



Friction Testing Program in Virginia

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Presentation Outline

- **Skid Testing Program Outline**
- **Historical Data and Results**
- **Challenges**
- **Future Steps**

Friction Testing in Virginia

- In house operation
 - By NDT section
- Equipment: 2 - ICC skid tester
- Follows ASTM E 274

Skid Testing Program in Virginia

- **Programmatic**
 - **Inventory Testing**
 - On IS and Pr routes
 - **Wet Accident Reduction Program**
 - On IS and PR routes
- **Need based**
 - **Project specific**
 - **As needed**

Inventory Testing

- IS and Pr routes are tested on multi year cycles
- 2-3 districts/year
- Test at every 0.2 mile intervals
- Test results uploaded into HTRIS
- Test results to be uploaded into PMS in the future

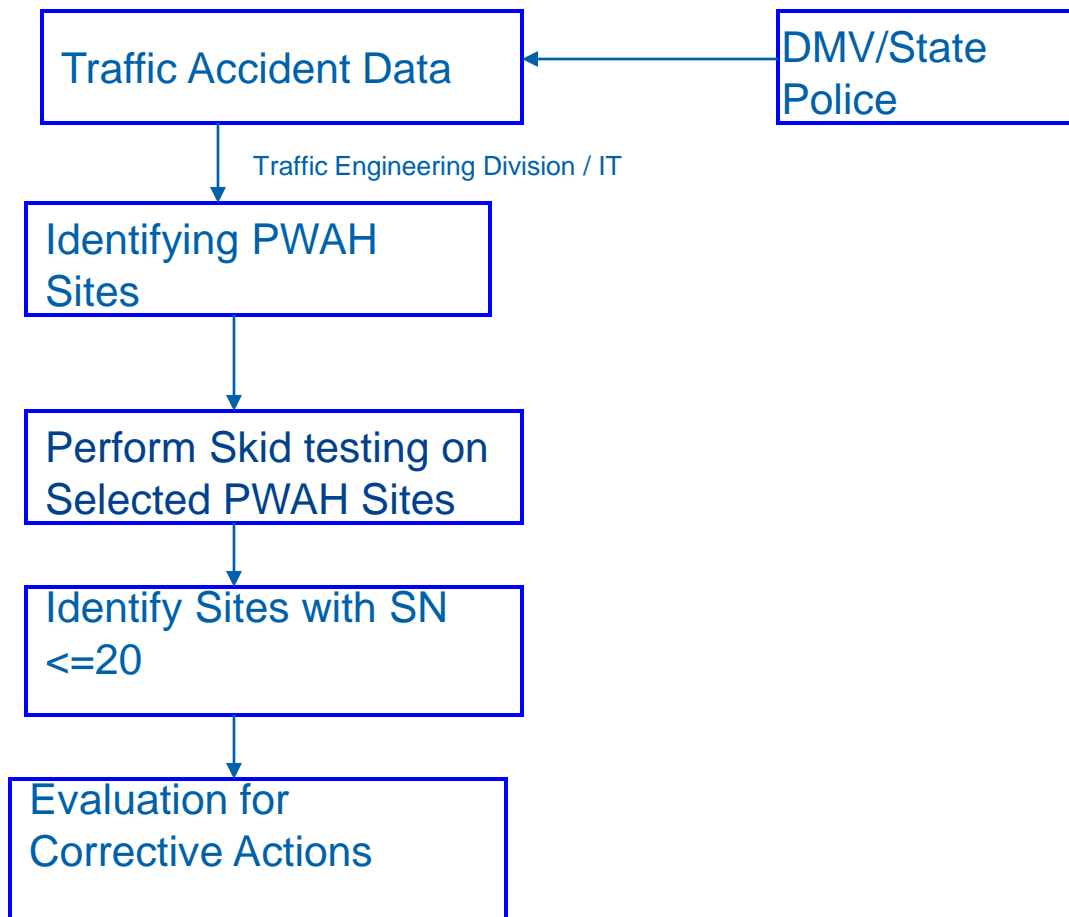
Wet Accident Reduction Program (WARP)

- Developed by Virginia Highway Transportation Research Council (VHTRC) in early 1970s
- Both reactive and proactive approach
- The purpose of WARP is to improve the highway safety by identifying and correcting sections of roadway with high or potentially high wet skid accident incidence

