

Risk Factors for Farm Vehicle Public Road Crashes

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Objectives

- Identify driver, vehicle, and environmental risk factors associated with farm vehicle public road crashes in NC
- Compare crash farms and no-crash farms: descriptive and multivariate analysis

Background

- Public road crashes major public health problem
- Increasing demand for public road use with population growth
- Urbanization impacting how public roads are shared
- Crash report data: 300 farm vehicle crashes annually in NC
- Farm vehicle crashes: rare event
 - Official statistics may underestimate problem
 - Vehicle Miles Traveled (VMT)
 - Severity
- NC farmer input through focus groups and mail surveys:
 - Public road conflict and crashes are major safety problems

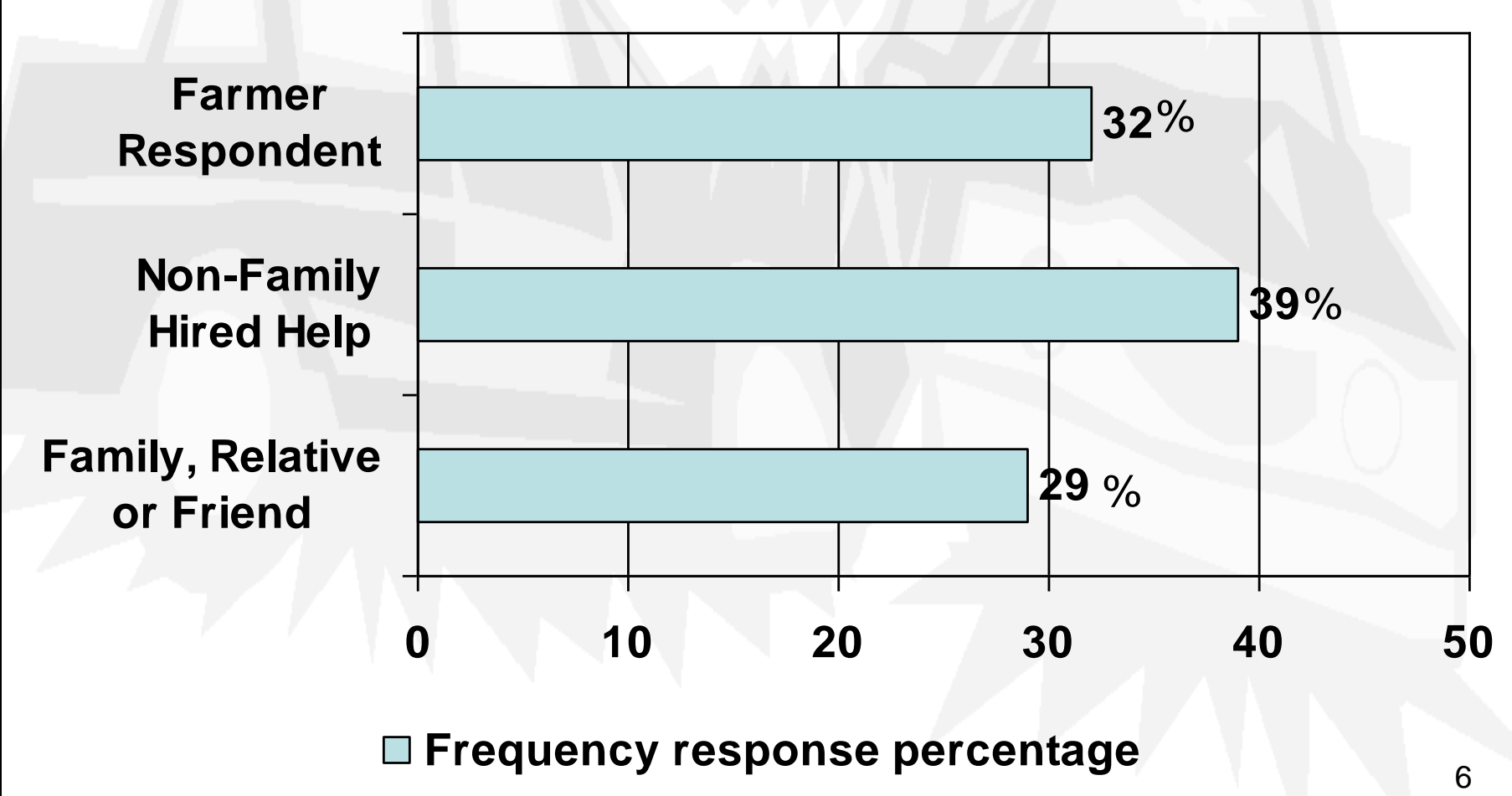
Methods

- Telephone survey, Winter 2003
- NC farm owners or owner/operators from USDA database
- Two stages of sampling and interviews
- Eligibility
 - over 18 yrs
 - actively farming
 - drive farm vehicle on public roads
 - Crash: farm vehicle public road crash since 1992
- Initial Sample: 424 total
 - Stage 1: 208 no crash, 28 crash (12.9% prevalence)
 - Stage 2: 188 crash

