

# **TAMING THE DEADLIEST HIGHWAY IN AMERICA**

**Group 2**

# PROJECT SUMMARY

- What, if any, percent of reduction of serious injury and fatal collisions have transpired due to recent improvements being completed on U.S. Highway 6?
- What worked, what didn't?
- What impact could this have on the criminal justice field?

The reason for the interest in this study is: For many years this Utah Highway has been rated as one of the most deadly roads in the United States.

# THEORY

With the recent improvements on U.S. Highway 6, we hope to see that there has been a significant reduction in vehicle collisions that result in serious and fatal injuries.

These improvements are:

- Increased width of driving lanes
- Number of passing lanes increased
- Road straightening, angle of curves reduced
- Center line rumble strips
- Wild animal barrier fencing

We also hope to answer the question of what caused the most significant reduction in vehicle accidents – was it the engineered improvements done by the department of transportation or has it occurred due to some other variable?

# HISTORY



Highway 6 much safer than a decade ago



Kathy Justice's mother was killed in a Highway 8 accident in 1971.

## 'I Drive Hwy 6. Pray For Me'

Some in the crowd were not convinced. They'd already spent several frustrating years trying to get state officials to do something about Highway 6. 7



## The Deadliest Roads Are Rural



### Truck Explosion Leaves Huge Crater On Highway *Crater Is 80 Feet Wide*

A huge crater marked the spot on Highway 6 where Wednesday's explosion took place.

Utah Highway Patrol officials said the crater is about 30 feet deep and 80 feet wide.

The driver was able to get out of the truck and warn other motorists to stay away before the blast happened.

The rig had just left a commercial explosives maker in the area.

# THE RESEARCH PLAN

## Secondary Data Research

- Use data from accident investigations that has been collected by the U.H.P and U.D.O.T.

## Primary Research

- Collect data using LiDar and personal observations to collect speeds and types of vehicles on U.S. Highway 6.

## Conclusion

- Analyze and determine whether or not our theory is accurate.

# LOCATIONS

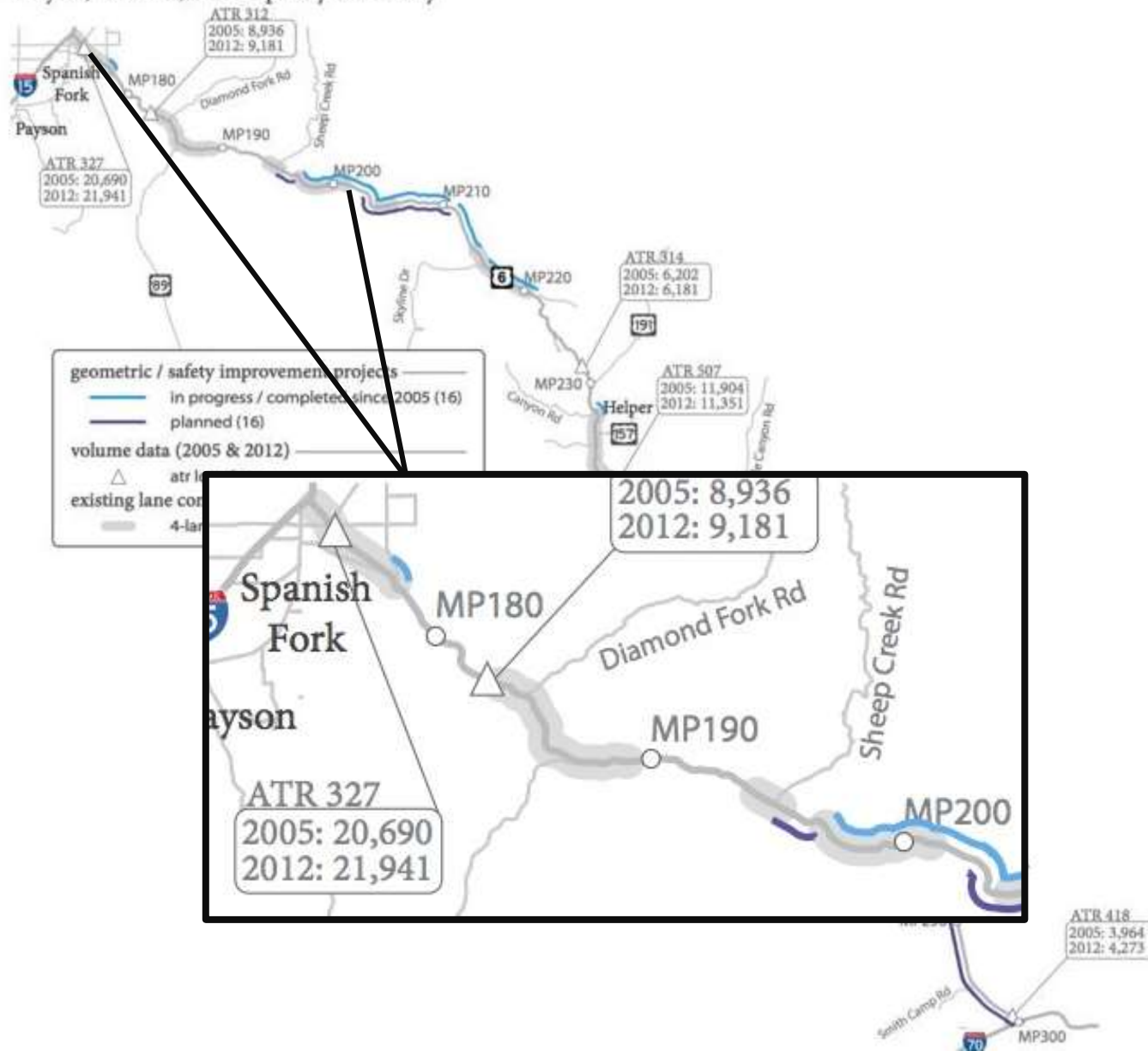
Initially, we looked at the whole highway starting at the mouth of Spanish Fork Canyon down to the intersection of U.S. Highway 6 and U.S. highway 191 near Helper, UT.

