

United States Highway 74 Corridor Study, Mecklenburg and Union Counties, NC Commercial Motor Vehicle (Heavy Truck) Crashes, 2001 through 2003

This study, completed in April, 2004, presents map sheets and selected tabular data representing heavy truck crashes along a specified corridor of US Highway 74 in Mecklenburg and Union Counties in North Carolina between January 1, 2001 and December 31, 2003.

Data sources: crash data is compiled by NCDOT/DMV and UNC-Chapel Hill's Highway Safety Research Center. Reference data, used to geolocate crashes in a GIS system, is provided primarily by NCDOT. Other reference sources may be used, such as street/road data provided by local governments.

Document organization: this document has five sections. Each of the first four sections begins with an overview map of the 74 corridor, crash locations, and other related features followed by three Focus Maps of sections of the corridor with increased detail and resolution, and ending with a statistical report of selected data. The first of these four sections presents data for all three years combined. Each of the three succeeding sections presents data for a specific year (2001 through 2003, in that order). The final section consists of a full-corridor map showing per-mile crash rates along sections of the corridor for the three years combined.

The corridor: the corridor consists of Highway 74 itself and a half-mile buffer on either side. In some northwestern parts of the corridor, Highway 74 shares the roadway with other routes. The northwestern-most end of the corridor study area is at the Mecklenburg-Gaston County line. The corridor ends at the Union-Anson County line. All reported heavy truck crashes located within this described area are included in this study. The great majority of the total 879 crashes over the three years in this corridor occurred on Highway 74 itself.

Crash rates: per-mile crash rates in the corridor are calculated (and represented) in two ways. In the first, the total beginning-to-end "straight-line" length of the corridor was calculated, regardless of whether the roadway in any particular place is divided. Then all crashes located within 125 feet of Highway 74 itself were identified and totaled ($n = 592$). This number of crashes was divided by length of the corridor to find an overall crash per-mile rate. In this "straight line" method, the crash rate for the corridor was 12.25 crashes per mile.

In the second calculation, sections where the highway is divided were treated as two roads and a total "linear" length of the corridor was calculated. The same process was then followed to find a per-mile crash rate. In this "linear" method, the crash rate for the corridor was 6.43 crashes per mile.

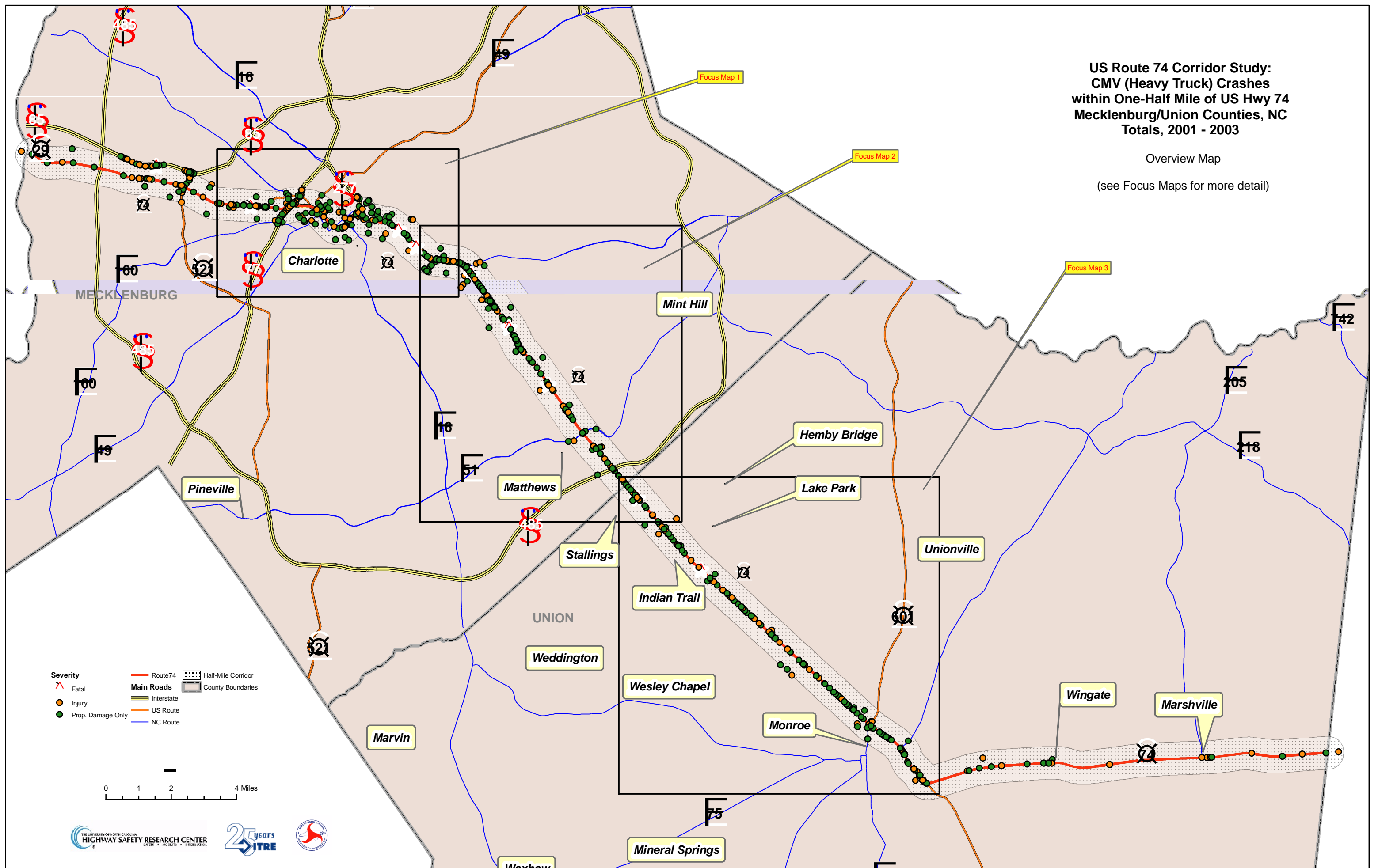
Next, the corridor was divided into eleven logical sections, with breaks at major intersecting roads. Each of these sections was measured and the two methods just described were applied to each section to find average crash per mile rates for the sections.

On the map, crash rates using the "straight line" method are presented with blue numbers, below the line in each section; crash rates using the "linear" method are shown with red numbers, above the line in each section. Each section is also color-coded relative to its crash rate.

This report is a cooperative production of the Highway Safety Research Center of UNC-Chapel Hill and the Municipal Technical Services division of the Institute for Transportation Research and Education at NC State. For more information, contact Dr. Ron Hughes at HSRC or Carl Furney at ITRE. Report compiled by Ted Donlan, MEd., Research Asst., MTS-ITRE.