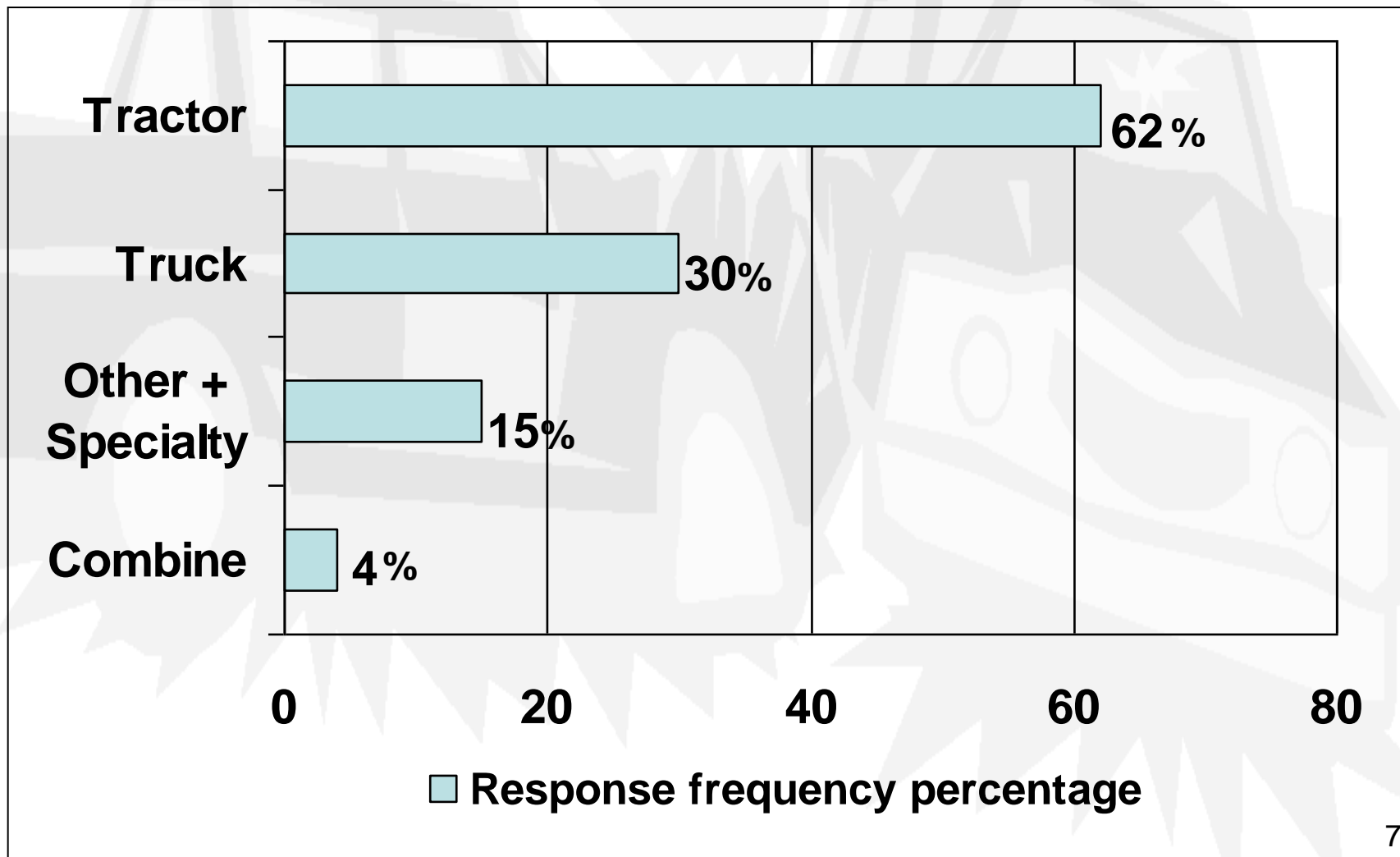
Demographic Characteristics of Farm Respondents: Crash and No-Crash Farms

