CAPS

CENTER for ADVANCED PUBLIC SAFETY

ICE & SNOW IMPACT STUDY

2012-2014 Alabama Crash Data

ADECA

Alabama Department of Economic and Community Affairs

David B. Brown, PhD, P.E.

brown@cs.ua.edu

September 8, 2014

THE UNIVERSITY OF ALABAMA

Introduction

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This study consisted of a comparison between:

- **A Test Subset of the 2012-2014* Data**
  - **Weather: snow, sleet, hail or freezing rain**
  - **Road surface condition: ice, snow or slush**
  - **This subset will be referenced as: *Icy Weather Crashes***
- **A Control Subset that Contained All Other Crashes**
- **Qualifiers**
  - **Some comparison were reduced to eliminate:**
    - **Non-descriptive values: e.g., Other, Unknown, etc.**
    - **Values with extremely low frequencies**
    - **Reduced both subsets in a comparable way**
  - **IMPACTS were re-run on the pruned subsets**

***Year 2014 was complete through about the first half of July.**

Organization of Results

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Results in this PPT are organized by topic:

- **Definition of the Test Subset (next three slides)**
- **Time Related (7-14)**
- **Causal Driver Demographics (14-22)**
- **Driver Causes (23-31)**
- **Location (32-48)**
- **Roadway (49-52)**
- **Crash Severity (53-63)**

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Weather = 4 OR 12 OR 9 ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

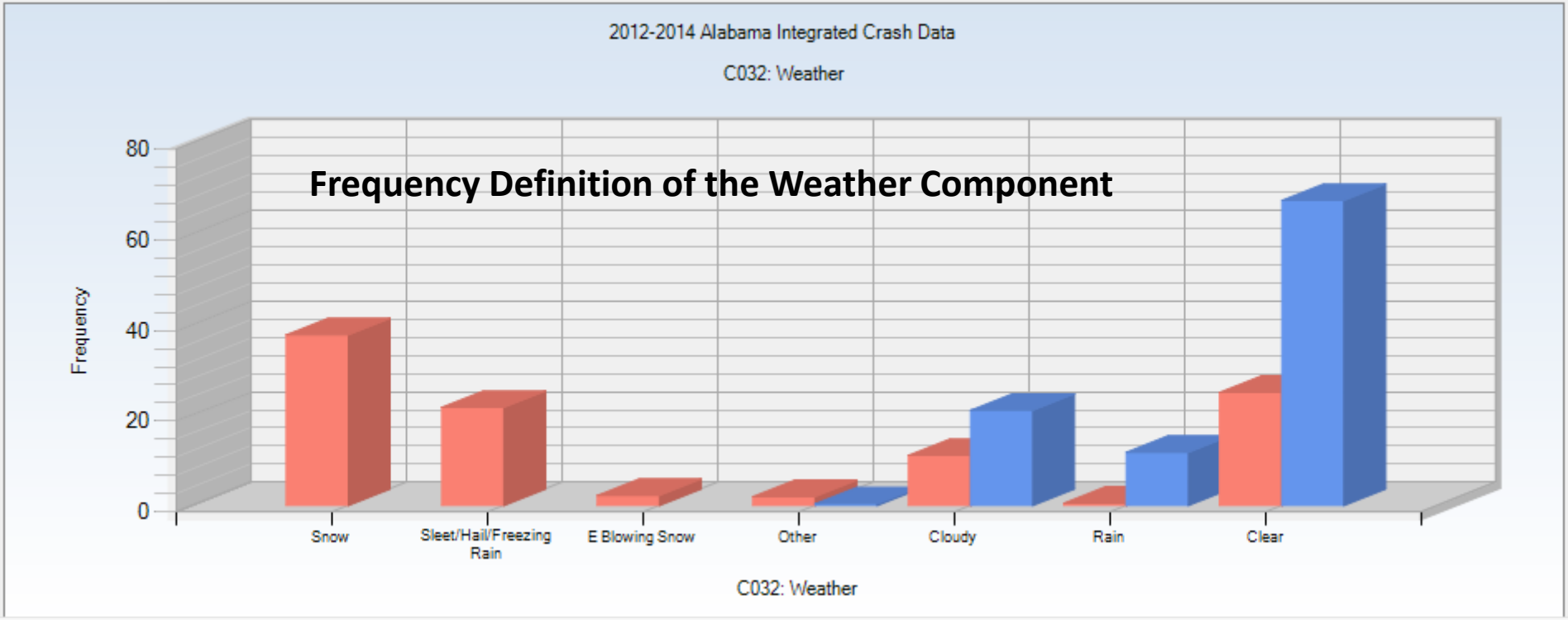
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C032: Weather Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Snow	1116	37.63	0	0.00	0.000	1116.000
Sleet/Hail/Freezing Rain	642	21.65	0	0.00	0.000	642.000
E Blowing Snow	66	2.23	0	0.00	0.000	66.000
Other	58	1.96	56	0.02	109.564*	57.471
Cloudy	328	11.06	65863	20.99	0.527*	-294.607
Rain	16	0.54	36799	11.73	0.046	-331.863
Clear	740	24.95	211043	67.26	0.371*	-1255.001

C032: Weather

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Roadway Condition =...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

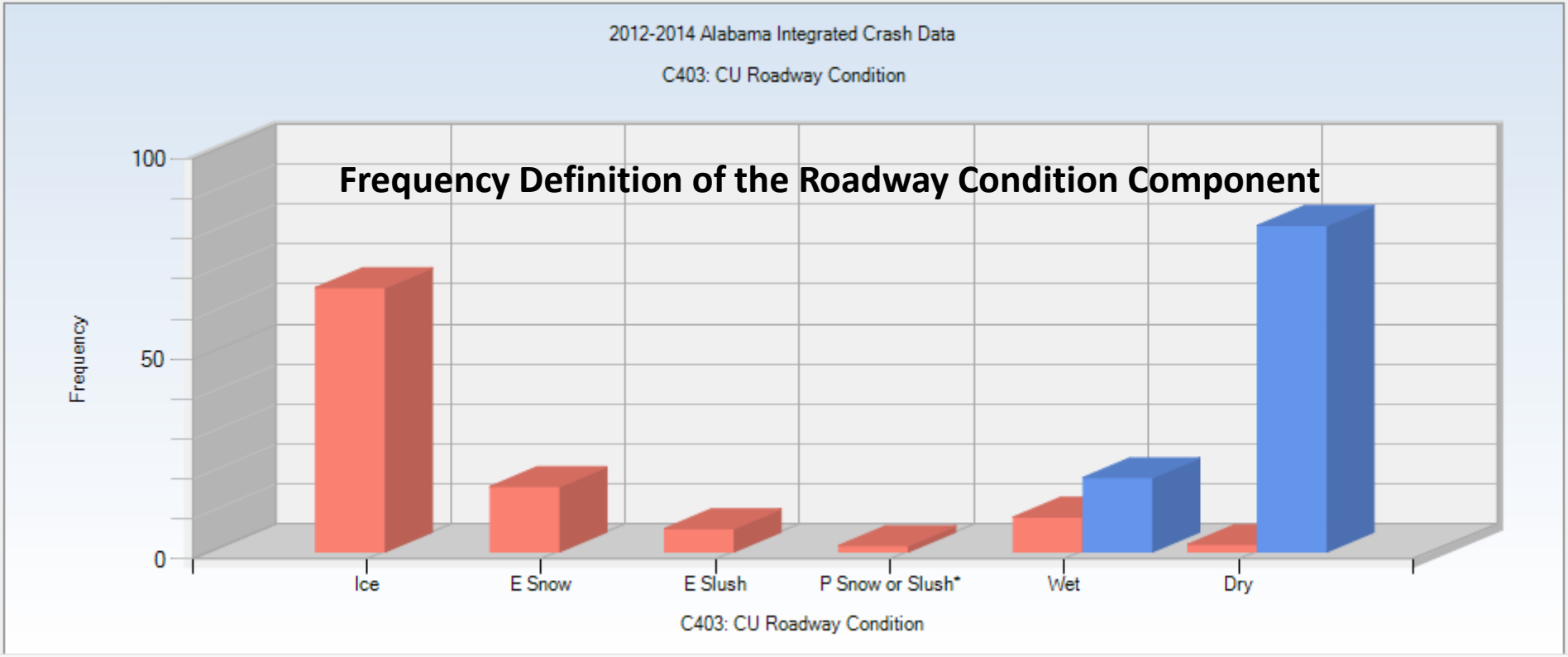
Order: Max Gain Descending Suppress Zero-Valued Rows Significance: Over Representation Threshold: 2.0

C403: CU Roadway Condition Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Ice	1934	65.98	0	0.00	0.000	1934.000
E Snow	477	16.27	0	0.00	0.000	477.000
E Slush	169	5.77	0	0.00	0.000	169.000
P Snow or Slush*	45	1.54	0	0.00	0.000	45.000
Wet	253	8.63	56767	18.50	0.467*	-289.243
Dry	53	1.81	250077	81.50	0.022*	-2335.757

C403: CU Roadway Condition

Sort by Sum of Max Gain

Display Filter Name



Combining Subsets

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Test Subset was a Logical OR of the two:

- **Weather: snow, sleet, hail or freezing rain**
- **Road surface condition: ice, snow or slush**
- **Some bad weather had good road conditions**
- **Some bad road conditions had good weather**
- **Subset addressed most slippery conditions**

Time Related Topics:

- Icy Crash Proportion by Year
- Week and Month of the Year
- Day of the Week
- Time of Day and Lighting Conditions

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C003: Year Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
2012	142	4.72	128284	39.66	0.119*	-1050.956
2013	884	29.39	125978	38.95	0.755*	-287.512
2014	1982	65.89	69202	21.39	3.080*	1338.467

C005: Day of Month
C202: CU Contributing Circumstance
C003: Year
C204: E CU Sequence of Events #1
C017: First Harmful Event

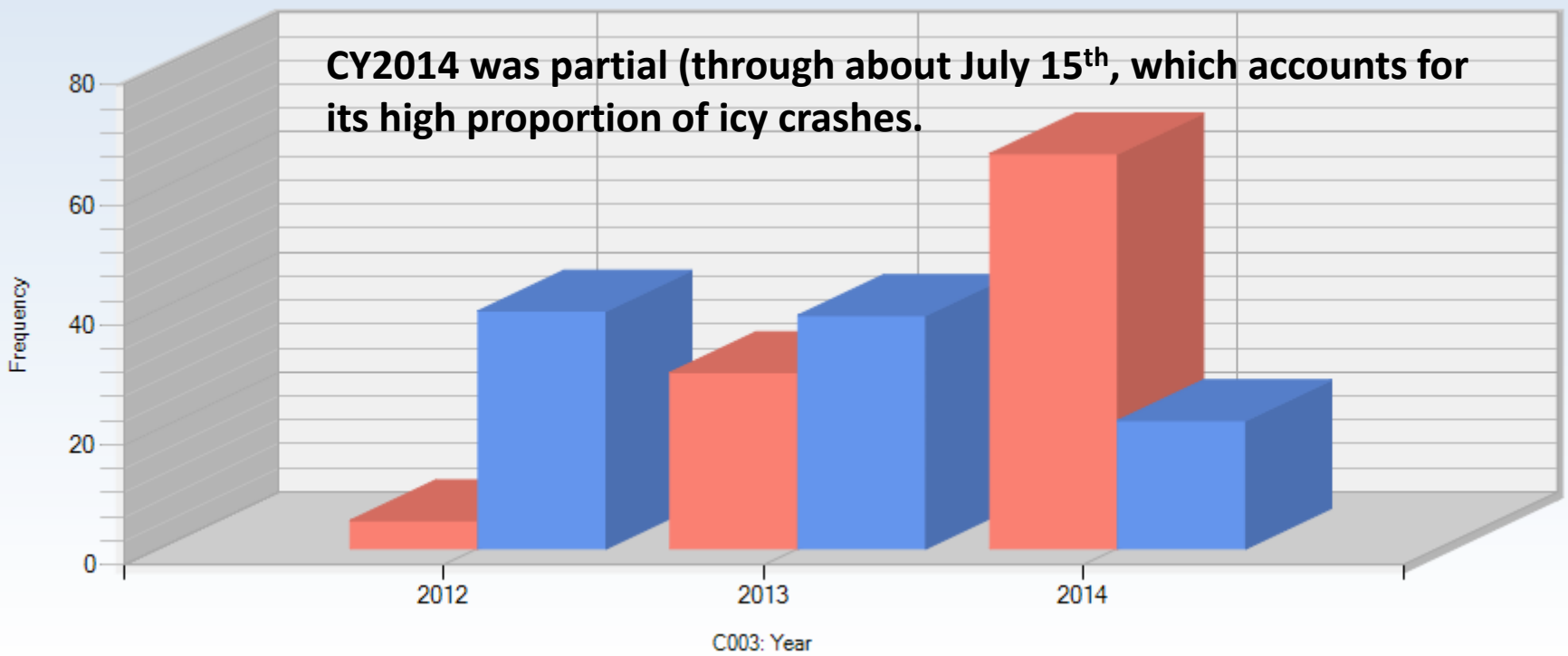
Sort by Sum of Max Gain

Display Filter Name

2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow-Ice-Slush

C003: Year

CY2014 was partial (through about July 15th, which accounts for its high proportion of icy crashes.



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sno...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

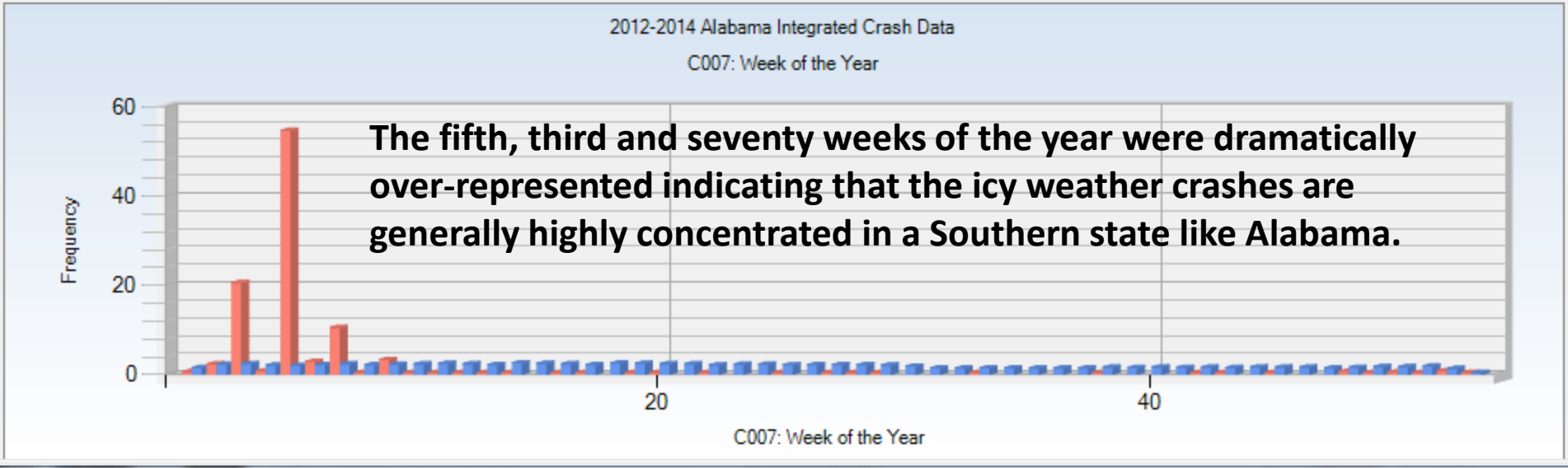
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C007: Week of the Year Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
1	18	0.60	4892	1.51	0.396	-27.492
2	69	2.29	7206	2.23	1.030	1.989
3	617	20.51	7578	2.34	8.755*	546.530
4	23	0.76	6593	2.04	0.375*	-38.311
5	1643	54.62	6366	1.97	27.754*	1583.800
6	86	2.86	6873	2.12	1.346*	22.086
7	315	10.47	7475	2.31	4.532*	245.487
8	10	0.33	6918	2.14	0.155	-54.333
9	99	3.29	7146	2.21	1.490*	32.547
10	12	0.40	7463	2.31	0.173	-57.401
11	1	0.03	7829	2.42	0.014	-71.804

C001: County
C002: City
C003: Year
C004: Month
C005: Day of Month
C006: Day of the Week
C007: Week of the Year
C008: Time of Day
C009: Data Source
C010: Rural or Urban
C011: Highway Classifications
C012: Controlled Access
C013: E Highway Side
C014: Distance from Node 1

Sort by Sum of Max Gain

Display Filter Name



The fifth, third and seventy weeks of the year were dramatically over-represented indicating that the icy weather crashes are generally highly concentrated in a Southern state like Alabama.

CARE 10.1.0.0 - [Crosstab Results - 2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush]

File Dashboard Filters Analysis Crosstab Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

Suppress Zero Values: Rows and Columns Select Cells: Column: Week of the Year ; Row: Year

	1	2	3	4	5	6	7	8
2012	3 16.67%	47 68.12%	5 0.81%	0 0.00%	3 0.18%	2 2.33%	26 8.25%	5 50.00%
2013	7 38.89%	3 4.35%	605 98.06%	3 13.04%	57 3.47%	36 41.86%	0 0.00%	5 50.00%
2014	8 44.44%	19 27.54%	7 1.13%	20 86.96%	1583 96.35%	48 55.81%	289 91.75%	0 0.00%
TOTAL	18 0.60%	69 2.29%	617 20.51%	23 0.76%	1643 54.62%	86 2.86%	315 10.47%	10 0.33%

The cross-tabulation above shows the years that were involved For the third, fifth and seventh week of the year.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Month = 10 OR 9 OR 8 O...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

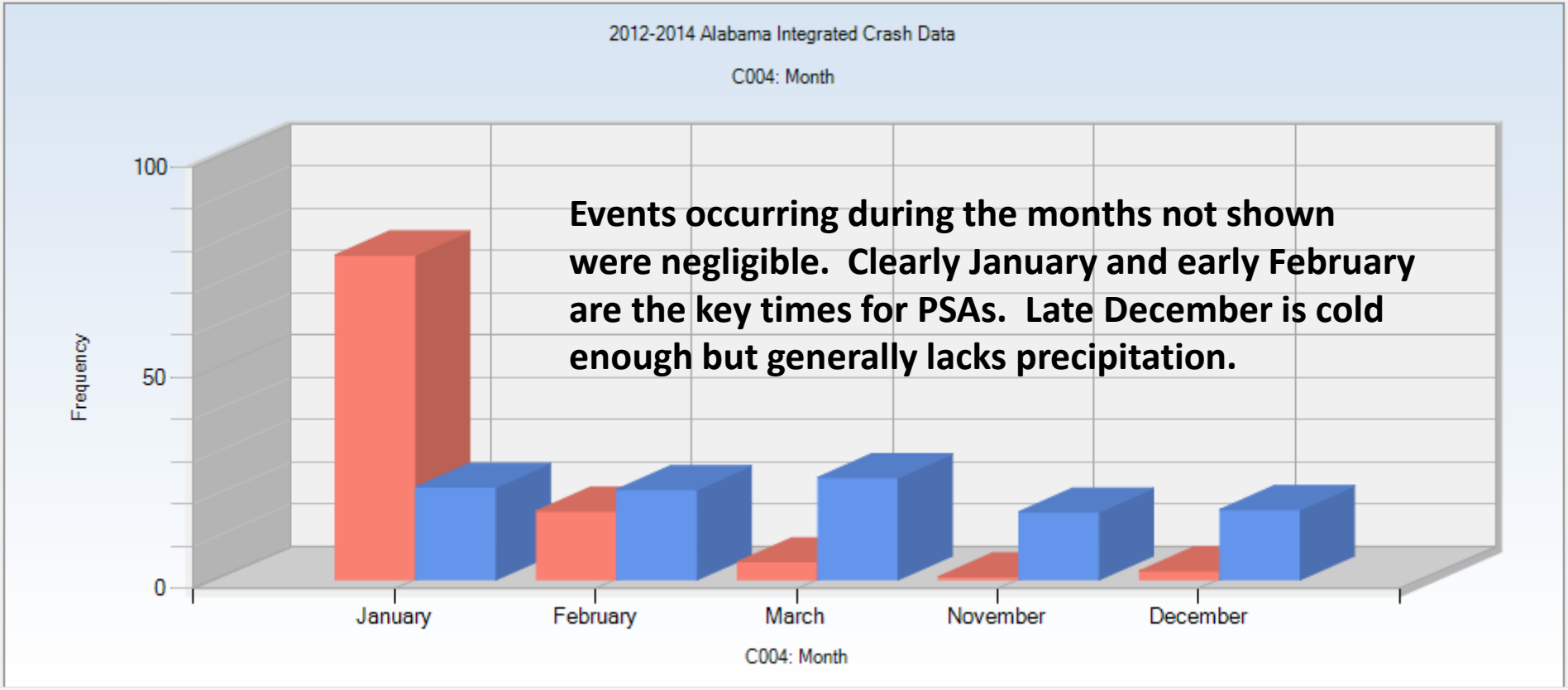
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C004: Month Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
January	2298	76.88	29844	21.91	3.509*	1643.092
February	485	16.23	29047	21.33	0.761*	-152.418
March	125	4.18	32919	24.17	0.173*	-597.387
November	20	0.67	21841	16.04	0.042*	-459.287
December	61	2.04	22557	16.56	0.123*	-433.999

C004: Month

Sort by Sum of Max Gain

Display Filter Name



Events occurring during the months not shown were negligible. Clearly January and early February are the key times for PSAs. Late December is cold enough but generally lacks precipitation.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

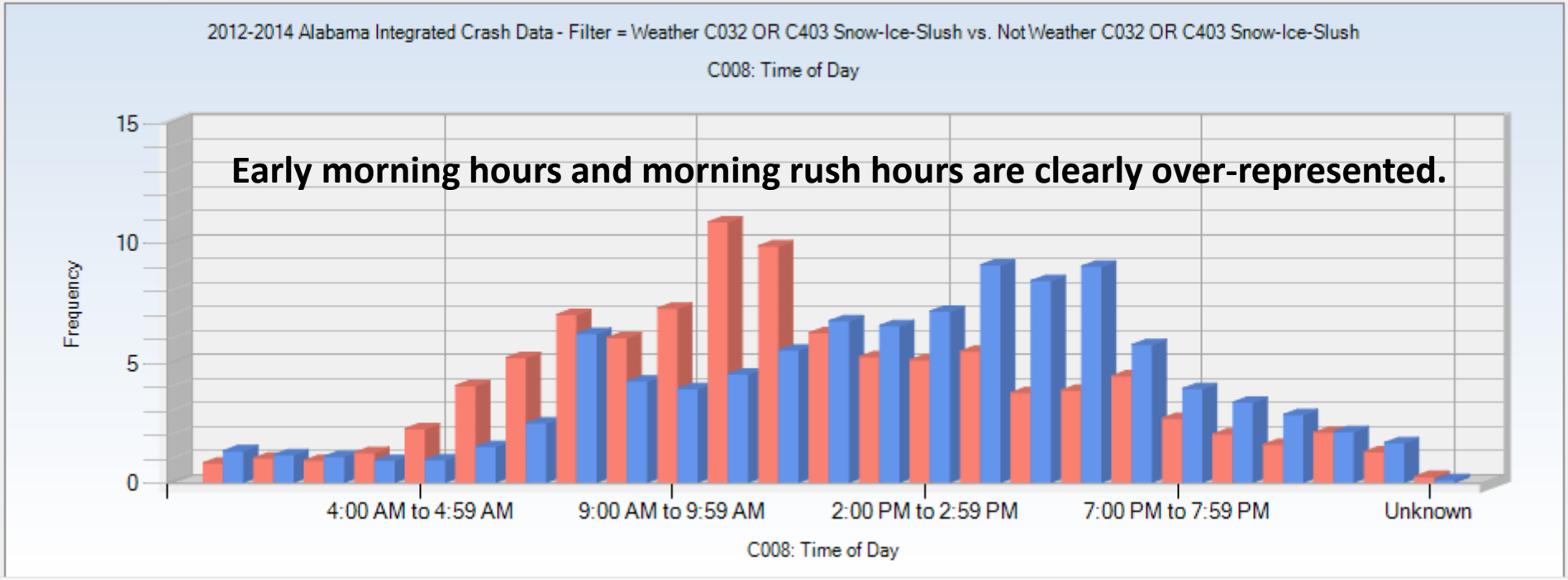
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C008: Time of Day Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
4:00 AM to 4:59 AM	67	2.23	3014	0.93	2.390*	38.972
5:00 AM to 5:59 AM	121	4.02	4813	1.49	2.703*	76.242
6:00 AM to 6:59 AM	156	5.19	7965	2.46	2.106*	81.931
7:00 AM to 7:59 AM	210	6.98	20036	6.19	1.127	23.679
8:00 AM to 8:59 AM	181	6.02	13586	4.20	1.433*	54.659
9:00 AM to 9:59 AM	218	7.25	12627	3.90	1.857*	100.577
10:00 AM to 10:59 AM	326	10.84	14570	4.50	2.406*	190.509
11:00 AM to 11:59 AM	296	9.84	17798	5.50	1.788*	130.490