US Route 74 Corridor Study:
CMV (Heavy Truck) Crashes
within One-Half Mile of US Hwy 74
Mecklenburg/Union Counties, NC
Totals, 2001 - 2003

Overview Map
(see Focus Maps for more detail)



- Severity**
- Fatal
 - Injury
 - Prop. Damage Only
- Main Roads**
- Route 74
 - Interstate
 - US Route
 - NC Route
- Other Symbols**
- Half-Mile Corridor
 - County Boundaries



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Focus Map 1

Charlotte

MECKLENBURG

0 0.15 0.3 0.6 Miles

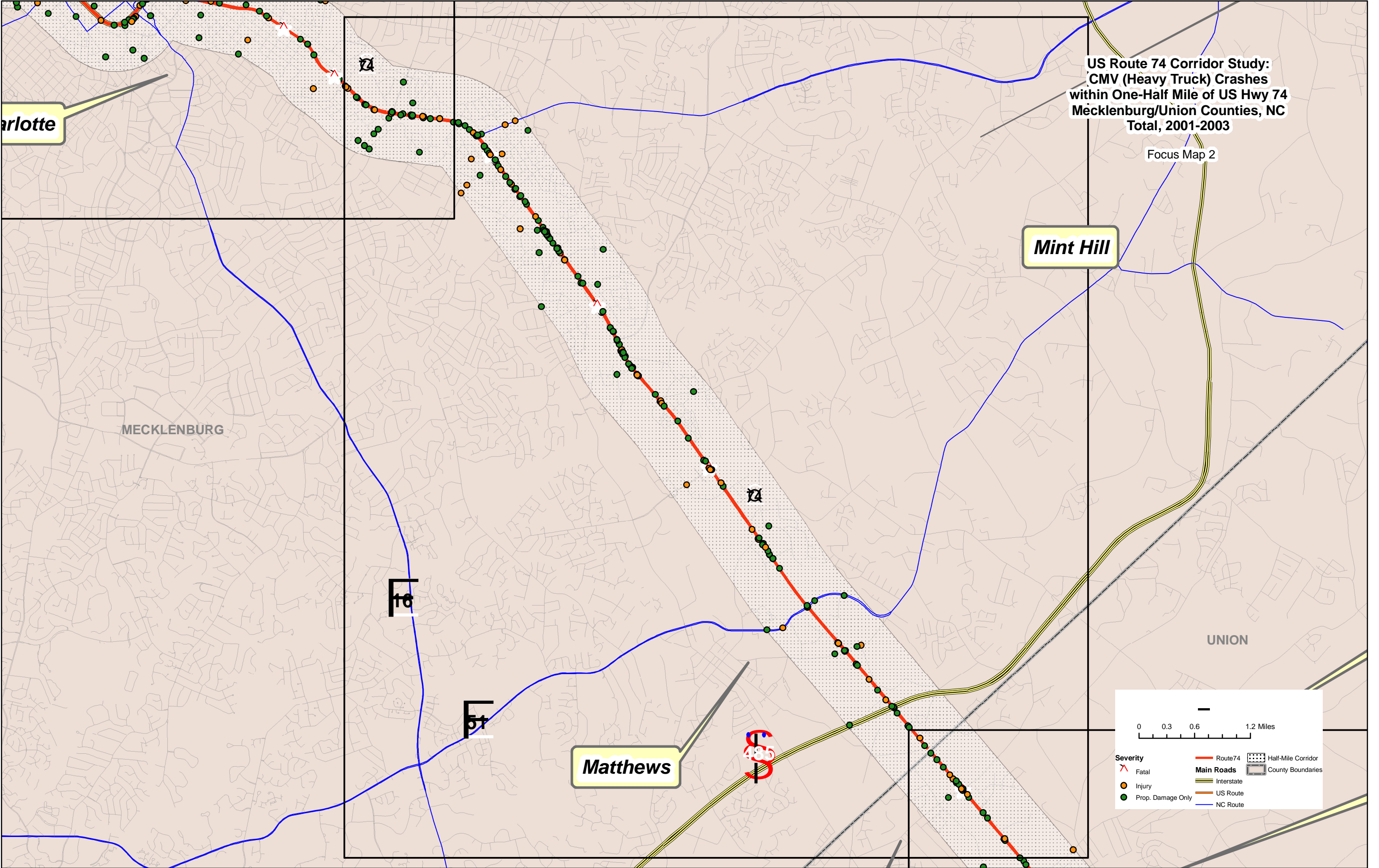
Severity

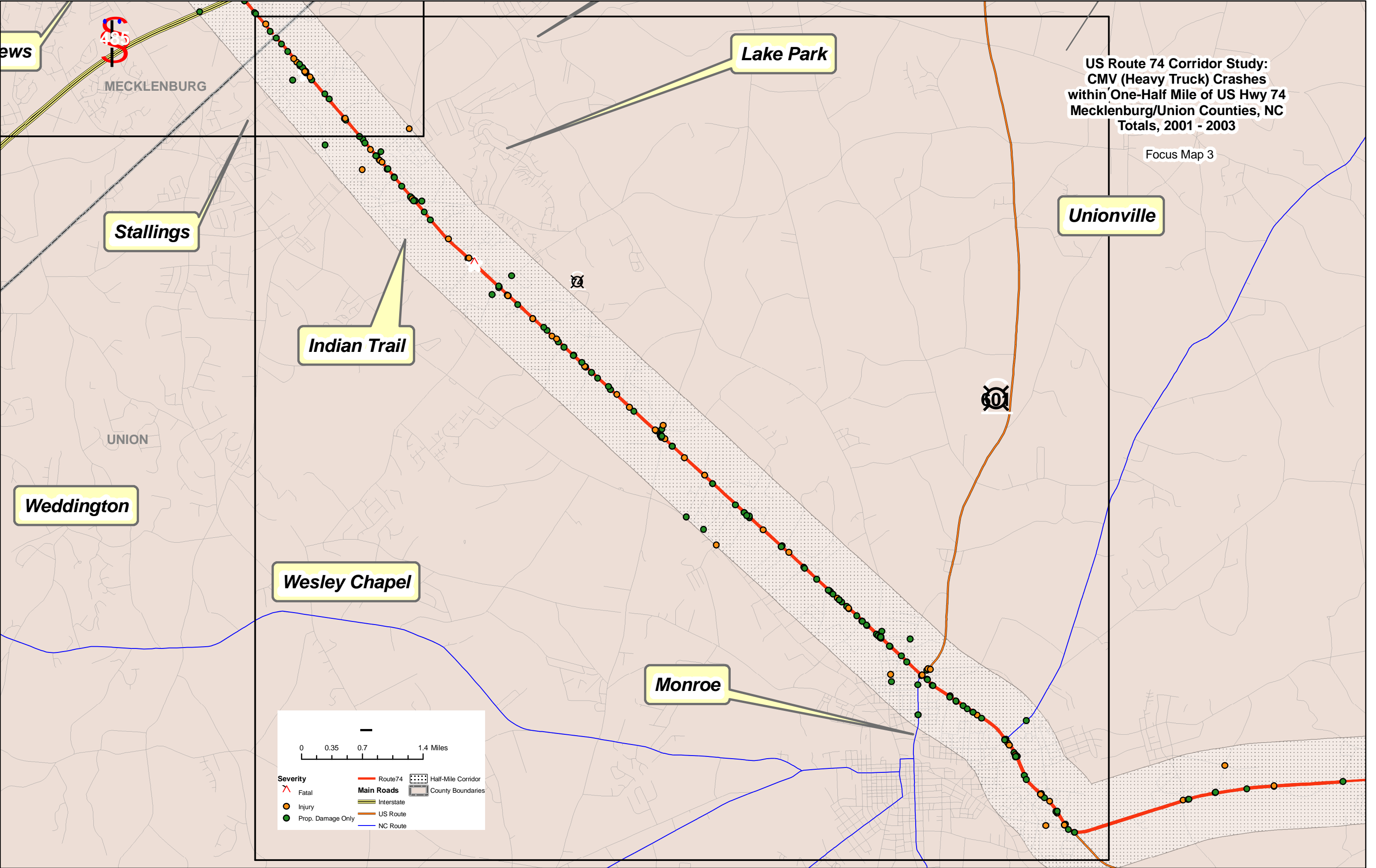
- Fatal
- Injury
- Prop. Damage Only

Main Roads

- Route74
- Interstate
- US Route
- NC Route

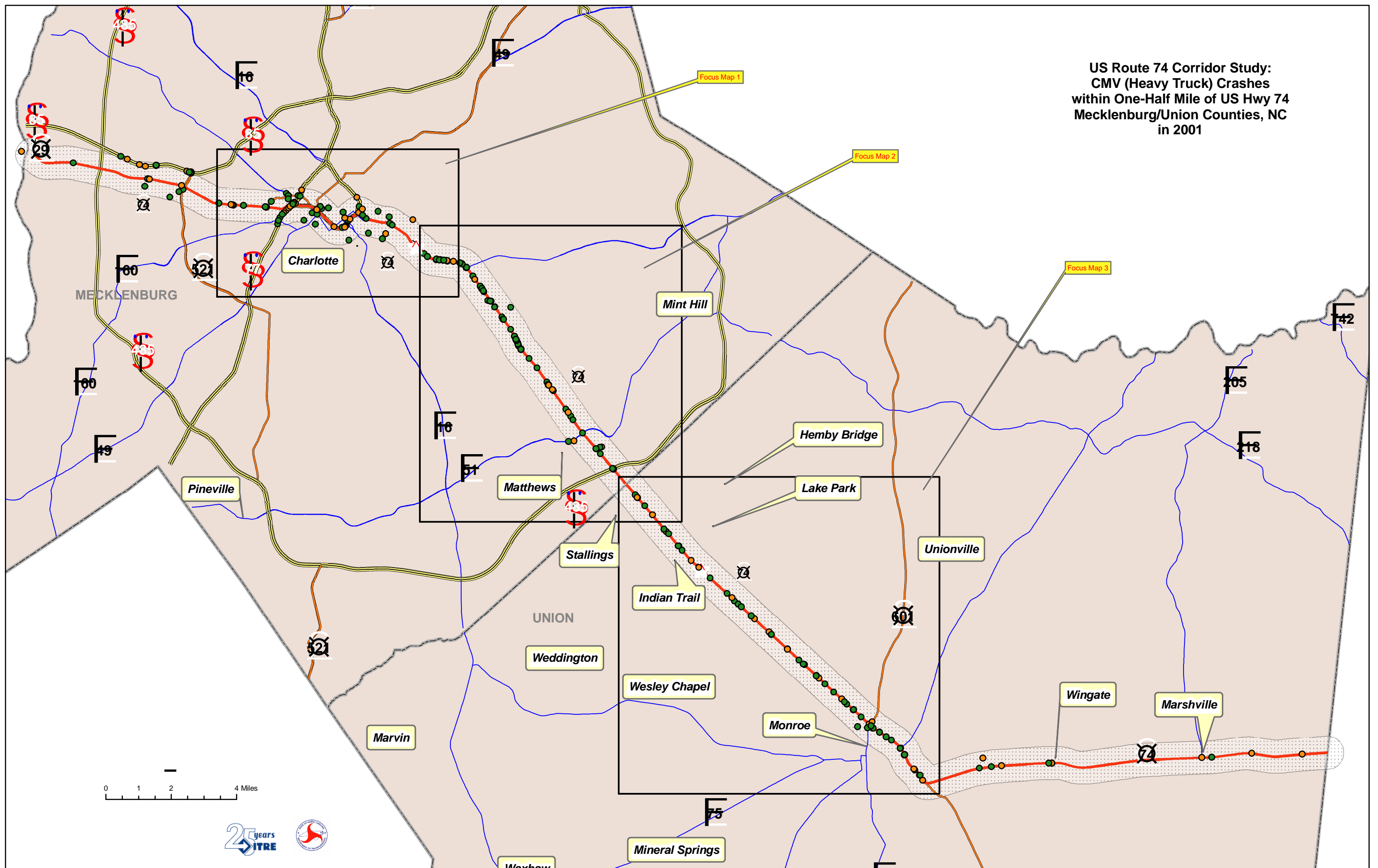
- Half-Mile Corridor
- County Boundaries





Data Summary: Totals		Rural/Urban	Total	Crash Type	Total
Crash Years 2001 - 2003		RURAL	78	ANIMAL	1
TOTAL CRASHES	879	URBAN	801	PEDESTRIAN	2
Severity	Total			OTHER NON-COLLISION	3
NO DATA	6	Alcohol Involved	Total	REAR END, TURN	4
FATAL	9	YES	10	RIGHT TURN, DIFFERENT ROADWAYS	4
DISABLING INJURY	12	NO	869	HEAD ON	6
EVIDENT INJURY	63			RAN OFF ROAD - LEFT	6
POSSIBLE INJURY	196	Speed Involved	Total	MOVABLE OBJECT	7
PROP. DAMAGE ONLY	593	YES	10	PARKED MOTOR VEHICLE	7
		NO	869	OVERTURN/ROLLOVER	8
Road Condition	Total			SIDESWIPE, OPPOSITE DIRECTION	8
FUEL, OIL	1	Workzone Involved	Total	JACKKNIFE	9
SLUSH	1	YES	28	RAN OFF ROAD - RIGHT	12
SNOW	1	NO	851	OTHER COLLISION WITH VEHICLE	14