	CRASH (N=216)	NO-CRASH (N=208)
<i>*p < .01</i>		
Mean Age	49*	46
Mean Years Farming	39	41
Mean Number Farm Helpers	8*	5
Mean Acres Farmed	782*	293
Mean Gross Farm Sales	\$179,660*	\$86,500

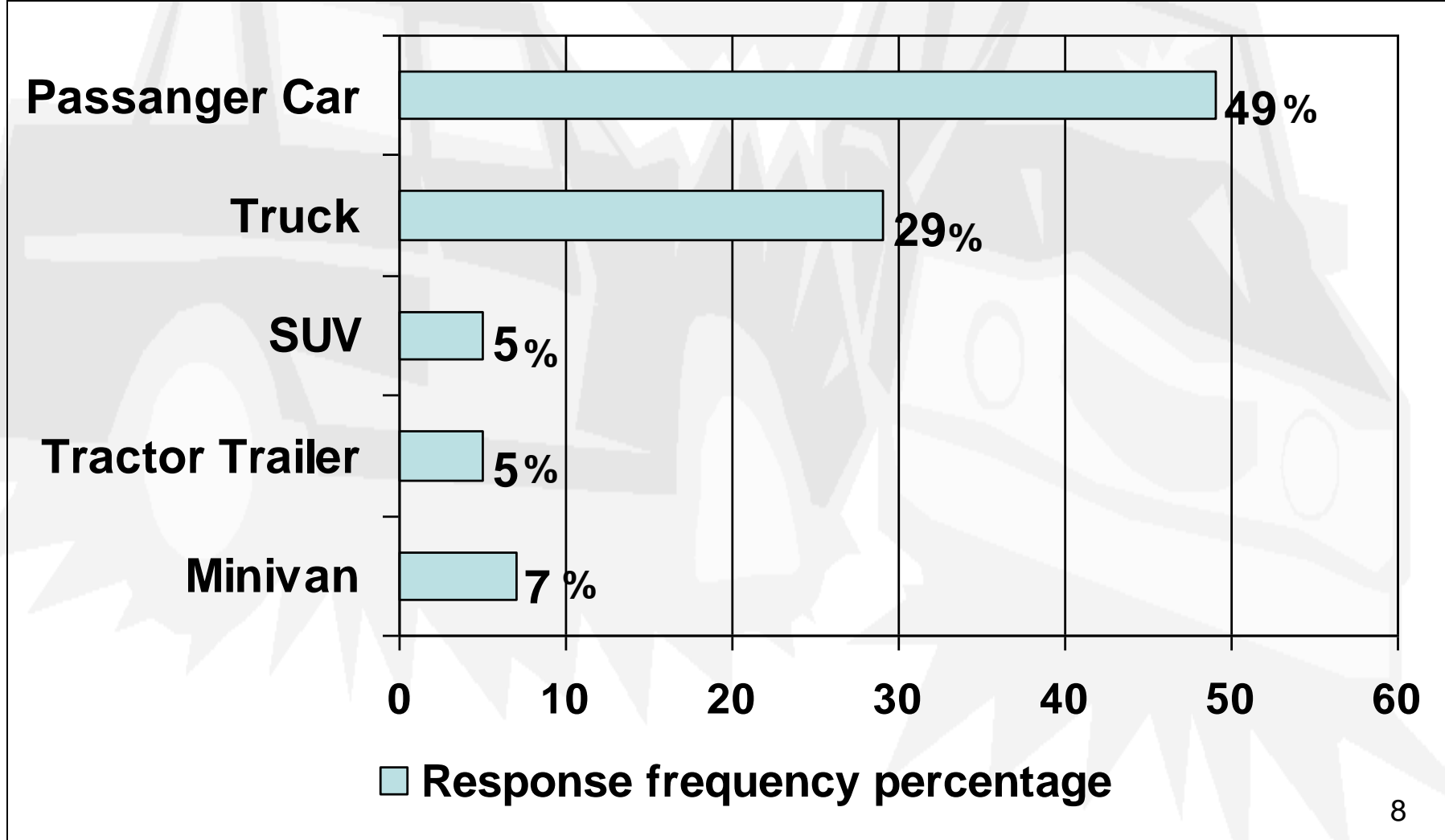
Who Was Driving Farm Vehicle When Most Recent Crash Occurred: Crash Farms (n = 216)