C043: Agency ORI
C023: E Manner of Crash
C018: Location First Harmful Event Rel t
C203: CU First Harmful Event Location
C053: Number of Persons Recorded
C008: Time of Day
C054: Number of Motorists Recorded
C407: CU Roadway Curvature and Grad
C409: CU Traffic Control
C033: Locale
C413: E CU Turn Lanes

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Lighting Conditions = 13 ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

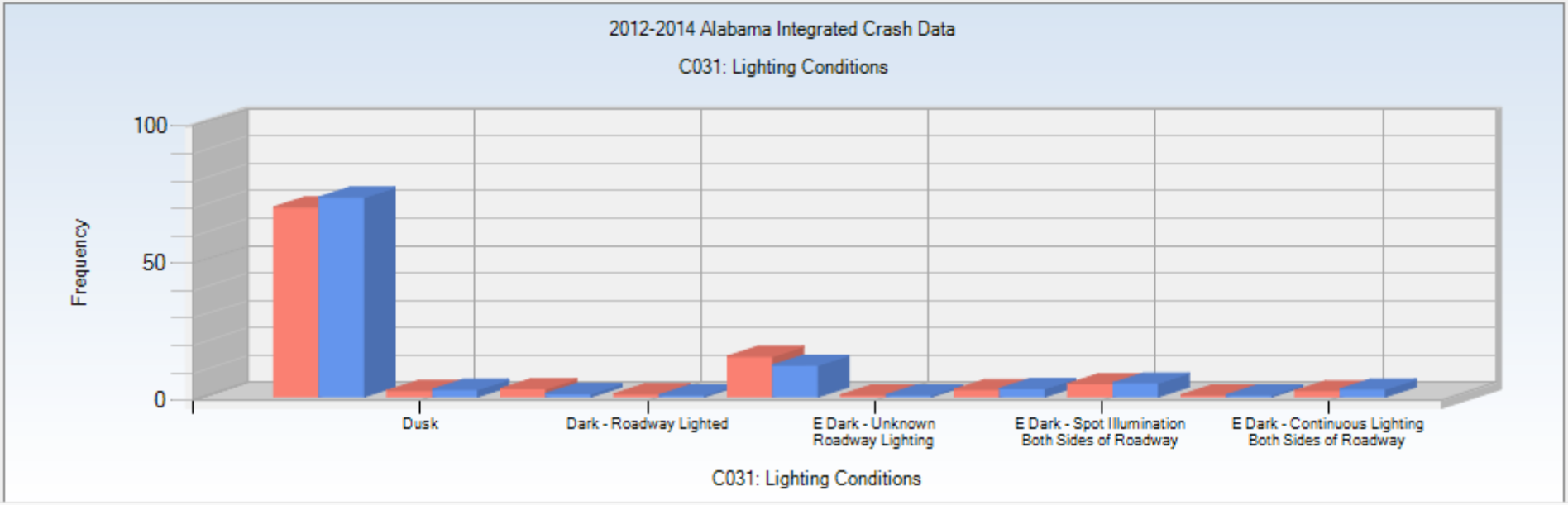
Order: Max Gain Descending Suppress Zero-Valued Rows Significance: Over Representation Threshold: 2.0

C031: Lighting Conditions Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Daylight	2062	69.17	234517	72.78	0.950*	-107.459
Dusk	65	2.18	8462	2.63	0.830	-13.280
Dawn	87	2.92	3626	1.13	2.594*	53.457
Dark - Roadway Lighted	30	1.01	1772	0.55	1.830*	13.608
Dark - Roadway Not Lighted	439	14.73	37008	11.48	1.282*	96.648
E Dark - Unknown Roadway L...	7	0.23	899	0.28	0.842	-1.316
E Dark - Spot Illumination One ...	78	2.62	9617	2.98	0.877	-10.965
E Dark - Spot Illumination Both...	140	4.70	16021	4.97	0.945	-8.206
E Dark - Continuous Lighting ...	10	0.34	1415	0.44	0.764	-3.090
E Dark - Continuous Lighting B...	63	2.11	8907	2.76	0.765	-19.396

C031: Lighting Conditions

Sort by Sum of Max Gain

Display Filter Name



Causal Driver Characteristics:

- Age
  - Youngest under-represented but still high frequency
  - Concentration: ages that could not avoid driving
- Gender
  - Male involvement is higher in proportion than expected
  - Could reflect willingness to drive in these conditions
- Employment
- Vehicle Usage (Police Emergencies)
- Vehicle Type
- Vehicle Age

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CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Driver Raw Age = 104...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

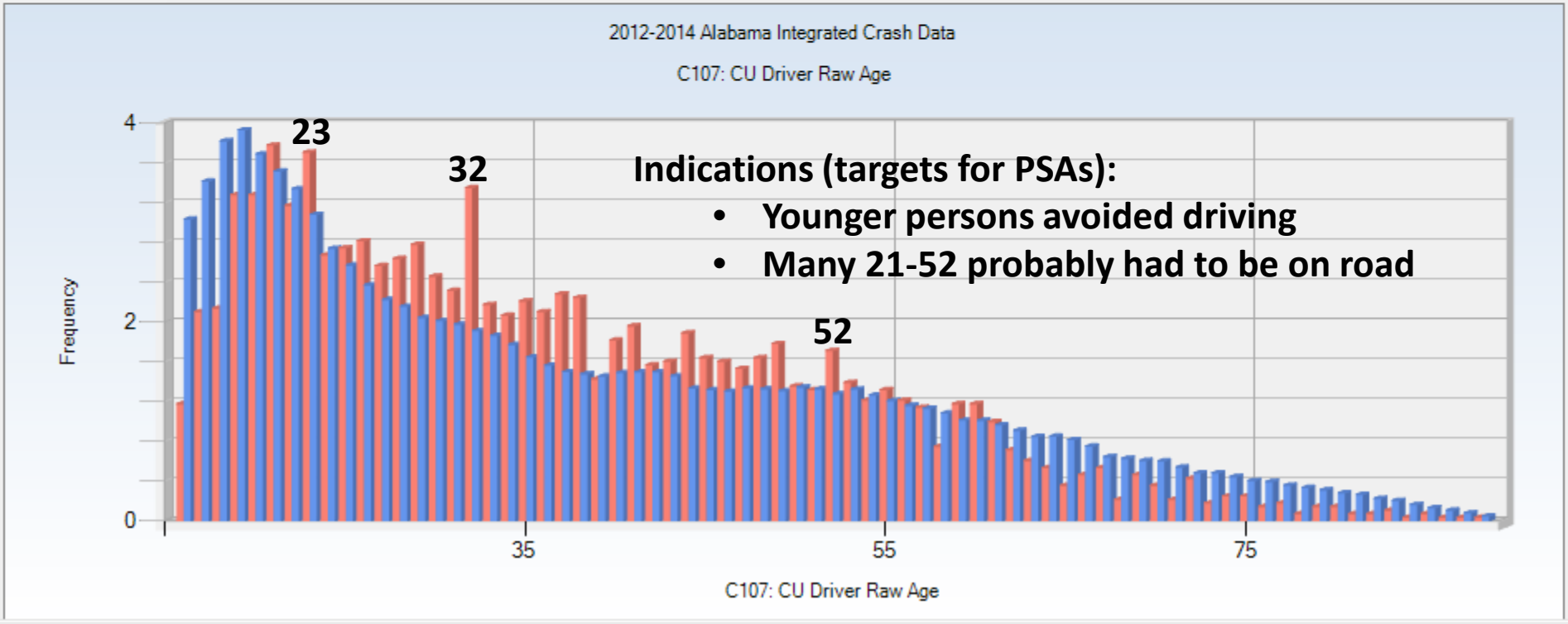
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C107: CU Driver Raw Age Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
29	78	2.78	5978	2.04	1.360*	20.655
30	69	2.46	5882	2.01	1.223	12.576
31	65	2.32	5782	1.98	1.172	9.535
32	94	3.35	5589	1.91	1.753*	40.386
33	61	2.17	5451	1.86	1.167	8.710
34	58	2.07	5186	1.77	1.166	8.252
35	62	2.21	4817	1.65	1.342	15.792

C107: CU Driver Raw Age

Sort by Sum of Max Gain

Display Filter Name



Indications (targets for PSAs):

- **Younger persons avoided driving**
- **Many 21-52 probably had to be on road**

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Driver Age Range = 2...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

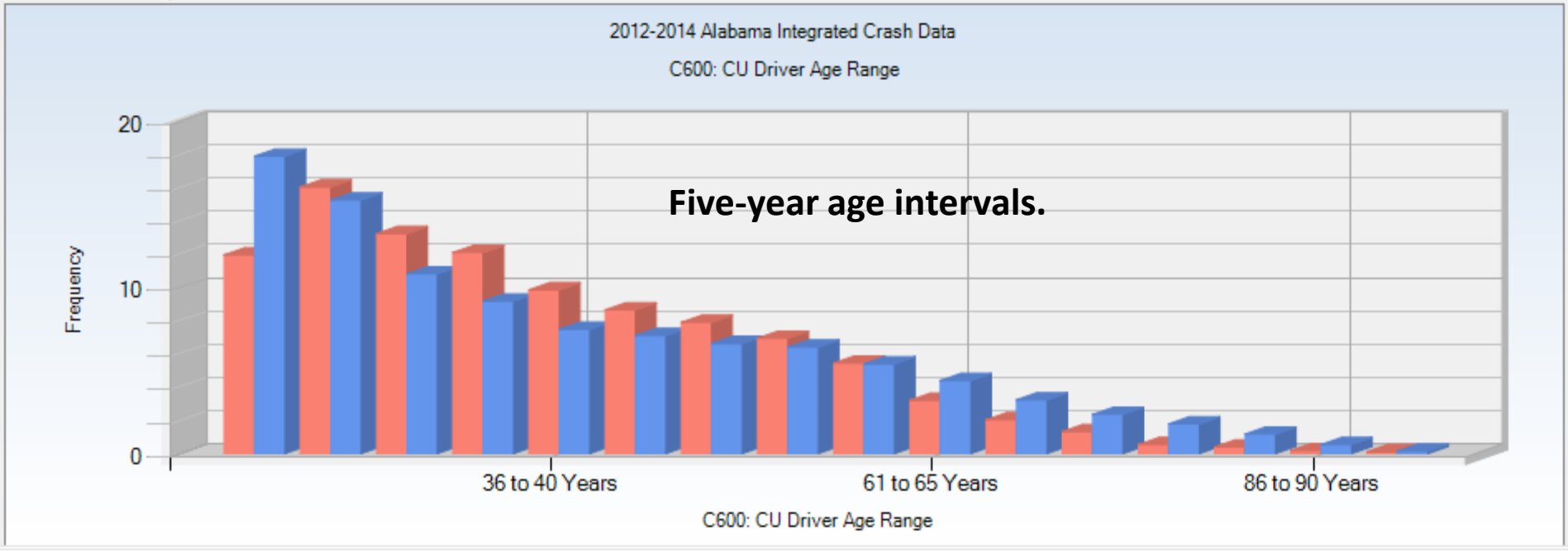
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C600: CU Driver Age Range Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
16 to 20 Years	336	11.98	52337	17.94	0.668*	-167.194
21 to 25 Years	451	16.08	44602	15.29	1.052	22.174
26 to 30 Years	372	13.26	31618	10.84	1.224*	68.009
31 to 35 Years	340	12.12	26825	9.19	1.318*	82.091
36 to 40 Years	277	9.88	21892	7.50	1.316*	66.519
41 to 45 Years	243	8.66	20777	7.12	1.216*	43.240
46 to 50 Years	222	7.91	19358	6.64	1.193*	35.883
51 to 55 Years	195	6.95	18720	6.42	1.083	15.017
56 to 60 Years	153	5.45	15780	5.41	1.008	1.283

C600: CU Driver Age Range

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Driver Gender = 3 OR...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

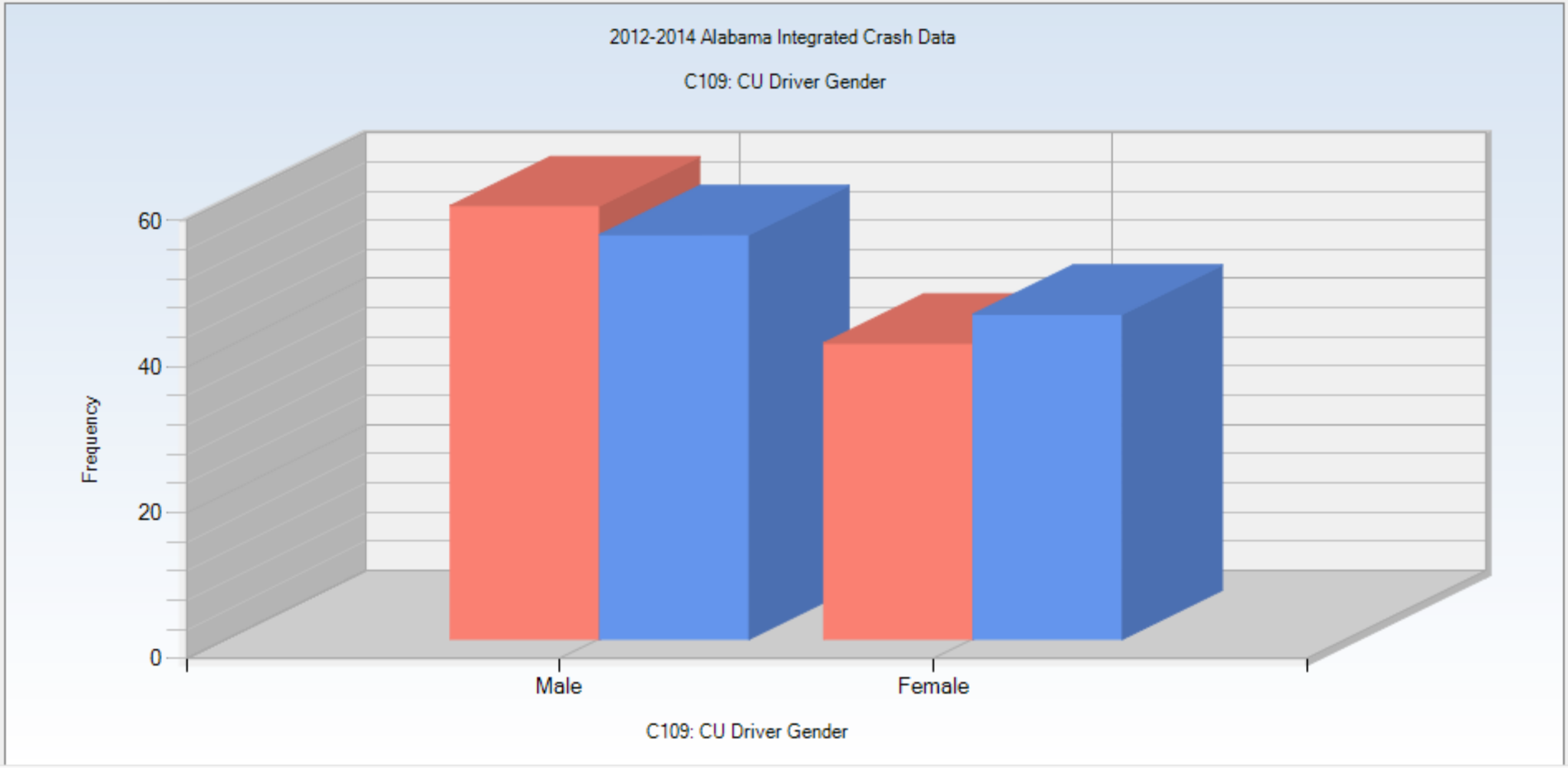
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C109: CU Driver Gender	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Male	1680	59.41	164088	55.45	1.071*	111.987
Female	1148	40.59	131854	44.55	0.911*	-111.987

C109: CU Driver Gender

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not E CU Driver Employment ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

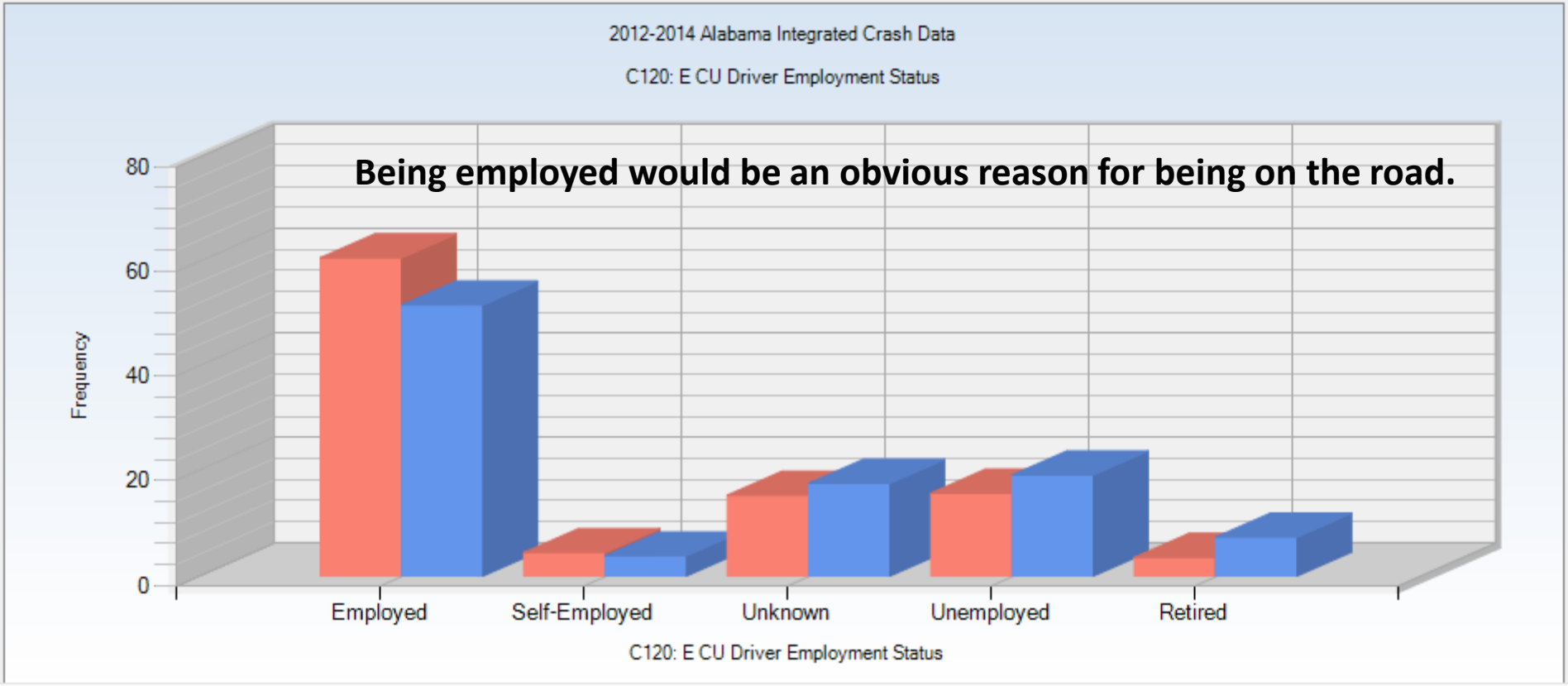
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C120: E CU Driver Employment Status	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Employed	1679	60.77	151053	51.75	1.174*	249.040
Self-Employed	123	4.45	11219	3.84	1.158	16.794
Unknown	426	15.42	51640	17.69	0.871*	-62.856
Unemployed	437	15.82	56318	19.30	0.820*	-96.140
Retired	98	3.55	21638	7.41	0.478*	-106.838

C120: E CU Driver Employment Status

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Vehicle Usage = 18 O...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

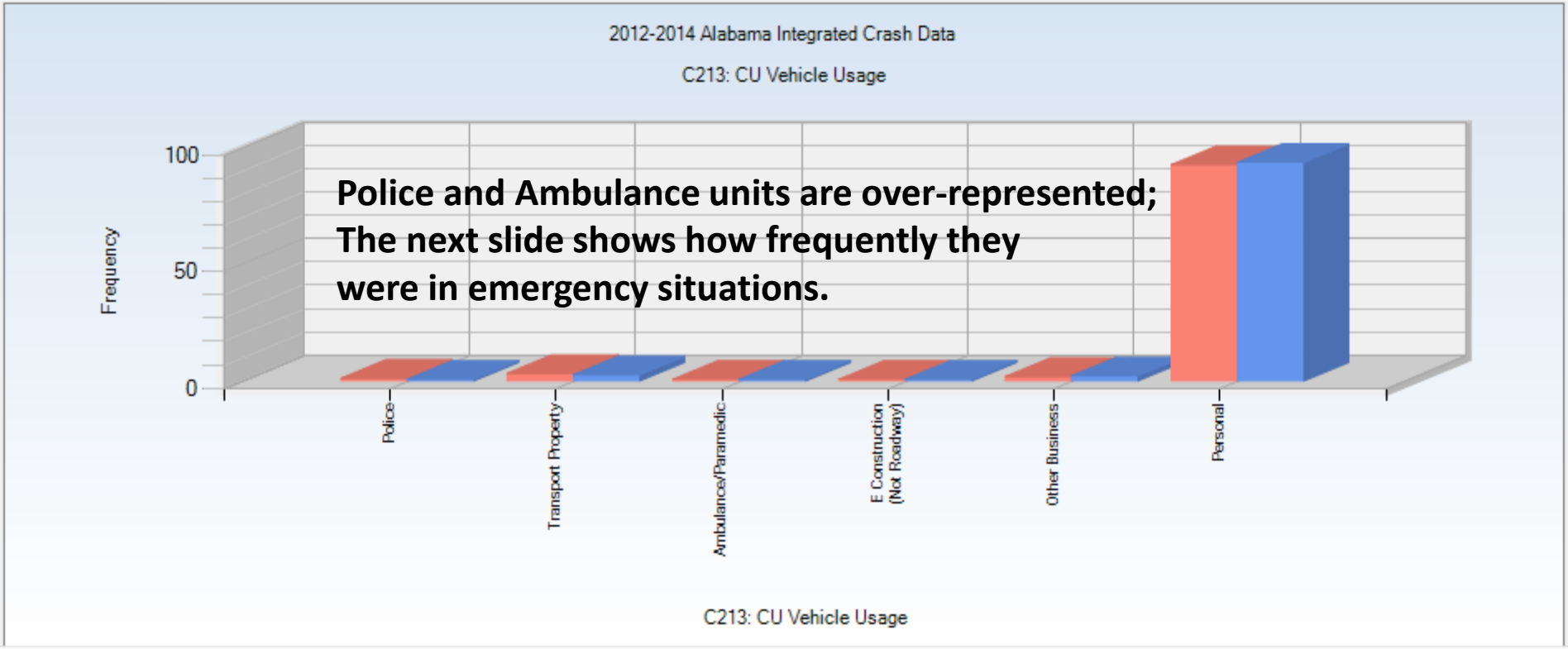
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C213: CU Vehicle Usage Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Police	31	1.10	1280	0.43	2.536*	18.775
Transport Property	90	3.18	7689	2.60	1.226	16.564
Ambulance/Paramedic	10	0.35	149	0.05	7.027	8.577
E Construction (Not Roadway)	12	0.42	1112	0.38	1.130	1.379
Other Business	51	1.80	6307	2.13	0.847	-9.237
Personal	2634	93.14	278890	94.19	0.989*	-29.630

C213: CU Vehicle Usage

Sort by Sum of Max Gain

Display Filter Name



Police and Ambulance units are over-represented; The next slide shows how frequently they were in emergency situations.