WATER (STANDING, MOVING)	3			LEFT TURN, DIFFERENT ROADWAYS	16
NO DATA	4	Weather	Total	LEFT TURN, SAME ROADWAY	28
ICE	7	OTHER	1	FIXED OBJECT	31
WET	117	SLEET, HAIL, FREEZING RAIN/DRIZZLE	2	BACKING UP	35
DRY	745	FOG, SMOG, SMOKE	3	RIGHT TURN, SAME ROADWAY	37
Road Configuration	Total	SNOW	3	ANGLE	127
NO DATA	10	RAIN	68	SIDESWIPE, SAME DIRECTION	212
ONE-WAY, NOT DIVIDED	45	CLOUDY	166	REAR END, SLOW OR STOP	302
TWO-WAY, NOT DIVIDED	179	CLEAR	636		
TWO-WAY, DIVIDED, POSITIVE MEDIAN BARRIER	233			Number of Trucks Involved	Total
TWO-WAY, DIVIDED, UNPROTECTED MEDIAN	412			2	43
				1	836
Traffic Control Device	Total	Ambient Light	Total	Number of Vehicles Involved	Total
FLASHING SIGNAL WITH STOP SIGN	1	DARK - UNKNOWN LIGHTING	1	10	1
FLASHING SIGNAL WITHOUT STOP SIGN	1	NO DATA	2	6	2
FLASHING STOP AND GO SIGNAL	1	DUSK	14	7	3
RR GATE AND FLASHER	1	DAWN	17	5	6
HUMAN CONTROL	2	DARK - ROADWAY NOT LIGHTED	32	4	20
RR CROSSBUCKS ONLY	2	DARK - LIGHTED ROADWAY	104	1	47
OTHER	7	DAYLIGHT	709	3	66
DOUBLE YELLOW LINE, NO PASSING ZONE	8			2	734
YIELD SIGN	10				
STOP SIGN	44				
NO DATA	108				
STOP AND GO SIGNAL	316				
NO CONTROL PRESENT	378				

US Route 74 Corridor Study:
CMV (Heavy Truck) Crashes
within One-Half Mile of US Hwy 74
Mecklenburg/Union Counties, NC
in 2001



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CMV (Heavy Truck) Crashes
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Mecklenburg/Union Counties, NC
in 2001

