuries</u>	Crashes	<u>Injuries</u>	Crashes	<u>Injuries</u>	Crashes	<u>Injuries</u>	Crashes	<u>Injuries</u>
Fatal	15	16	16	20	16	16	15	16	8	9	14	15
Non Fatal Injury	653	1,036	637	1,002	600	928	459	694	548	755	579	883
PDO	1,389		1,631		1,620		1,591		1,595		1,565	
Total	2,057	1,052	2,284	1,022	2,236	944	2,065	710	2,151	764	2,159	898
Alcohol Relate	ed Crasi	hes										
Fatal	2	3	8	11	2	2	1	1	0	0	3	3
Non Fatal Injury	52	76	49	77	33	41	33	48	33	41	40	57
PDO	55		51		59		53		59		55	
Total	109	79	108	88	94	43	87	49	92	41	98	60
Percent Alco	hol Relate	ed										
Fatal	13.3%	18.8%	50.0%	55.0%	12.5%	12.5%	6.7%	6.3%	0.0%	0.0%	18.6%	22.1%
Non Fatal Injury	8.0%	7.3%	7.7%	7.7%	5.5%	4.4%	7.2%	6.9%	6.0%	5.4%	6.9%	6.4%
Total	5.3%	7.5%	4.7%	8.6%	4.2%	4.6%	4.2%	6.9%	4.3%	5.4%	4.5%	6.7%
Pedestrian Cr	<u>ashes</u>											
Fatal	2	2	0	0	2	2	0	0	2	2	1	1
Non Fatal Injury	7	8	8	9	7	8	7	8	3	3	6	7
PDO	1		0		1		0		1		1	
Total	10	10	8	9	10	10	7	8	6	5	8	8
Bicycle Crash	es											
Fatal	0	0	0	0	0	0	2	2	1	1	1	1
Non Fatal Injury	0	0	1	1	4	5	2	2	6	6	3	3
PDO	1		0		1		0		0		0	
Total	1	0	1	1	5	5	4	4	7	7	4	3
Motorcycle Cr	rashes											
Fatal	2	2	5	6	2	2	3	3	0	0	2	3
Non Fatal Injury	45	50	42	49	46	59	39	43	44	49	43	50
PDO	6		4		8		10		5		7	
Total	53	52	51	55	56	61	52	46	49	49	52	53

County Ranking

General Information			Ranking		
		<u>2020</u>	<u>2021</u>		
Population (2020)	87,349	32	32		
Registered Vehicles (2020)	95,374	34	34		
Estimated Avg. Annual Miles Traveled (100 MVMT) (2019)	11.13	29	29		

Crash Rates

(Based on a 3 Year Average of All Repo	rted Crash	es)	
Total Crash Rate (/100 MVMT)	229.86	60	64
Fatal Crash Rate (/100 MVMT)	1.23	46	68
Non Fatal Injury Crash Rate (/100 MVMT)	49.19	58	65
Crash Injuries Per 1000 People	9.40	48	55
Fatal Crash Injuries Per 1000 People	0.16	39	61
Crashes Per 1000 Reg. Veh.	26.81	48	52
Fatal Crashes Per 1000 Reg. Veh.	0.14	38	57
Percent Alcohol Related Crashes	3.9%	69	74
Severity Index	4.00	65	73

\$\$ Comprehensive Cr	Ran	king	
(Based on a 3 Year Average of Crashes in 2020 Do	2020	2021	
Average Annual Cost	\$278,360,867	29	40
Average Cost Per Crash	\$108,848	47	63
Average Cost Per Person	\$3,187	44	63
Average Cost Per Vehicle	\$2,919	42	66

Time To Next....

Average Cost / 100 Miles Traveled

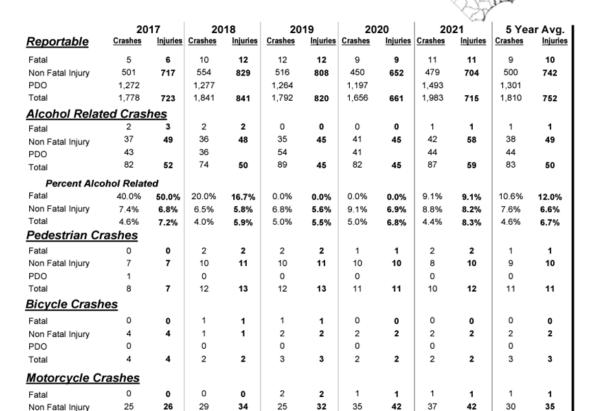
Crash	3.4	Hours
Fatal Injury	611.2	Hours
Injury	10.7	Hours
Crash Cost Per Hour	\$3	1,776