CARE 10.1.0.0 - [Crosstab Results - 2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush]

File Dashboard Filters Analysis Crosstab Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

ppress Zero Values: Rows and Columns Select Cells: Column: E CU Emergency Status ; Row: CU Vehicle Usage

	On an Emergency Call	No Emergency or Pursuit	Unknown	Not Applicable/Not E	CU is Not a Vehicle	CU is Unknown	Record from Paper System	TOTAL
Not Roadway)	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.40%
Wrecker/Tow	0 0.00%	0 0.00%	0 0.00%	3 100.00%	0 0.00%	0 0.00%	0 0.00%	3 0.10%
ther Business	0 0.00%	0 0.00%	0 0.00%	45 88.24%	0 0.00%	0 0.00%	6 11.76%	51 1.70%
E nstruction/Main	0 0.00%	0 0.00%	0 0.00%	6 100.00%	0 0.00%	0 0.00%	0 0.00%	6 0.20%
E nstruction/Main	0 0.00%	0 0.00%	0 0.00%	1 100.00%	0 0.00%	0 0.00%	0 0.00%	1 0.03%
Police	5 16.13%	26 83.87%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	31 1.03%
Fire Fighting	2 100.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	2 0.07%
bulance/Para medic	5 50.00%	5 50.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	10 0.33%
E Other Emergency	0 0.00%	2 100.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	2 0.07%
Unknown	0 0.00%	0 0.00%	1 1.20%	82 98.80%	0 0.00%	0 0.00%	0 0.00%	83 2.76%
ot Applicable	0 0.00%	0 0.00%	0 0.00%	3 100.00%	0 0.00%	0 0.00%	0 0.00%	3 0.10%
CU is Not a Vehicle	0 0.00%	0 0.00%	0 0.00%	0 0.00%	1 100.00%	0 0.00%	0 0.00%	1 0.03%
U is Unknown	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	53 94.64%	3 5.36%	56 1.86%
Other Personal Use	0 0.00%	0 0.00%	0 0.00%	2 100.00%	0 0.00%	0 0.00%	0 0.00%	2 0.07%
Rental Truck mmercial Use)	0 0.00%	0 0.00%	0 0.00%	2 100.00%	0 0.00%	0 0.00%	0 0.00%	2 0.07%
E nsit/Commuter	0 0.00%	0 0.00%	0 0.00%	2 100.00%	0 0.00%	0 0.00%	0 0.00%	2 0.07%
E Shuttle Bus	0 0.00%	0 0.00%	0 0.00%	1 100.00%	0 0.00%	0 0.00%	0 0.00%	1 0.03%
TOTAL	13 0.43%	36 1.20%	1 0.03%	2713 90.22%	1 0.03%	53 1.76%	190 6.32%	3007 100.00%

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Causal Unit (CU) Type = ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

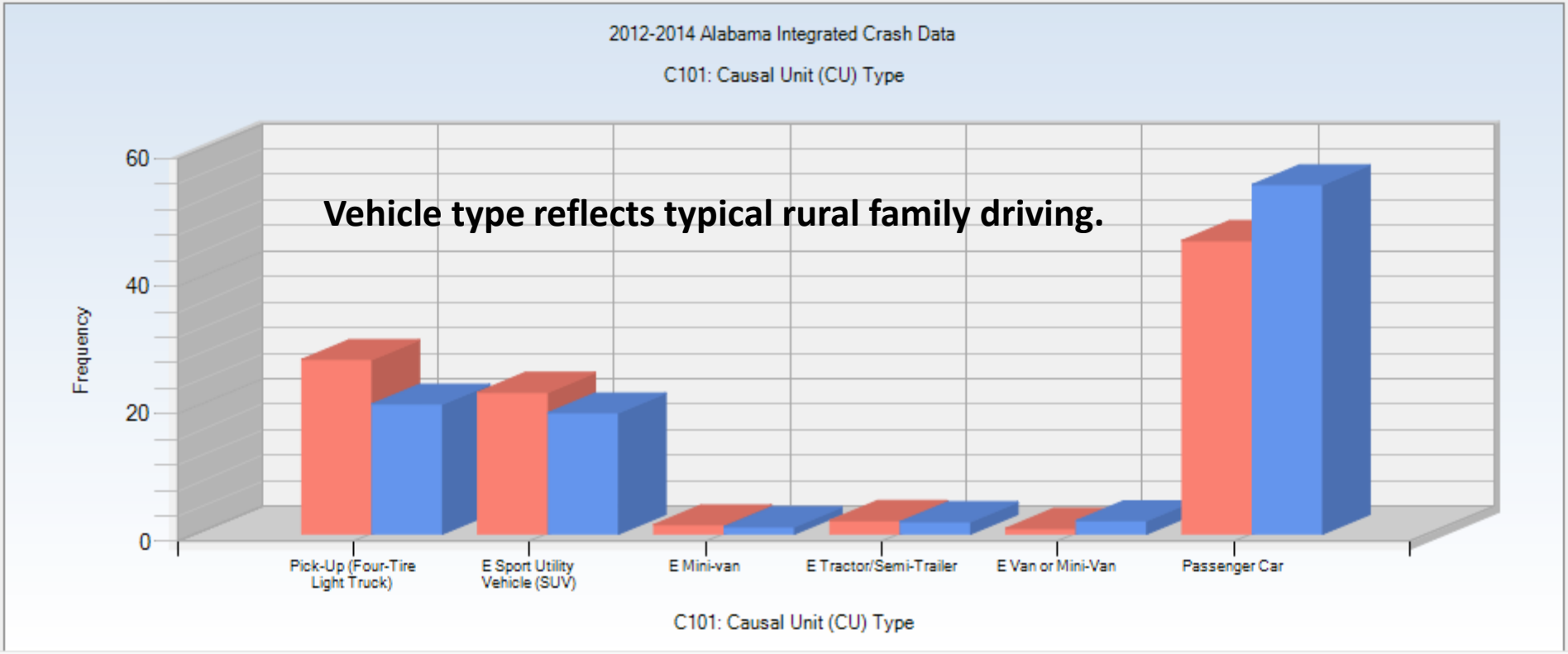
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C101: Causal Unit (CU) Type Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Pick-Up (Four-Tire Light Truck)	774	27.34	60791	20.36	1.343*	197.677
E Sport Utility Vehicle (SUV)	629	22.22	56751	19.00	1.169*	90.978
E Mini-van	41	1.45	3419	1.14	1.265	8.587
E Tractor/Semi-Trailer	60	2.12	5754	1.93	1.100	5.450
E Van or Mini-Van	25	0.88	6278	2.10	0.420*	-34.518
Passenger Car	1302	45.99	163503	54.75	0.840*	-248.074

C101: Causal Unit (CU) Type

Sort by Sum of Max Gain

Display Filter Name



Vehicle type reflects typical rural family driving.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

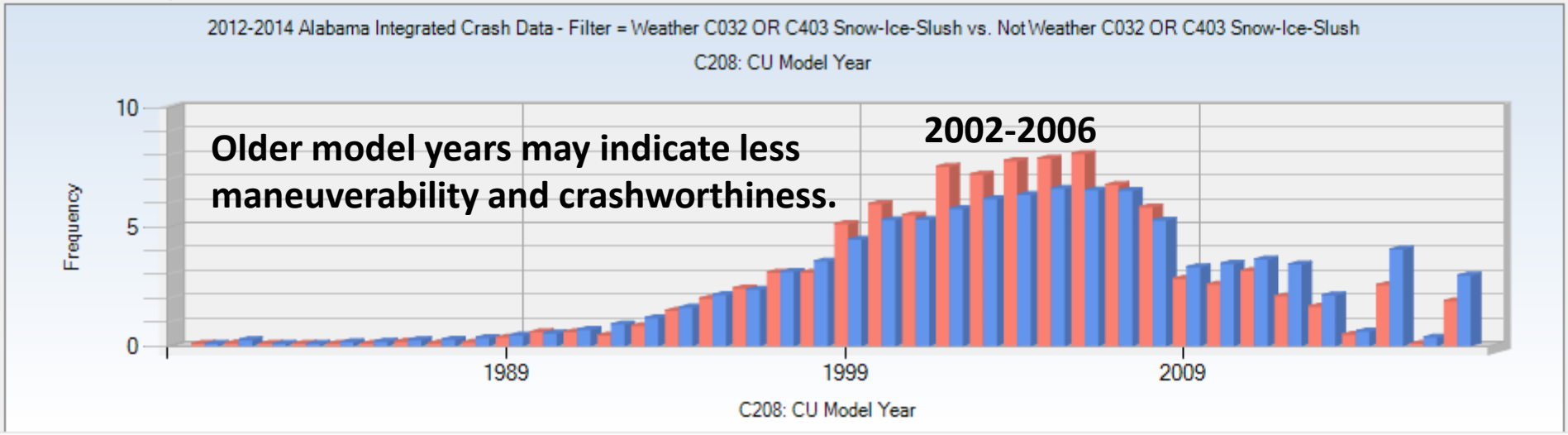
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C208: CU Model Year Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
1960-1969	1	0.03	145	0.05	0.738	-0.355
1970-1979	3	0.10	786	0.25	0.408	-4.345
1980	1	0.03	87	0.03	1.230	0.187
1983	1	0.03	257	0.08	0.416	-1.402
1984	1	0.03	458	0.14	0.234	-3.280
1985	2	0.07	565	0.18	0.379	-3.280
1986	5	0.17	773	0.24	0.692	-2.223
1987	3	0.10	823	0.26	0.390	-4.691
1988	4	0.13	1054	0.33	0.406	-5.849
1989	10	0.33	1391	0.43	0.769	-2.998
1990	17	0.57	1640	0.51	1.109	1.675
1991	17	0.57	2147	0.67	0.847	-3.063

C045: HasGPS
C411: CU Opposing Lane Separation
C232: E CU Areas Damaged #3
C402: E CU Road Surface Type
C120: E CU Driver Employment Status
C035: Police Notification Delay
C208: CU Model Year
C210: CU Body (Passenger Cars Only)
C108: CU Driver Race
C206: E CU Sequence of Events #3
C121: CU Driver Condition
C124: CU Driver Alcohol Test Type Giver
C126: CU Driver Alcohol Test Results
C127: E CU Driver Drug Test Results
C037: EMS Arrival Delay
C125: E CU Driver Drug Test Type Giver

Sort by Sum of Max Gain

Display Filter Name



Driver Causation Topics:

- Primary Contributing Circumstances
  - Too Fast for Conditions
  - Over-Steering; Over-Correction
- Speed at Impact
  - Higher than expected impact speeds
  - Higher impact speed increases severity
- Sequence of Events
  - Run off the road predominant first event
- First Harmful Event
- Number of Vehicles
- Manner of Crash

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CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Primary Contributing Circ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

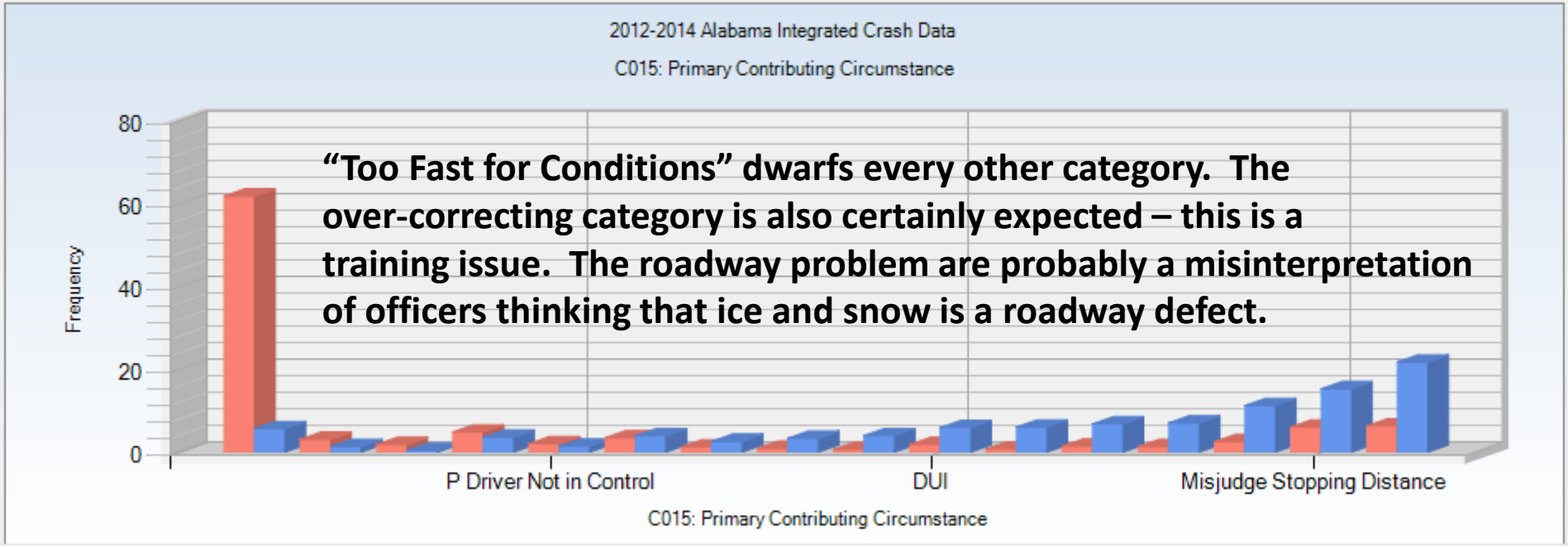
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C015: Primary Contributing Circumstance Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Driving too Fast for Conditions	1328	61.91	11478	5.67	10.914*	1206.326
E Over Correcting/Over Steer...	66	3.08	2678	1.32	2.325*	37.611
E Roadway/Sign/Signal Defect	39	1.82	200	0.10	18.395*	36.880
E Ran off Road	104	4.85	7263	3.59	1.351*	27.007
P Driver Not in Control	43	2.00	2818	1.39	1.439*	13.127
E Swerved to Avoid Vehicle	74	3.45	7902	3.91	0.883	-9.766
E Other Improper Action	27	1.26	5227	2.58	0.487*	-28.410
E Failed to Yield Right-of-Way...	19	0.89	6751	3.34	0.265	-52.565
E Ran Traffic Signal	13	0.61	8024	3.97	0.153	-72.060

C015: Primary Contributing Circumstance

Sort by Sum of Max Gain

Display Filter Name



"Too Fast for Conditions" dwarfs every other category. The over-correcting category is also certainly expected – this is a training issue. The roadway problem are probably a misinterpretation of officers thinking that ice and snow is a roadway defect.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Primary Contributing Circ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

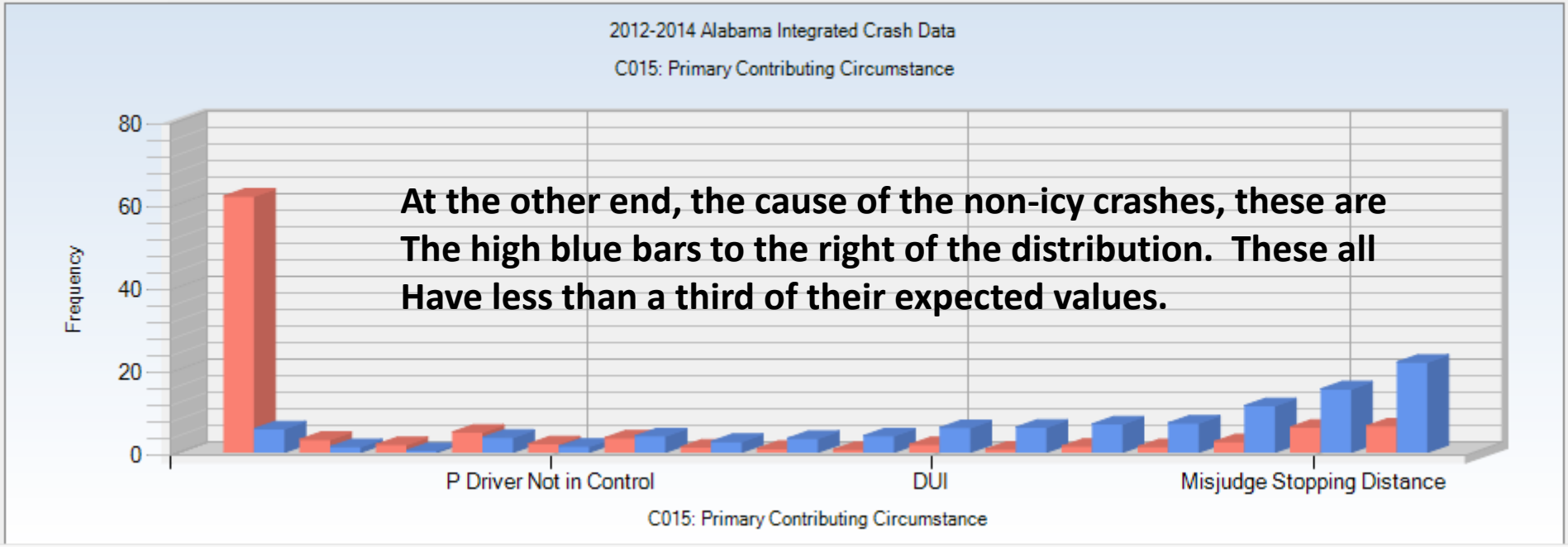
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C015: Primary Contributing Circumstance Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
E Failed to Yield Right-of-Way...	19	0.89	6751	3.34	0.265	-52.565
E Ran Traffic Signal	13	0.61	8024	3.97	0.153	-72.060
DUI	39	1.82	11952	5.91	0.308*	-87.699
E Failed to Yield Right-of-Way...	15	0.70	12216	6.04	0.116	-114.498
Improper Lane Change/Use	30	1.40	13789	6.81	0.205*	-116.172
E Failed to Yield Right-of-Way...	28	1.31	14290	7.06	0.185*	-123.483
Unseen Object/Person/Vehicle	54	2.52	22752	11.24	0.224*	-187.186
Misjudge Stopping Distance	130	6.06	30944	15.29	0.396*	-198.027
Followed too Close	136	6.34	44062	21.78	0.291*	-331.086

C015: Primary Contributing Circumstance

Sort by Sum of Max Gain

Display Filter Name



At the other end, the cause of the non-icy crashes, these are The high blue bars to the right of the distribution. These all Have less than a third of their expected values.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Estimated Speed at I...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

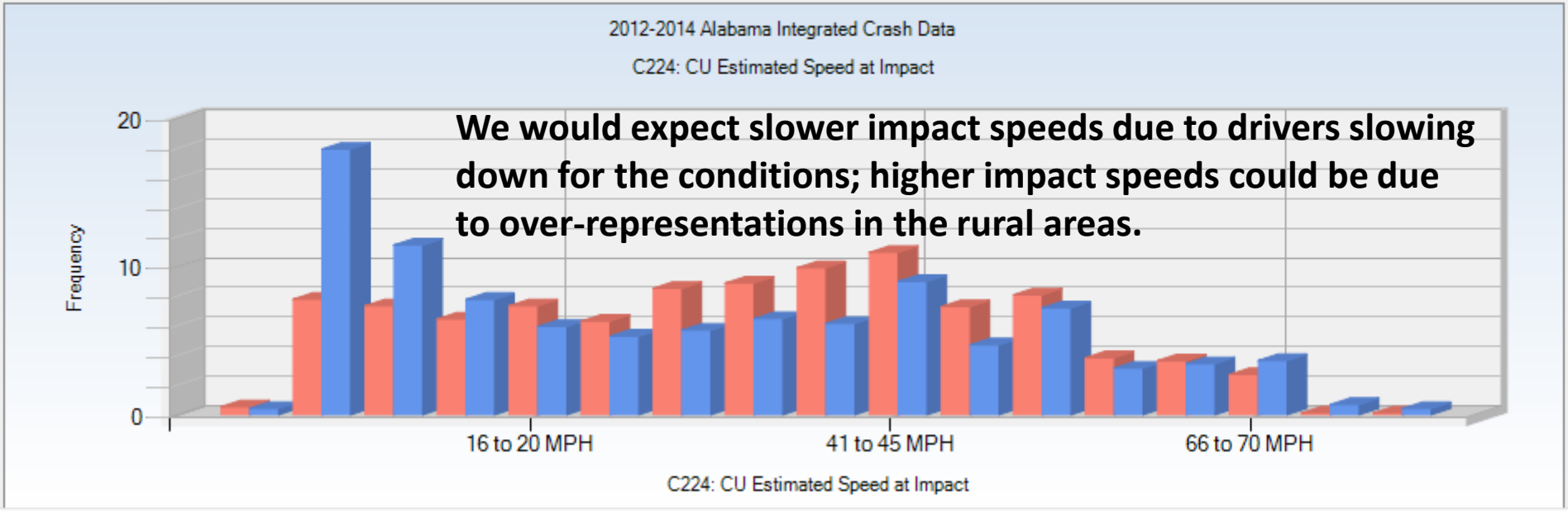
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C224: CU Estimated Speed at Impact Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
21 to 25 MPH	128	6.32	10092	5.31	1.191	20.498
26 to 30 MPH	173	8.54	10875	5.72	1.493*	57.158
31 to 35 MPH	180	8.89	12341	6.49	1.369*	48.541
36 to 40 MPH	201	9.93	11727	6.17	1.609*	76.082
41 to 45 MPH	222	10.96	17112	9.00	1.218*	39.720
46 to 50 MPH	148	7.31	8974	4.72	1.548*	52.407
51 to 55 MPH	164	8.10	13728	7.22	1.121	17.767
56 to 60 MPH	78	3.85	5988	3.15	1.223	14.215
61 to 65 MPH	74	3.65	6555	3.45	1.060	4.175
66 to 70 MPH	55	2.72	6965	3.66	0.741	-19.192

C224: CU Estimated Speed at Impact

Sort by Sum of Max Gain

Display Filter Name



We would expect slower impact speeds due to drivers slowing down for the conditions; higher impact speeds could be due to over-representations in the rural areas.

