

## **SR 228, BALLS BEND REALIGNMENT PROJECT**

### **I. PURPOSE AND NEED**

The Pennsylvania Department of Transportation (PennDOT) is completing preliminary design for the SR 228 corridor from just east of Three Degree Road near the Adams/Middlesex Township line, east approximately 1.6 miles to PA Route 8, referred to as the Balls Bend Realignment Project. According to PennDOT's *Publication 13M, Design Manual, Part 2 (DM-2)*, SR 228 east of Three Degree Road is classified as a Rural Arterial Highway. Within the project area, SR 228 is a two-lane roadway with a number of deficiencies that can generally be grouped into the categories of capacity, access, and safety. Due to high levels of traffic and a lack of adequate left- and right-turning lanes, the project area is at times subject to heavy traffic congestion. This adds additional drive time to commutes and increases the potential for traffic collisions. The existing roadway in the project corridor includes several curves that do not meet current design standards which creates sight distance deficiencies and also contributes to potential for crashes. (See attached Project Area map - **Figure 1.**)

#### **A. Needs**

The transportation deficiencies that exist in the project corridor are described in the following paragraphs.

##### **1. Capacity**

SR 228 is part of the National Highway System (NHS) and is classified as a principal arterial – community arterial – rural roadway. PennDOT is undertaking a series of improvements to SR 228 from I-79/I-76/US19 in Cranberry Township to PA Route 8 in Middlesex Township. Development pressures in Cranberry Township are expanding to the east and causing increased congestion on SR 228 throughout the corridor; development pressure is anticipated to continue into the future.

In 2017 the AADT on SR 228 in the project area was 14,168 vehicles/day and is projected to increase to 16,940 vehicles/day in the design year (2040). Trucks make up approximately 8% of the traffic on SR 228. The lack of turning lanes on SR 228 causes lengthy queues behind left-turning vehicles stopped in the travel lane. Bus stops and the school zone at the western end of the project area also create delays.

##### **2. Safety**

Crash data for the most recent five (5) years available, 2013 through 2017, was obtained from PennDOT for SR 228. During this 5-year period, 82 crashes were recorded along SR 228 within the project study area. A comparison of the crashes for SR 228, to the statewide average for similar roadway facilities, shows that the crash rate on SR 228 (1.81 crashes

per million vehicle miles traveled) exceeds the statewide average crash rate (0.89 crashes per million vehicle miles traveled) by more than double. The crash data shows that crashes are scattered throughout the project corridor with the majority of the crashes being associated with intersections/driveways, rear end collisions, and curvature of the roadway (**Figure 2**).

Currently SR 228 has a posted speed limit of 50 mph. Within the project area, SR 228 contains a series of curves that do not meet the current design standards, including the curve locally known as Balls Bend. The curves moving from the western limits of the project to Route 8 meet design speed criteria of 35, 40, 30, 35, 35, and 30 mph and are posted with warning signs and/or reduced speed limits. The curve locally known as Balls Bend currently meets a 40 mph design speed. There are three vertical curves within the project limit that do not meet the required stopping sight distance for a 50 mph design speed. These curves meet design speeds of 40, 30, and 40 mph. These curves contribute to sight distance issues and crashes on the roadway. Balls Bend is a hot spot for crashes, with fatalities having occurred at this location. When incidents happen on SR 228 there are few options for re-routing traffic around the crashes.