## **U.D.O.T regions of interest:**

- Region 3 / Milepost 178-200
- Region 4 / Milepost 202-232

# REGION 3 / MILEPOST 178-200

Project, Volume, and Capacity Summary



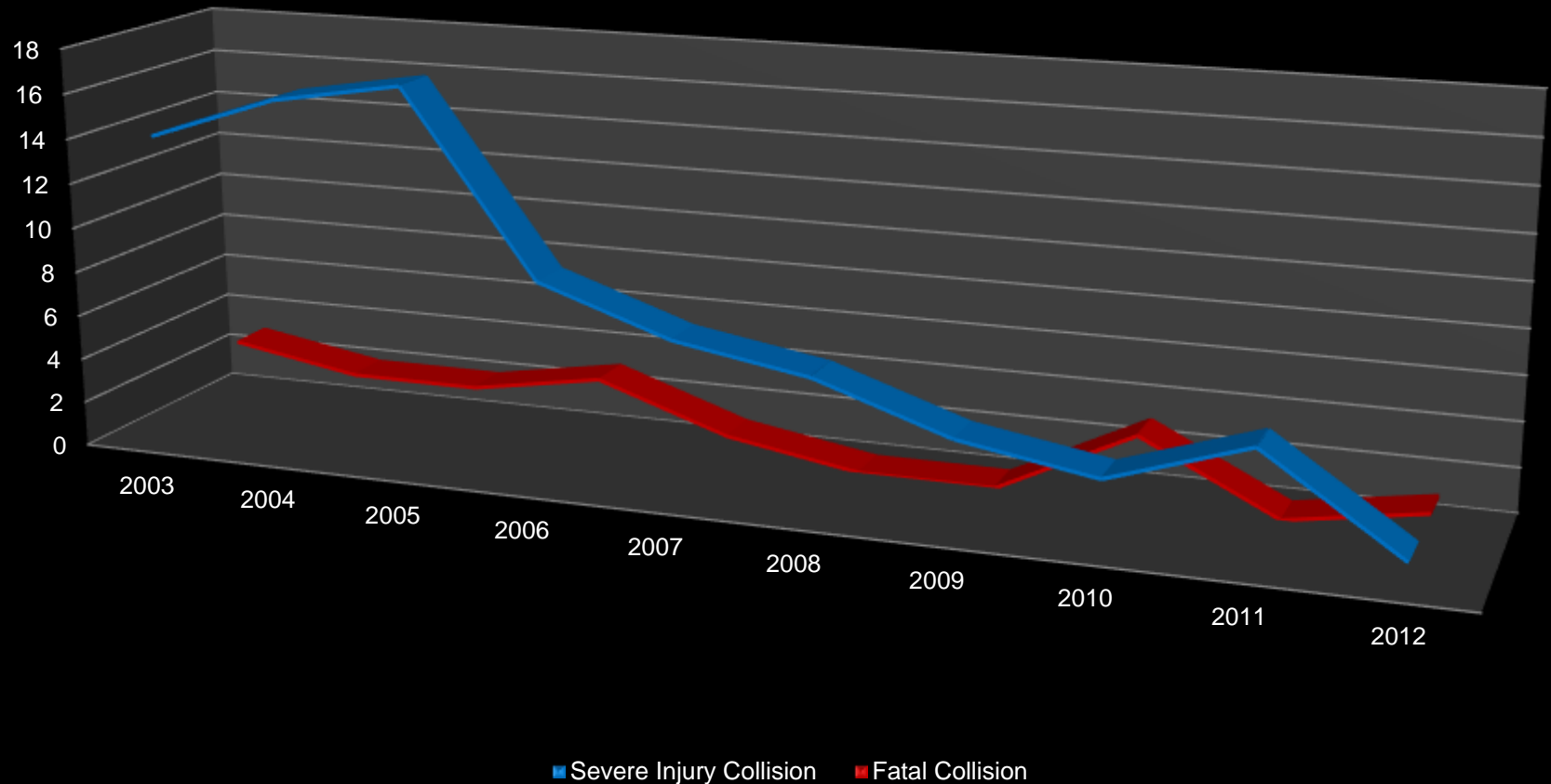
# REGION 3 / MILEPOST 178-200

<b>PROJECT LOCATION</b>	<b>CONCEPT DESCRIPTION</b>	<b>START DATE</b>	<b>END DATE</b>
US-6; MP 196.725 to 201.096	Widening from 2 lanes to 5	1/1/02	12/31/05
US-6; MP 189.86 to 242.76	Median Rumble Strip	1/1/03	12/31/05
US-6 ;MP 200	Bridge Replacement C-287	6/7/08	9/28/09
US-6, MP 189.34 TO MP 193.25	Minor Rehabilitation - Roadway	7/18/11	8/26/11