CARE 10.1.0.0 - [Crosstab Results - 2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush]

File Dashboard Filters Analysis Crosstab Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

Suppress Zero Values: Rows and Columns Select Cells: Column: Crash Severity ; Row: CU Estimated Speed at Impact

	Fatal Injury	Incapacitating Injury	Non-Incapacitating Inju	Possible Injury	Property Damage Only	Unknown	TOTAL
1 to 5 MPH	0 0.00%	0 0.00%	2 1.04%	4 2.12%	145 6.18%	7 7.95%	158 5.36%
6 to 10 MPH	0 0.00%	3 2.44%	7 3.65%	3 1.59%	132 5.63%	4 4.55%	149 5.06%
11 to 15 MPH	0 0.00%	2 1.63%	4 2.08%	7 3.70%	116 4.95%	2 2.27%	131 4.45%
16 to 20 MPH	0 0.00%	3 2.44%	5 2.60%	9 4.76%	129 5.50%	3 3.41%	149 5.06%
21 to 25 MPH	0 0.00%	6 4.88%	5 2.60%	10 5.29%	105 4.48%	2 2.27%	128 4.34%
26 to 30 MPH	0 0.00%	5 4.07%	9 4.69%	5 2.65%	149 6.35%	5 5.68%	173 5.87%
31 to 35 MPH	0 0.00%	7 5.69%	13 6.77%	8 4.23%	146 6.23%	6 6.82%	180 6.11%
36 to 40 MPH	3 33.33%	9 7.32%	21 10.94%	13 6.88%	151 6.44%	4 4.55%	201 6.82%
41 to 45 MPH	1 11.11%	20 16.26%	25 13.02%	11 5.82%	161 6.87%	4 4.55%	222 7.54%
46 to 50 MPH	1 11.11%	8 6.50%	20 10.42%	13 6.88%	103 4.39%	3 3.41%	148 5.02%
51 to 55 MPH	1 11.11%	15 12.20%	12 6.25%	7 3.70%	127 5.42%	2 2.27%	164 5.57%
56 to 60 MPH	0 0.00%	6 4.88%	8 4.17%	7 3.70%	57 2.43%	0 0.00%	78 2.65%
61 to 65 MPH	0 0.00%	12 9.76%	10 5.21%	3 1.59%	49 2.09%	0 0.00%	74 2.51%
66 to 70 MPH	0 0.00%	3 2.44%	4 2.08%	6 3.17%	41 1.75%	1 1.14%	55 1.87%
71 to 75 MPH	0 0.00%	1 0.81%	0 0.00%	0 0.00%	1 0.04%	0 0.00%	2 0.07%
76 to 80 MPH	0 0.00%	0 0.00%	0 0.00%	0 0.00%	2 0.09%	0 0.00%	2 0.07%
E Stationary	0 0.00%	1 0.81%	1 0.52%	1 0.53%	23 0.98%	5 5.68%	31 1.05%
Unknown	3	18	40	77	637	36	811

Higher impact speeds Result in Higher injury severity.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not E CU Sequence of Events ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

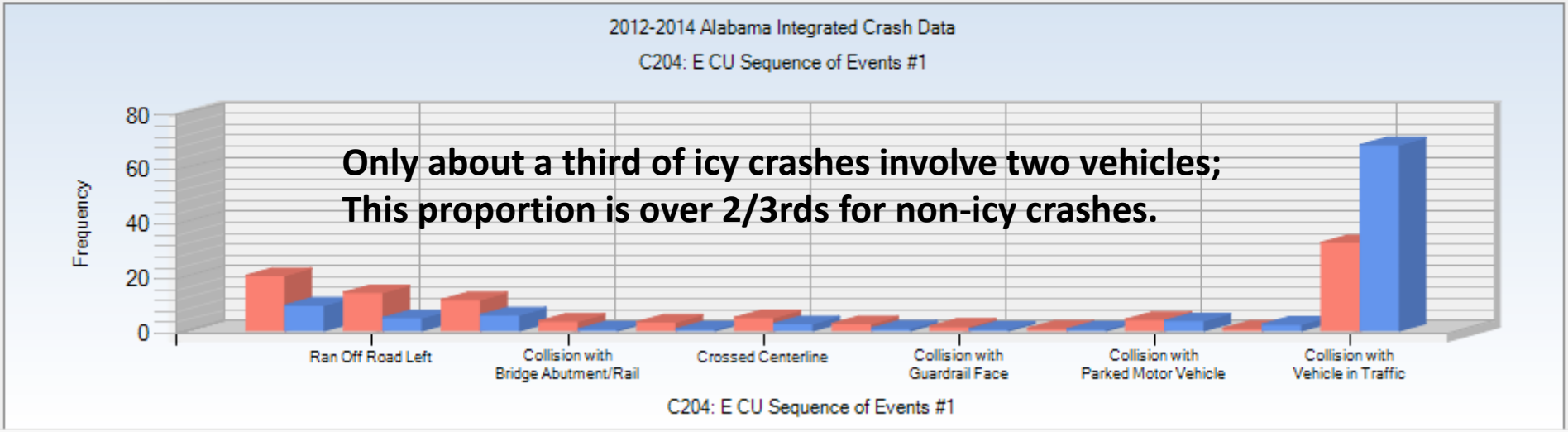
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C204: E CU Sequence of Events #1 Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Ran Off Road Right	525	20.29	25401	9.38	2.164*	282.398
Ran Off Road Left	364	14.07	12891	4.76	2.956*	240.880
Evasive Action (Swerve/Brake)	295	11.40	15747	5.81	1.961*	144.602
Collision with Bridge Abutment/Rail	91	3.52	378	0.14	25.206*	87.390
Collision with Concrete Barrier	83	3.21	930	0.34	9.344*	74.118
Crossed Centerline	125	4.83	7135	2.63	1.834*	56.854
Other Non-Collision	69	2.67	2504	0.92	2.885*	45.085
Collision with Guardrail Face	42	1.62	544	0.20	8.084*	36.804
Collision with Ditch	24	0.93	1215	0.45	2.068*	12.396
Collision with Parked Motor Vehicle	107	4.14	10000	3.69	1.120	11.491
Collision with Vehicle in (or from) O...	24	0.93	6541	2.41	0.384*	-38.472
Collision with Vehicle in Traffic	838	32.39	184870	68.25	0.475*	-927.672

C204: E CU Sequence of Events #1

Sort by Sum of Max Gain

Display Filter Name



Only about a third of icy crashes involve two vehicles;
This proportion is over 2/3rds for non-icy crashes.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not First Harmful Event = 24 ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C017: First Harmful Event Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Collision with Bridge Abutment/...	163	5.93	883	0.30	19.904*	154.810
E Collision with Concrete Barrier	147	5.35	1696	0.57	9.345*	131.270
E Ran Off Road Right	211	7.68	9715	3.28	2.342*	120.897
Collision with Ditch	186	6.77	10074	3.40	1.991*	92.567
E Ran Off Road Left	138	5.02	5199	1.76	2.862*	89.781
E Collision with Guardrail Face	107	3.90	1995	0.67	5.783*	88.497
Collision with Tree	143	5.21	7745	2.61	1.991*	71.168
Collision with Parked Motor Ve...	165	6.01	12241	4.13	1.453*	51.469
Overturn/Rollover	87	3.17	4348	1.47	2.157*	46.674
E Evasive Action (Swerve/Bra...	51	1.86	2314	0.78	2.376*	29.538
Collision with Sign Post	45	1.64	2096	0.71	2.315*	25.560
Collision with Utility Pole	48	1.75	2974	1.00	1.740*	20.417
E Collision with Embankment	37	1.35	1837	0.62	2.172*	19.962
E Crossed Centerline	35	1.27	1846	0.62	2.044*	17.879
E Collision with Vehicle in (or fr...	30	1.09	7228	2.44	0.448*	-37.037
Collision with Vehicle in Traffic	1154	42.01	220613	74.49	0.564*	-892.106

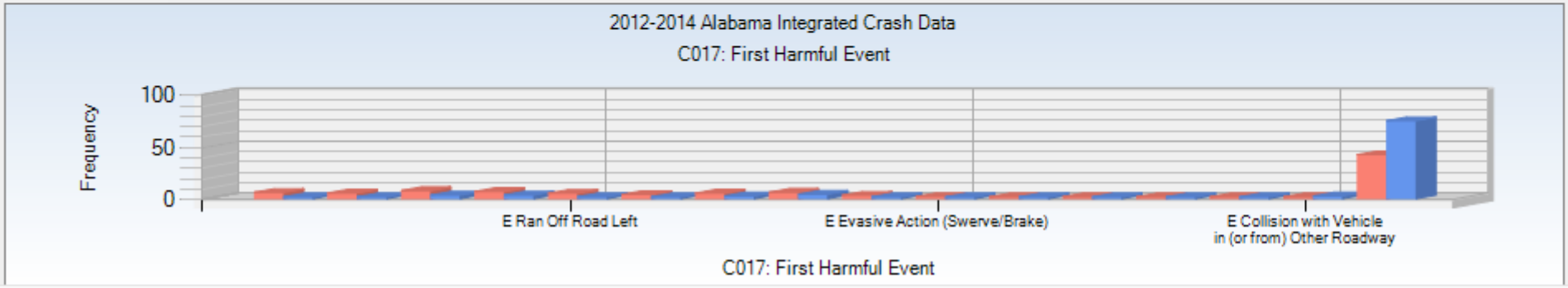
C017: First Harmful Event

Extremely high Over-representations:

- **Bridge Abutment**
- **Concrete Barrier**
- **Guardrail Face**

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

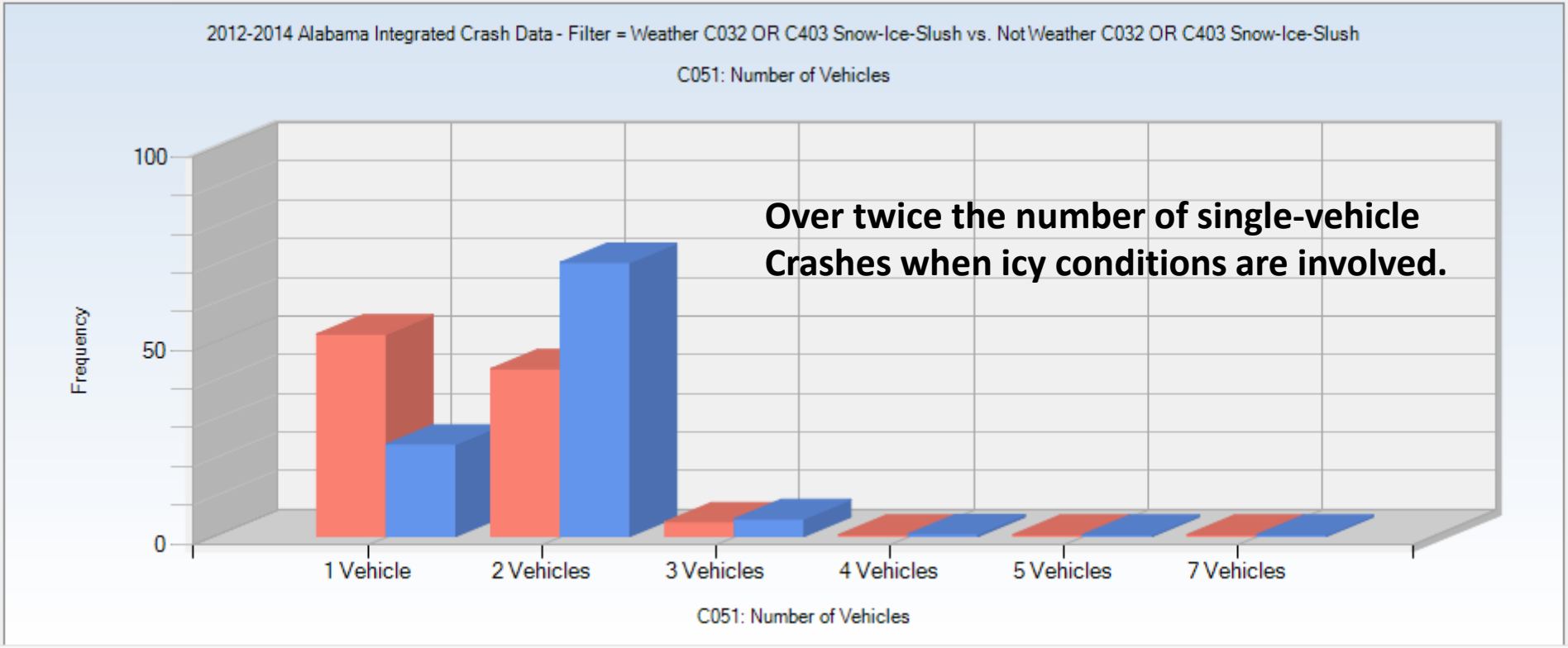
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C051: Number of Vehicles Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
1 Vehicle	1574	52.33	77217	23.87	2.192*	855.933
2 Vehicles	1304	43.35	229203	70.86	0.612*	-827.435
3 Vehicles	112	3.72	14666	4.53	0.821	-24.384
4 Vehicles	10	0.33	2011	0.62	0.535	-8.701
5 Vehicles	7	0.23	267	0.08	2.819	4.517
7 Vehicles	1	0.03	19	0.01	5.660	0.823

C501: Vehicle 2 (V2) Type
C052: Number of Drivers Recorded
C006: Day of the Week
C505: V2 Left Scene
C051: Number of Vehicles
C002: City
C205: E CU Sequence of Events #2
C043: Agency ORI

Sort by Sum of Max Gain

Display Filter Name



Over twice the number of single-vehicle Crashes when icy conditions are involved.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not E Manner of Crash = 12 ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

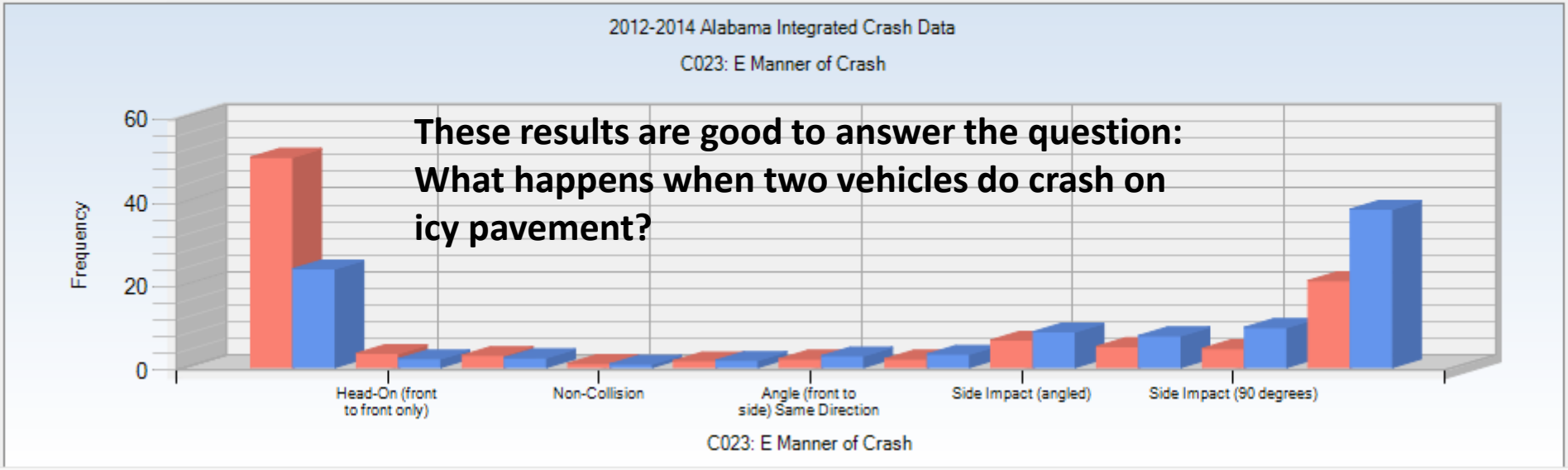
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C023: E Manner of Crash Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Single Vehicle Crash (all types)	1379	50.33	67841	23.61	2.132*	732.149
Head-On (front to front only)	92	3.36	5929	2.06	1.627*	35.468
Angle Oncoming (frontal)	79	2.88	6645	2.31	1.247	15.641
Non-Collision	26	0.95	2312	0.80	1.179	3.956
Sideswipe - Opposite Direction	43	1.57	4908	1.71	0.919	-3.797
Angle (front to side) Same Dire...	56	2.04	7940	2.76	0.740	-19.706
Angle (front to side) Opposite ...	56	2.04	9157	3.19	0.641*	-31.310
Side Impact (angled)	179	6.53	24466	8.51	0.767*	-54.279
Sideswipe - Same Direction	137	5.00	21841	7.60	0.658*	-71.250
Side Impact (90 degrees)	124	4.53	27482	9.56	0.473*	-138.036
Rear End (front to rear)	569	20.77	108847	37.88	0.548*	-468.836

C023: E Manner of Crash

Sort by Sum of Max Gain

Display Filter Name



These results are good to answer the question: What happens when two vehicles do crash on icy pavement?

Location Topics:

- Rural-Urban
- Locale
- Highway Classification (Controlled Access)
- County
- City
- Intersection or Non-Intersection
- Agency Regional/District Classifications
  - ALDOT
  - RPO
  - ADECA
  - DPS

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CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

Order: Max Gain Descending Suppress Zero-Valued Rows Significance: Over Representation Threshold: 2.0

C010: Rural or Urban Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Rural	1132	37.63	78202	24.18	1.557*	404.773
Urban	1876	62.37	245262	75.82	0.823*	-404.773

C007: Week of the Year
C008: Time of Day
C009: Data Source
C010: Rural or Urban

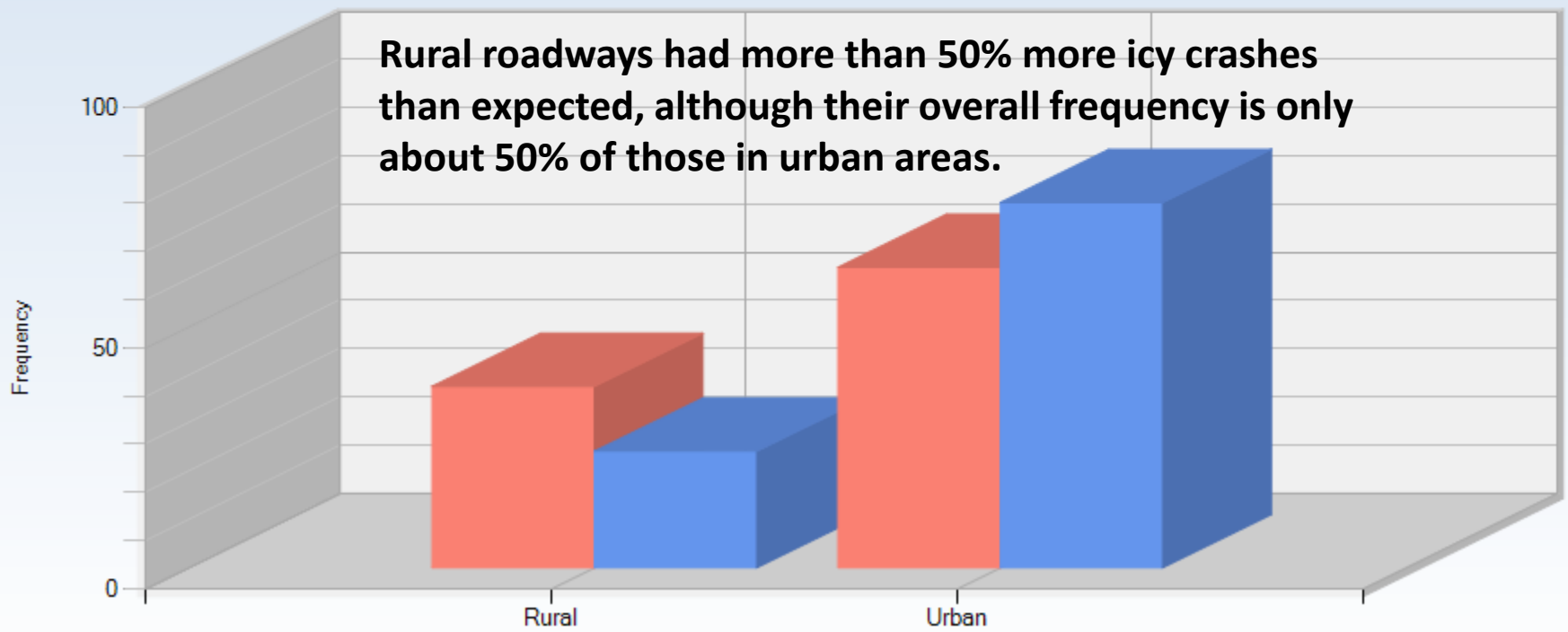
Sort by Sum of Max Gain

Display Filter Name

2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow-Ice-Slush

C010: Rural or Urban

Rural roadways had more than 50% more icy crashes than expected, although their overall frequency is only about 50% of those in urban areas.



C010: Rural or Urban

CARE 10.1.0.0 - [Crosstab Results - 2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush]

File Dashboard Filters Analysis Crosstab Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

Suppress Zero Values: None Select Cells: Column: Crash Severity ; Row: Rural or Urban

	Fatal Injury	Incapacitating Injury	Non-Incapacitating Inju	Possible Injury	Property Damage Only	Unknown	TOTAL
Rural	9 100.00%	78 61.90%	119 61.66%	45 23.32%	871 36.31%	10 11.36%	1132 37.63%
Urban	0 0.00%	48 38.10%	74 38.34%	148 76.68%	1528 63.69%	78 88.64%	1876 62.37%
TOTAL	9 0.30%	126 4.19%	193 6.42%	193 6.42%	2399 79.75%	88 2.93%	3008 100.00%

Rural areas are over-represented in all crashes, but this cross-tabulation indicates that they will be even more over-represented in the more severe crashes. No doubt this is due to the increased speed on the rural roads. All nine fatalities and about 62% of the Incapacitating Injury crashes were on rural roads.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

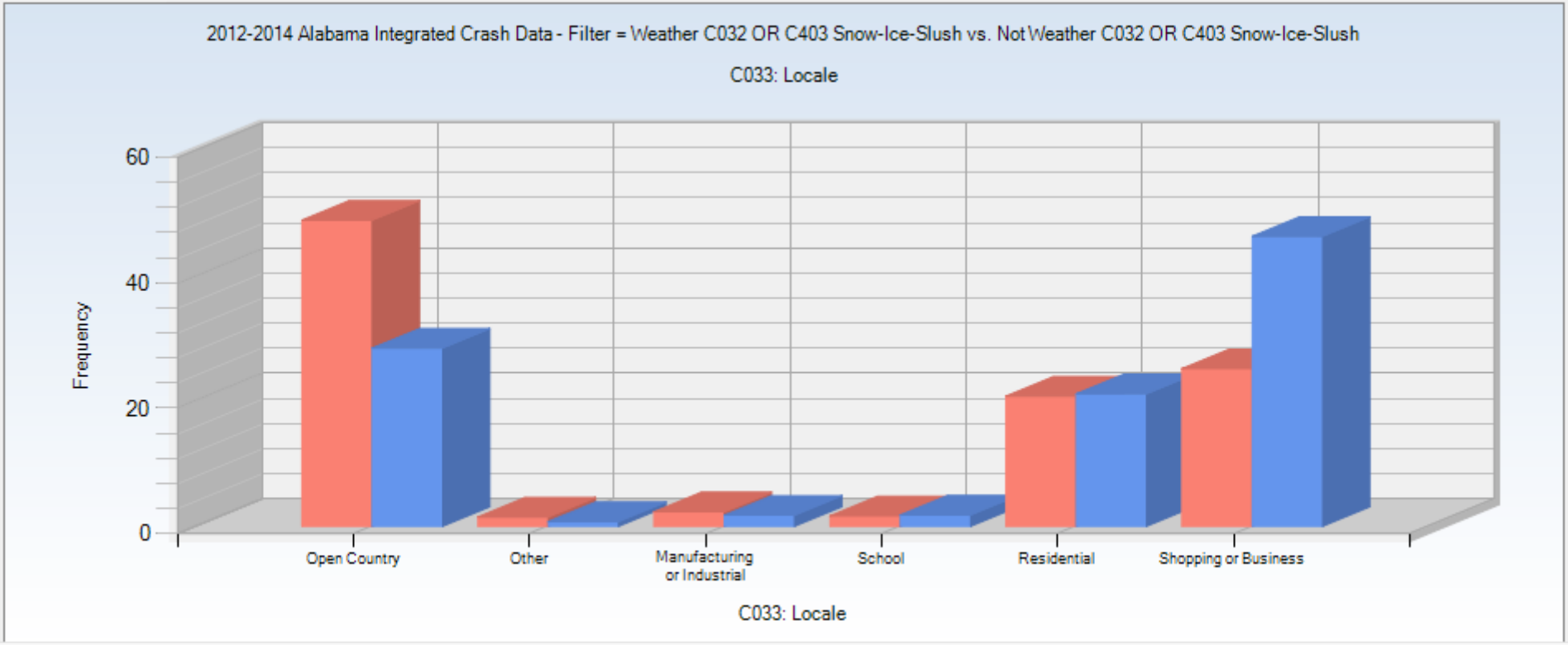
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C033: Locale Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Open Country	1465	48.78	91461	28.38	1.719*	612.646
Other	44	1.47	2387	0.74	1.978*	21.755
Manufacturing or Industrial	69	2.30	5648	1.75	1.311	16.365
School	49	1.63	5738	1.78	0.916	-4.474
Residential	622	20.71	67974	21.09	0.982	-11.471
Shopping or Business	754	25.11	148898	46.21	0.543*	-633.627

