



Injury Report 2021

Wake County Health and Human Services Public Health Report



Nannette M. Bowler, JD, Health and Human Services Director
Rebecca Kaufman, Public Health Division Director

Editor-in chief: Nicole Mushonga, Assistant Physician Director and
Epidemiology Program Director

Content Editors: Morgan Poole, Field Epidemiology Program Manager
Ramsay Hoke, Epidemiology Specialist



Health &
Human Services

Table of Contents

Cover image: <https://pixabay.com/photos/accident-crash-tree-automobile-car-2161956/> Accessed 10.6.21.

1.0 Overview	3
2.0 Leading Causes of Emergency Department (ED) Visits and Hospitalizations by Injury	4
3.0 Leading Causes of Injury Deaths	6
4.0 Fall Deaths	7
5.0 Poisoning Deaths	8
6.0 Unintentional Overdose Deaths	9
6.1 The Wake County Drug Overdose Prevention Initiative	12
7.0 Motor Vehicle Traffic (MVT) Deaths	12
8.0 Pedestrian /Automobile Crashes	13
9.0 Bicycle/Automobile Crashes	13
10.0 Acknowledgements	14

1.0 Overview

Information about the many types of injuries is complex and is gathered from several data sources such as death certificates, medical examiner reports, law enforcement reports, hospital admissions and emergency department visits. This report describes injuries and their impact on the health of those who live, work, play, and learn in Wake County. Deaths are the most severe outcome from injuries but are the “tip of the iceberg” (Figure 1) when evaluating the burden of injuries. Many injuries are either treated by medical providers during outpatient visits and not reported or no medical treatment is sought for the injury. Thus, the total societal burden of injuries from all causes is unknown.

The term "intentional" is used to refer to injuries resulting from purposeful human action, whether directed at oneself or others. Intentional injuries include self-inflicted and interpersonal acts of violence intended to cause harm.

“Unintentional” is used to refer to injuries that were unplanned and can be defined as events in which:

- the injury occurs in a short period of time (seconds or minutes)
- a harmful outcome was not sought
- the outcome was the result of one of the forms of physical energy in the environment or normal body functions being blocked by external means (like drowning)(1)

This report analyzes the three leading causes of injury death in Wake County (motor vehicle traffic (MVT), falls, and poisonings). Similar to previous years, poisonings (unintentional) became the number one cause of injury death in 2020.

Figure 1



Source: Injury and Violence Prevention Branch NC. DHHS 9/28/21

¹Unintentional Injury (2021). Maine Center for Disease Control and Prevention. Retrieved 9/28/21 from <https://www.maine.gov/dhhs/mecdc/population-health/inj/unintentional.html>

2.0 Leading Causes of Emergency Department (ED) Visits and Hospitalizations by Injury

Table 1 shows “Fall-Unintentional “ displaced “Motor Vehicle Traffic (MVT)-Unintentional “ as the top cause of injury ED visits from 2016-2020.

Table 1: Top Five Causes of ED Visits by Injury (All Ages), Wake County, 2016-2020*															
Cause of Injury	2016			2017			2018			2019			2020		
	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank
Fall - Unintentional	7,617	727.7	2	9,843	918.0	2	11,655	1,067.0	2	11,892	1,069.7	1	10,368	932.6	1
MVT - Unintentional	10,740	1,026.0	1	11,195	1,044.1	1	11,789	1,079.3	1	11,876	1,068.2	2	8,937	803.9	2
Natural/ Environmental *- Unintentional	2,540	242.6	3	2,861	266.8	3	2,769	253.5	3	2,765	248.7	3	2,139	192.4	3
Other Specified [♦] / Unintentional	1,596	152.5	4	1,911	178.2	4	1,847	169.1	5	1,788	160.8	5	1,670	150.2	4
Unspecified **- Unintentional	-	-	-	-	-	-	1,858	170.1	4	1,912	172.0	4	1,209	108.7	5
Poisoning - Unintentional	1,166	111.4	5	1,242	115.8	5	-	-	-	-	-	-	-	-	-

*2020 data are provisional: data as of 09/09/2021. Note: Rates per 100,000 Wake County population; data are limited to Wake County residents. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

♦A “natural/environmental” injury is defined as one resulting from exposure to adverse natural and environmental conditions (such as severe heat, severe cold, lightning, sunstroke, large storms, and natural disasters) as well as lack of food or water. (Source: [Definitions for WISQARS Nonfatal - NCIPC \(cdc.gov\)](#) 9.28.21).