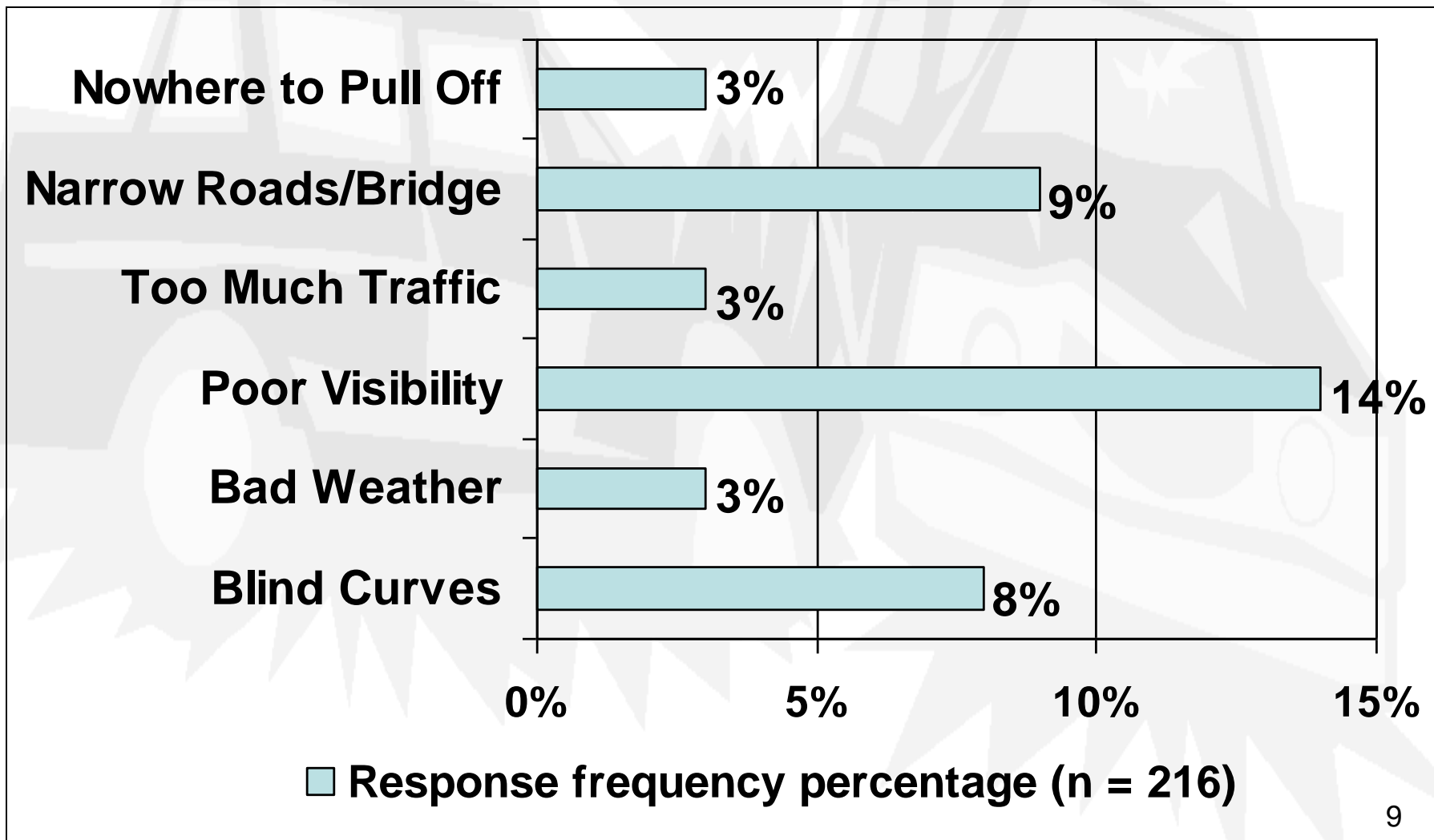
Farm Vehicle Involved In Most Recent Crash: Crash Farms (n = 216)



