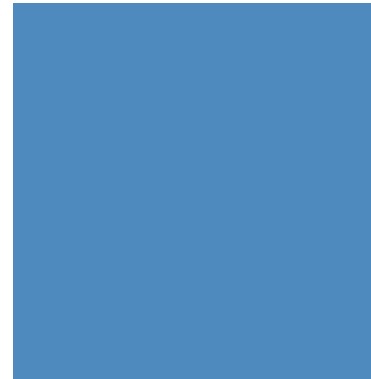


# Highway Innovations, Start to Finish: IHSDM

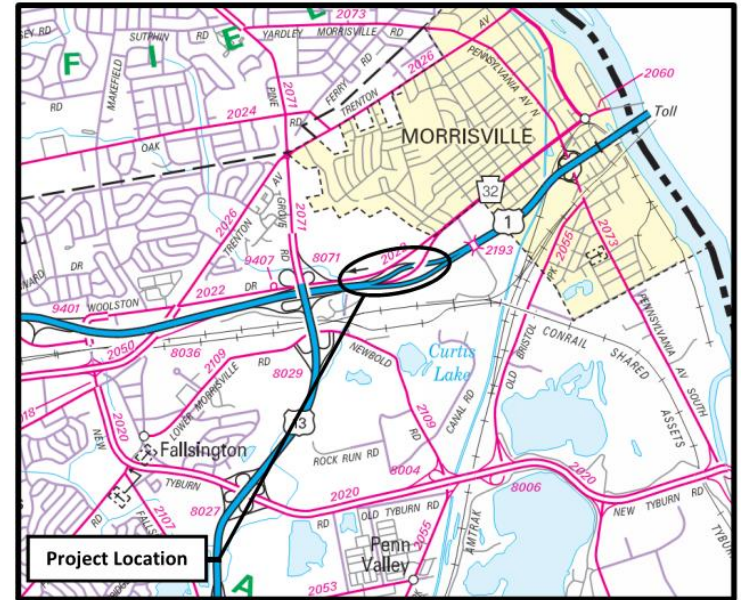


Presenter:

Nathan Parrish, PE

# Route 1 Project Background

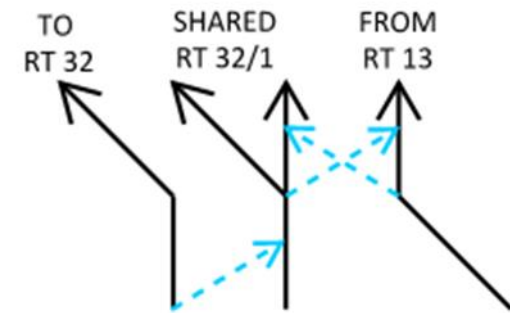
- ❑ Falls Township, Bucks County
- ❑ Route 1 NB, SR 32 Exit, and Route 13 on ramp (SR 8071)
- ❑ Route 1 NB ADT of 29,000
- ❑ Final survey February of 2017
- ❑ Advertised on June 22, 2017
- ❑ Time sensitive federal construction funding



# Route 1 Project Background

- ❑ Accident rate 5 times higher than statewide average
- ❑ Dedicated lane to SR 32
- ❑ Shared SR 32 and Route 1 Lane
- ❑ Dedicated entrance lane from Route 13 (SR 8071 Ramp)
- ❑ 600' separate Route 13 entrance and SR 32 exit

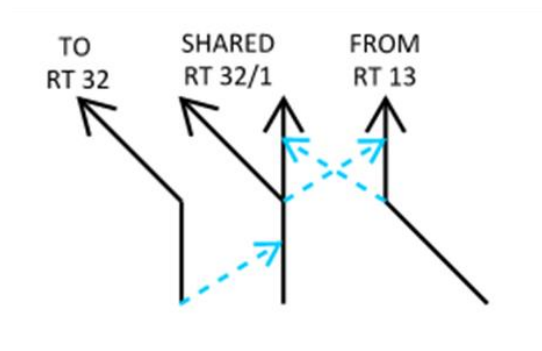
## Existing Geometry



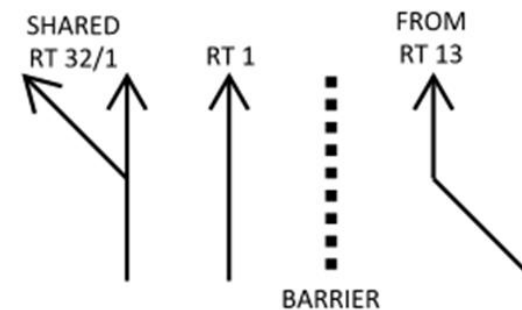
# Proposed Condition

- ❑ 2 continuous Route 1 NB lanes
- ❑ Change SR 32 Exit to taper type exit
- ❑ Concrete median barrier between Route 1 and Route 13 Ramp