** Intent established, but mechanism unclear or not documented.

♦An “other specified” injury is defined as one associated with any other specified cause that does not fit another category. Some examples include causes such as electric current, electrocution, explosive blast, fireworks, overexposure to radiation, welding flash burn, or animal scratch. (Source: [Definitions for WISQARS Nonfatal - NCIPC \(cdc.gov\)](#) 9.28.21).

Table 2 shows that unintentional falls were the top cause of injury hospitalizations in Wake County from 2016 to 2020 by a significant margin.

Table 2: Top Five Causes of Injury Hospitalizations by Injury (All Ages), Wake County, 2016-2020*															
Cause of Injury	2016			2017			2018			2019			2020		
	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank
Fall - Unintentional	1,752	167.4	1	1,837	171.3	1	1,886	172.7	1	2,150	193.4	1	1,945	174.9	1
MVT - Unintentional	492	47.0	2	440	41.0	2	478	43.8	2	561	50.5	2	494	44.4	2
Poisoning - Unintentional	315	30.1	3	284	26.5	3	312	28.6	3	339	30.5	3	322	29.0	3
Poisoning - Self-Inflicted	257	24.6	4	246	22.9	4	243	22.2	4	257	23.1	4	210	18.9	4
Fire/Burn - Unintentional	155	14.8	5	157	14.6	5	183	16.8	5	187	16.8	5	-	-	-
Unspecified - Unintentional	-	-	-	-	-	-	-	-	-	-	-	-	156	14.0	5

* 2020 data are provisional; data as of 09/09/2021. Note: Rates per 100,000 Wake County population; data are limited to Wake County residents. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

3.0 Leading Causes of Injury Deaths

As in previous years, the top three causes of injury death in Wake County have not changed. While falls represented the highest percentage of injury deaths in 2019, poisonings had the highest percentage in 2020 (Figure 2).

Figure 3 shows the 2020 rankings for the top five causes of injury death in Wake County. While fall and MVT death rates decreased from 2019 to 2020, the poisoning death rate increased dramatically (87.5%).

Figure 2: Percentages of the Top Three Causes of Injury Death, Wake County, 2016-2020*