WARP Process

- **Identification of sites with known high wet accidents**
 - Potential Wet Accident Hot Spot Sites (PWAH)
 - Needs accident data from DMV each year
- **Testing of PWAH**
 - Performed by Materials division NDT section
- **Skid test results forwarded to district**
 - Sites with SN < 20 flagged
 - District perform further review on these sites
 - Remedial actions depends on pavement type
 - Remedial action varies from putting sign to resurfacing

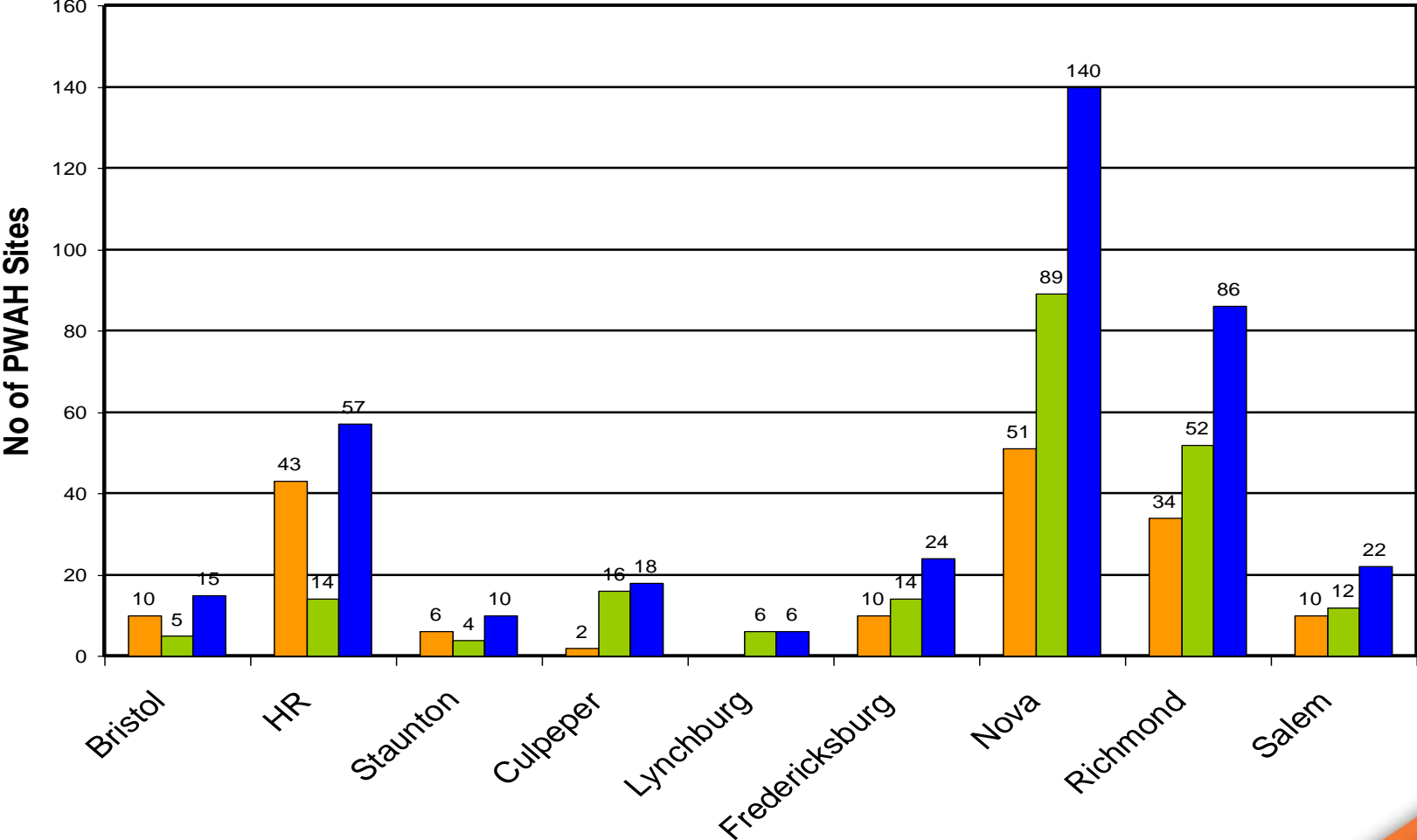
WARP Program Out Line



Selection of PWAH

- **PWAH Sites are identified from the previous year traffic accident data**
- **Discard Snow and Ice Accident**
- **Location must have at least 3 wet accidents, each separated by no more than 0.2 miles from its nearest neighbor**
- **PWAH site must have**
 - **the value of $(\text{wet} / (\text{wet} + \text{dry}))$, 20% greater than the value of $(\text{wet} / (\text{wet} + \text{dry}))$ for all the roads in that area**