## Existing Condition



## Proposed Condition

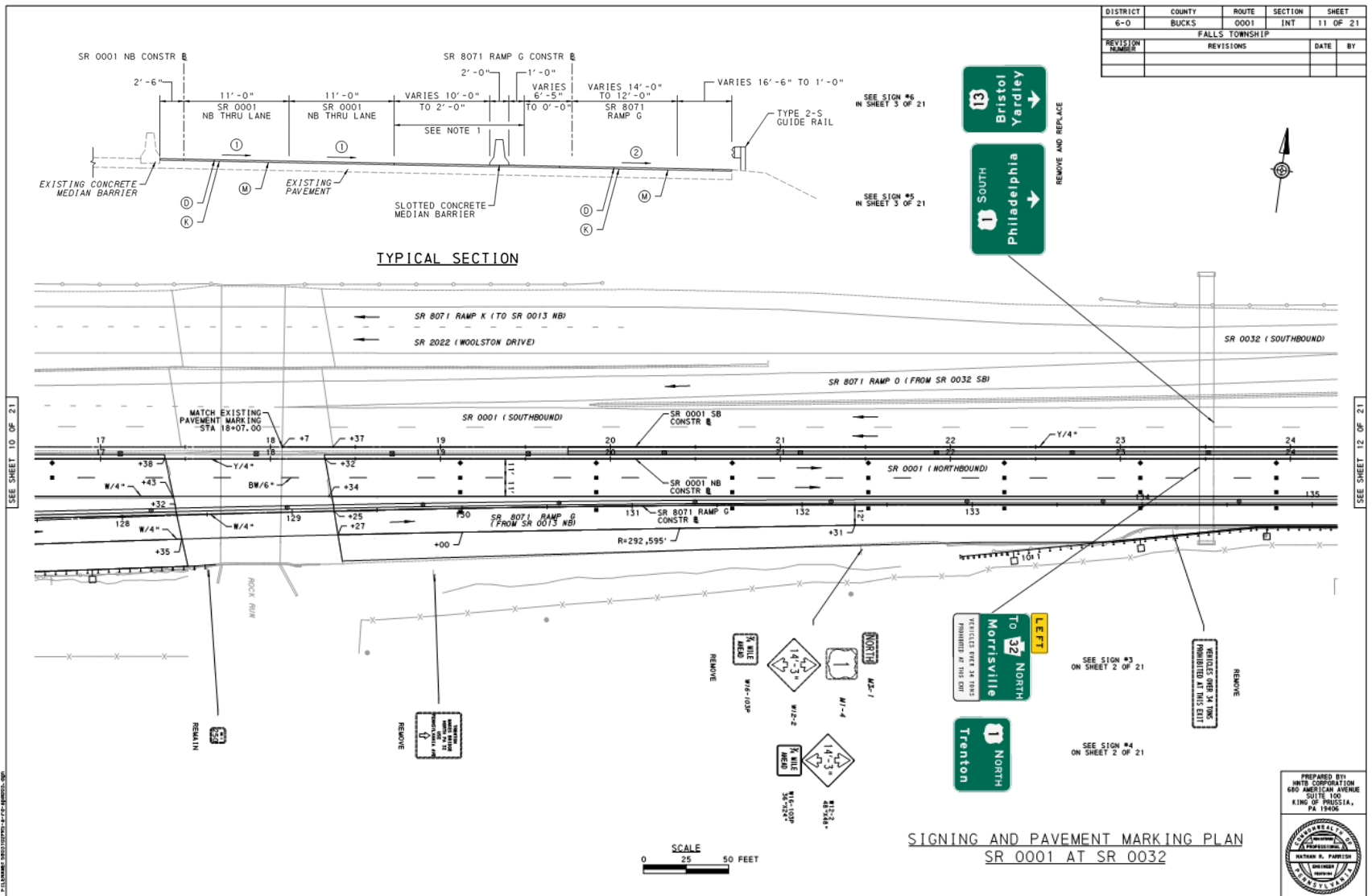


# Project Considerations

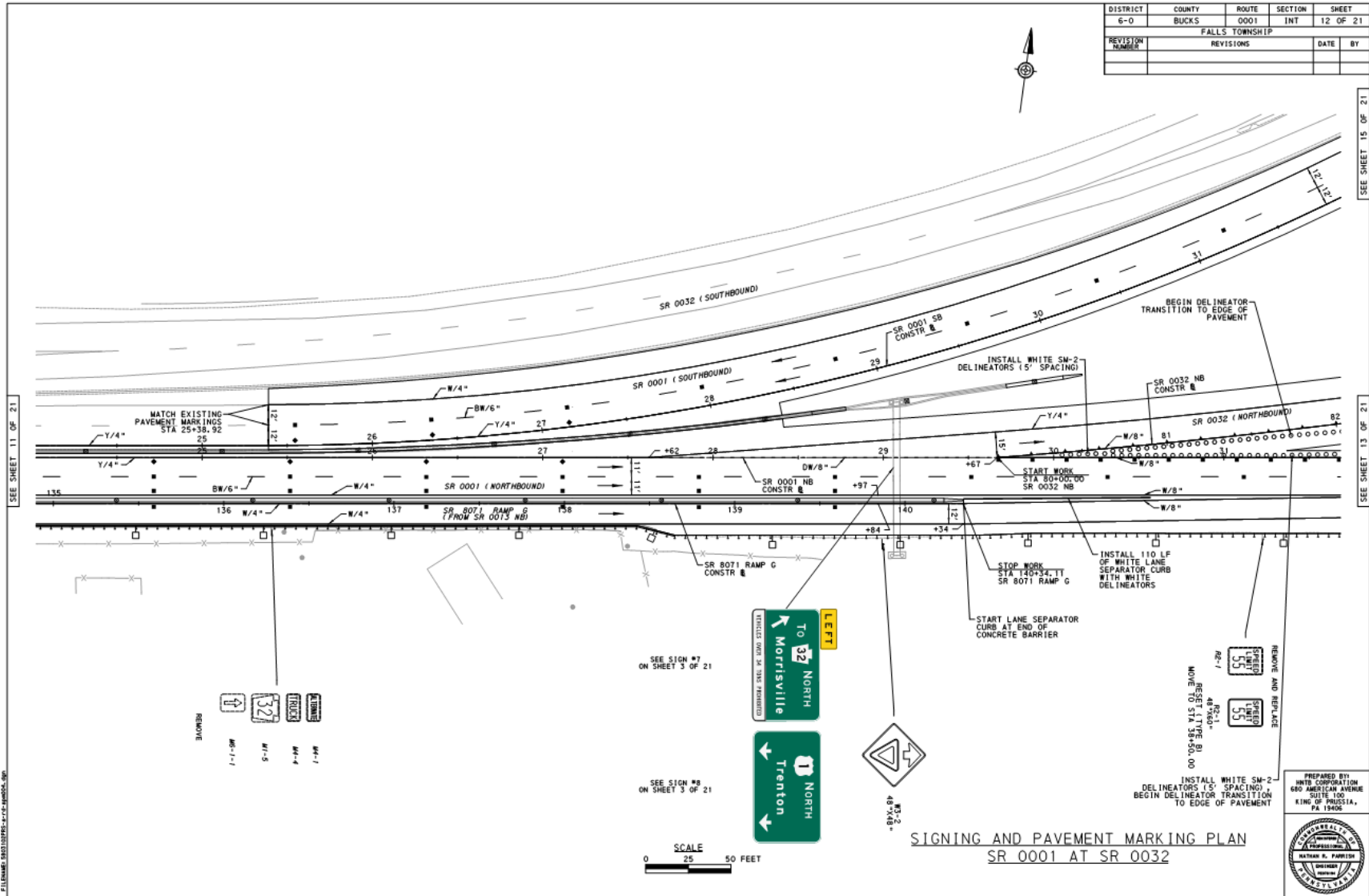
- Construction budget of \$2.5 Million
- Design timeline
- No right-of-way takes
- Safety approval
- Environmental clearance
- Drainage and slotted concrete median barrier