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Charlotte

MECKLENBURG

0 0.15 0.3 0.6 Miles

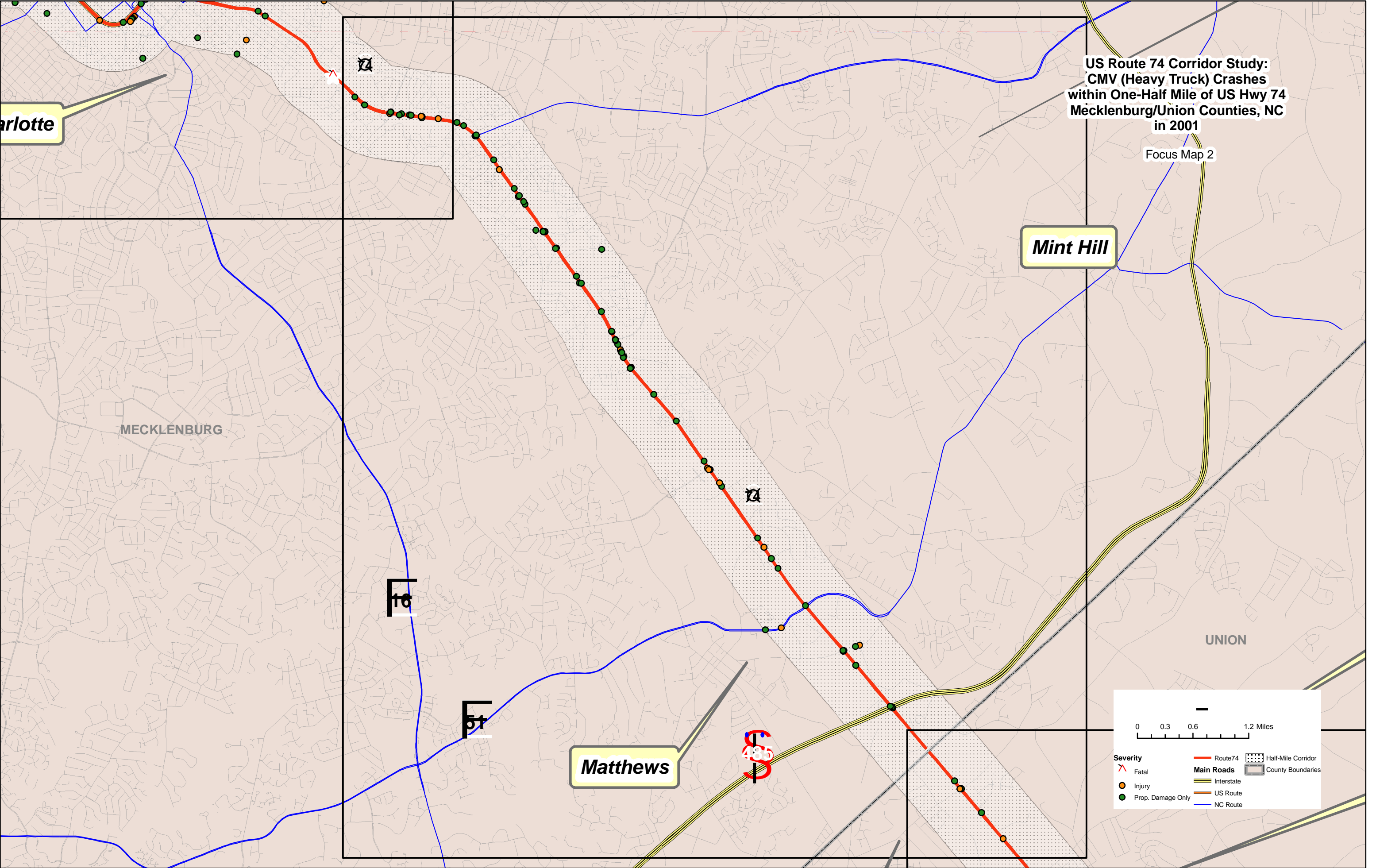
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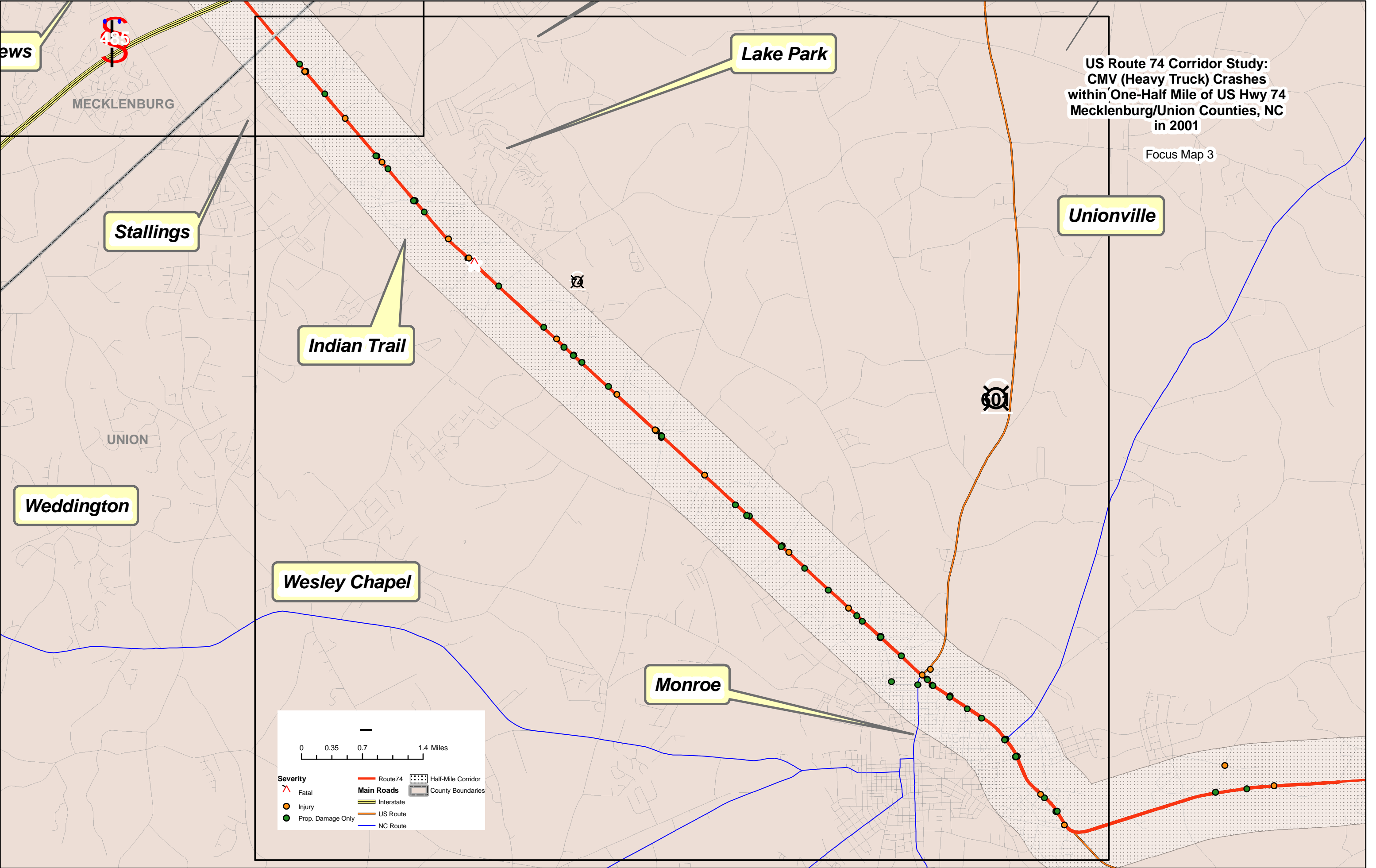
- Fatal
- Injury
- Prop. Damage Only