C054: Number of Motorists Recorded
C407: CU Roadway Curvature and Grad
C409: CU Traffic Control
C033: Locale
C413: E CU Turn Lanes
C223: CU Speed Limit
C129: CU Vehicle Maneuvers
C028: Mileposted Route
C001: County

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow-Ice-Slu...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

rder: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

011: Highway Classifications Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Interstate	653	21.71	30365	9.39	2.313*	370.626
Federal	440	14.63	50904	15.74	0.929	-33.373
State	562	18.68	58399	18.05	1.035	18.928
County	495	16.46	50967	15.76	1.044	21.041
Municipal	843	28.03	127026	39.27	0.714*	-338.257
Private Property	15	0.50	5782	1.79	0.279	-38.769
Other	0	0.00	21	0.01	0.000	0.000

C005: Day of Month
C006: Day of the Week
C007: Week of the Year
C008: Time of Day
C009: Data Source
C010: Rural or Urban
C011: Highway Classifications
C012: Controlled Access
C013: E Highway Side
C014: Distance from Node 1

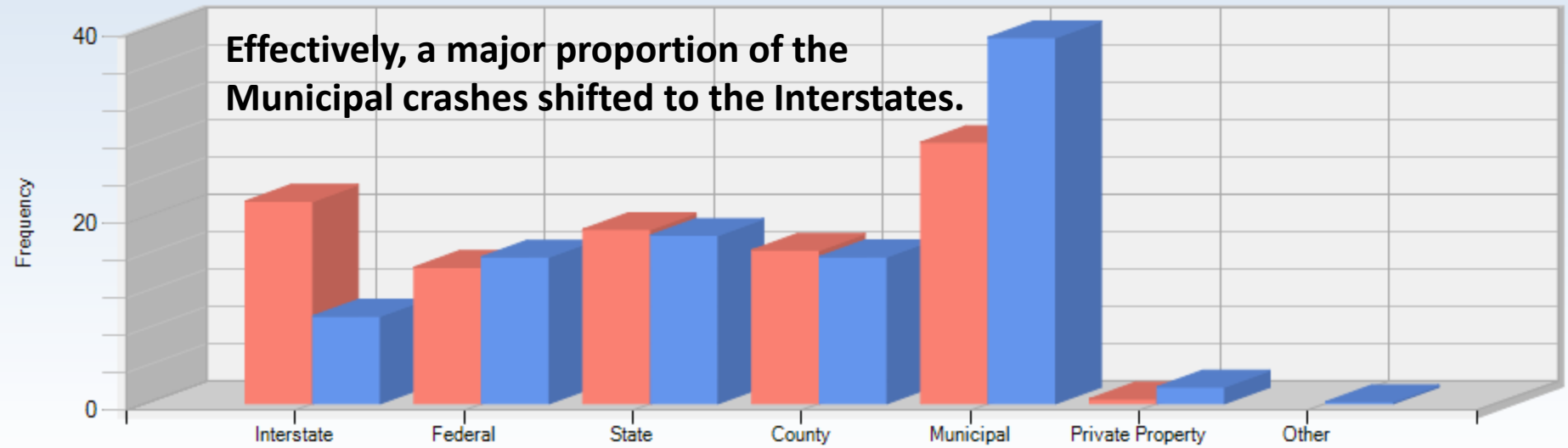
Sort by Sum of Max Gain

Display Filter Name

2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow-Ice-Slush

C011: Highway Classifications

Effectively, a major proportion of the Municipal crashes shifted to the Interstates.



C011: Highway Classifications

CARE 10.1.0.0 - [Crosstab Results - 2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush]

File Dashboard Filters Analysis Crosstab Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

Suppress Zero Values: None Select Cells: Column: Crash Severity ; Row: Highway Classifications

	Fatal Injury	Incapacitating Injury	Non-Incapacitating Inju	Possible Injury	Property Damage Only	Unknown	TOTAL
Interstate	1 11.11%	29 23.02%	44 22.80%	52 26.94%	513 21.38%	14 15.91%	653 21.71%
Federal	1 11.11%	22 17.46%	31 16.06%	26 13.47%	347 14.46%	13 14.77%	440 14.63%
State	4 44.44%	34 26.98%	43 22.28%	34 17.62%	438 18.26%	9 10.23%	562 18.68%
County	3 33.33%	30 23.81%	48 24.87%	15 7.77%	388 16.17%	11 12.50%	495 16.46%
Municipal	0 0.00%	11 8.73%	27 13.99%	66 34.20%	699 29.14%	40 45.45%	843 28.03%
Private Property	0 0.00%	0 0.00%	0 0.00%	0 0.00%	14 0.58%	1 1.14%	15 0.50%
Other	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
TOTAL	9 0.30%	126 4.19%	193 6.42%	193 6.42%	2399 79.75%	88 2.93%	3008 100.00%

While Interstates were the most over-represented as far as overall crashes, only one of the fatalities occurred there. Clearly state and county roadways share the blame for the more severe crashes. As we will see below this is because of the safety design features (e.g., guardrails and median barriers) that exist on Interstates.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C012: Controlled Access Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Main Road	897	29.90	65005	20.14	1.485*	292.868
On Ramp	51	1.70	1808	0.56	3.035*	34.197
(Main Road at) Interchage	19	0.63	1217	0.38	1.680	7.690
Frontage Road	13	0.43	1123	0.35	1.246	2.563
Off Ramp	26	0.87	5456	1.69	0.513*	-24.706
Not a Controlled Access	1994	66.47	248193	76.89	0.864*	-312.612

C230: CU Areas Damaged #1
C101: Causal Unit (CU) Type
C226: CU Vehicle Damage
C012: Controlled Access
C209: CU Make
C231: E CU Areas Damaged #2
C045: HasGPS
C411: CU Opposing Lane Separation

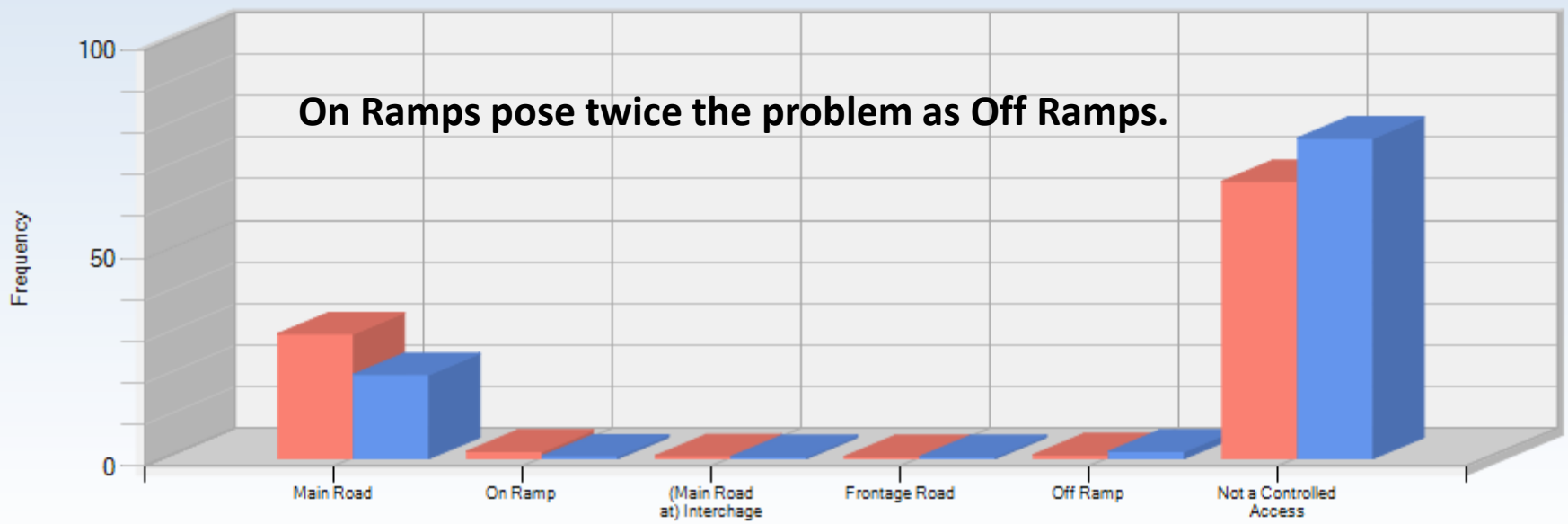
Sort by Sum of Max Gain

Display Filter Name

2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow-Ice-Slush

C012: Controlled Access

On Ramps pose twice the problem as Off Ramps.



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C001: County

Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Jefferson	634	21.08	54638	16.89	1.248*	125.903
Tuscaloosa	225	7.48	17792	5.50	1.360*	59.546
Etowah	108	3.59	7451	2.30	1.559*	38.711
Marshall	84	2.79	5288	1.63	1.708*	34.825
Talladega	70	2.33	4289	1.33	1.755*	30.115
Blount	47	1.56	1990	0.62	2.540*	28.494
Coosa	28	0.93	527	0.16	5.713*	23.099
Limestone	62	2.06	4202	1.30	1.587*	22.924
Calhoun	98	3.26	8449	2.61	1.247	19.430
Clebume	26	0.86	902	0.28	3.100*	17.612
Jackson	36	1.20	2240	0.69	1.728*	15.169
Colbert	50	1.66	3892	1.20	1.381	13.807
Chilton	33	1.10	2169	0.67	1.636*	12.830
Cullman	61	2.03	5205	1.61	1.260	12.597
Cherokee	24	0.80	1240	0.38	2.081*	12.469

C033: Locale
C413: E CU Turn Lanes
C223: CU Speed Limit
C129: CU Vehicle Maneuvers
C028: Mileposted Route
C001: County
C021: Distance to Fixed Object
C224: CU Estimated Speed at Impact
C046: HasRTMP
C401: E CU Involved Road/Bridge
C027: At Intersection
C020: E Distracted Driving
C048: Regional Planning Organization
C050: ADECA CTSP Region
C410: CU Traffic Control Functioning
C227: CU Vehicle Towed
C014: Distance from Node 1
C042: Highway Patrol Posts
C036: Police Arrival Delay

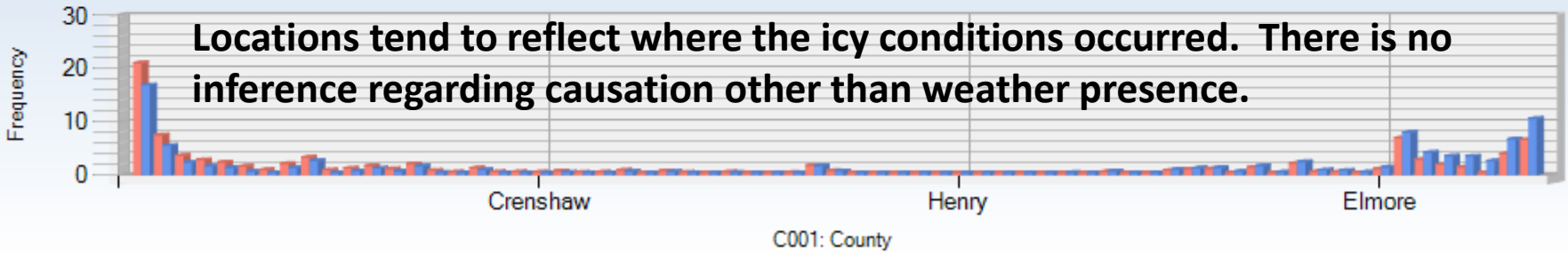
Sort by Sum of Max Gain

Locations with the greatest proportions of icy roadway crashes.

Display Filter Name

2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow-Ice-Slush

C001: County



Locations tend to reflect where the icy conditions occurred. There is no inference regarding causation other than weather presence.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

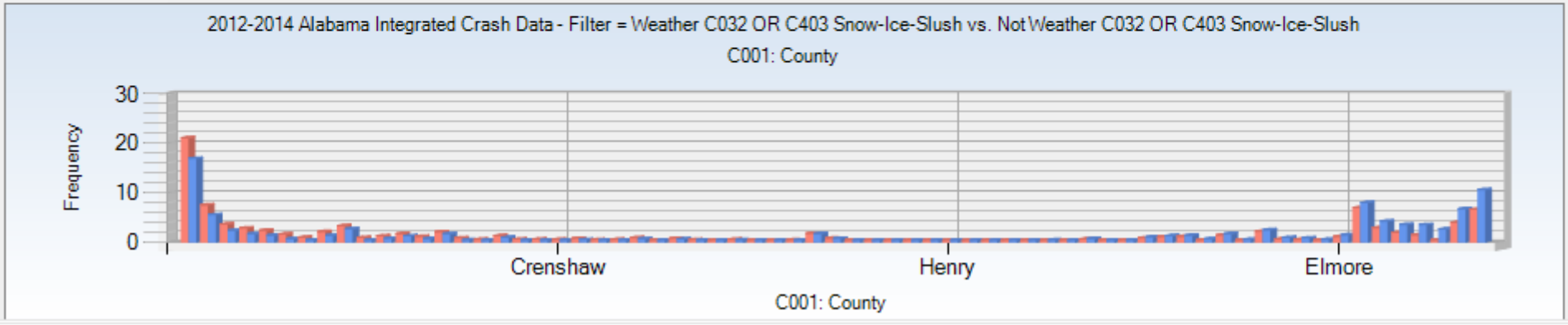
C001: County Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Escambia	11	0.37	1930	0.60	0.613	-6.948
Russell	41	1.36	5339	1.65	0.826	-8.649
Macon	6	0.20	1590	0.49	0.406	-8.786
Morgan	64	2.13	7865	2.43	0.875	-9.139
Coffee	17	0.57	2833	0.88	0.645	-9.345
Dallas	14	0.47	2547	0.79	0.591	-9.685
Covington	5	0.17	1654	0.51	0.325	-10.381
Elmore	32	1.06	4630	1.43	0.743	-11.056
Madison	208	6.91	25693	7.94	0.871	-30.928
Shelby	86	2.86	13492	4.17	0.685*	-39.467
Baldwin	56	1.86	11317	3.50	0.532*	-49.241
Lee	42	1.40	11178	3.46	0.404*	-61.948
Houston	10	0.33	8385	2.59	0.128	-67.975
Montgomery	118	3.92	21610	6.68	0.587*	-82.959
Mobile	198	6.58	34180	10.57	0.623*	-119.851

C033: Locale
C413: E CU Turn Lanes
C223: CU Speed Limit
C129: CU Vehicle Maneuvers
C028: Mileposted Route
C001: County
C021: Distance to Fixed Object
C224: CU Estimated Speed at Impact
C046: HasRTMP
C401: E CU Involved Road/Bridge
C027: At Intersection
C020: E Distracted Driving
C048: Regional Planning Organization
C050: ADECA CTSP Region
C410: CU Traffic Control Functioning
C227: CU Vehicle Towed
C014: Distance from Node 1
C042: Highway Patrol Posts
C036: Police Arrival Delay

Sort by Sum of Max Gain

Locations with the lowest proportions of icy roadway crashes.

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C002: City

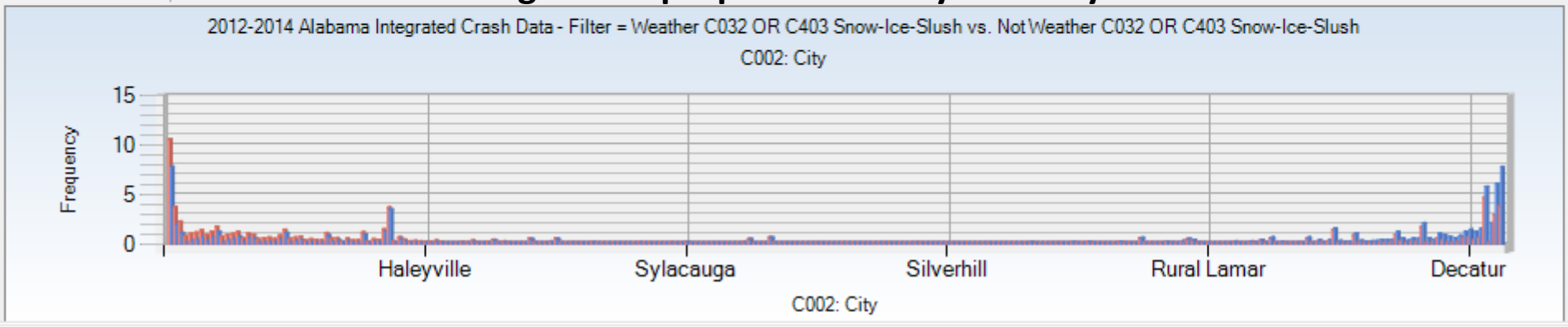
Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Birmingham	317	10.55	25228	7.80	1.352*	82.499
Rural Jefferson	113	3.76	6549	2.03	1.856*	52.125
Rural Tuscaloosa	69	2.30	3677	1.14	2.019*	34.821
Rural Coosa	25	0.83	487	0.15	5.523*	20.473
Rural Blount	32	1.06	1255	0.39	2.743*	20.334
Rural Talladega	35	1.16	1631	0.50	2.309*	19.839
Rural Cullman	42	1.40	2432	0.75	1.858*	19.394
Rural Chilton	29	0.96	1143	0.35	2.730*	18.375
Rural Calhoun	38	1.26	2317	0.72	1.764*	16.463
Gadsden	53	1.76	3939	1.22	1.448*	16.386
Rural Clebume	23	0.77	713	0.22	3.470*	16.372
Rural Etowah	28	0.93	1391	0.43	2.166*	15.070
Rural Morgan	31	1.03	1828	0.57	1.824*	14.008
Northport	37	1.23	2585	0.80	1.540*	12.972
Lincoln	19	0.63	664	0.21	3.078	12.828

C501: Vehicle 2 (V2) Type
C052: Number of Drivers Recorded
C006: Day of the Week
C505: V2 Left Scene
C051: Number of Vehicles
C002: City
C205: E CU Sequence of Events #2
C043: Agency ORI
C023: E Manner of Crash
C018: Location First Harmful Event Rel t
C203: CU First Harmful Event Location
C053: Number of Persons Recorded
C008: Time of Day
C054: Number of Motorists Recorded
C407: CU Roadway Curvature and Grad
C409: CU Traffic Control
C033: Locale
C413: E CU Turn Lanes
C223: CU Speed Limit

Sort by Sum of Max Gain

Locations with the greatest proportions of icy roadway crashes.

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C002: City

Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Daphne	6	0.20	1964	0.61	0.329	-12.256
Foley	2	0.07	1555	0.48	0.138	-12.454
Rural Shelby	19	0.63	3405	1.05	0.600	-12.650
Anniston	13	0.43	3041	0.94	0.460	-15.267
Prattville	6	0.20	2399	0.74	0.269	-16.299
Enterprise	2	0.07	2020	0.62	0.107	-16.776
Pelham	7	0.23	2708	0.84	0.278	-18.172
Homewood	19	0.63	4020	1.24	0.508	-18.367
Decatur	22	0.73	4802	1.48	0.493*	-22.636
Auburn	13	0.43	4004	1.24	0.349	-24.218
Opelika	20	0.67	4988	1.54	0.431*	-26.365
Huntsville	141	4.69	18717	5.79	0.810*	-32.980
Dothan	1	0.03	6941	2.15	0.015	-63.519
Montgomery	89	2.96	19673	6.08	0.487*	-93.866
Mobile	116	3.86	25174	7.78	0.496*	-117.999

C501: Vehicle 2 (V2) Type
C052: Number of Drivers Recorded
C006: Day of the Week
C505: V2 Left Scene
C051: Number of Vehicles
C002: City
C205: E CU Sequence of Events #2
C043: Agency ORI
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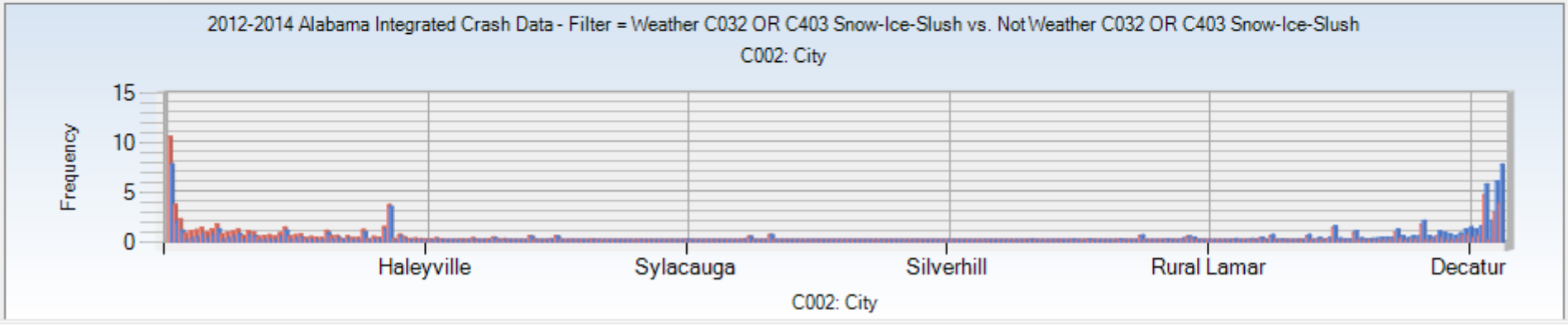
C203: CU First Harmful Event Location
C053: Number of Persons Recorded
C008: Time of Day
C054: Number of Motorists Recorded
C407: CU Roadway Curvature and Grad
C409: CU Traffic Control
C033: Locale
C413: E CU Turn Lanes
C223: CU Speed Limit

Sort by Sum of Max Gain

Locations with the lowest proportions of icy roadway crashes.