# Proposed Condition



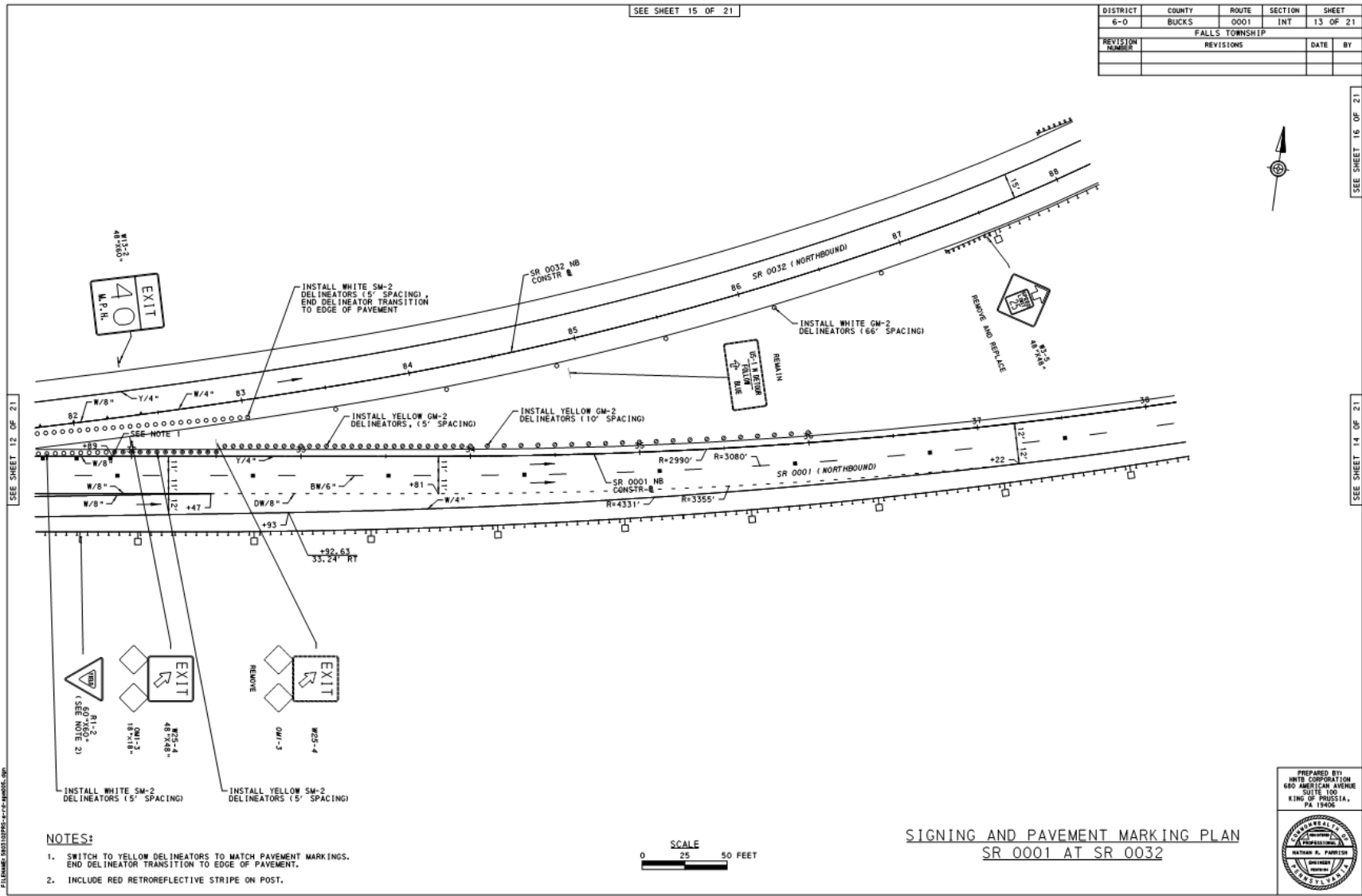
# Proposed Condition



# Proposed Condition

SEE SHEET 15 OF 21

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	BUCKS	0001	INT	13 OF 21
FALLS TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

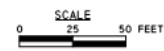


SEE SHEET 12 OF 21

SEE SHEET 16 OF 21

SEE SHEET 14 OF 21

- NOTES:**
1. SWITCH TO YELLOW DELINEATORS TO MATCH PAVEMENT MARKINGS. END DELINEATOR TRANSITION TO EDGE OF PAVEMENT.
  2. INCLUDE RED RETROREFLECTIVE STRIPE ON POST.



