



**David P. Brand, P.E.,P.S.**

County Engineer

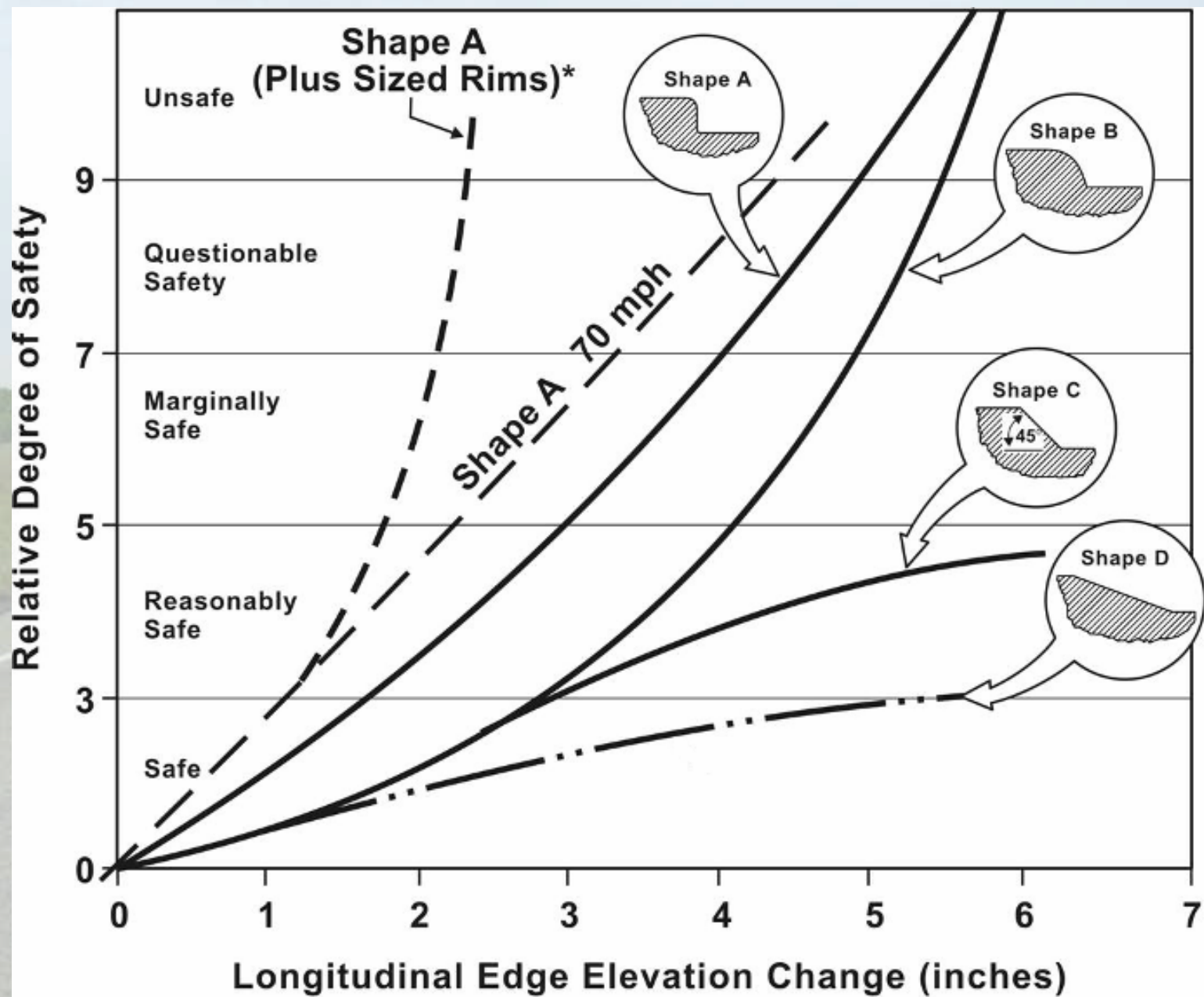
Madison County, Ohio

Chair - NACE Roadway Safety Working Group

NACE Representative - Center for Excellence in Rural Safety  
(CERS) Advisory Committee