50

Back to Table of Contents

\$25.02 57 75

Caldwell County



County Ranking

General Information	Ranking 2020 2021		
Population (2020)	80,526	34	34
Registered Vehicles (2020)	92,980	35	35
Estimated Avg. Annual Miles Traveled (100 MVMT) (2019)	7.44	44	44
Crash Rates			
(Based on a 3 Year Average of All Repo	rted Crasi	hes)	
Total Crash Rate (/100 MVMT)	335.86	13	11
Fatal Crash Rate (/100 MVMT)	1.39	41	57
Non Fatal Injury Crash Rate (/100 MVMT)	67.63	19	24
Crash Injuries Per 1000 People	9.39	52	56
Fatal Crash Injuries Per 1000 People	0.13	68	76
Crashes Per 1000 Reg. Veh.	26.88	51	50
Fatal Crashes Per 1000 Reg. Veh.	0.11	72	84
Percent Alcohol Related Crashes	3.8%	78	77
Severity Index	3.81	73	77

PDO

Total

\$\$ Comprehensive Cras	Ranking		
(Based on a 3 Year Average of Al Crashes in 2020 Dollar	2020	2021	
Average Annual Cost	\$234,445,733	43	47
Average Cost Per Crash	\$93,791	72	82
Average Cost Per Person	\$2,911	70	77
Average Cost Per Vehicle	\$2,521	73	82
Average Cost / 100 Miles Traveled	\$31.50	31	41

Time To Next....

Crash	3.5	Hours
Fatal Injury	847.7	Hours
Injury	11.6	Hours
Crash Cost Per Hour	\$2	6,763

Catawba County



	20	17	20	18	20	19	20	20	20	21	E Vo	ar Avg.
Reportable	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries
Fatal	20	20	14	14	19	20	23	26	35	39	22	24
Non Fatal Injury	1,304	1,954	1,344	1,949	1,212	1,857	1,169	1,753	1,205	1,737	1,247	1,850
PDO	3,437		3,651		3,660		3,245		3,548		3,508	
Total	4,761	1,974	5,009	1,963	4,891	1,877	4,437	1,779	4,788	1,776	4,777	1,874
Alcohol Relat	ed Cras	hes										
Fatal	5	5	2	2	5	6	5	7	10	12	5	6
Non Fatal Injury	77	114	97	125	82	127	97	127	104	144	91	127
PDO	95		109		119		121		111		111	
Total	177	119	208	127	206	133	223	134	225	156	208	134
Percent Alco	hol Relati	ed										
Fatal	25.0%	25.0%	14.3%	14.3%	26.3%	30.0%	21.7%	26.9%	28.6%	30.8%	24.3%	26.9%
Non Fatal Injury	5.9%	5.8%	7.2%	6.4%	6.8%	6.8%	8.3%	7.2%	8.6%	8.3%	7.3%	6.9%
Total	3.7%	6.0%	4.2%	6.5%	4.2%	7.1%	5.0%	7.5%	4.7%	8.8%	4.3%	7.1%
Pedestrian Ci	rashes											
Fatal	4	4	4	4	0	0	4	4	5	5	3	3
Non Fatal Injury	16	19	31	32	26	26	26	32	33	37	26	29
PDO	3		2		0		1		2		2	
Total	23	23	37	36	26	26	31	36	40	42	31	33
Bicycle Crash	ies											
Fatal	1	1	1	1	2	2	0	0	0	0	1	1
Non Fatal Injury	4	4	6	6	7	7	7	8	9	9	7	7
PDO	0		0		0		0		0		0	
Total	5	5	7	7	9	9	7	8	9	9	7	8
Motorcycle C	rashes											
Fatal	3	3	1	1	3	3	5	5	4	4	3	3
Non Fatal Injury	61	73	55	61	49	57	54	64	57	66	55	64
PDO	11		13		13		16		14		13	
Total	75	76	69	62	65	60	75	69	75	70	72	67

<u>County Ranking</u> 52 68 65 60 44

General Information	Ranking		
		2020	<u>2021</u>
Population (2020)	160,924	18	18
Registered Vehicles (2020)	178,709	15	15
Estimated Avg. Annual Miles Traveled (100 MVMT) (2019)	21.29	12	12
Crash Rates			

(Based on a 3 Year Average of All Reported Crashes)

(Bused on a o real Average of All Nepe	ntou oruon	00)	
Total Crash Rate (/100 MVMT)	316.96	17	2
Fatal Crash Rate (/100 MVMT)	1.25	91	6
Non Fatal Injury Crash Rate (/100 MVMT)	58.97	43	4
Crash Injuries Per 1000 People	11.73	24	2
Fatal Crash Injuries Per 1000 People	0.18	76	5
Crashes Per 1000 Reg. Veh.	37.76	15	1
Fatal Crashes Per 1000 Reg. Veh.	0.15	84	5
Percent Alcohol Related Crashes	3.6%	87	8
Severity Index	3.21	93	9:

\$\$ Comprehensive Crash Cost \$\$			Ranking		
(Based on a 3 Year Average of Al Crashes in 2020 Dollars	2020	2021			
Average Annual Cost	\$577,375,867	20	15		
Average Cost Per Crash	\$85,554	94	90		
Average Cost Per Person	\$3,588	60	47		
Average Cost Per Vehicle	\$3,231	68	50		
Average Cost / 100 Miles Traveled	\$27.12	83	65		

Time To Next....

Crash	1.3	Hours	
Fatal Injury	298.6	Hours	
Injury	4.6	Hours	
Crash Cost Per Hour	\$65,910		

56

Back to Table of Contents