Main Roads

- Route74
- Interstate
- US Route
- NC Route

- Half-Mile Corridor
- County Boundaries



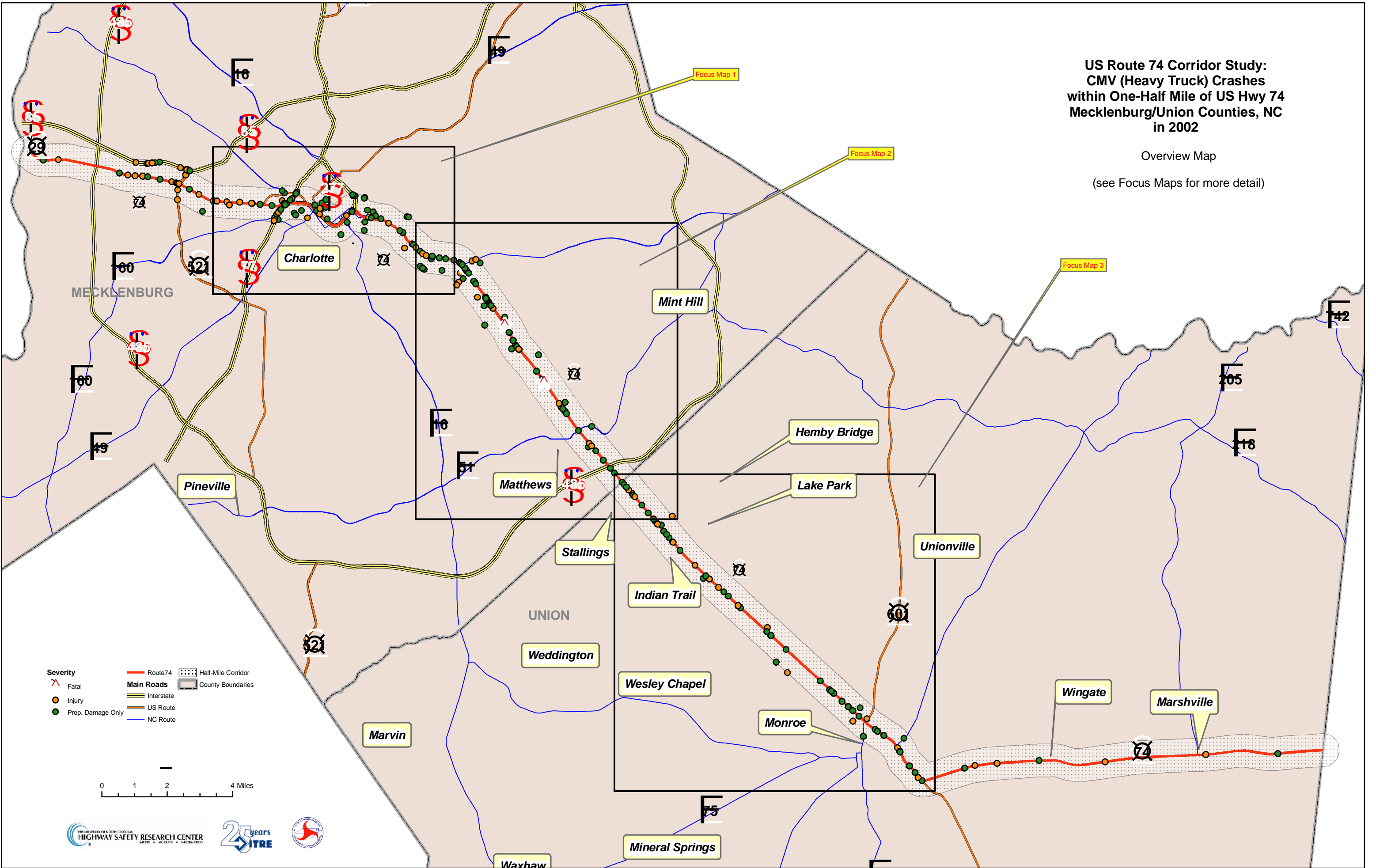


Data Summary		Rural/Urban	Total	Crash Type	Total
Crash Year 2001		RURAL	30	MOVABLE OBJECT	1
TOTAL CRASHES	273	URBAN	243	OTHER NON-COLLISION	1
Severity	Total	Alcohol Involved	Total	SIDESWIPE, OPPOSITE DIRECTION	1
FATAL	2	YES	1	HEAD ON	2
DISABLING INJURY	3	NO	272	PARKED MOTOR VEHICLE	2
NO DATA	4	Speed Involved	Total	OTHER COLLISION WITH VEHICLE	3
EVIDENT INJURY	13	YES	4	OVERTURN/ROLLOVER	3
POSSIBLE INJURY	64	NO	269	REAR END, TURN	3
PROP. DAMAGE ONLY	187	Workzone Involved	Total	LEFT TURN, DIFFERENT ROADWAYS	4
Road Condition	Total	YES	2	RAN OFF ROAD - RIGHT	4
WATER (STANDING, MOVING)	1	NO	271	FIXED OBJECT	5
WET	27	Weather	Total	JACKKNIFE	5
DRY	245	FOG, SMOG, SMOKE	1	BACKING UP	9
Road Configuration	Total	RAIN	16	RIGHT TURN, SAME ROADWAY	13
ONE-WAY, NOT DIVIDED	13	CLOUDY	47	LEFT TURN, SAME ROADWAY	14
TWO-WAY, NOT DIVIDED	42	CLEAR	209	ANGLE	39
TWO-WAY, DIVIDED, POSITIVE MEDIAN BARRIER	83	Ambient Light	Total	SIDESWIPE, SAME DIRECTION	76
TWO-WAY, DIVIDED, UNPROTECTED MEDIAN	135	DARK - UNKNOWN LIGHTING	1	REAR END, SLOW OR STOP	88
Traffic Control Device	Total	DUSK	2	Number of Trucks Involved	Total
DOUBLE YELLOW LINE, NO PASSING ZONE	1	DARK - ROADWAY NOT LIGHTED	5	2	11
OTHER	1	DAWN	6	1	262
RR CROSSBUCKS ONLY	1	DARK - LIGHTED ROADWAY	34	Number Vehicles Involved	Total
YIELD SIGN	3	DAYLIGHT	225	5	1
STOP SIGN	14			6	1
NO DATA	24			7	1
STOP AND GO SIGNAL	105			10	1
NO CONTROL PRESENT	124			4	8
				1	12
				3	17
				2	232

US Route 74 Corridor Study:
CMV (Heavy Truck) Crashes
within One-Half Mile of US Hwy 74
Mecklenburg/Union Counties, NC
in 2002

Overview Map

(see Focus Maps for more detail)



Severity
Fatal
Injury
Prop. Damage Only

Main Roads
Route 74
Interstate
US Route
NC Route

Half-Mile Corridor
County Boundaries

0 1 2 4 Miles

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CMV (Heavy Truck) Crashes
within One-Half Mile of US Hwy 74
Mecklenburg/Union Counties, NC
in 2002