SIGNING AND PAVEMENT MARKING PLAN  
SR 0001 AT SR 0032

PREPARED BY:  
**HNTB CORPORATION**  
 600 AMERICAN AVENUE  
 SUITE 1100  
 KING OF PRUSSIA,  
 PA 19380



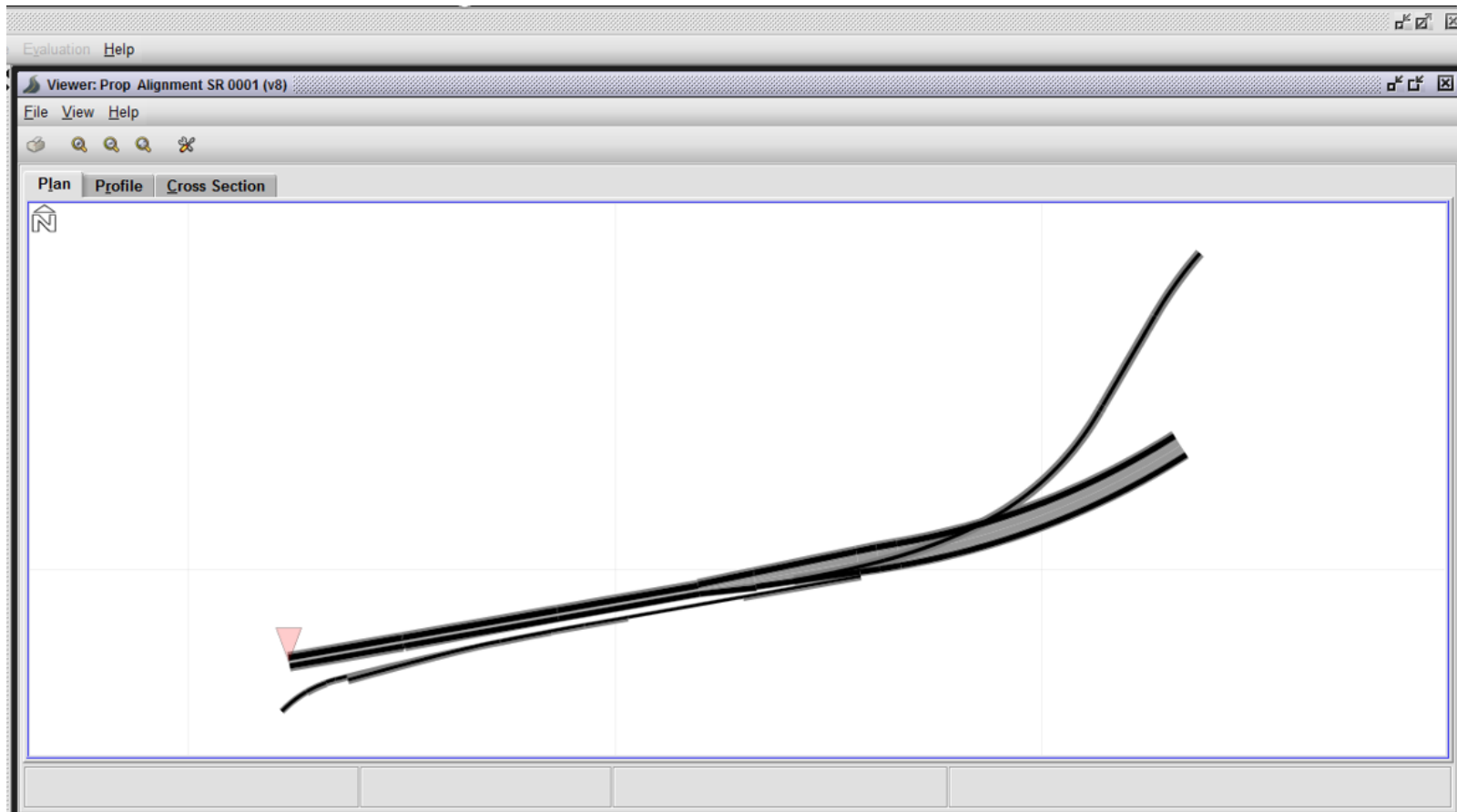
# Improved Safety?

How do we determine if the proposed condition has improved safety.....