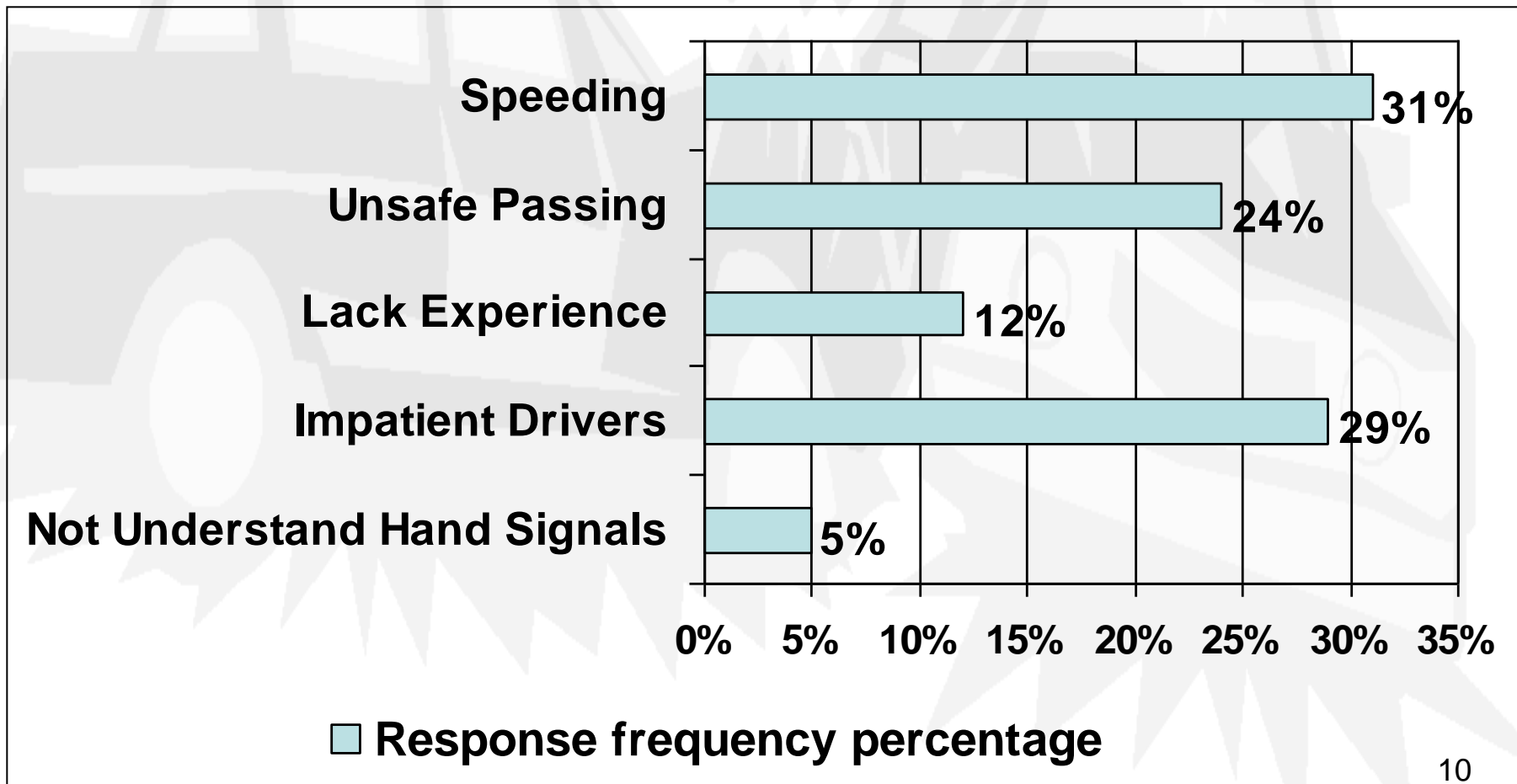
Non-Farm Vehicle Involved In Most Recent Crash: Crash Farms (n = 216)



Road Conditions That Contributed to Farm Vehicle Public Road Crashes: Crash Farms