Focus Map 1

Charlotte

MECKLENBURG

0 0.15 0.3 0.6 Miles

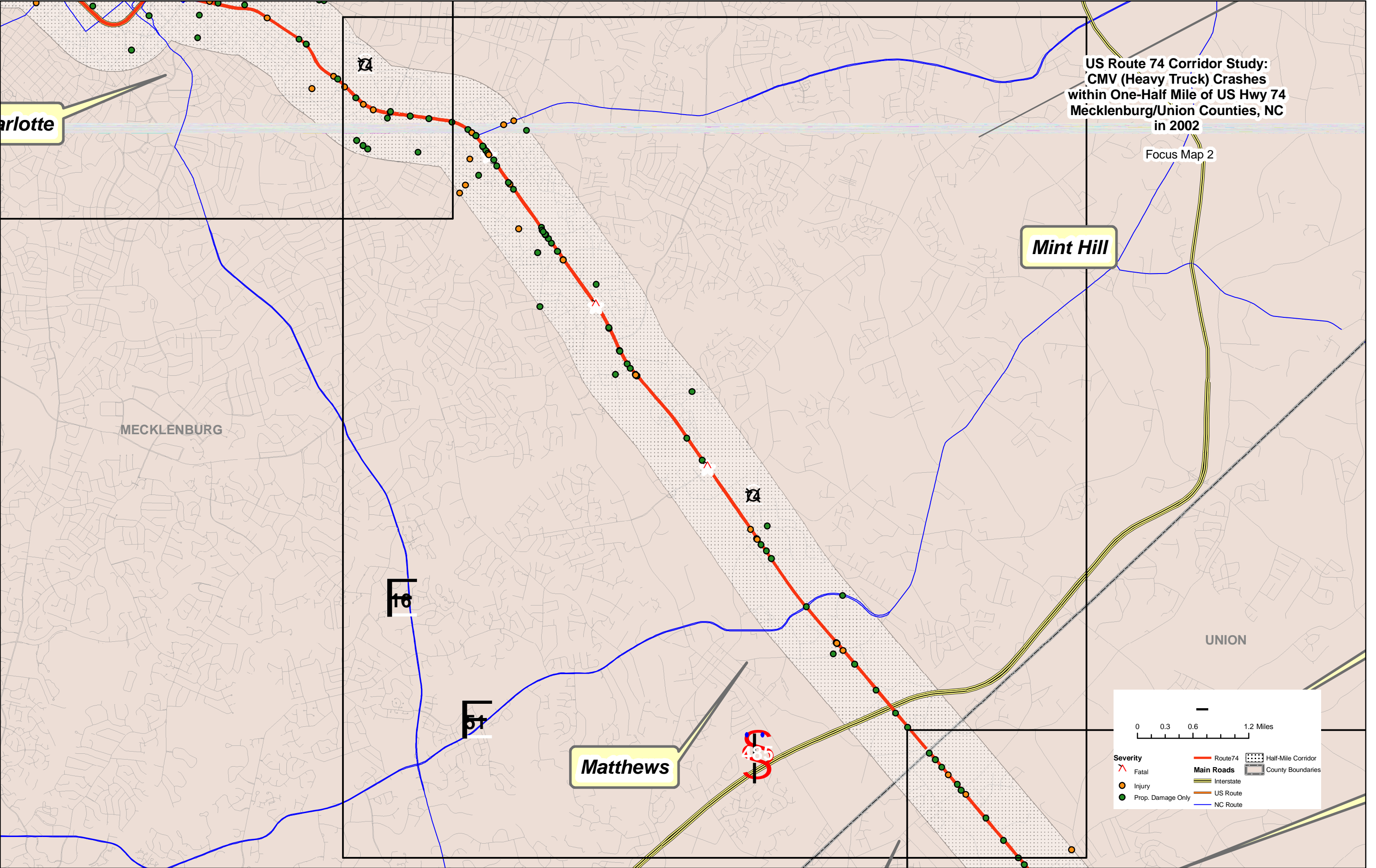
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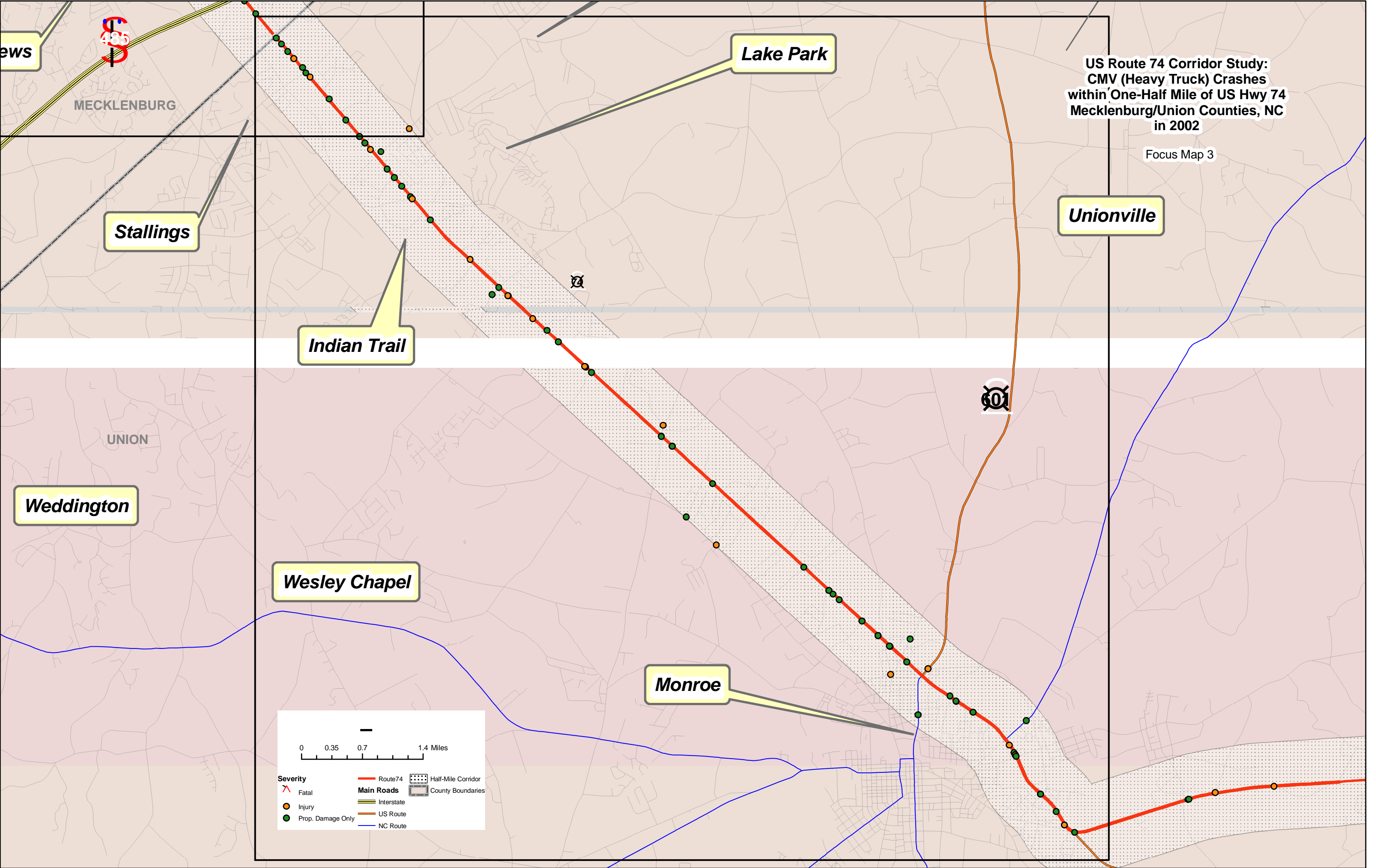
- Fatal
- Injury
- Prop. Damage Only

Main Roads

- Route74
- Interstate
- US Route
- NC Route

- Half-Mile Corridor
- County Boundaries





Data Summary	
Crash Year 2002	
TOTAL CRASHES	318

Severity	Total
FATAL	3
DISABLING INJURY	6
EVIDENT INJURY	27
POSSIBLE INJURY	70
PROP. DAMAGE ONLY	212

Road Condition	Total
FUEL, OIL	1
SLUSH	1
SNOW	1
UNKNOWN	1
WATER (STANDING, MOVING)	1
ICE	4
WET	30
DRY	279

Road Configuration	Total
UNKNOWN	3
ONE-WAY, NOT DIVIDED	15
TWO-WAY, NOT DIVIDED	73
TWO-WAY, DIVIDED, POSITIVE MEDIAN BARRIER	81
TWO-WAY, DIVIDED, UNPROTECTED MEDIAN	146

Traffic Control Device	Total
FLASHING SIGNAL WITH STOP SIGN	1
FLASHING STOP AND GO SIGNAL	1
RR CROSSBUCKS ONLY	1
RR GATE AND FLASHER	1
HUMAN CONTROL	2
DOUBLE YELLOW LINE, NO PASSING ZONE	3
OTHER	5
YIELD SIGN	6
STOP SIGN	15
NO DATA	32
STOP AND GO SIGNAL	109
NO CONTROL PRESENT	142

Rural/Urban	Total
RURAL	23
URBAN	295

Alcohol Involved	Total
YES	7
NO	311

Speed Involved	Total
YES	3
NO	315

Workzone Involved	Total
YES	11
NO	307

Weather	Total
SLEET, HAIL, FREEZING RAIN/DRIZZLE	2
SNOW	2
RAIN	17
CLOUDY	57
CLEAR	240

Ambient Light	Total
DAWN	5
DUSK	6
DARK - ROADWAY NOT LIGHTED	10
DARK - LIGHTED ROADWAY	36
DAYLIGHT	261

Crash Type	Total
OTHER NON-COLLISION	1
PEDESTRIAN	1
JACKKNIFE	2
MOVABLE OBJECT	2
OVERTURN/ROLLOVER	2
RAN OFF ROAD - LEFT	2
OTHER COLLISION WITH VEHICLE	3
HEAD ON	4
PARKED MOTOR VEHICLE	4
RAN OFF ROAD - RIGHT	4
LEFT TURN, DIFFERENT ROADWAYS	5
SIDESWIPE, OPPOSITE DIRECTION	5
LEFT TURN, SAME ROADWAY	6
FIXED OBJECT	11
RIGHT TURN, SAME ROADWAY	12
BACKING UP	18
ANGLE	52
SIDESWIPE, SAME DIRECTION	68
REAR END, SLOW OR STOP	116

