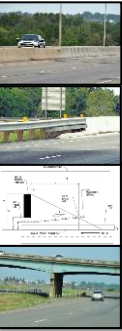


Session 1: Introduction and Pre-Assessment




FAST Act Guardrail Safety Training
Highway Barrier Design Training

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May 23rd, 2019




Disclaimer

This material is based upon work supported by the Federal Highway Administration under Grant Agreement No. 693JJ317500085. Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the Federal Highway Administration. This document does not constitute a national standard, specification or regulation.



Ground Rules

- Be on time
- Participate
- Restrict sidebar conversations
- Turn off cellphones



Objectives of Course

At the end of this 1-day session you will be able to:

- Identify when a traffic barrier is the best treatment to use at a specific site.
- Select a barrier that will adequately shield the identified area of concern
- Select the appropriate terminal or crash cushion for the situation encountered
- Assess the topography of the site to provide for an optimal barrier system installation.


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Three Elements of a Crash

 DRIVER

 VEHICLE

 ROADWAY

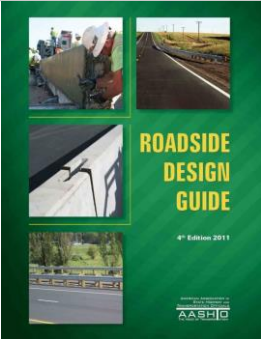
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Basis for Guidance Presented



NDDOT follow:

- NDDOT Design Manual (Chpt. III, Section 13, with App. A, and B),
- NDDOT Standard Drawings (D-764), and
- AASHTO Roadside Design Guide, 2011

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Session 1: Introduction and Pre-Assessment

Session 1
Introduction and Pre-assessment



Barriers should reduce the severity of potential crashes and should not introduce a new severe risk regardless where they are located

Session 1 Learning Outcomes

At the end of this session, you will be able to:

- Identify the primary Roadside Safety Concerns in North Dakota.
- Assess your current knowledge of Barrier Design.

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Leading Cause of Death by Age

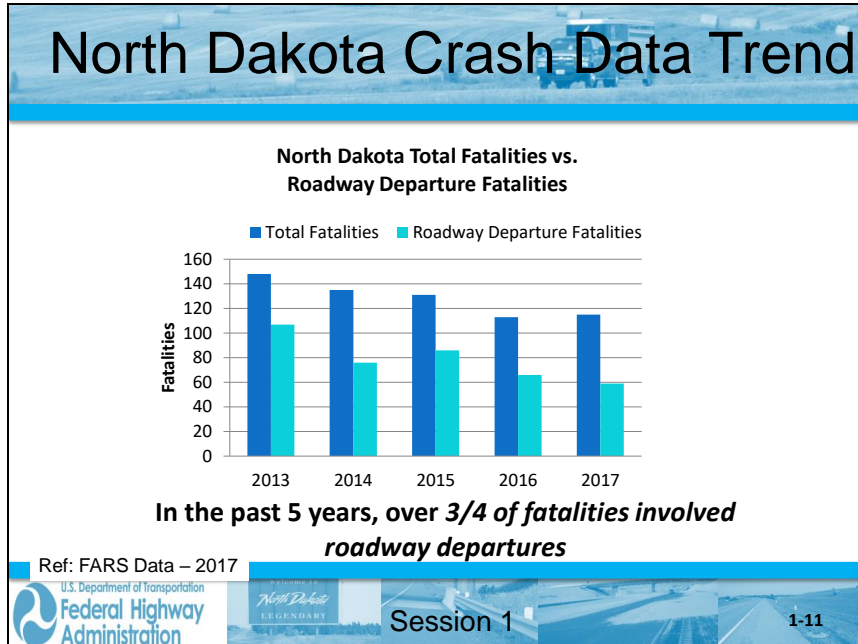
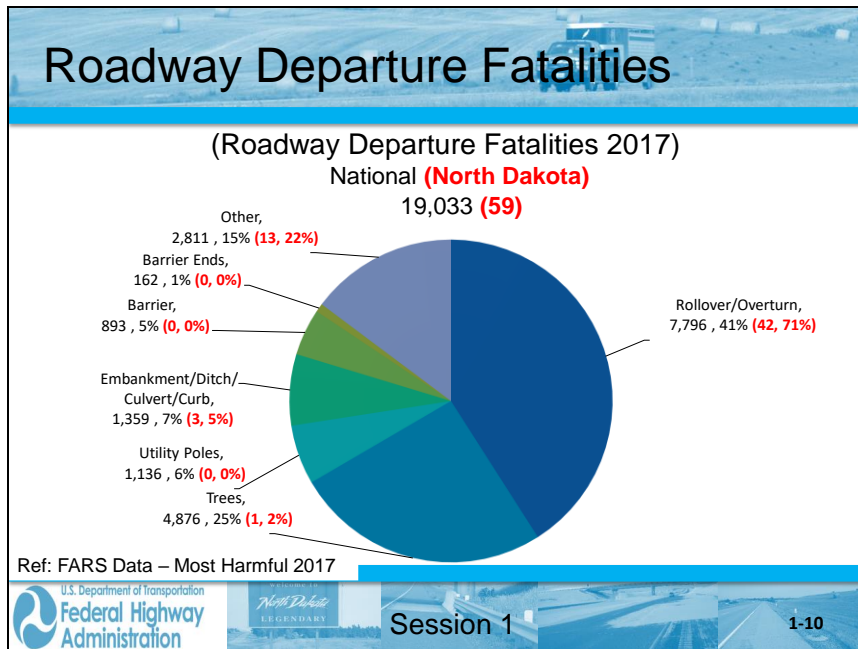
R A N K	Cause and Number of Deaths										2012
	Infants Under 1	Toddlers 1-3	Young Children 4-7	Children 8-15	Youth 16-20	Young Adults 21-24	Other Adults			Elderly 65+	
							25-34	35-44	45-64		
1	Perinatal Period 14,106	Congenital Anomalies 474	MV Traffic Crashes 495	MV Traffic Crashes 1,584	MV Traffic Crashes 6,327	MV Traffic Crashes 4,446	MV Traffic Crashes 6,933	Malignant Neoplasms 16,085	Malignant Neoplasms 143,028	Heart Disease 576,301	
2	Congenital Anomalies 5,623	MV Traffic Crashes 410	Malignant Neoplasms 449	Malignant Neoplasms 842	Homicide 2,422	Homicide 2,650	Suicide 5,046	Heart Disease 13,688	Heart Disease 101,804	Malignant Neoplasms 391,001	
3	Heart Disease 500	Accidental Drowning 380	Congenital Anomalies 180	Suicide 428	Suicide 1,810	Suicide 2,036	Homicide 4,489	MV Traffic Crashes 6,883	Stroke 15,952	Stroke 143,293	