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not At Intersection = 4 OR 3 ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

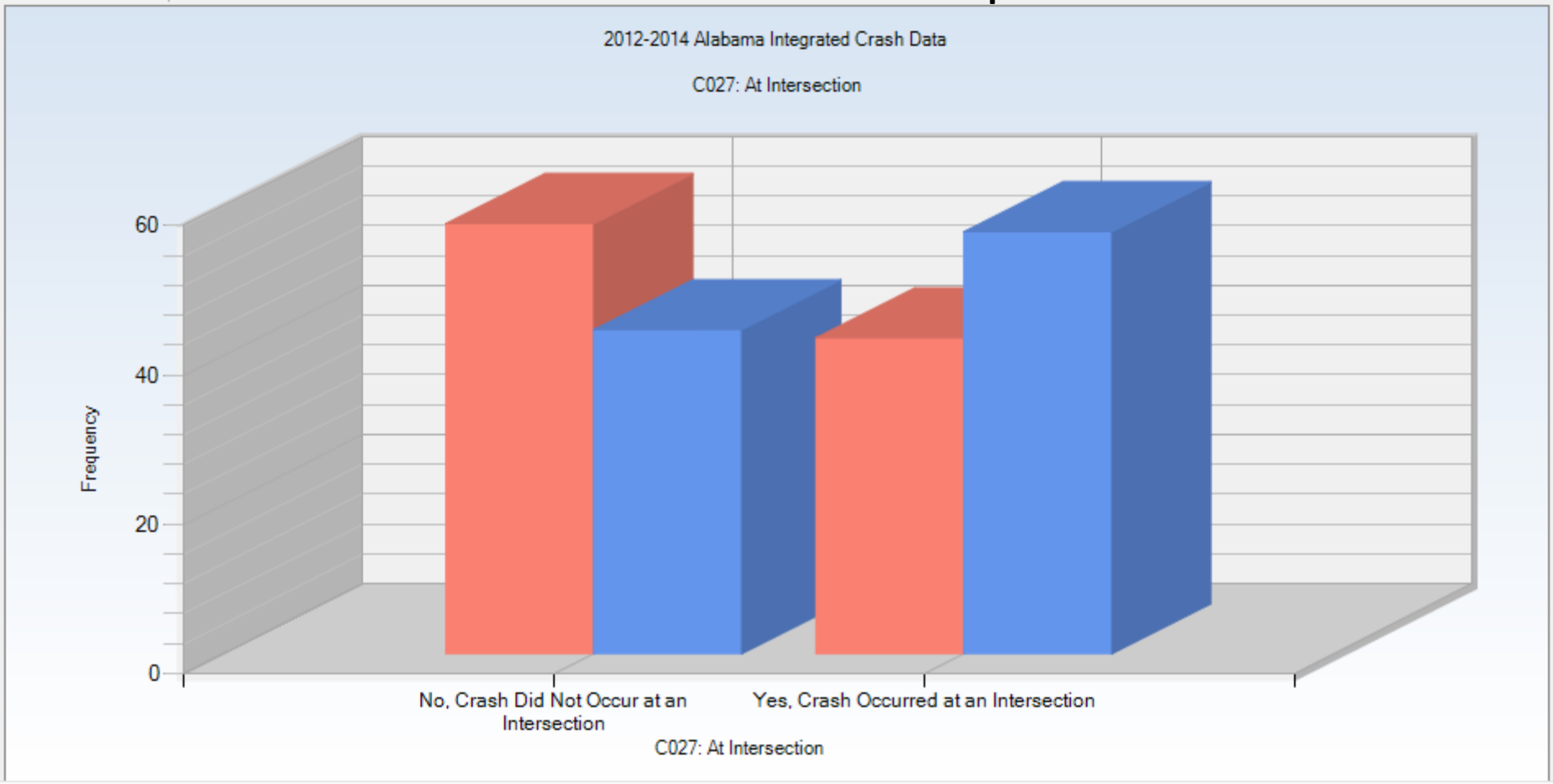
C027: At Intersection Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
No, Crash Did Not Occur at an...	1577	57.66	129406	43.44	1.327*	389.036
Yes, Crash Occurred at an Inte...	1158	42.34	168520	56.56	0.749*	-389.036

C027: At Intersection

Sort by Sum of Max Gain

Non-intersection crashes reflect rural over-representation.

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Location First Harmful Ev...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

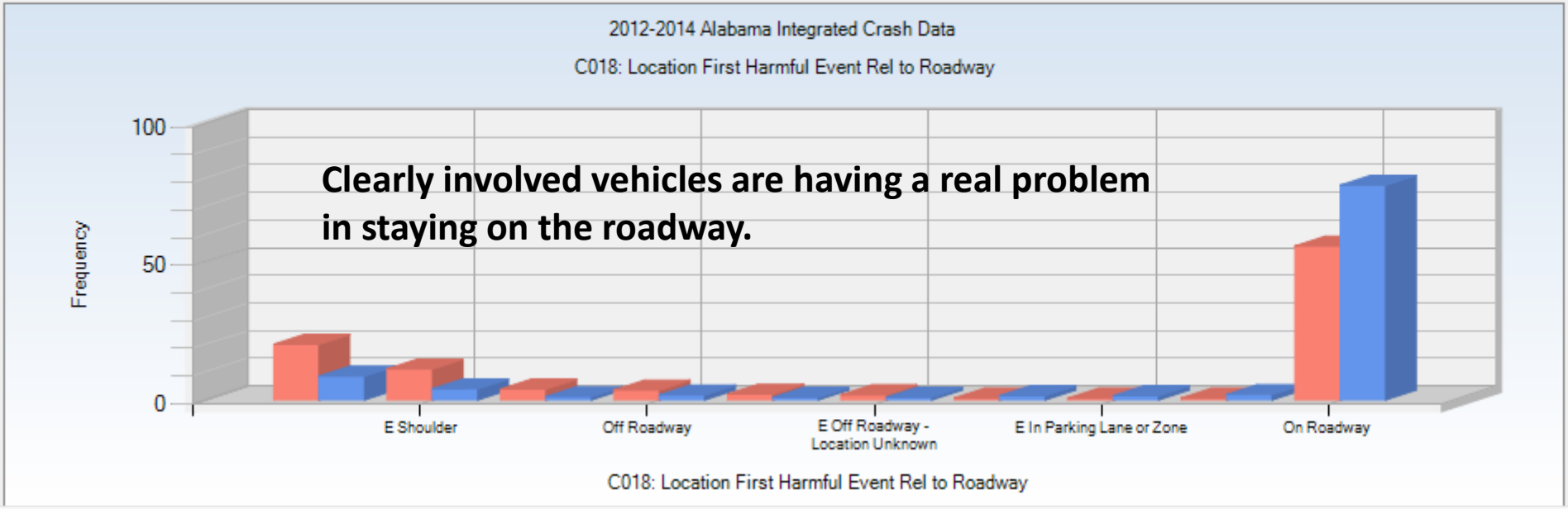
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C018: Location First Harmful Event Rel to Roadway	Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
E Roadside	601	20.11	27463	8.55	2.351*	345.321
E Shoulder	334	11.17	12876	4.01	2.786*	214.125
Median	116	3.88	3685	1.15	3.381*	81.693
Off Roadway	106	3.55	5713	1.78	1.993*	52.812
E Outside of Right-of-Way	62	2.07	2847	0.89	2.339*	35.495
E Off Roadway - Location Unk...	54	1.81	3077	0.96	1.885*	25.353
P Intersection*	20	0.67	5000	1.56	0.430*	-26.550
E In Parking Lane or Zone	14	0.47	4798	1.49	0.313	-30.669
E At Intersection no Crosswalk	20	0.67	6097	1.90	0.352*	-36.763
On Roadway	1662	55.60	249129	77.60	0.717*	-657.374

C018: Location First Harmful Event Rel to R

Sort by Sum of Max Gain

Display Filter Name



Clearly involved vehicles are having a real problem in staying on the roadway.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

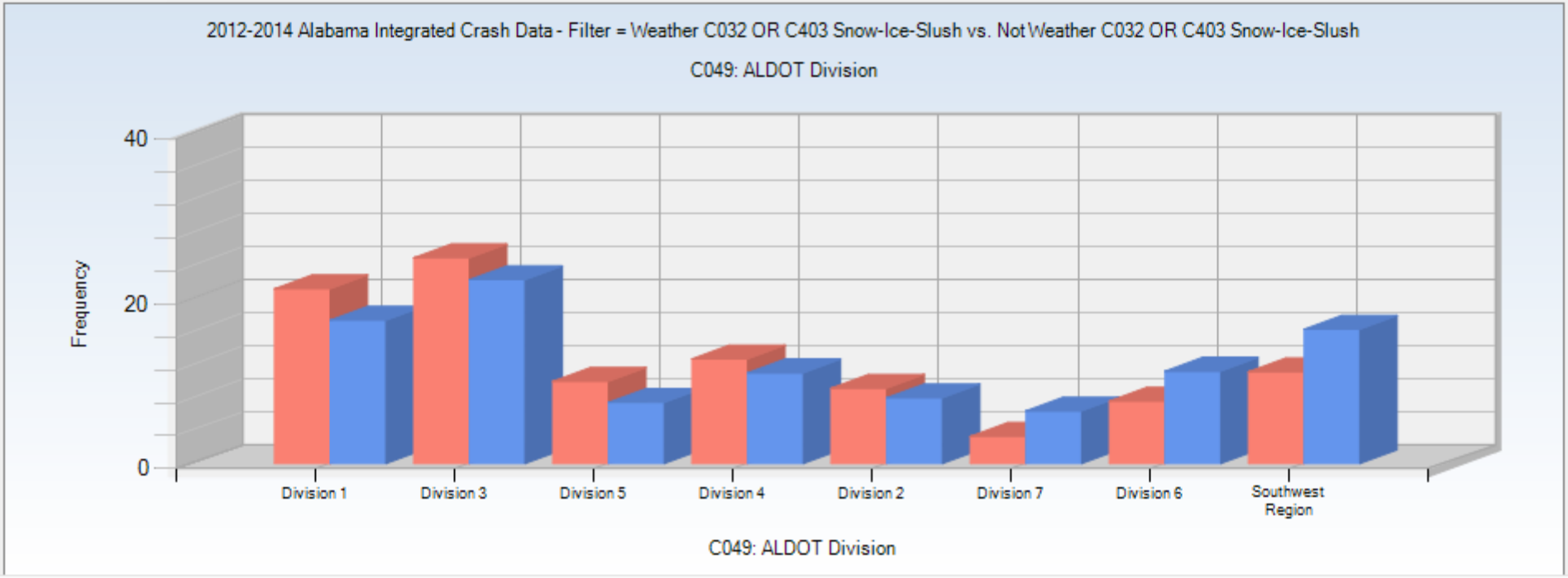
C049: ALDOT Division Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Division 1	638	21.21	56271	17.40	1.219*	114.707
Division 3	751	24.97	72162	22.31	1.119*	79.929
Division 5	300	9.97	23973	7.41	1.346*	77.063
Division 4	382	12.70	35615	11.01	1.153*	50.798
Division 2	275	9.14	25809	7.98	1.146*	34.989
Division 7	99	3.29	20649	6.38	0.516*	-93.026
Division 6	228	7.58	36255	11.21	0.676*	-109.154
Southwest Region	335	11.14	52724	16.30	0.683*	-155.307

C106: CU Driver Age
C325: CU Driver/Non-Motorist Age
C026: Intersection Related
C049: ALDOT Division
C406: CU Contributing Material Source
C230: CU Areas Damaged #1
C101: Causal Unit (CU) Type
C226: CU Vehicle Damage
C012: Controlled Access
C209: CU Make
C231: E CU Areas Damaged #2

Sort by Sum of Max Gain

Information for ALDOT emphasis and resource allocation.

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C048: Regional Planning Organization Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Region 4	431	14.33	27789	8.59	1.668*	172.581
Region 3	864	28.72	80609	24.92	1.153*	114.390
Region 2	264	8.78	21547	6.66	1.318*	63.627
Region 12	427	14.20	40299	12.46	1.139*	52.246
Region 1	134	4.45	12500	3.86	1.153	17.758
Region 6	87	2.89	8107	2.51	1.154	11.610
Region 5	76	2.53	7165	2.22	1.141	9.370
Region 11	140	4.65	14312	4.42	1.052	6.908
Region 10	83	2.76	16517	5.11	0.540*	-70.597
Region 9	174	5.78	29461	9.11	0.635*	-99.968
Region 7	63	2.09	17731	5.48	0.382*	-101.887
Region 8	265	8.81	47427	14.66	0.601*	-176.040

C021: Distance to Fixed Object
C224: CU Estimated Speed at Impact
C046: HasRTMP
C401: E CU Involved Road/Bridge
C027: At Intersection
C020: E Distracted Driving
C048: Regional Planning Organization
C050: ADECA CTSP Region
C410: CU Traffic Control Functioning
C227: CU Vehicle Towed
C014: Distance from Node 1
C042: Highway Patrol Posts
C036: Police Arrival Delay
C107: CU Driver Raw Age
C011: Highway Classifications
C022: E Type of Roadway Junction/Feati

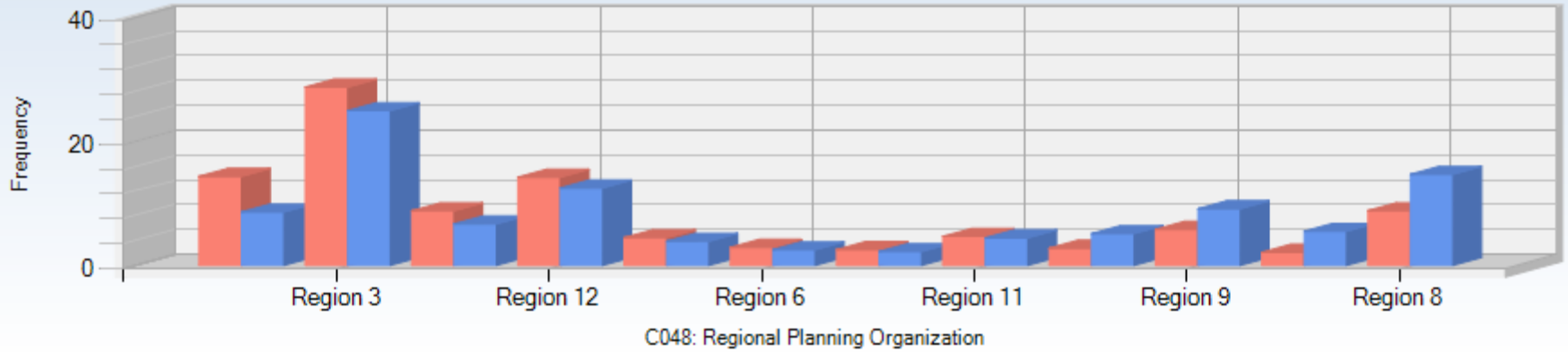
Sort by Sum of Max Gain

Information for RPO emphasis and resource allocation.

Display Filter Name

2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Snow-Ice-Slush

C048: Regional Planning Organization



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

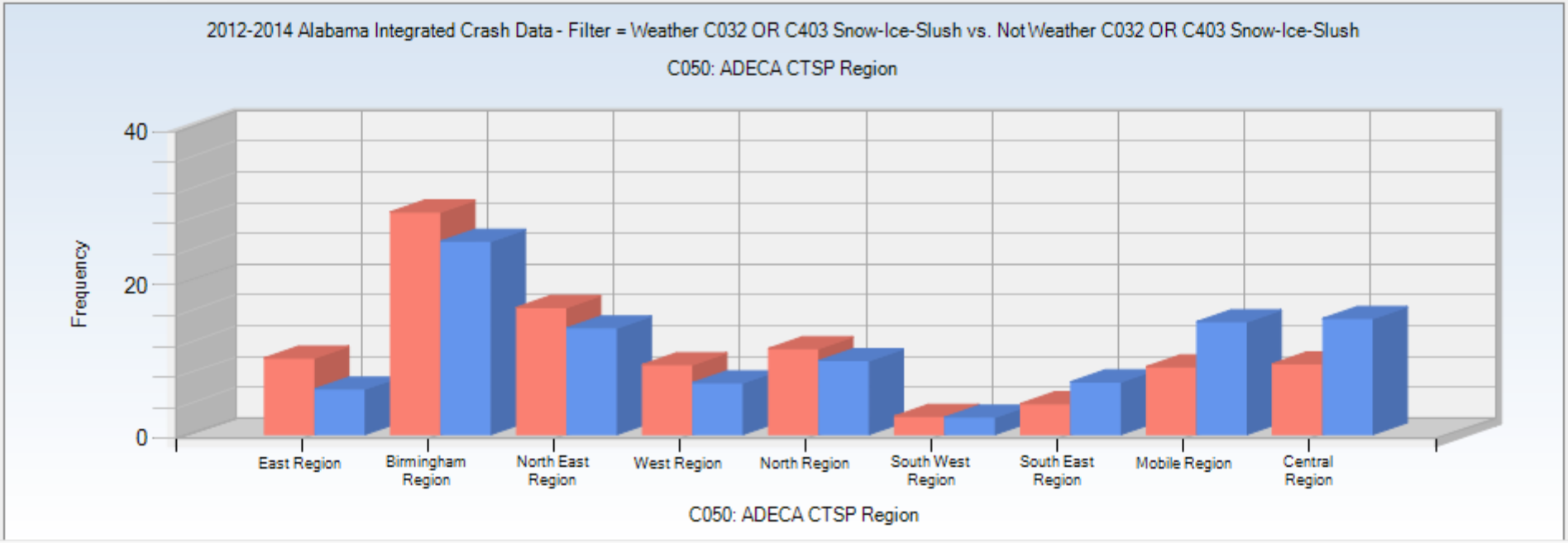
C050: ADECA CTSP Region Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
East Region	299	9.94	19098	5.90	1.684*	121.401
Birmingham Region	871	28.96	81333	25.14	1.152*	114.657
North East Region	497	16.52	44788	13.85	1.193*	80.501
West Region	273	9.08	21731	6.72	1.351*	70.916
North Region	336	11.17	31014	9.59	1.165*	47.590
South West Region	71	2.36	7199	2.23	1.061	4.054
South East Region	120	3.99	22106	6.83	0.584*	-85.571
Mobile Region	265	8.81	47427	14.66	0.601*	-176.040
Central Region	276	9.18	48768	15.08	0.609*	-177.510

C021: Distance to Fixed Object
C224: CU Estimated Speed at Impact
C046: HasRTMP
C401: E CU Involved Road/Bridge
C027: At Intersection
C020: E Distracted Driving
C048: Regional Planning Organization
C050: ADECA CTSP Region
C410: CU Traffic Control Functioning
C227: CU Vehicle Towed
C014: Distance from Node 1
C042: Highway Patrol Posts

Sort by Sum of Max Gain

Information for ADECA CTSP emphasis and resource allocation.

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

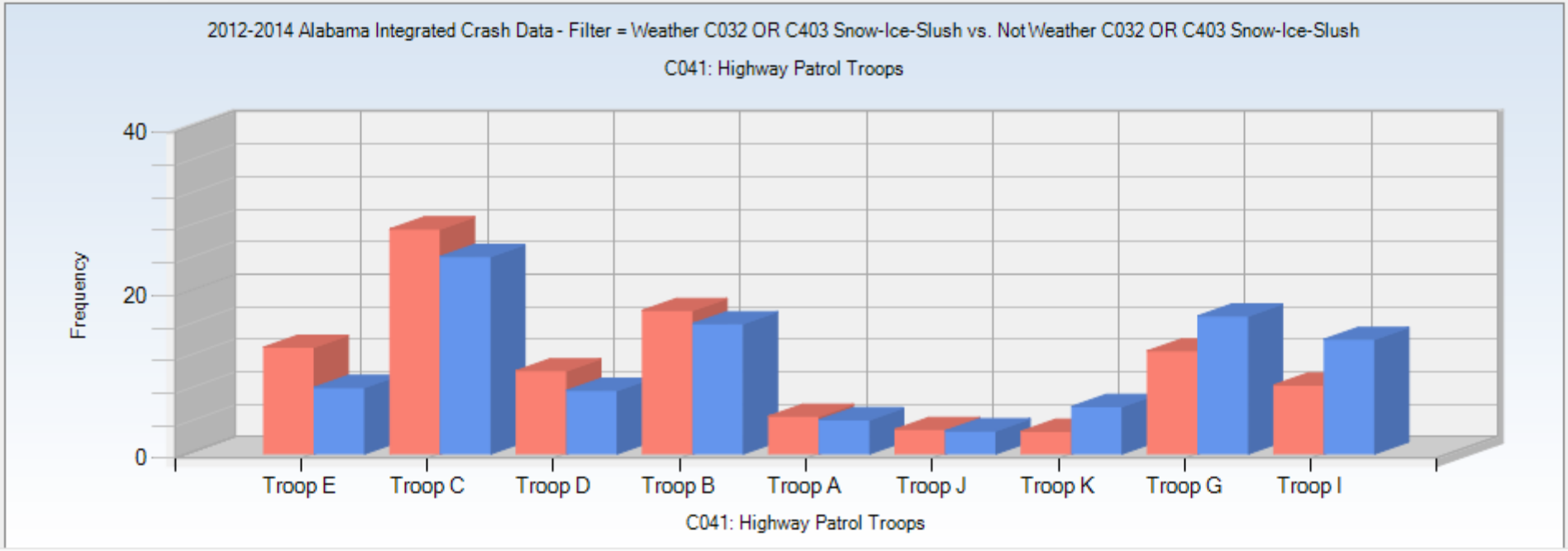
C041: Highway Patrol Troops Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Troop E	394	13.10	26383	8.16	1.606*	148.656
Troop C	831	27.63	78440	24.25	1.139*	101.560
Troop D	307	10.21	25156	7.78	1.312*	73.066
Troop B	530	17.62	51735	15.99	1.102*	48.899
Troop A	139	4.62	13506	4.18	1.107	13.403
Troop J	90	2.99	9166	2.83	1.056	4.762
Troop K	83	2.76	18781	5.81	0.475*	-91.651
Troop G	380	12.63	54800	16.94	0.746*	-129.604
Troop I	254	8.44	45497	14.07	0.600*	-169.092

C022: E Type of Roadway Junction/Featu
C010: Rural or Urban
C600: CU Driver Age Range
C041: Highway Patrol Troops
C106: CU Driver Age
C325: CU Driver/Non-Motorist Age
C026: Intersection Related
C049: ALDOT Division
C406: CU Contributing Material Source
C230: CU Areas Damaged #1
C101: Causal Unit (CU) Type
C226: CU Vehicle Damage

Sort by Sum of Max Gain

Information for DPS emphasis and resource allocation.