Vice Chair – NACo Transportation Committee

Member – FHWA Every Day Counts Safety Edge Team











# Roadway Departure Focus: Rural Two Lane Roads

## Safety Edge Solution:

- Safety Benefit
- Pavement Benefit
- Low Cost



# Construction

- Clip Shoulders
- Construct Overlay
- **Pull Shoulders Flush**
- Business as Usual
  - No Effect on Production
  - Minimal Monitoring



# Madison County Ohio Experience







# 2009

## CR 7 – Plain City Georgesville Rd.

- 3800 ADT
- 9.1 miles long
- Numerous curves and hills
- 3 Fatalities and 45 injuries (3 years)
- 77 Total Crashes over 3 year period
  - 2.82 crashes/mile/year

# It starts with the Contract and / or Contractor

- V. **PLAIN CITY GEORGESVILLE (I-70 TO CONVERSE HUFF RD.)**  
6.94 miles, 22 ½ feet in width, First Lift ¾" 404 Scratch Coarse, Second Lift  
1 ¼" 404, with .1 gal. tack per sq. yd. – Berm 18" wide tapered down on outside.

1. 5,253 CU.YDS. ITEM 404 – PRICE PER CU. YD. \$ 117.00  
SUB-TOTAL \$ 614,601.00

2. 2,720 TONS BERM AGGREGATE – ITEM 617  
PRICE PER TON \$ 19.50  
SUB-TOTAL \$ 53,040.00

3. ITEM 740.03 - PERMANENT YELLOW CENTER & WHITE EDGE LINES  
LUMP SUM \$ 16,000.00

4. ALTERNATE BID: (Only if Authorized)

SAFETY EDGE – ITEM SPECIAL (as per note) LUMP SUM INCLUDING  
ALL INCIDENTALS (Note: Bid item to cover the extra cost (above the asphalt  
concrete) of forming the safety edge and requiring the use of the "Shoulder  
Wedge Maker" (SWM) as produced by Transtech Systems, Inc.  
([http://www.transtechsys.com/products/pro\\_products\\_main.htm](http://www.transtechsys.com/products/pro_products_main.htm)) or an equal as  
approved by engineer).

LUMP SUM \$ 1,600.00

5. ITEM 254 - PAVEMENT PLANING (10'X 22 1/2'X 1 1/4" Depth Tapered Out  
@ 8 Locations / 25' X 22 1/2' X 1 1/4" Depth Tapered Out @ 2 Locations)