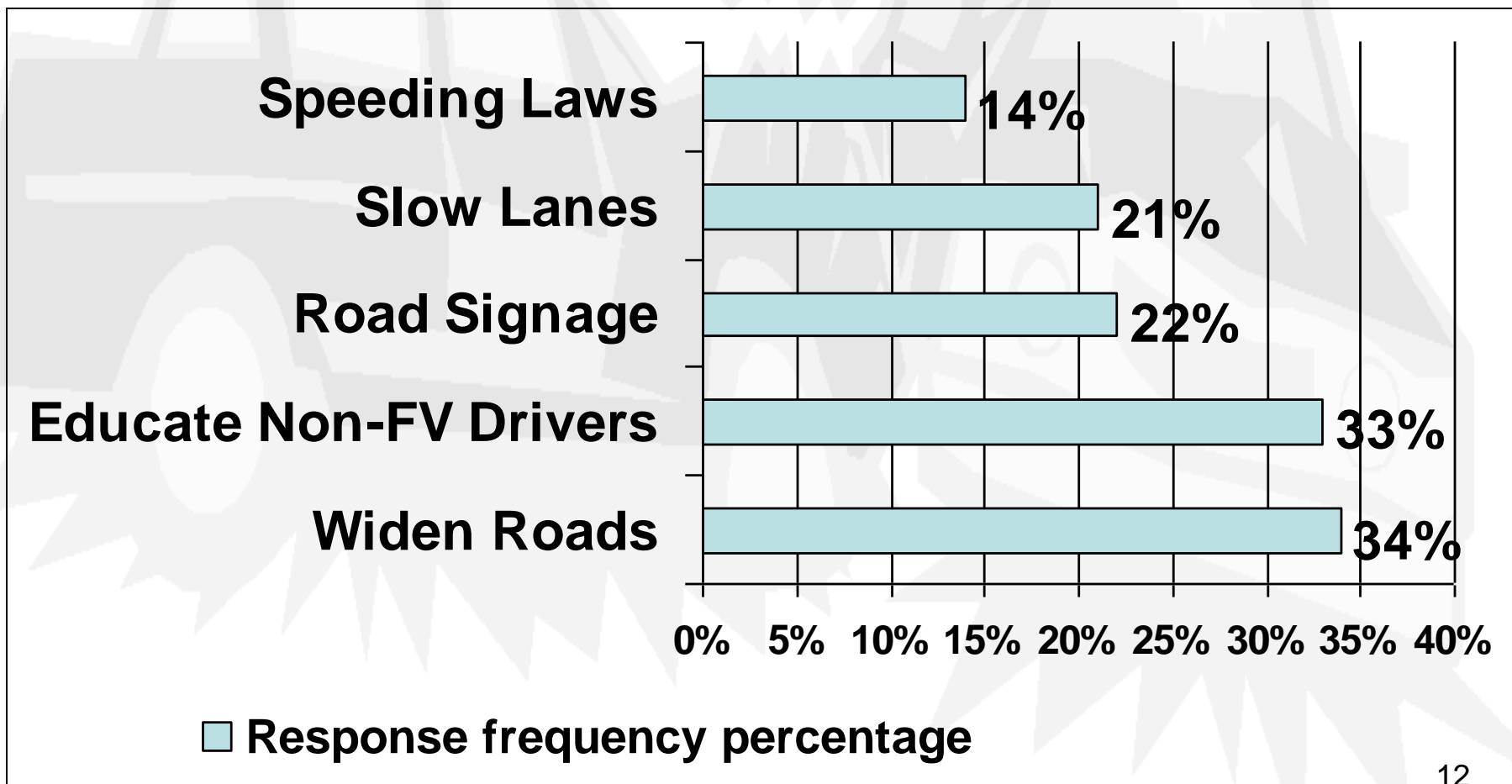
Non-Farm Vehicle Driver Behaviors That Contributed to Farm Vehicle Public Road Crashes: Crash Farms (n = 216)



Logistic Regression Results: Statistically Significant Predictors and Odds Ratio Point Estimates (variables that increase or decrease the odds of being a crash farm)

Non-English Speaking Help	4.61
Non-Family Hired Help	4.32
Perceived Public Road Conflict	1.77
Non-Farm Public Road Use	1.40
Farm Injury History	1.34
Youngest Driver	1.02
Oldest Driver	0.96
Perception of Danger	0.53
Low Farm Income	0.26

Farmers Recommend Driver, Vehicle and Public Road Environmental Changes for Improved Safety (n = 424)



Limitations

- Data from one state
- Recall and self-report
- Lack information on specifics of crashes
- Lack information on road conditions and geography of crash and non-crash farms.

Conclusion

- Crash Farms: use hired help, use non-English speaking help, report younger drivers, more public road conflict, and higher non-farm public road use
- No-Crash Farms: report older drivers, low farm income, higher perception of public road driving danger
- Farm and non-farm vehicle public road sharing, conditions, and driver behaviors contribute to crashes.