Display Filter Name



Roadway Topics:

- Roadway Curvature and Grade
- Traffic Control
- Speed Limit

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Roadway Curvature a...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

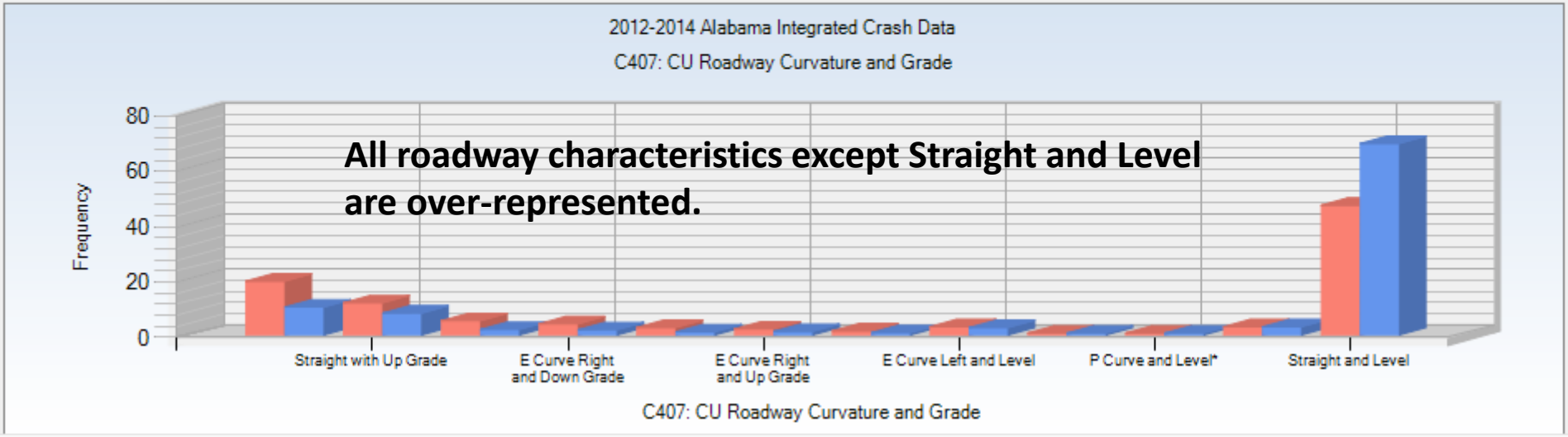
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C407: CU Roadway Curvature and Grade Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Straight with Down Grade	564	19.37	30692	10.03	1.931*	271.992
Straight with Up Grade	337	11.58	23990	7.84	1.476*	108.756
E Curve Left and Down Grade	148	5.08	5999	1.96	2.593*	90.925
E Curve Right and Down Grade	116	3.98	5634	1.84	2.164*	62.397
E Curve Left and Up Grade	77	2.65	3281	1.07	2.467*	45.784
E Curve Right and Up Grade	62	2.13	3764	1.23	1.731*	26.189
Straight at Hillcrest	41	1.41	2386	0.78	1.806*	18.299
E Curve Left and Level	86	2.95	8011	2.62	1.128	9.782
P Curve with Down Grade*	15	0.52	660	0.22	2.389	8.721
P Curve and Level*	17	0.58	984	0.32	1.816	7.638
E Curve Right and Level	85	2.92	8892	2.91	1.005	0.400
Straight and Level	1363	46.82	211593	69.16	0.677*	-650.123

C407: CU Roadway Curvature and Grade

Sort by Sum of Max Gain

Display Filter Name



All roadway characteristics except Straight and Level are over-represented.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Traffic Control = 24 O...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

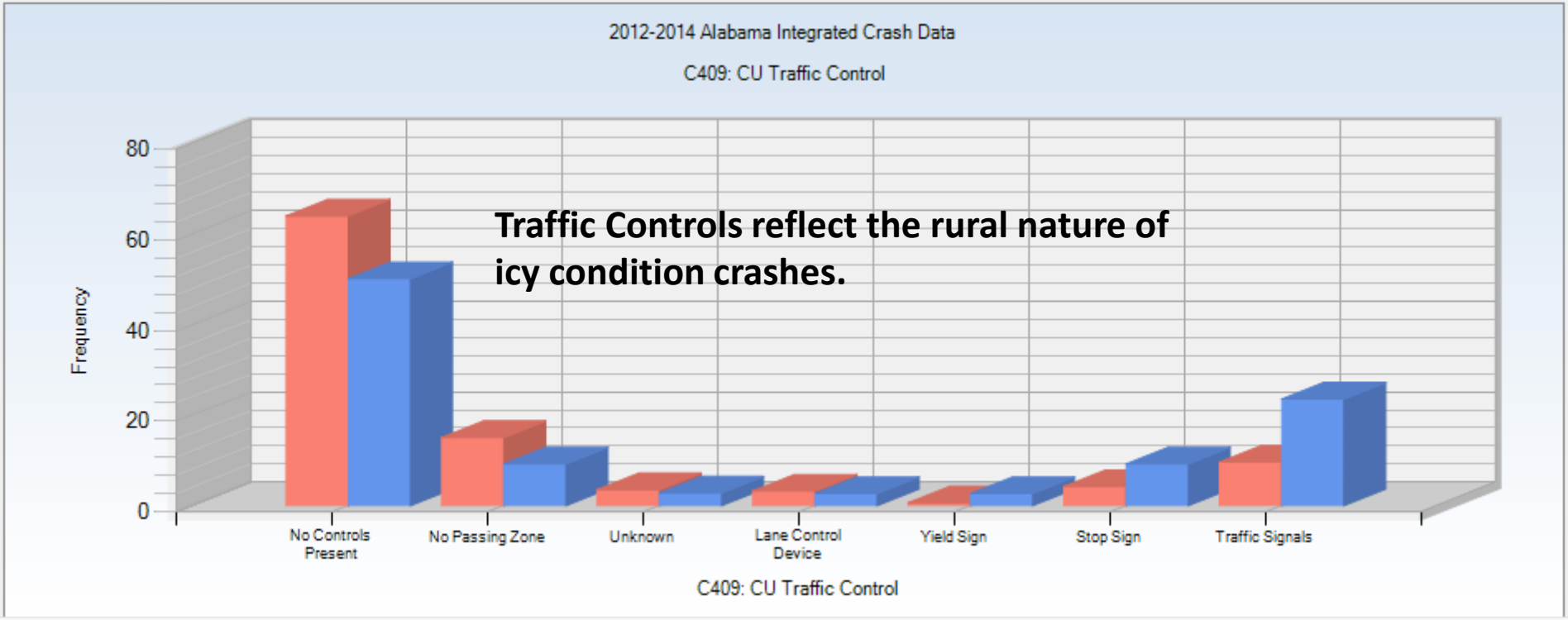
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C409: CU Traffic Control Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
No Controls Present	1834	63.86	151228	50.02	1.277*	397.511
No Passing Zone	431	15.01	27727	9.17	1.636*	167.626
Unknown	101	3.52	8347	2.76	1.274*	21.713
Lane Control Device	92	3.20	8021	2.65	1.208	15.810
Yield Sign	18	0.63	7985	2.64	0.237	-57.848
Stop Sign	121	4.21	27739	9.17	0.459*	-142.488
Traffic Signals	275	9.58	70986	23.48	0.408*	-399.284

C409: CU Traffic Control

Sort by Sum of Max Gain

Display Filter Name



Traffic Controls reflect the rural nature of icy condition crashes.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Speed Limit = 20 OR ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

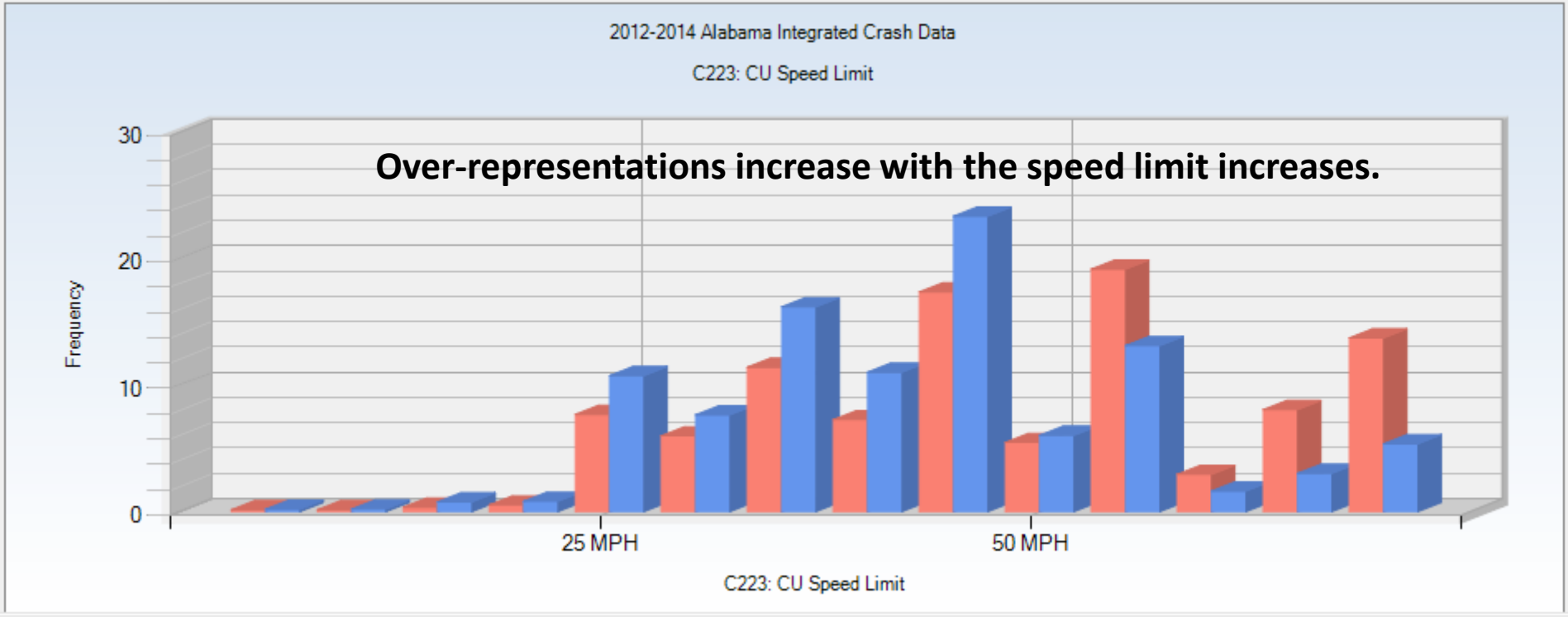
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C223: CU Speed Limit Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
40 MPH	210	7.26	33147	11.02	0.659*	-108.704
45 MPH	502	17.35	70215	23.34	0.744*	-173.108
50 MPH	158	5.46	18120	6.02	0.907	-16.222
55 MPH	554	19.15	39462	13.12	1.460*	174.578
60 MPH	85	2.94	4894	1.63	1.806*	37.945
65 MPH	233	8.05	9087	3.02	2.667*	145.630
70 MPH	397	13.72	16115	5.36	2.562*	242.056

C223: CU Speed Limit

Sort by Sum of Max Gain

Display Filter Name



Crash Severity Topics:

- Severity Comparison: Icy vs. Non-Icy
- Multiple Fatalities and Injuries
- Vehicle Towed and for What Reason
- Vehicle Damage
- EMS Arrival Delay
- Police Arrival Delay
  - Arrival delays
  - Notification delays
- Barrier Effects of Severity
  - Guardrail
  - Concrete Barrier

CAPS
CENTER for ADVANCED PUBLIC SAFETY

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

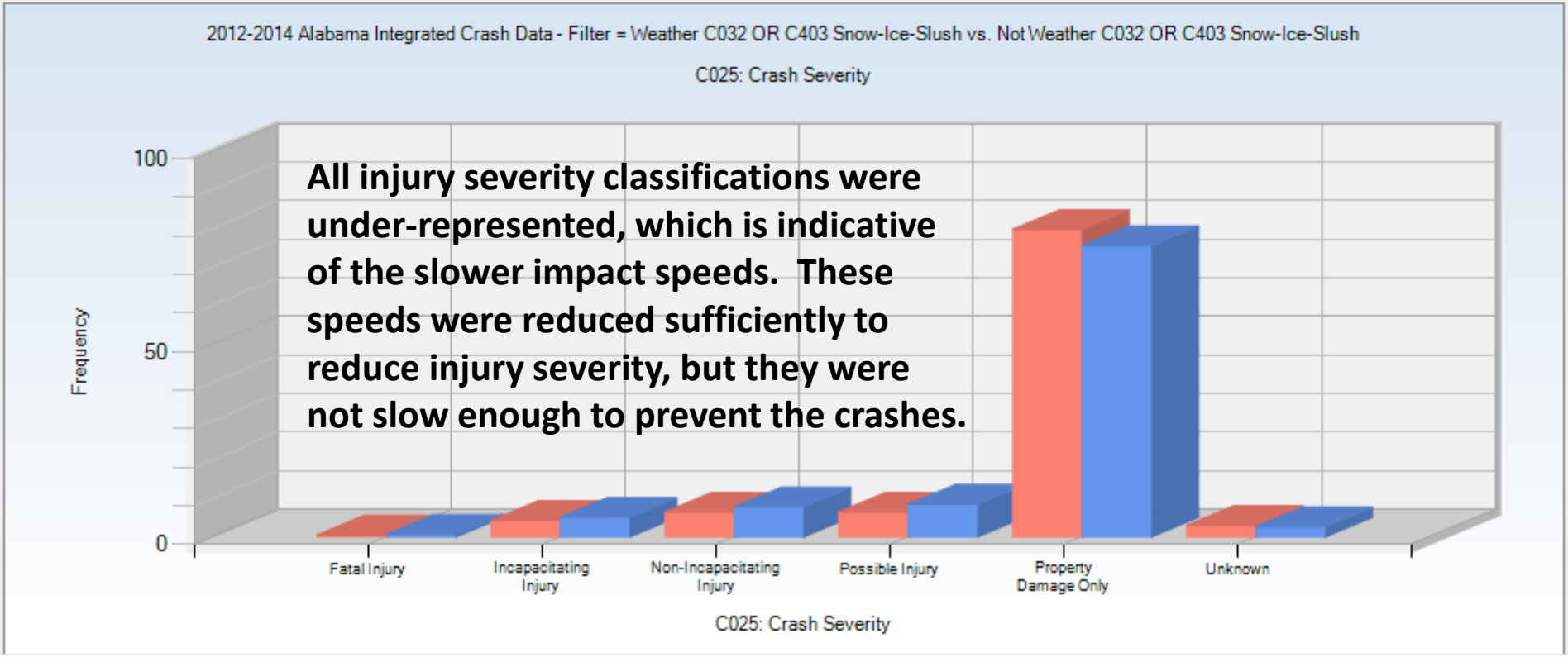
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C025: Crash Severity Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Fatal Injury	9	0.30	1958	0.61	0.494	-9.208
Incapacitating Injury	126	4.19	16357	5.06	0.828	-26.109
Non-Incapacitating Injury	193	6.42	25077	7.75	0.828*	-40.199
Possible Injury	193	6.42	27272	8.43	0.761*	-60.611
Property Damage Only	2399	79.75	244456	75.57	1.055*	125.722
Unknown	88	2.93	8344	2.58	1.134	10.406

C059: Number Injured (Includes Fatalitie
C408: CU Vision Obscured By
C222: CU Contributing Vehicle Defect
C025: Crash Severity
C058: Number Injured (Non-Fatal)
C211: E CU Owners State
C113: CU Driver Second License Class
C114: CU Driver License Status

Sort by Sum of Max Gain

Display Filter Name



All injury severity classifications were under-represented, which is indicative of the slower impact speeds. These speeds were reduced sufficiently to reduce injury severity, but they were not slow enough to prevent the crashes.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

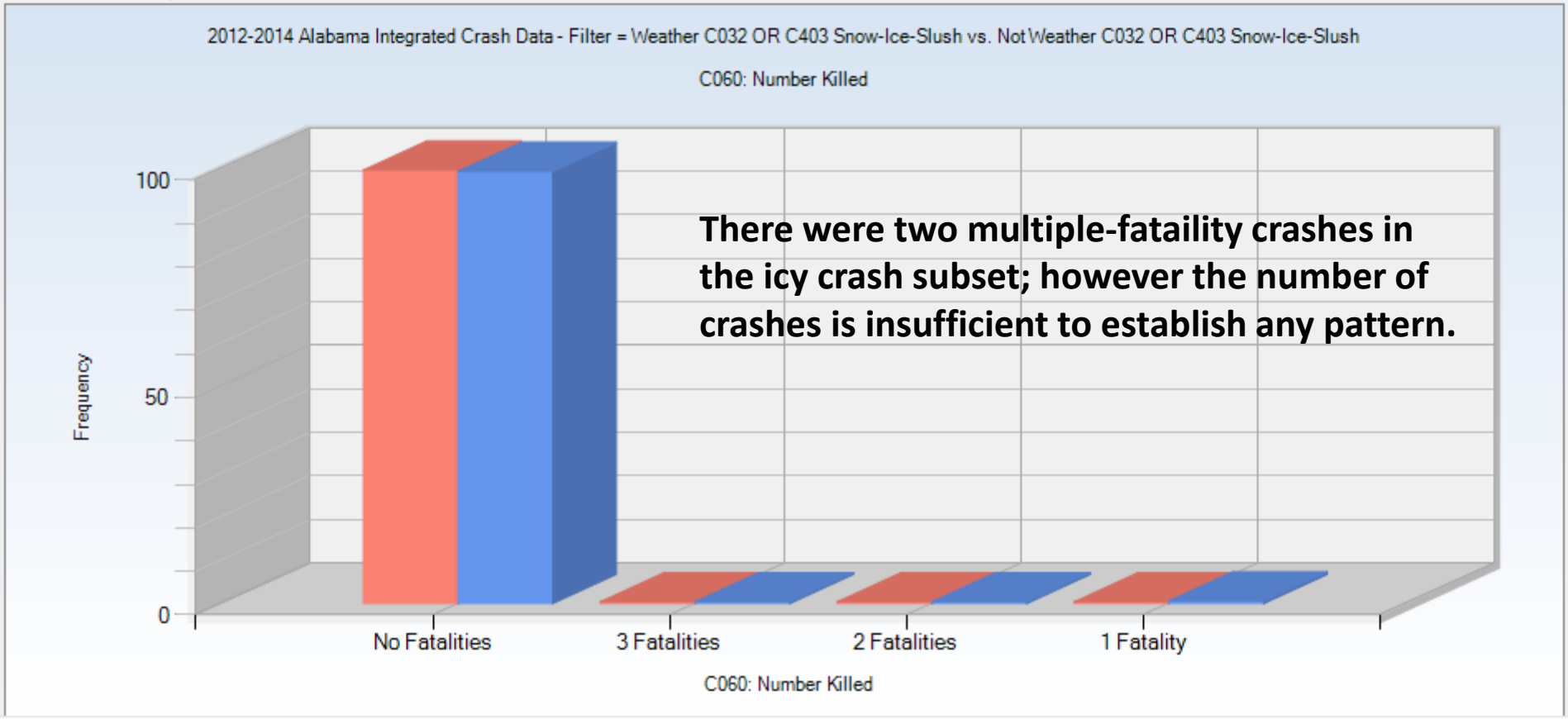
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C060: Number Killed Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
No Fatalities	2999	99.70	321501	99.39	1.003	9.255
3 Fatalities	1	0.03	22	0.01	4.888	0.795
2 Fatalities	1	0.03	125	0.04	0.860	-0.162
1 Fatality	7	0.23	1814	0.56	0.415	-9.869

C405: CU Contributing Material in Road
C055: Number of Non-Motorists Record
C056: Number of Pedestrians
C610: Has Railroad Crossing Number
C009: Data Source
C060: Number Killed

Sort by Sum of Max Gain

Display Filter Name



There were two multiple-fataility crashes in the icy crash subset; however the number of crashes is insufficient to establish any pattern.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

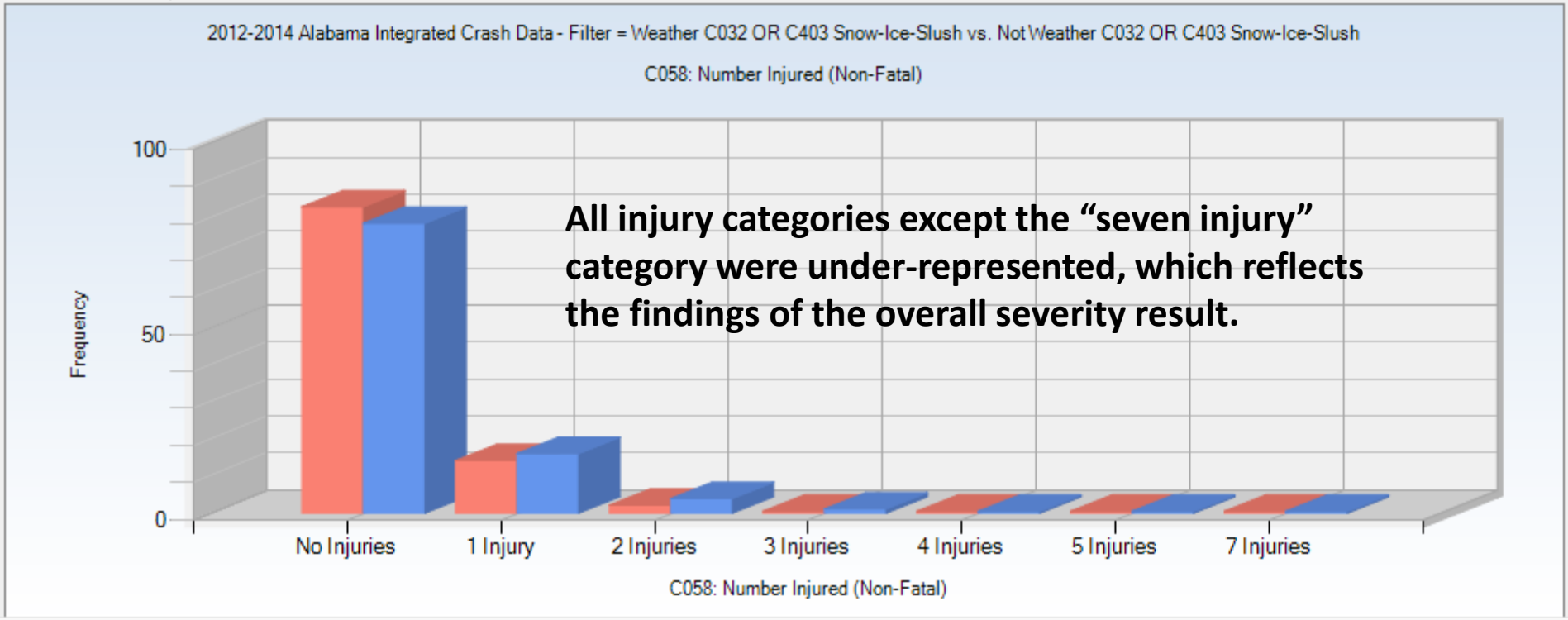
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C058: Number Injured (Non-Fatal) Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
No Injuries	2490	82.78	253437	78.35	1.057*	133.205
1 Injury	426	14.16	51936	16.06	0.882*	-56.970
2 Injuries	64	2.13	12675	3.92	0.543*	-53.869
3 Injuries	14	0.47	3498	1.08	0.430	-18.529
4 Injuries	11	0.37	1186	0.37	0.997	-0.029
5 Injuries	1	0.03	457	0.14	0.235	-3.250
7 Injuries	2	0.07	63	0.02	3.414	1.414

C059: Number Injured (Includes Fatalitie
C408: CU Vision Obscured By
C222: CU Contributing Vehicle Defect
C025: Crash Severity
C058: Number Injured (Non-Fatal)
C211: E CU Owners State
C113: CU Driver Second License Class
C114: CU Driver License Status
C105: CU Left Scene

Sort by Sum of Max Gain

Display Filter Name



All injury categories except the "seven injury" category were under-represented, which reflects the findings of the overall severity result.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Vehicle Towed = 8 O...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