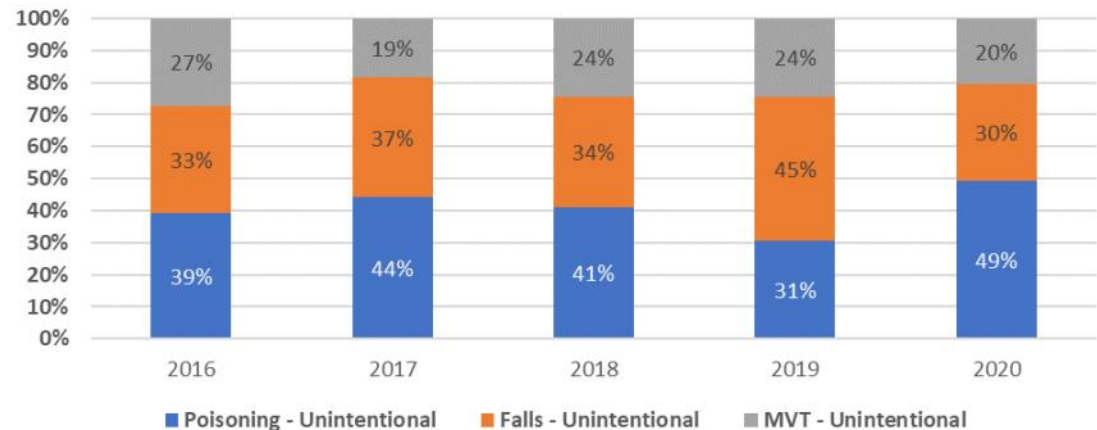


Figure 3: Death Rates, Top Five Causes of Injury Death, Wake County, 2016-2020*

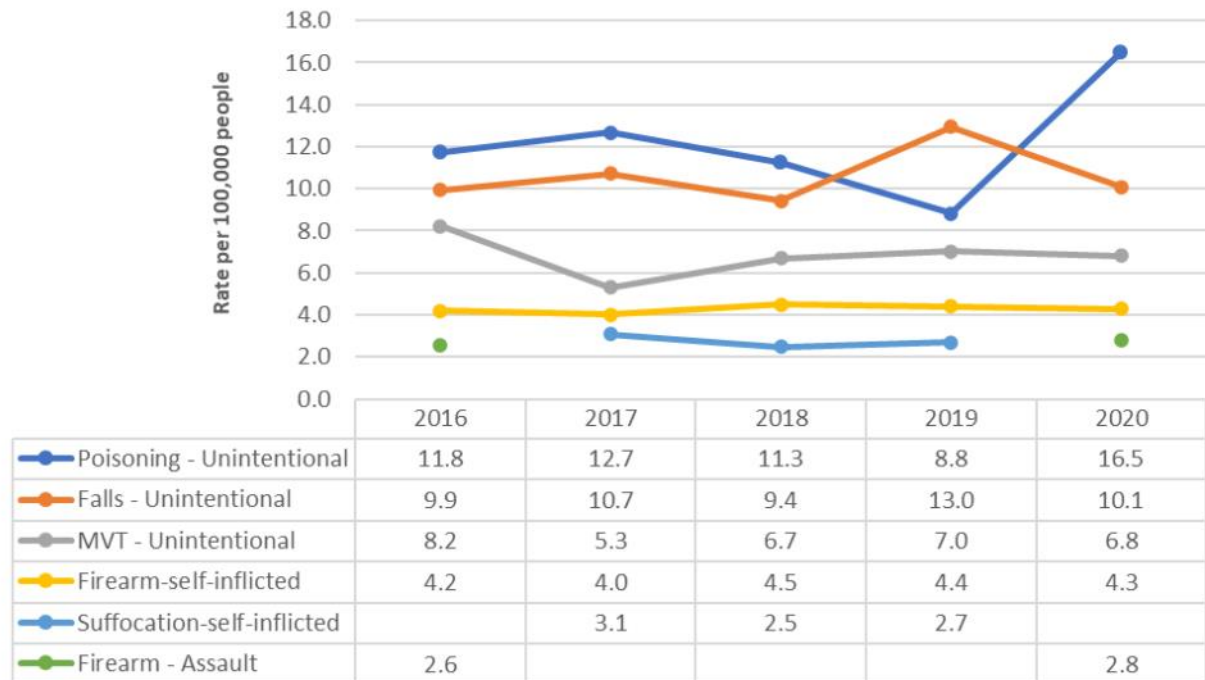


Figure 2: 2020 data is provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

Figure 3: 2020 data is provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

4.0 Fall Deaths

Table 3 shows there were 579 fall deaths in Wake County from 2016-2020. The 65+ age group led all age groups in the number of deaths, but their death rate remains fairly stable in comparison to previous years. White non-Hispanics had the highest death rate among racial and ethnic groups, and males had a slightly higher death rate than females overall.

Table 3: Unintentional Fall Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	311	53.7	11.1
Male	268	46.3	12.7
Race/Ethnicity			
White (NH**)	499	86.2	15.1
Black (NH)	54	9.3	4.8
American Indian (NH)	0	0.0	0.0
Asian (NH)	5	0.9	1.2
Hispanic	20	3.5	3.6
Other (NH)/Unknown	***	***	***
Age Group			
0-14	0	0.0	0.0
15-24	***	***	***
25-34	6	1.0	0.7
35-44	11	1.9	1.4
45-54	21	3.6	2.7
55-64	36	6.2	5.8
65+	502	86.7	80.1
Total	579	100	10.7

*2016-20 data is provisional.

**"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

5.0 Poisoning Deaths

Table 4 shows that there were 674 unintentional poisoning deaths in Wake County in 2016-20, a dramatic increase (19.7%) from 2015-19. As in previous years, males (75.1%), white non-Hispanics (74%) , and people ages 25-54 (73.8%) had the highest percentage of poisoning deaths. Notably, the black non-Hispanic poisoning death rate increased by 33.7% from 2015-19 to 2016-20.

Table 4: Unintentional Poisoning Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	168	24.9	6.0
Male	506	75.1	24.1
Race/Ethnicity**			
White (NH)	499	74.0	15.1
Black (NH)	139	20.6	12.3
American Indian (NH)	***	***	***
Asian (NH)	6	0.9	1.4
Hispanic	27	4.0	4.8
Other (NH)/Unknown	***	***	***
Age Group			
0-14	***	***	***
15-24	84	12.5	11.7
25-34	221	32.8	27.5
35-44	154	22.9	19.0
45-54	122	18.1	15.7
55-64	70	10.4	11.3
65+	22	3.3	3.5
Total	674	100	12.4

*2016-20 data is provisional. **"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

6.0 Unintentional Overdose Deaths

Table 5 shows that the overall cocaine overdose death rate increased by 28.6% from 2015-19 to 2016-20. Black non-Hispanics continue to be disproportionately represented among cocaine deaths. During 2016-20, black non-Hispanics died from cocaine overdoses at almost twice the rate of white non-Hispanics and more than three times the rate of Hispanics.