### **3. Access**

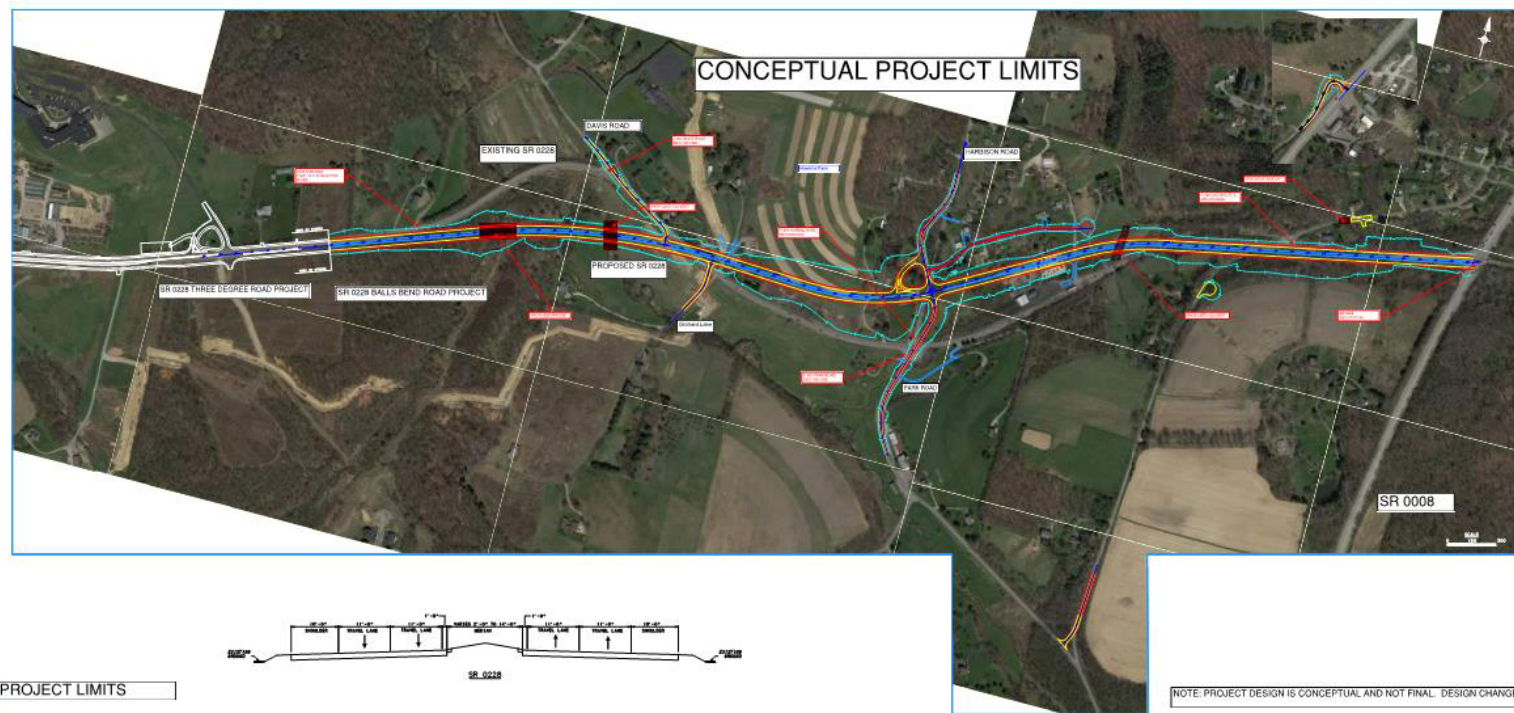
SR 228 is utilized as a regional through highway and a local access road passing through several communities while providing access to residential areas, businesses, and community facilities. SR 228 services numerous driveways while also serving truck traffic and through traffic. Numerous driveways are present in the study area. Conflicts between the through and local trips are prevalent because the lack of turning lanes and narrow shoulders force vehicles to queue behind turning vehicles. This line of vehicles can become lengthy because few gaps exist in the oncoming vehicle stream for turning vehicles to utilize. It is becoming quite difficult for left turns to be made from driveways onto SR 228 due to the high traffic volumes in the peak hours. Safety is also a concern due to the numerous driveways, as most crashes in this section of roadway occur at driveways and intersections. As the traffic volumes continue to increase, turning vehicles are expected to become an even larger problem.

### **B. Purpose**

The purpose of the proposed project is to improve mobility and safety for the traveling public along the SR 228 corridor from the area just east of Three Degrees Road near the Adams/Middlesex Township line, to the intersection with PA Route 8.

SR 228, Balls Bend Realignment  
MPMS 91288, ECMS 03705  
Middlesex Township, Butler County

**Figure 1: Project Area Map**



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**APRIL 2018**

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Figure 2: Crash Cluster Map