LUMP SUM \$ 6,000.00

**GRAND TOTAL PLAIN CITY GEORGESVILLE ....\$ 691,241.00**

**GRAND-TOTAL AMOUNT..... \$ 1,002,433.50**

# Recognize This?







**New Pavement Surface**

**New Graded  
Material**

**30°**

**Old Pavement**

**Old Shoulder**







24° Edge Bevel not 30°



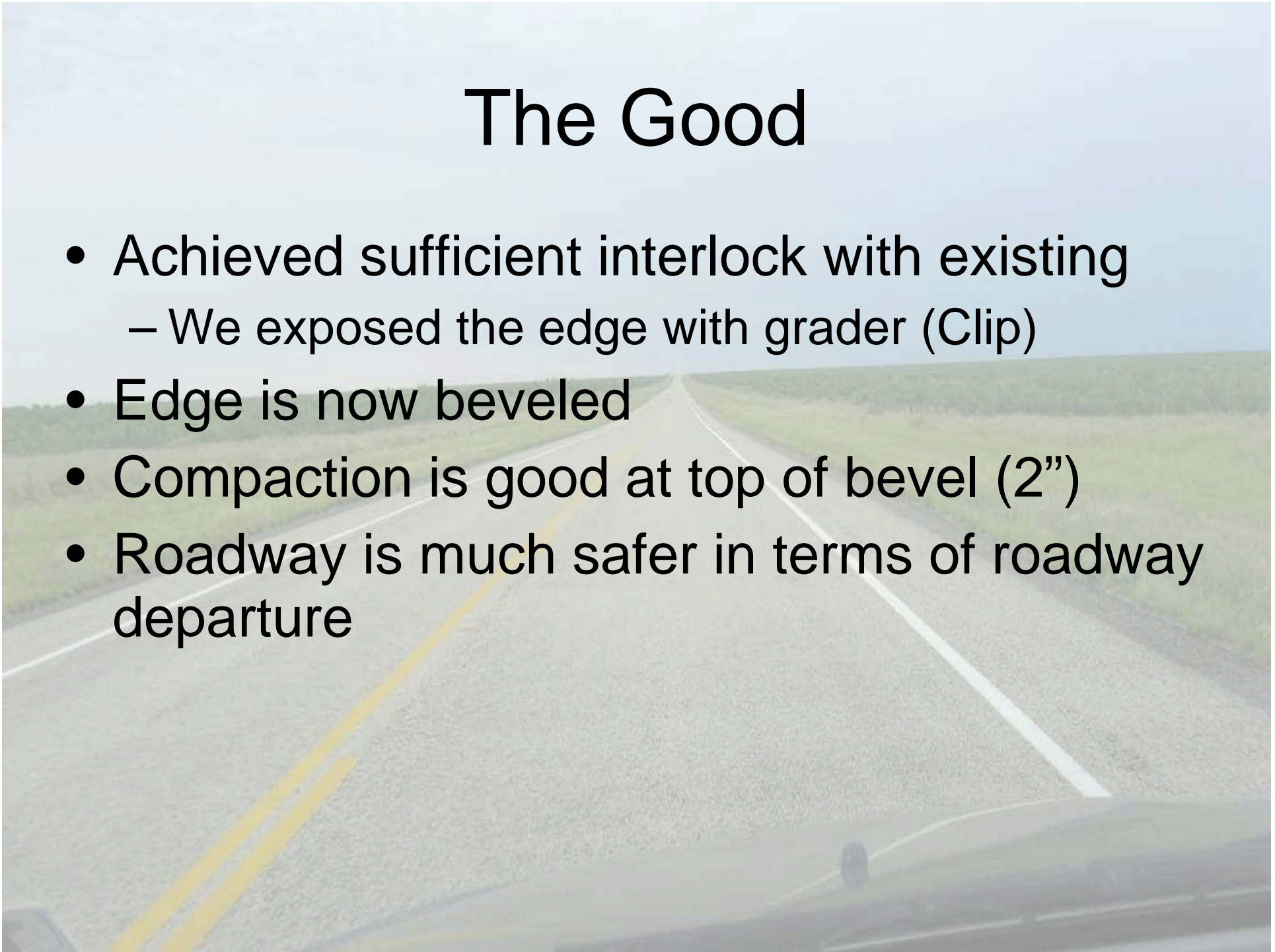


Slight snow plow scuffing (no damage)