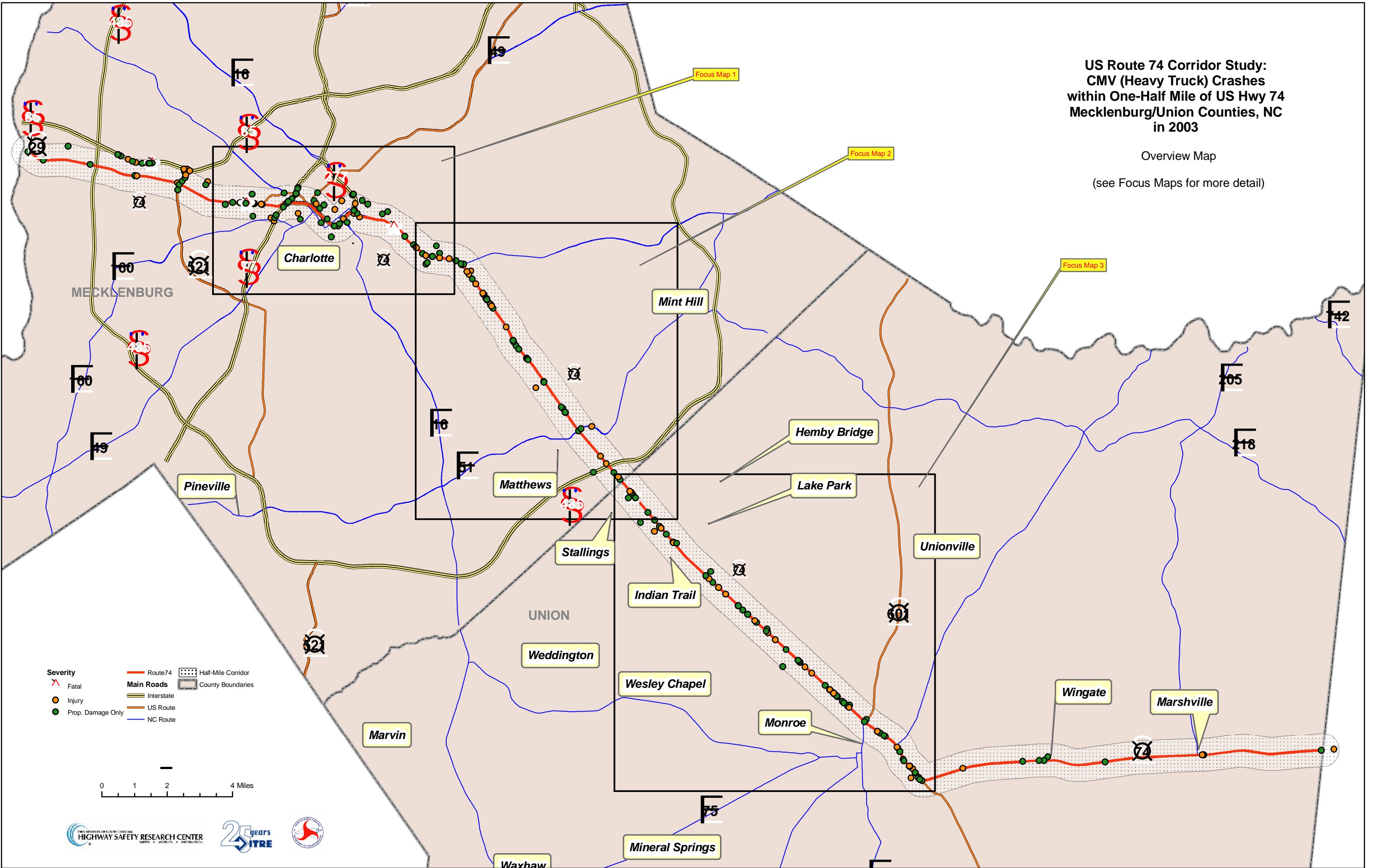
Number of Trucks Involved	Total
2	14
1	304

Number Vehicles Involved	Total
7	1
5	2
4	7
1	13
3	30
2	265

US Route 74 Corridor Study:
CMV (Heavy Truck) Crashes
within One-Half Mile of US Hwy 74
Mecklenburg/Union Counties, NC
in 2003

Overview Map

(see Focus Maps for more detail)



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CMV (Heavy Truck) Crashes
within One-Half Mile of US Hwy 74
Mecklenburg/Union Counties, NC
in 2003