# IHSDM

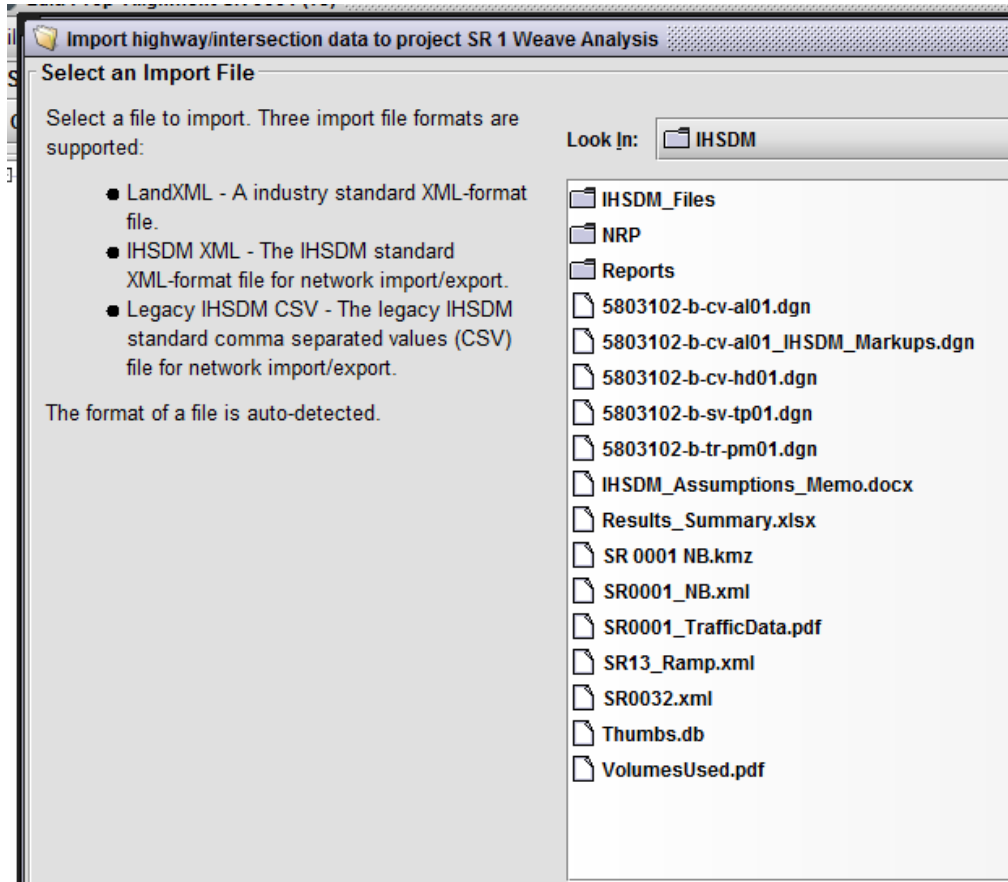
# SR 1 NB IHSDM

- ❑ Crash Prediction Module
- ❑ Create existing and proposed models to determine safety benefit



# Import LandXML Files (baseline and profile) for Each Roadway

## Import Highway / Intersection / Site Set...



# Input Station Based Data for Each Roadway

- Lane Widths
- Medians
- Shoulders
- Cross Slope
- AADT
- Barrier
- Ramp Connections

Select a module view:  
Crash Prediction Data

☑ Crash Prediction Data

- ✓ Horizontal Alignment
- ✓ Vertical Alignment
- ✓ Lane
- ⚠ Lane Offset
- ✓ Median
- ✓ Shoulder Section
- ✓ Cross Slope
- ✓ Annual Average Daily Traffic
- ⚠ High Volume Section
- ✓ Ramp Connection
- ⚠ Weaving Section
- ✓ Median Barrier
- ✓ Outside Barrier
- ⚠ Clear Zone
- ⚠ Site-Specific Crash Data

**Lane**

This element specifies the characteristics of a lane. A number of lane types are supported including thru, climb, passing, and

Start Sta.	End Sta.	Side of Road	Priority	Type	Start Width (ft)	End Width (ft)
10+00.000	45+49.702	Right	10	Thru	11.00	11.00
10+00.000	45+49.702	Right	20	Thru	11.00	11.00
10+00.000	45+49.702	Left	10	Thru	12.00	12.00
10+00.000	45+49.702	Left	20	Thru	12.00	12.00

# Results

- Analysis predicted accidents would be reduced by about 23% per year when compared to existing conditions