# The Good

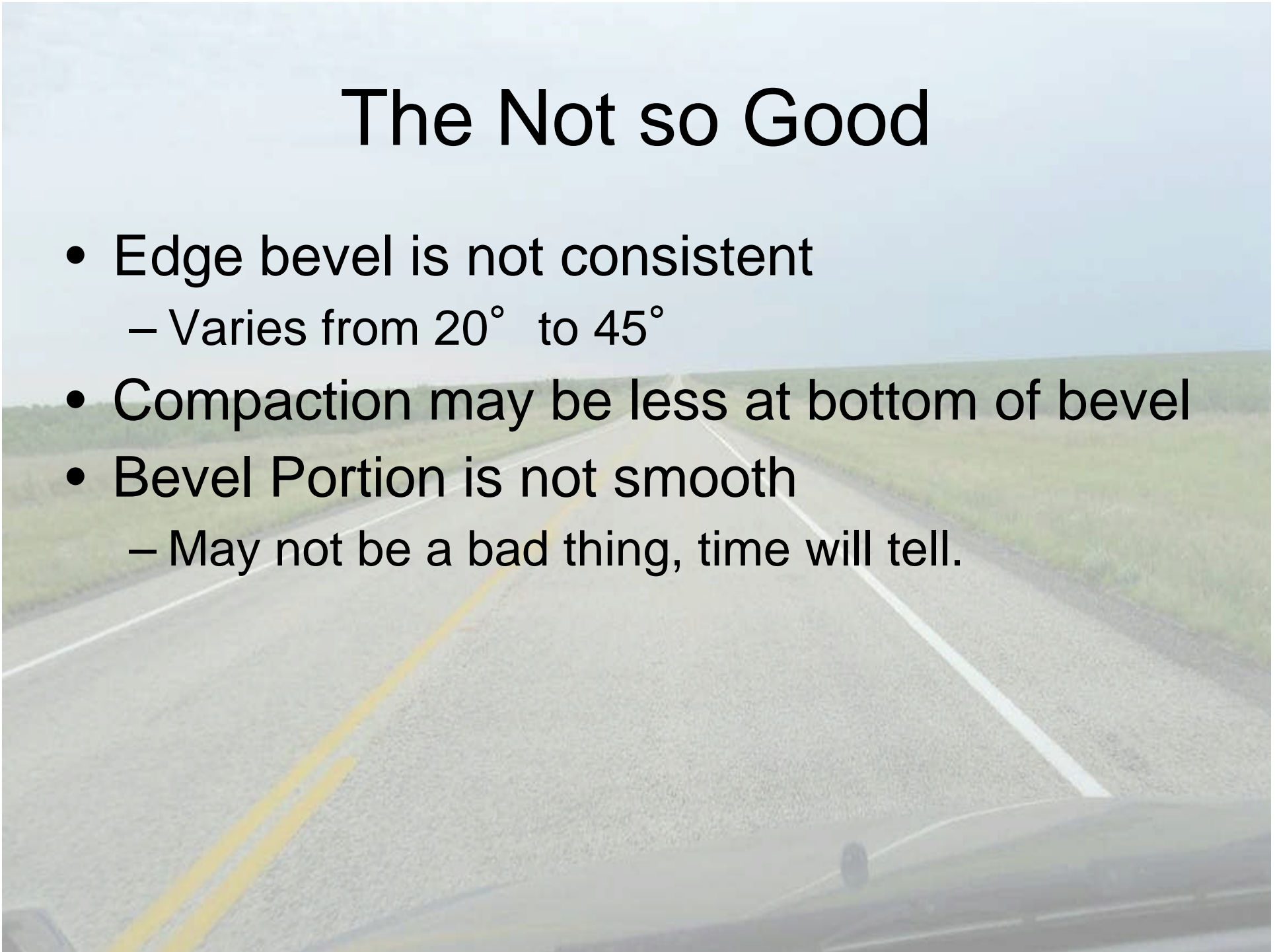
- Achieved sufficient interlock with existing
  - We exposed the edge with grader (Clip)
- Edge is now beveled
- Compaction is good at top of bevel (2")
- Roadway is much safer in terms of roadway departure





# The Not so Good

- Edge bevel is not consistent
  - Varies from  $20^{\circ}$  to  $45^{\circ}$
- Compaction may be less at bottom of bevel
- Bevel Portion is not smooth
  - May not be a bad thing, time will tell.





# 2010

## CR25 - Rosedale Road

- 400 ADT
- 3.05 miles long
- Some curves and hills (for Madison County)
- 0 Fatalities and limited injuries



It starts  
with the  
Contract  
and / or  
Contractor

2010 – MADISON COUNTY ENGINEER'S PAVING PROGRAM  
BIDDER'S SHEETS

I. ROSEDALE ROAD (C.R. 11 – UNION CO. LINE)

3.05 miles, 20 feet in width, 1 ½" Single Lift 404, with .1 gal. tack per sq. yd. –  
Berm 18" wide tapered down on outside.