R A N K	Cause and Number of Deaths									2015
	Infants Under 1	Toddlers 1-3	Young Children 4-7	Children 8-15	Youth 16-20	Young Adults 21-24	Other Adults			Elderly 65+
							25-34	35-44	45-64	
1	Perinatal Period 11,613	Congenital Anomalies 389	Malignant Neoplasms 360	MV Traffic Crashes 744	MV Traffic Crashes 3,114	MV Traffic Crashes 3,415	Accidental Poisoning 11,231	Malignant Neoplasms 10,909	Malignant Neoplasms 159,176	Heart Disease 507,138
2	Congenital Anomalies 4,825	Homicide 329	MV Traffic Crashes 279	Malignant Neoplasms 694	Suicide 2,441	Accidental Poisoning 2,820	Suicide 6,947	Accidental Poisoning 10,580	Heart Disease 111,120	Malignant Neoplasms 419,389
3	Heart Disease 292	Accidental Drowning 316	Congenital Anomalies 168	Suicide 663	Homicide 2,027	Suicide 2,798	MV Traffic Crashes 6,281	Heart Disease 10,387	Chronic Liver Disease 22,152	CLRD ⁵ 131,804



Session 1

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ND Roadside Fatalities (5 yr total)

	FIRST HARMFUL	MOST HARMFUL
Rollover	153	235
Embankment, Ditches, Curbs and Culverts	86	13
Trees	6	10
Barrier and End	5	2
Utility Poles/Light Support	0	1

Ref: FARS 2013 to 2017

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North Dakota Strategic Highway Safety Plan

Lane Departure

On North Dakota roadways, there were 1,581 serious injury lane-departure crashes resulting in 1,906 serious injuries between 2012 and 2016. This is an average of 381 serious injuries per year and accounted for nearly 58% of serious injury crashes during the 5-year study period (NDDOT, 2017).

2018 NORTH DAKOTA VISION ZERO PLAN

VISION ZERO
Zero fatalities. Zero serious injuries.

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North Dakota Strategic Highway Safety Plan

Some highlights from data revealed:

- Majority of lane-departure serious injuries are from single-vehicle crashes (75%).
- Highway curve serious injuries (26%) are considered over-represented.
- The most harmful events for single-vehicle serious injuries involved overturning/rolling over (72%) and collisions with fixed objects (13%).
- A plurality of Lane Departure serious injuries (31%) occurred during summer months and a majority occurred on dry roads (75%) during daylight conditions (51%).



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Real World Crashes



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Need for Training

The potential consequences of barrier systems that are not designed appropriately:

- Systems may not function as designed.
- Crash severities may be increased.

Support North Dakota Vision Zero/Strategic Highway Safety Plan (SHSP).



Session 1

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Need for Training

The next slides show locations where barrier was (or wasn't) installed.

At a glance can you identify any issues here (or do you need additional information)?

We will discuss these sites in further detail in later applicable sessions, so please record and save your responses.



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Session 1: Introduction and Pre-Assessment





Review Learning Outcomes

- Identify the primary Roadside Safety Concerns in North Dakota.
- Assess your current knowledge of Barrier Design.



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