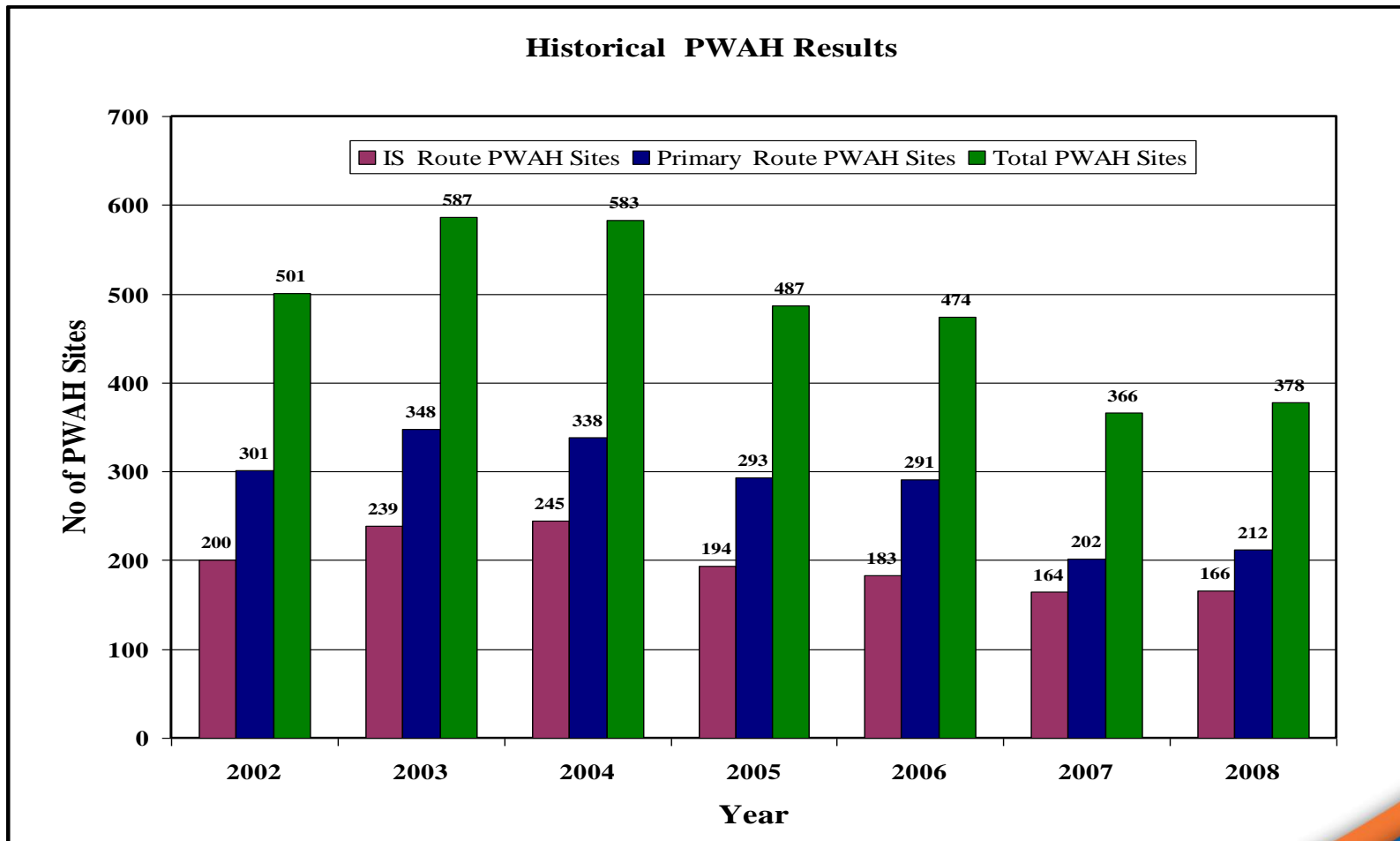
2008 WARP Results



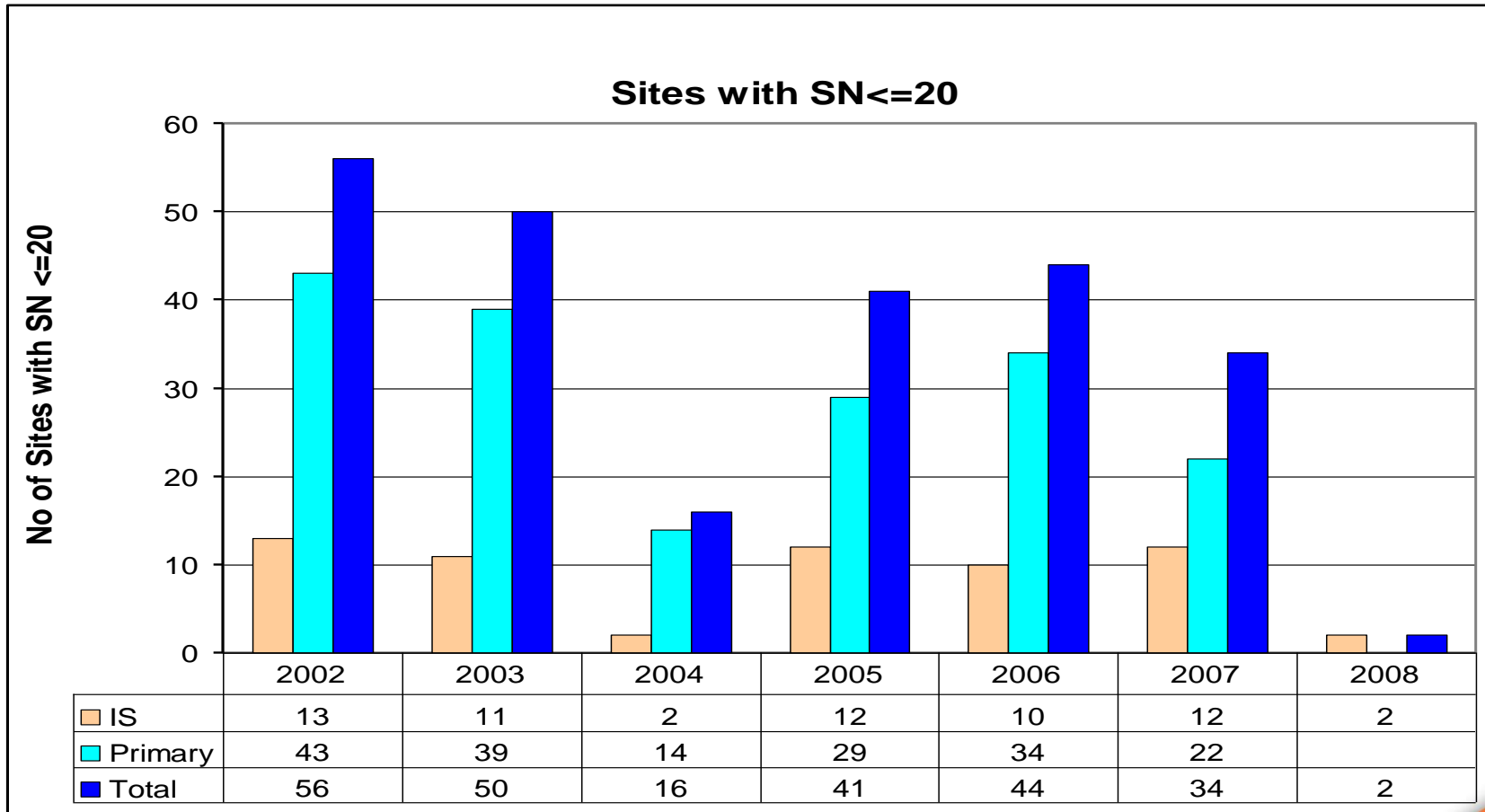
2008 Results, Contd.

- Only two sites has been identified which had a Skid Number less or equal 20
- To evaluate the seasonal effects on skid number, we analyzed our calibration data for the year 2009 and 2010, and did not find any significant statistical difference between the skid number for various seasons.
- We also retested few sites in Richmond, Hampton Road and Northern Virginia district at different times and did not observe any significant variation of Skid numbers.

Historical Trend of PWAH



Historical Trend of Low Skid Sites



Need Based Testing

- **Research Projects**
- **Assessing existing pavement condition**
- **Assessing new paving project**

Challenges

- **Cost**
- **Skilled operator**
- **Expensive out of state calibration**
- **No 'cut off' number**
 - **Subjective interpretation**
- **Too many stakeholders**

Future of the skid program

- Revision of WARP program by traffic engineering division and other stakeholders
- Inventory and WARP data to go into PMS
 - Wider use of the friction data
- Having skid number into acceptance criteria?

Questions ?

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Thank you!