Table 5: Cocaine Overdose Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	51	21.0	1.8
Male	192	79.0	9.1
Race/Ethnicity**			
White (NH)	143	58.9	4.3
Black (NH)	85	35.0	7.5
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	12	4.9	2.1
Other (NH)/Unknown	***	***	***
Age Group			
0-14	0	0.0	0.0
15-24	19	7.8	2.6
25-34	81	33.3	10.1
35-44	55	22.6	6.8
45-54	53	21.8	6.8
55-64	29	11.9	4.7
65+	6	2.5	1.0
Total	243	100	4.5

Additionally, males died from cocaine overdoses at a dramatically higher rate than females.

The heroin overdose death rate increased by almost 15.6% from 2015-19 to 2016-20. Males died at a much higher rate than females and white non-Hispanics died at a higher rate than other racial/ethnic groups (Table 6).

Table 6: Heroin Overdose Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	45	22.3	1.6
Male	157	77.7	7.5
Race/Ethnicity**			
White (NH)	157	77.7	4.7
Black (NH)	33	16.3	2.9
American Indian (NH)	***	***	***
Asian (NH)	***	***	***
Hispanic	9	4.5	1.6
Other (NH)/Unknown	0	0.0	0.0
Age Group			
0-14	0	0.0	0.0
15-24	25	12.4	3.5
25-34	72	35.6	9.0
35-44	60	29.7	7.4
45-54	29	14.4	3.7
55-64	12	5.9	1.9
65+	***	***	***
Total	202	100	3.7

Table 5 and Table 6:

*2016-20 data is provisional. **"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

Table 7 shows other synthetic narcotic (e.g. fentanyl) overdose deaths increased 42.6% from 2015-19 to 2016-20. Subgroups that saw significant increases in death rates were males, black non-Hispanics, and people ages 25-44.

Table 7: Other Synthetic Narcotic Overdose Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	100	23.9	3.6
Male	319	76.1	15.2
Race/Ethnicity**			
White (NH)	315	75.2	9.5
Black (NH)	84	20.1	7.4
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	15	3.6	2.7
Other (NH)/Unknown	***	***	***
Age Group			
0-14	0	0.0	0.0
15-24	64	15.3	8.9
25-34	156	37.2	19.4
35-44	101	24.1	12.4
45-54	61	14.6	7.9
55-64	30	7.2	4.8
65+	7	1.7	1.1
Total	419	100	7.7

*2016-20 data is provisional. ***"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

Table 8 shows that females had a higher percentage of overdose deaths due to commonly prescribed opioids (e.g., oxycodone, hydrocodone, morphine, and methadone) than any other category in 2016-2020.

Table 8: Commonly Prescribed Opioid Overdose Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	46	32.4	1.6
Male	96	67.6	4.6
Race/Ethnicity**			
White (NH)	116	81.7	3.5
Black (NH)	20	14.1	1.8
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	***	***	***
Other (NH)/Unknown	***	***	***
Age Group			
0-14	***	0.7	***
15-24	15	10.6	2.1
25-34	41	28.9	5.1
35-44	33	23.2	4.1
45-54	33	23.2	4.2
55-64	17	12.0	2.7
65+	***	***	***
Total	142	100	2.6

*2016-20 data is provisional. ***"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

Table 9 shows the death rate for psychostimulant overdoses (including methamphetamine) increased 60% from 2015-19 to 2016-20. Males and white non-Hispanics represented most psychostimulant deaths.

Table 9: Psychostimulant Overdose Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	10	24.4	0.4
Male	31	75.6	1.5
Race/Ethnicity**			
White (NH)	36	87.8	1.1
Black (NH)	***	7.3	***
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	2.4	***
Hispanic	***	2.4	***
Other (NH)/Unknown	0	0.0	0.0
Age Group			
0-14	0	0.0	0.0
15-24	5	12.2	0.7
25-34	14	34.2	1.7
35-44	15	36.6	1.8
45-54	***	9.8	***
55-64	***	7.3	***
65+	0	0.0	0.0
Total	41	100	0.8

*2016-20 data is provisional. **"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

Table 10 shows that, as with commonly prescribed opioids, females had a relatively high percentage of benzodiazepine (sedatives used to treat anxiety) deaths during 2016-20 when compared to other drug death categories.