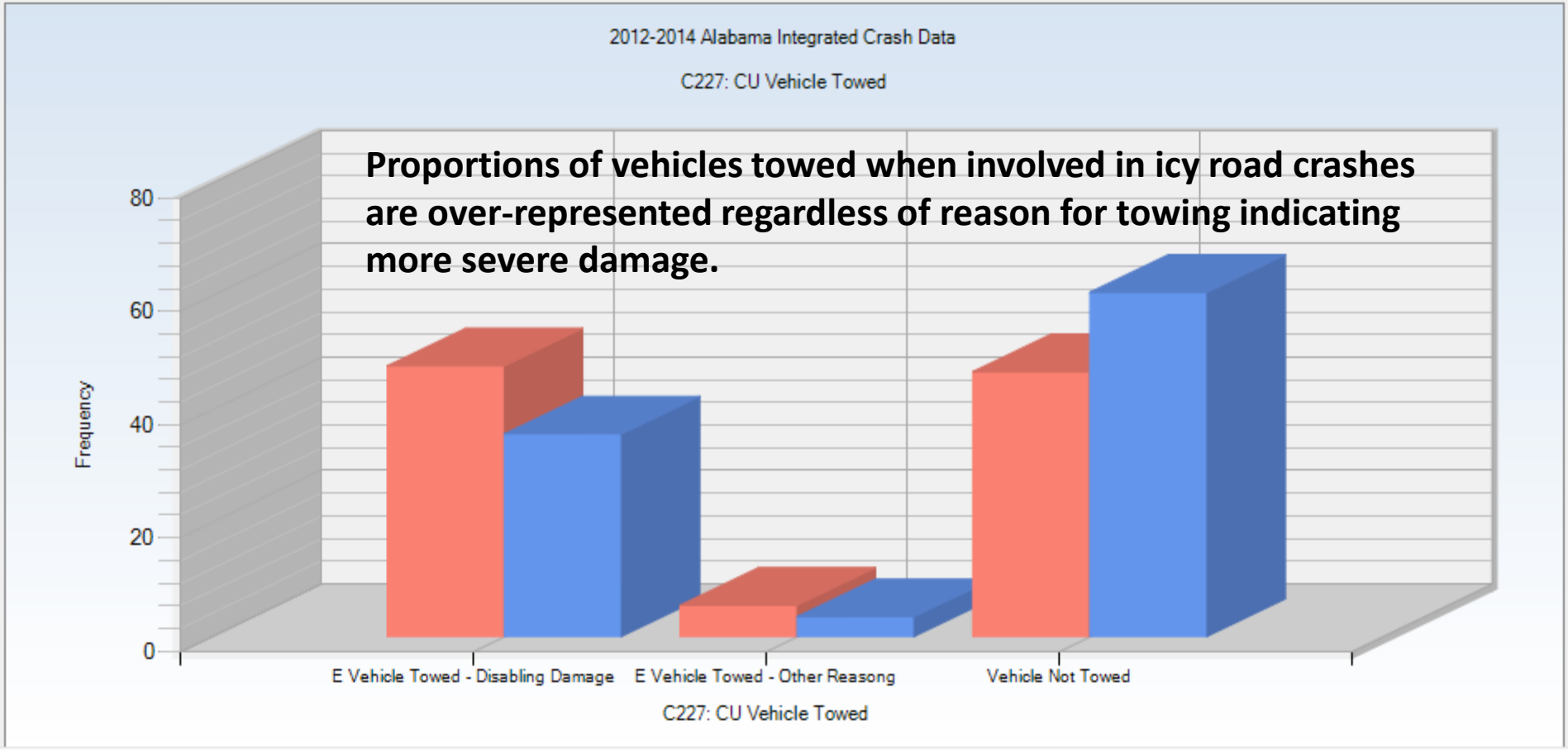
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C227: CU Vehicle Towed Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
E Vehicle Towed - Disabling D...	1340	47.77	107100	35.75	1.336*	337.328
E Vehicle Towed - Other Reas...	154	5.49	10450	3.49	1.574*	56.167
Vehicle Not Towed	1311	46.74	182065	60.77	0.769*	-393.495

C227: CU Vehicle Towed

Sort by Sum of Max Gain

Display Filter Name



Proportions of vehicles towed when involved in icy road crashes are over-represented regardless of reason for towing indicating more severe damage.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

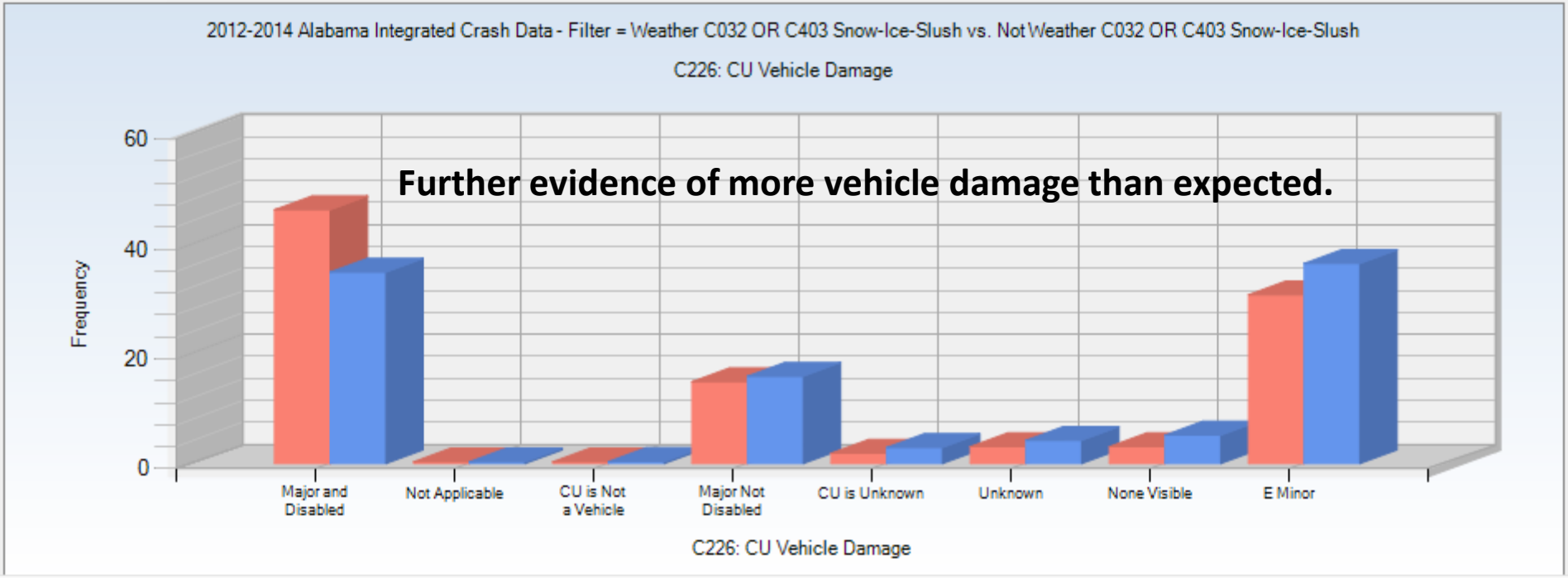
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C226: CU Vehicle Damage Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Major and Disabled	1388	46.21	112598	34.86	1.326*	340.946
Not Applicable	5	0.17	607	0.19	0.886	-0.645
CU is Not a Vehicle	1	0.03	1111	0.34	0.097	-9.331
Major Not Disabled	447	14.88	51367	15.90	0.936	-30.664
CU is Unknown	56	1.86	9417	2.92	0.639*	-31.569
Unknown	92	3.06	13623	4.22	0.726*	-34.681
None Visible	92	3.06	16682	5.16	0.593*	-63.127
E Minor	923	30.73	117639	36.42	0.844*	-170.930

C106: CU Driver Age
C325: CU Driver/Non-Motorist Age
C026: Intersection Related
C049: ALDOT Division
C406: CU Contributing Material Source
C230: CU Areas Damaged #1
C101: Causal Unit (CU) Type
C226: CU Vehicle Damage
C012: Controlled Access
C209: CU Make
C231: E CU Areas Damaged #2

Sort by Sum of Max Gain

Display Filter Name



CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not Adjusted EMS Arrival Del...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

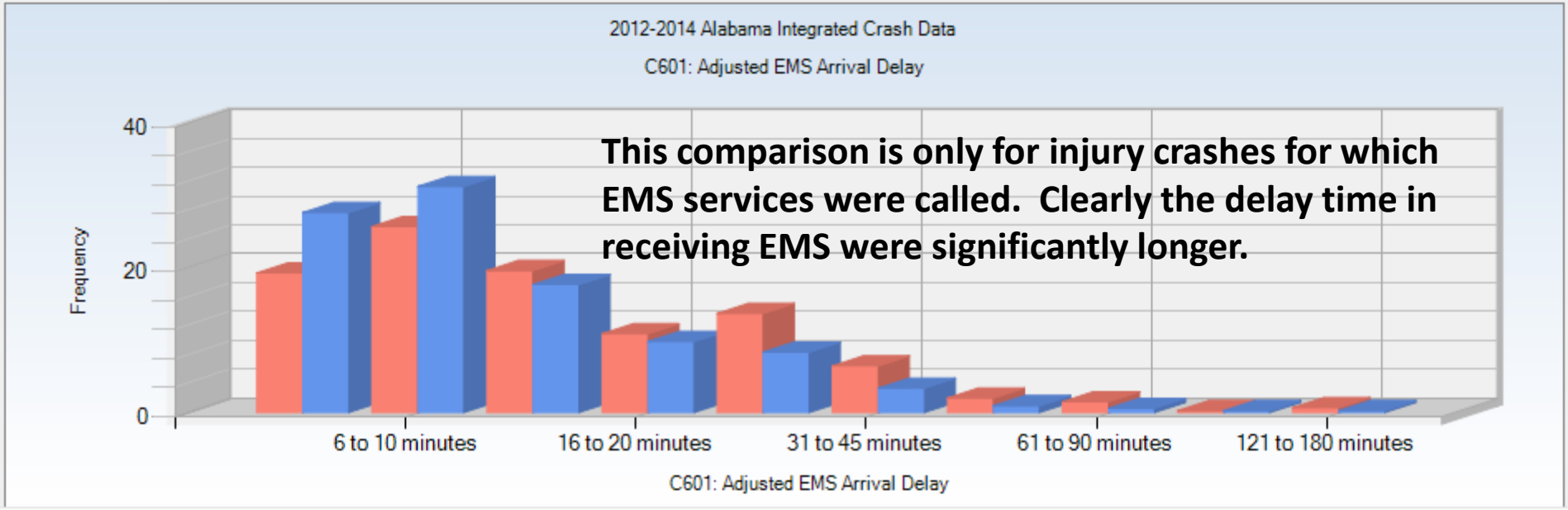
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C601: Adjusted EMS Arrival Delay Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
0 to 5 minutes	117	19.31	21634	27.66	0.698*	-50.620
6 to 10 minutes	156	25.74	24474	31.29	0.823*	-33.624
11 to 15 minutes	119	19.64	13846	17.70	1.109	11.722
16 to 20 minutes	66	10.89	7679	9.82	1.109	6.503
21 to 30 minutes	83	13.70	6535	8.36	1.639*	32.367
31 to 45 minutes	39	6.44	2622	3.35	1.920*	18.685
46 to 60 minutes	12	1.98	727	0.93	2.130	6.367
61 to 90 minutes	9	1.49	445	0.57	2.610	5.552
91 to 120 minutes	1	0.17	91	0.12	1.418	0.295
121 to 180 minutes	4	0.66	54	0.07	9.560	3.582

C601: Adjusted EMS Arrival Delay

Sort by Sum of Max Gain

Display Filter Name



This comparison is only for injury crashes for which EMS services were called. Clearly the delay time in receiving EMS were significantly longer.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

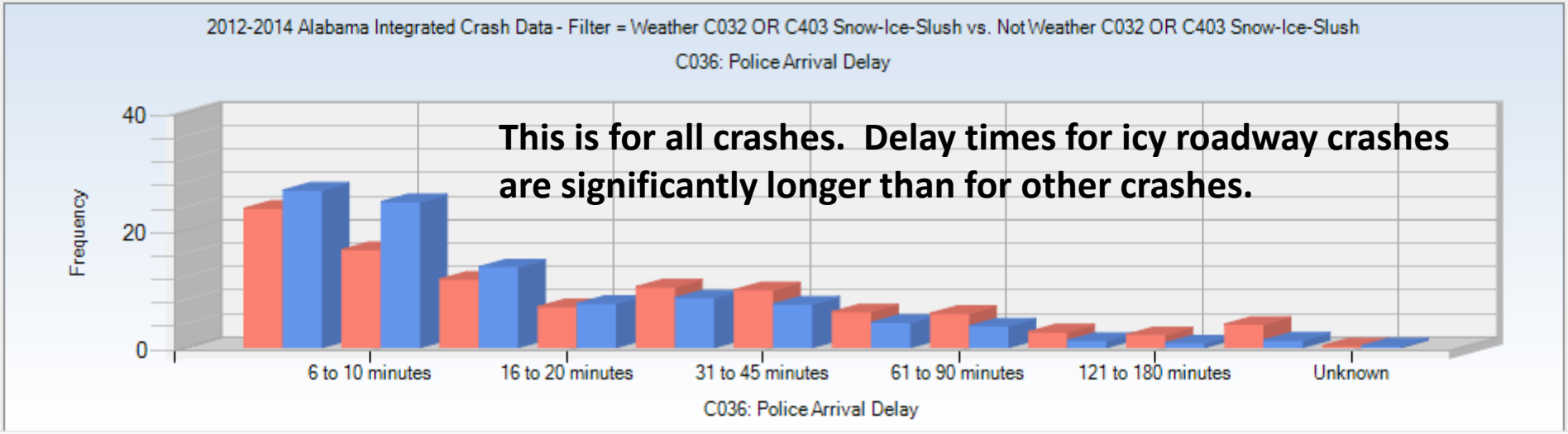
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C036: Police Arrival Delay Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
0 to 5 minutes	707	23.71	86205	26.81	0.884*	-92.416
6 to 10 minutes	497	16.67	79903	24.85	0.671*	-243.975
11 to 15 minutes	347	11.64	44155	13.73	0.847*	-62.468
16 to 20 minutes	207	6.94	24121	7.50	0.925	-16.684
21 to 30 minutes	308	10.33	27215	8.46	1.220*	55.624
31 to 45 minutes	293	9.83	23826	7.41	1.326*	72.051
46 to 60 minutes	181	6.07	13700	4.26	1.425*	53.954
61 to 90 minutes	173	5.80	11820	3.68	1.578*	63.388
91 to 120 minutes	79	2.65	3835	1.19	2.221*	43.436
121 to 180 minutes	65	2.18	2480	0.77	2.826*	42.002
Over 180 minutes	118	3.96	3959	1.23	3.214*	81.287
Unknown	7	0.23	345	0.11	2.188	3.801

C410: CU Traffic Control Functioning
C227: CU Vehicle Towed
C014: Distance from Node 1
C042: Highway Patrol Posts
C036: Police Arrival Delay
C107: CU Driver Raw Age
C011: Highway Classifications
C022: E Type of Roadway Junction/Featu
C010: Rural or Urban
C600: CU Driver Age Range
C041: Highway Patrol Troops
C106: CU Driver Age
C325: CU Driver/Non-Motorist Age
C026: Intersection Related
C049: ALDOT Division
C406: CU Contributing Material Source

Sort by Sum of Max Gain

Display Filter Name



This is for all crashes. Delay times for icy roadway crashes are significantly longer than for other crashes.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush vs. Not Weather C032 OR C403 Sn...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

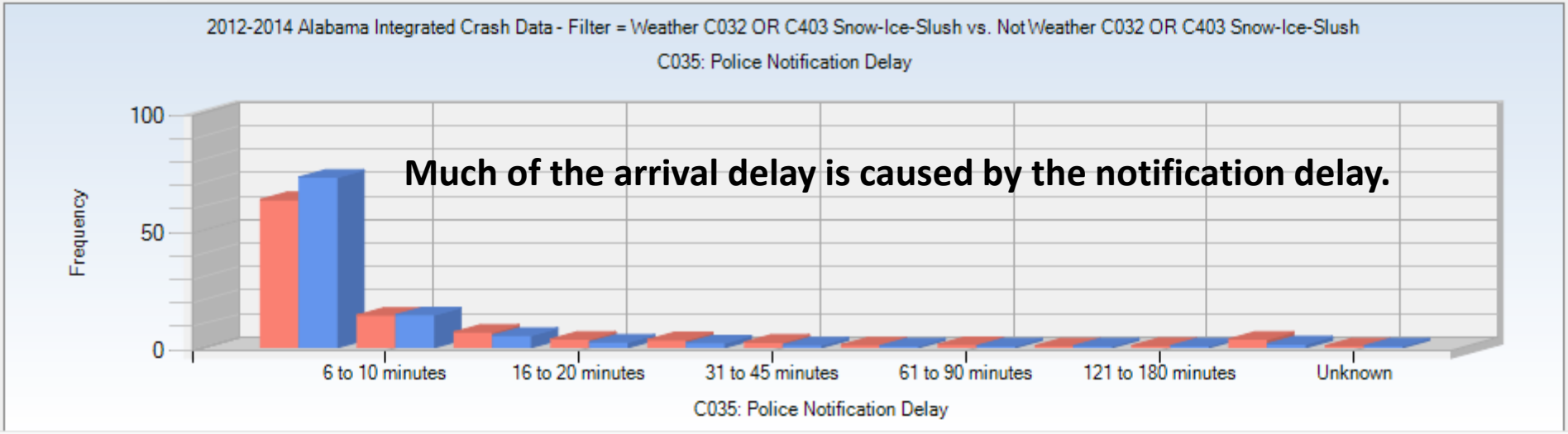
Order: Natural Order | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C035: Police Notification Delay Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
0 to 5 minutes	1875	62.98	232696	72.52	0.868*	-284.052
6 to 10 minutes	408	13.71	44619	13.91	0.986	-5.994
11 to 15 minutes	194	6.52	16545	5.16	1.264*	40.489
16 to 20 minutes	106	3.56	7231	2.25	1.580*	38.908
21 to 30 minutes	98	3.29	6239	1.94	1.693*	40.112
31 to 45 minutes	67	2.25	3426	1.07	2.108*	35.212
46 to 60 minutes	32	1.07	1714	0.53	2.012*	16.097
61 to 90 minutes	39	1.31	1573	0.49	2.672*	24.405
91 to 120 minutes	21	0.71	779	0.24	2.905*	13.772
121 to 180 minutes	24	0.81	788	0.25	3.283*	16.689
Over 180 minutes	106	3.56	4897	1.53	2.333*	60.564
Unknown	7	0.24	345	0.11	2.187	3.799

C045: HasGPS
C411: CU Opposing Lane Separation
C232: E CU Areas Damaged #3
C402: E CU Road Surface Type
C120: E CU Driver Employment Status
C035: Police Notification Delay
C208: CU Model Year
C210: CU Body (Passenger Cars Only)
C108: CU Driver Race
C206: E CU Sequence of Events #3
C121: CU Driver Condition
C124: CU Driver Alcohol Test Type Giver
C126: CU Driver Alcohol Test Results
C127: E CU Driver Drug Test Results
C037: EMS Arrival Delay
C125: E CU Driver Drug Test Type Giver

Sort by Sum of Max Gain

Display Filter Name



Much of the arrival delay is caused by the notification delay.

CARE 10.1.0.0 - [IMPACT Results - 2012-2014 Alabama Integrated Crash Data - Weather C032 OR C403 Snow-Ice-Slush AND Not CU Opposing Lane Separ...

File Dashboard Filters Analysis Impact Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data | Filter: Weather C032 OR C403 Snow-Ice-Slush | 1/ 1/2012 | 7/27/2014

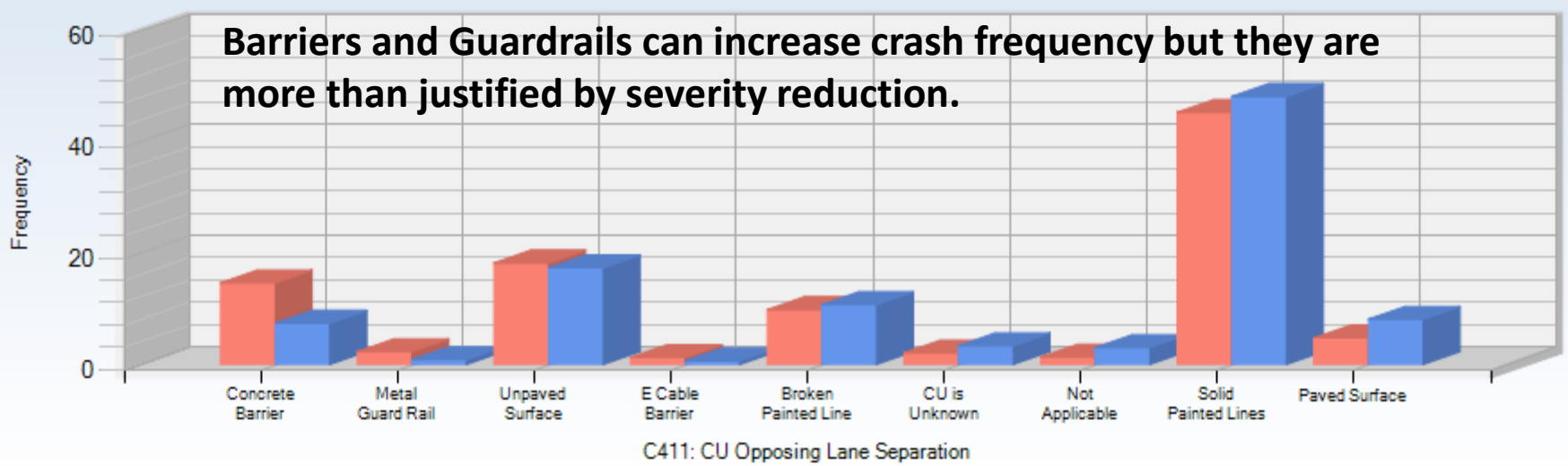
Order: Max Gain | Descending | Suppress Zero-Valued Rows | Significance: Over Representation | Threshold: 2.0

C411: CU Opposing Lane Separation Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Concrete Barrier	398	14.70	20839	7.43	1.978*	196.738
Metal Guard Rail	62	2.29	2414	0.86	2.659*	38.686
Unpaved Surface	495	18.29	48823	17.42	1.050	23.470
E Cable Barrier	34	1.26	1770	0.63	1.989*	16.905
Broken Painted Line	267	9.86	30191	10.77	0.916	-24.583
CU is Unknown	56	2.07	9417	3.36	0.616*	-34.949
Not Applicable	35	1.29	8478	3.02	0.427*	-46.880
Solid Painted Lines	1231	45.47	135505	48.35	0.941*	-77.702
Paved Surface	129	4.77	22849	8.15	0.585*	-91.675

C411: CU Opposing Lane Separation

Sort by Sum of Max Gain

Display Filter Name



Barriers and Guardrails can increase crash frequency but they are more than justified by severity reduction.

CARE 10.1.0.0 - [Crosstab Results - 2012-2014 Alabama Integrated Crash Data - Filter = Weather C032 OR C403 Snow-Ice-Slush]

File Dashboard Filters Analysis Crosstab Locations Tools Window Help

Data Source: 2012-2014 Alabama Integrated Crash Data Filter: Weather C032 OR C403 Snow-Ice-Slush 1/ 1/2012 7/27/2014

Suppress Zero Values: None Select Cells: Column: Crash Severity ; Row: CU Opposing Lane Separation

	Fatal Injury	Incapacitating Injury	Non-Incapacitating Inju	Possible Injury	Property Damage Only	Unknown	TOTAL
None	2 22.22%	9 7.14%	11 5.70%	21 10.88%	213 8.88%	17 19.32%	273 9.08%
Paved Surface	0 0.00%	3 2.38%	6 3.11%	9 4.66%	108 4.50%	3 3.41%	129 4.29%
Unpaved Surface	1 11.11%	23 18.25%	40 20.73%	26 13.47%	397 16.55%	8 9.09%	495 16.46%
Broken Painted Line	0 0.00%	11 8.73%	14 7.25%	15 7.77%	212 8.84%	15 17.05%	267 8.88%
Solid Painted Lines	6 66.67%	62 49.21%	84 43.52%	73 37.82%	976 40.68%	30 34.09%	1231 40.92%
Concrete Barrier	0 0.00%	12 9.52%	27 13.99%	36 18.65%	317 13.21%	6 6.82%	398 13.23%
Metal Guard Rail	0 0.00%	2 1.59%	4 2.07%	3 1.55%	53 2.21%	0 0.00%	62 2.06%
E Cable Barrier	0 0.00%	0 0.00%	1 0.52%	4 2.07%	27 1.13%	2 2.27%	34 1.13%
Fence	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Other	0 0.00%	1 0.79%	0 0.00%	1 0.52%	16 0.67%	1 1.14%	19 0.63%
Unknown	0 0.00%	0 0.00%	0 0.00%	0 0.00%	8 0.33%	1 1.14%	9 0.30%
Not Applicable	0 0.00%	1 0.79%	2 1.04%	2 1.04%	28 1.17%	2 2.27%	35 1.16%
CU is Unknown	0 0.00%	2 1.59%	4 2.07%	3 1.55%	44 1.83%	3 3.41%	56 1.86%
TOTAL	9 0.30%	126 4.19%	193 6.42%	193 6.42%	2399 79.75%	88 2.93%	3008 100.00%

Evidence of Guardrail and Concrete Barrier effectiveness in reducing severity – notice how they tend to push the crashes into the less severe categories. All crashes given above are from the icy crash subset.

CAPS

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Questions???