Focus Map 1

Charlotte

MECKLENBURG

0 0.15 0.3 0.6 Miles

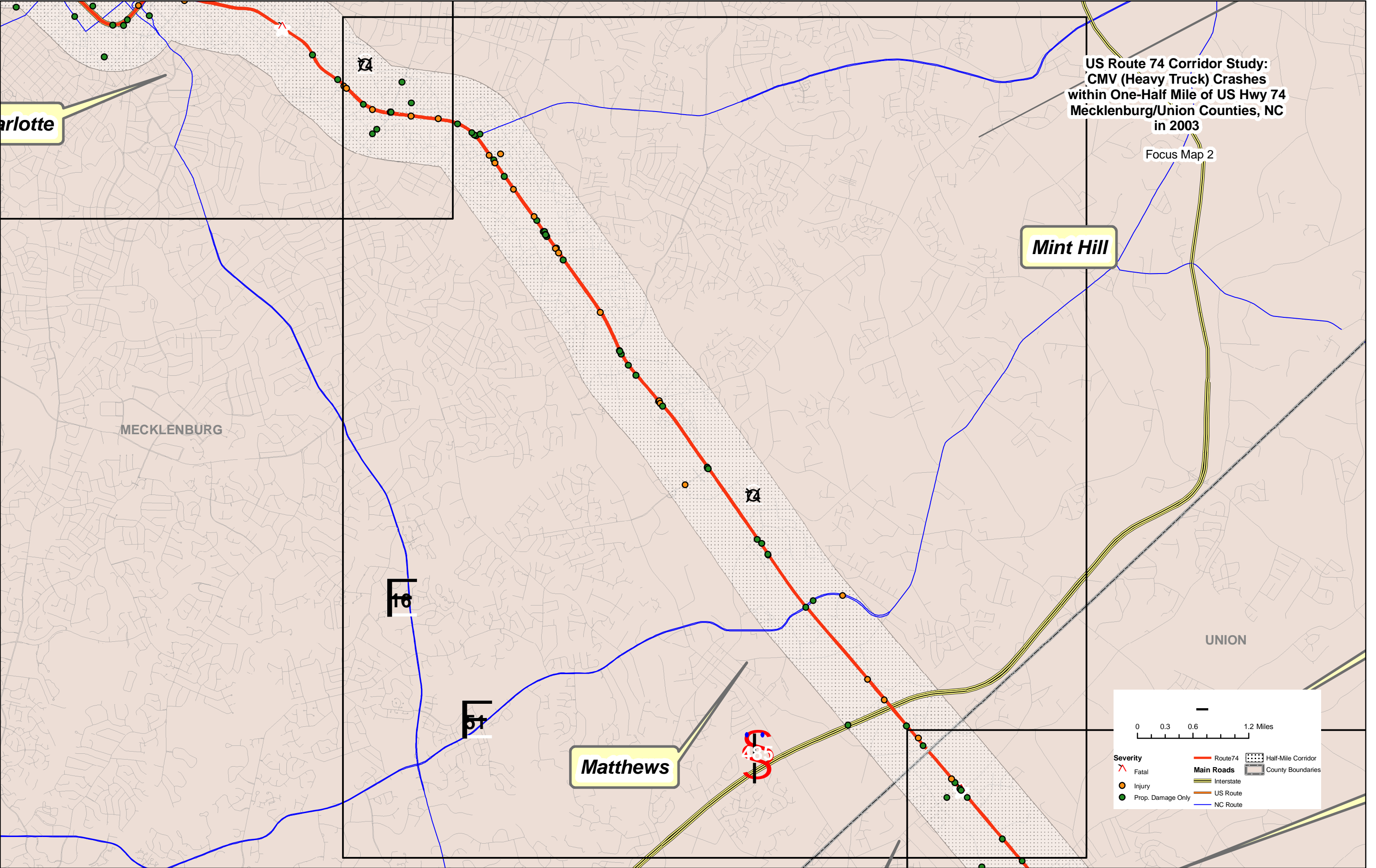
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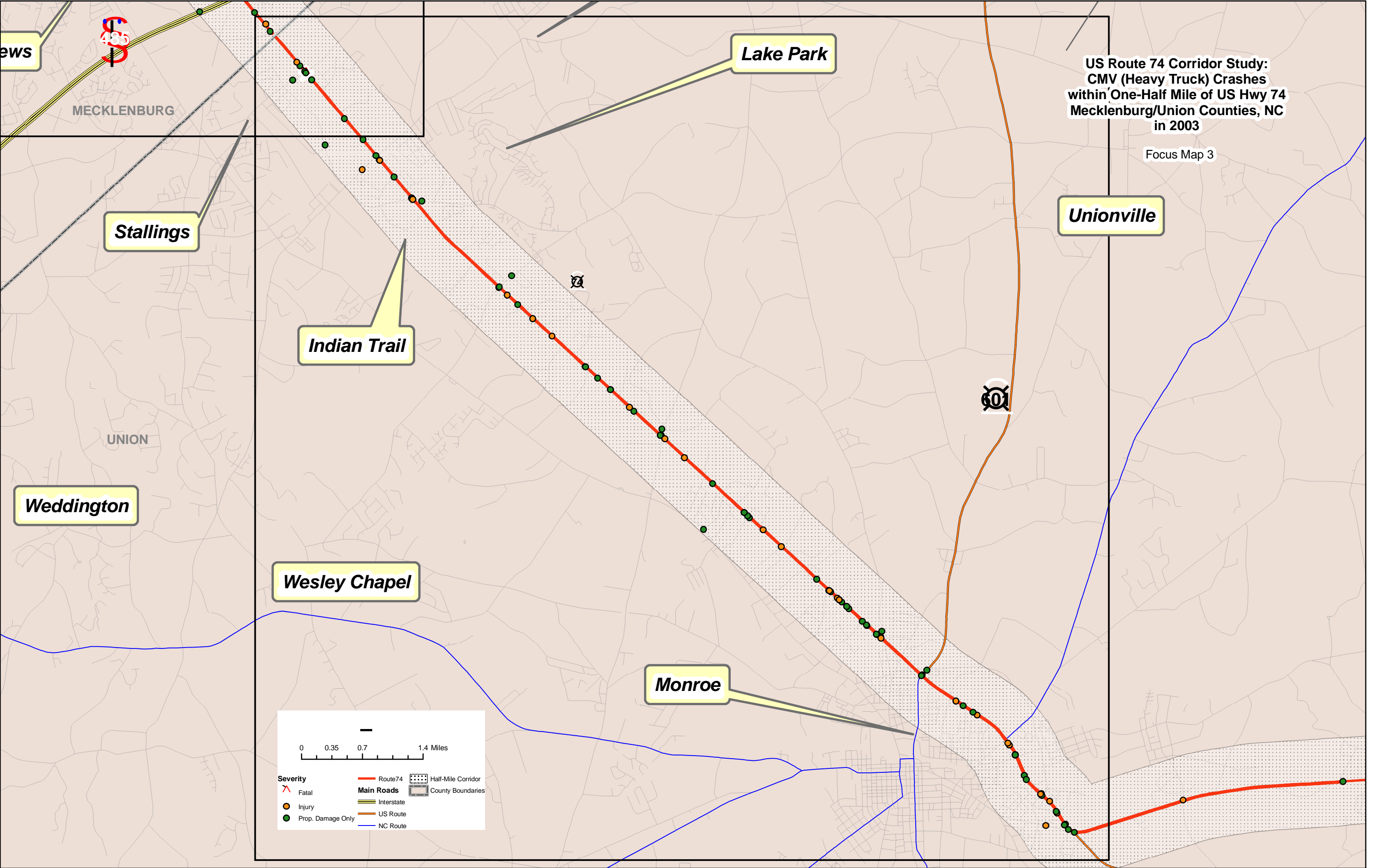
- Fatal
- Injury
- Prop. Damage Only

Main Roads

- Route74
- Interstate
- US Route
- NC Route

- Half-Mile Corridor
- County Boundaries





Data Summary		Rural/Urban	Total	Crash Type	Total
Crash Year 2003		RURAL	25	ANIMAL	1
TOTAL CRASHES	288	URBAN	263	OTHER NON-COLLISION	1
				PARKED MOTOR VEHICLE	1
				PEDESTRIAN	1
Severity	Total	Alcohol Involved	Total	REAR END, TURN	1
NO DATA	2	YES	2	JACKKNIFE	2
DISABLING INJURY	3	NO	286	SIDESWIPE, OPPOSITE DIRECTION	2
FATAL	4			OVERTURN/ROLLOVER	3
EVIDENT INJURY	23	Speed Involved	Total	MOVABLE OBJECT	4
POSSIBLE INJURY	62	YES	3	RAN OFF ROAD - LEFT	4
PROP. DAMAGE ONLY	194	NO	285	RAN OFF ROAD - RIGHT	4
				RIGHT TURN, DIFFERENT ROADWAYS	4
Road Condition	Total	Workzone Involved	Total	LEFT TURN, DIFFERENT ROADWAYS	7
WATER (STANDING, MOVING)	2	YES	15	BACKING UP	8
ICE	3	NO	273	LEFT TURN, SAME ROADWAY	8
UNKNOWN	3			OTHER COLLISION WITH VEHICLE	8
WET	59			RIGHT TURN, SAME ROADWAY	12
DRY	221			FIXED OBJECT	15
		Weather	Total	ANGLE	36
Road Configuration	Total	OTHER	1	SIDESWIPE, SAME DIRECTION	68
UNKNOWN	1	SNOW	1	REAR END, SLOW OR STOP	98
NO DATA	6	FOG, SMOG, SMOKE	2		
ONE-WAY, NOT DIVIDED	17	RAIN	35	Number of Trucks Involved	Total
TWO-WAY, NOT DIVIDED	64	CLOUDY	62	2	18
TWO-WAY, DIVIDED, POSITIVE MEDIAN BARRIER	69	CLEAR	187	1	270
TWO-WAY, DIVIDED, UNPROTECTED MEDIAN	131				
				Number of Vehicles Involved	Total
Traffic Control Device	Total	Ambient Light	Total	6	1
FLASHING SIGNAL WITHOUT STOP SIGN	1	UNKNOWN	2	7	1
OTHER	1	DAWN	6	5	3
YIELD SIGN	1	DUSK	6	4	5
DOUBLE YELLOW LINE, NO PASSING ZONE	4	DARK - ROADWAY NOT LIGHTED	17	3	19
STOP SIGN	15	DARK - LIGHTED ROADWAY	34	1	22
NO DATA	52	DAYLIGHT	223	2	237
STOP AND GO SIGNAL	102				
NO CONTROL PRESENT	112				

US Route 74 Corridor Study:
CMV (Heavy Truck) Crashes
Sectional Per Mile Crash Rates
Total, 2001 - 2003