Table 10: Benzodiazepine Overdose Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	47	31.8	1.7
Male	101	68.2	4.8
Race/Ethnicity**			
White (NH)	130	87.8	3.9
Black (NH)	12	8.1	1.1
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	1.4	***
Hispanic	***	2.7	***
Other (NH)/Unknown	0	0.0	0.0
Age Group			
0-14	0	0.0	0.0
15-24	27	18.2	3.8
25-34	50	33.8	6.2
35-44	32	21.6	3.9
45-54	23	15.5	3.0
55-64	14	9.5	2.3
65+	***	1.4	***
Total	148	100	2.7

*2016-20 data is provisional. **"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21

6.1 The Wake County Drug Overdose Prevention Initiative

In the summer of 2020, the Wake County Drug Overdose Prevention Initiative received additional funding beyond its initial three-year funding allocation, which ran from July 1, 2017 to June 30, 2020. The programmatic components of the Initiative continue to meet the needs of the Wake County community:

- Between August-December 2020, 33 individuals completed training on a credentialed peer support recovery-focused curriculum
- Since the inception of the Initiative (July 2017), 24 youth have been trained as youth ambassadors to provide community education on substance use and tobacco prevention
- In 2020, the Rapid Response Team (RRT) at Healing Transitions created a process to stratify clients in accordance with their support requirements and assign them to the appropriate level of care
- As of June 30, 2021, there were 1,565 clients eligible for RRT support services
- Client demand (i.e. new drug overdose cases) increased by 63% from July 2019 to June 2021
- The RRT saw 1,084 new clients from July 2019 to June 2021
- Since the start of the RRT program, 320 clients are in recovery after becoming engaged with the RRT

7.0 Motor Vehicle Traffic (MVT) Deaths

Table 11 shows that during 2016-20, males, Black non-Hispanics, and the 65+ age group had the highest MVT death rates.

Table 11: Motor Vehicle Traffic Deaths, Wake County, 2016-2020*			
	Number	Percent	Rate per 100,000
Sex			
Female	111	29.1	4.0
Male	270	70.9	12.8
Race/Ethnicity**			
White (NH)	180	47.2	5.4
Black (NH)	136	35.7	12.1
American Indian (NH)	***	***	***
Asian (NH)	13	3.4	3.1
Hispanic	47	12.3	8.4
Other (NH)/Unknown	***	***	***
Age Group			
0-14	15	3.9	1.4
15-24	61	16.0	8.5
25-34	65	17.1	8.1
35-44	57	15.0	7.0
45-54	58	15.2	7.5
55-64	47	12.3	7.6
65+	78	20.5	12.4
Total	381	100	7.0

*2016-20 data is provisional. **"NH" means non-Hispanic ethnicity.

*** Number, percentage and rate suppressed, fewer than 5 deaths.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/16/21.

8.0 Pedestrian/Automobile Crashes

Table 12 shows that crash deaths increased in Wake County in 2020; all other categories decreased when compared to 2019.

Table 12: Pedestrian* Crash Data by Crash Severity, Wake County, 2016-2020

	2016	2017	2018	2019	2020	Total
Killed	15	12	17	22	25	91
Suspected	27	41	32	53	45	198
Suspected Minor Injury	125	118	149	155	113	660
Possible Injury	161	108	125	138	89	621
No Injury	62	45	37	45	44	233
Unknown Injury	**	**	**	**	0	11
Grand Total	394	329	361	414	316	1,814

* Data shows only those pedestrian crashes that occurred on a roadway.

**Numbers less than 5 are suppressed.

Source: Special report prepared by NC Department of Transportation (DOT) for Wake County, 9/13/21

9.0 Bicycle/Automobile Crashes

Table 13 shows that just as with pedestrian crash injuries, bicycle crash injuries also decreased in 2020.

Table 13: Bicycle* Crash Data by Crash Severity, Wake County, 2016-2020

	2016	2017	2018	2019	2020	Total
Killed	**	**	0	0	**	6
Suspected Serious Injury	**	8	11	8	7	36
Suspected Minor Injury	36	54	44	44	31	209
Possible Injury	50	33	37	37	21	178
No Injury	30	16	20	14	15	95
Unknown Injury	**	0	0	0	**	**
Grand Total	122	113	112	103	78	528

* Data shows only those bicycle crashes that occurred on a roadway.

**Numbers less than 5 are suppressed.

Source: Special report prepared by NC Department of Transportation (DOT) for Wake County, 9/13/21.

10.0 Acknowledgements

Daniel Carter, NC Department of Transportation

Mary Beth Cox, NCDHHS Division of Public Health , Injury and Violence Prevention Branch

Jennifer Delcourt, WCHHS. Public Health Division

Shana Geary, NCDHHS, Division of Public Health, Injury and Violence Prevention Branch

Ty Lautenschlager, NC DHHS Division of Public Health, Injury and Violence Prevention Branch

Michelle Ricci, WCHHS, Public Health Division