1. 1,566 CU.YDS. ITEM 404 – PRICE PER CU. YD. \$ 126.57

SUB-TOTAL \$ 198,208.62

2. 537 TONS BERM AGGREGATE – ITEM 617

PRICE PER TON \$ 18.00

SUB-TOTAL \$ 9,666.00

3. ITEM 740.02 - PERMANENT YELLOW CENTER & WHITE EDGE LINES

LUMP SUM \$ 4,990.00

SAFETY EDGE – ITEM SPECIAL (as per note) LUMP SUM INCLUDING  
ALL INCIDENTALS (Note: Bid item to cover the extra cost (above the asphalt  
concrete) for installing and using the County owned Advent-Edge Universal  
Safety Edge Attachment. After completion of the work, the attachment shall be  
cleaned and returned to the County. All costs to be incidental to this Item Special.

LUMP SUM \$ 2,500.00

GRAND TOTAL ROSEDALE ROAD .....\$ 215,364.62

II. OLD COLUMBUS RD. (CHOCTAW EAST – CHOCTAW WEST)

.43 miles in length, 30 feet in width, single lift – 1 ½" lift of Item 404, with .1 gal.  
tack per sq. yd., 18" - 24" A.C. Band & Tape Joint at both ends, Berm – 18" wide  
tapered down on outside.





















# Rolling is a critical piece with Safety Edge











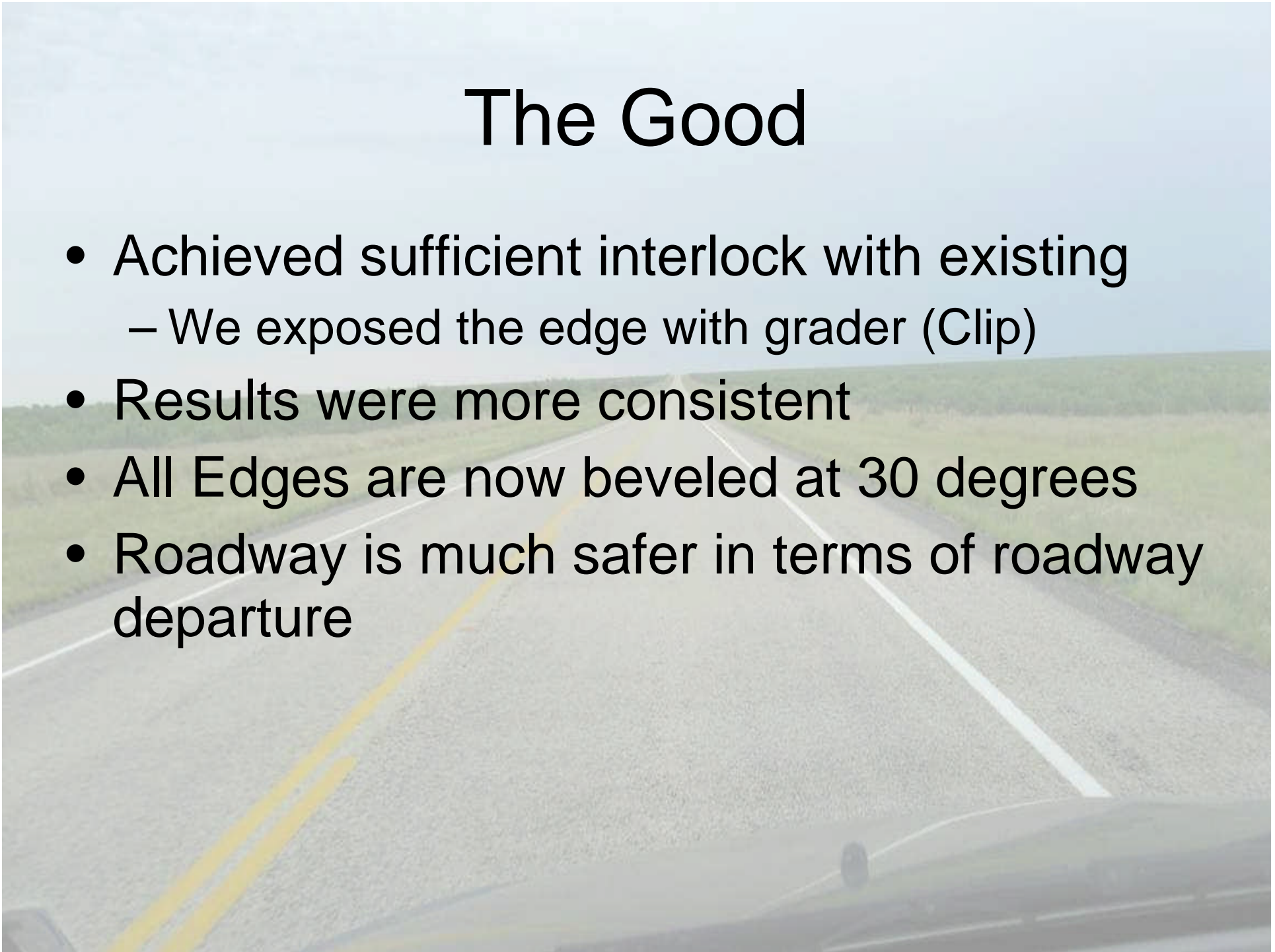






# The Good

- Achieved sufficient interlock with existing
  - We exposed the edge with grader (Clip)
- Results were more consistent
- All Edges are now beveled at 30 degrees
- Roadway is much safer in terms of roadway departure



# The Not so Good

- Compaction is just O.K.
  - Universal Shoe has no slope as material is pulled against it.
- Bevel Portion still is not smooth
  - Mix Design?
  - May not be a bad thing, time will tell.
- Still requires knowledge to set-up and adjust to achieve optimum results
- I wish I was elected in a slightly larger County that had a PR person on staff



# What does it take to achieve a Safety Edge Success Story ?

- Specify an “Tried & True” attachment
  - Advent Edge, Transtech Systems or industry accepted equal.
- Make sure the existing edge is exposed (clipped)
- Inspect to make sure the set-up is providing the desired results
- Install berm up to the top of the edge bevel
- It's not “**ROCKET SCIENCE**”

# Where is a Safety Edge not appropriate?

- ???????
- Wherever you know someone will never try to “re-enter” the roadway
- I can't think on a location where it can't be installed











# Why do we care about Safety?



What happened here?



TUESDAY, JULY 31, 2007

# The Madison Press



20 PAGES

SERVING GREATER MADISON COUNTY, OHIO, SINCE 1842

NEWSTAND 50¢ - HOME DELIVERY 33¢

Year 165, Volume No. 180

WWW.MADISON-PRESS.COM

## INSIDE



The Ohio State Fair begins its annual two-week run Wednesday. Find out what you'll see in Columbus.

SEE PAGE 1B

## LIFESTYLES



WEST JEFFERSON

## Woman killed in rollover accident

WEST JEFFERSON — Jennifer Zimmerman, 28, of Galloway, was killed Monday afternoon when she lost control of the vehicle she was driving on Plain City-Georgesville road just north of I-70.

An Ohio Highway Patrolman at the scene said Zimmerman, who was driving a Saturn SUV, was traveling south at a high rate of speed when she lost control of the vehicle on a sharp curve.

The vehicle ran off the roadway and traveled along a ditch for some distance.

Zimmerman apparently over-corrected while trying to regain control of the SUV, came out of the ditch, crossed the roadway and hit another ditch, the officer said.

The car then flipped and rolled several times before coming to rest in a field of yellow daisies.

Zimmerman, who was not wearing a seat belt, was thrown from the vehicle. Her body was found about 40 yards from the car.

Squads from the West Jefferson Fire Department responded to the crash.

According to the Patrol, the accident is still under investigation.

Funeral arrangements are pending.



BY BETTE PEARCE/THE PRESS

An Ohio State Highway Patrolman investigates the crash that killed a Galloway woman.



# How did it happen?









I hope I never see that again!





# **Safety Edge is an “Insurance Policy”**

I hope we never need it,  
but I’m glad it’s there!





# Questions?

David Brand - Madison County Engineer

[dbrand@co.madison.oh.us](mailto:dbrand@co.madison.oh.us)

Office - (740) 852-9404

Cell – (614) 623-6543