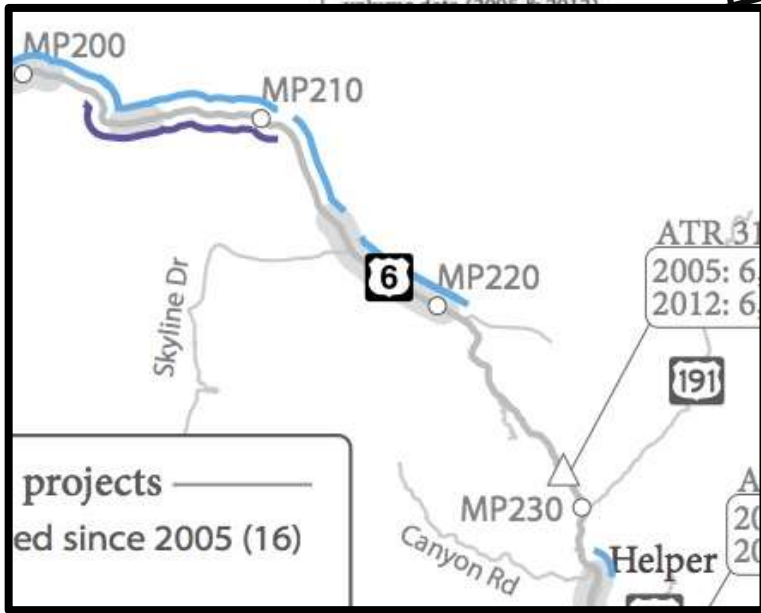
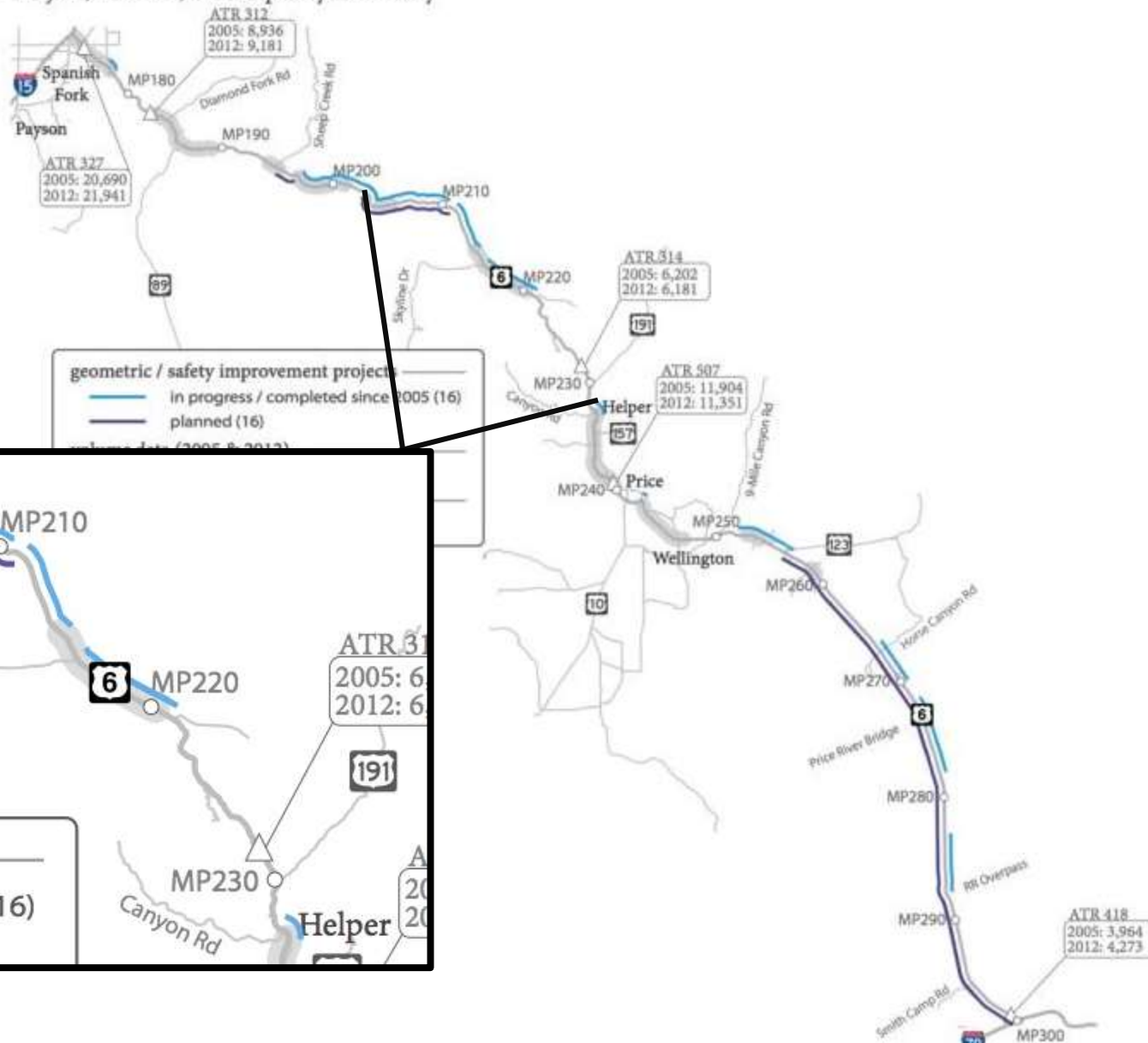
# REGION 3 / MILEPOST 178-200

Region 3



# REGION 4 / MILEPOST 202-232

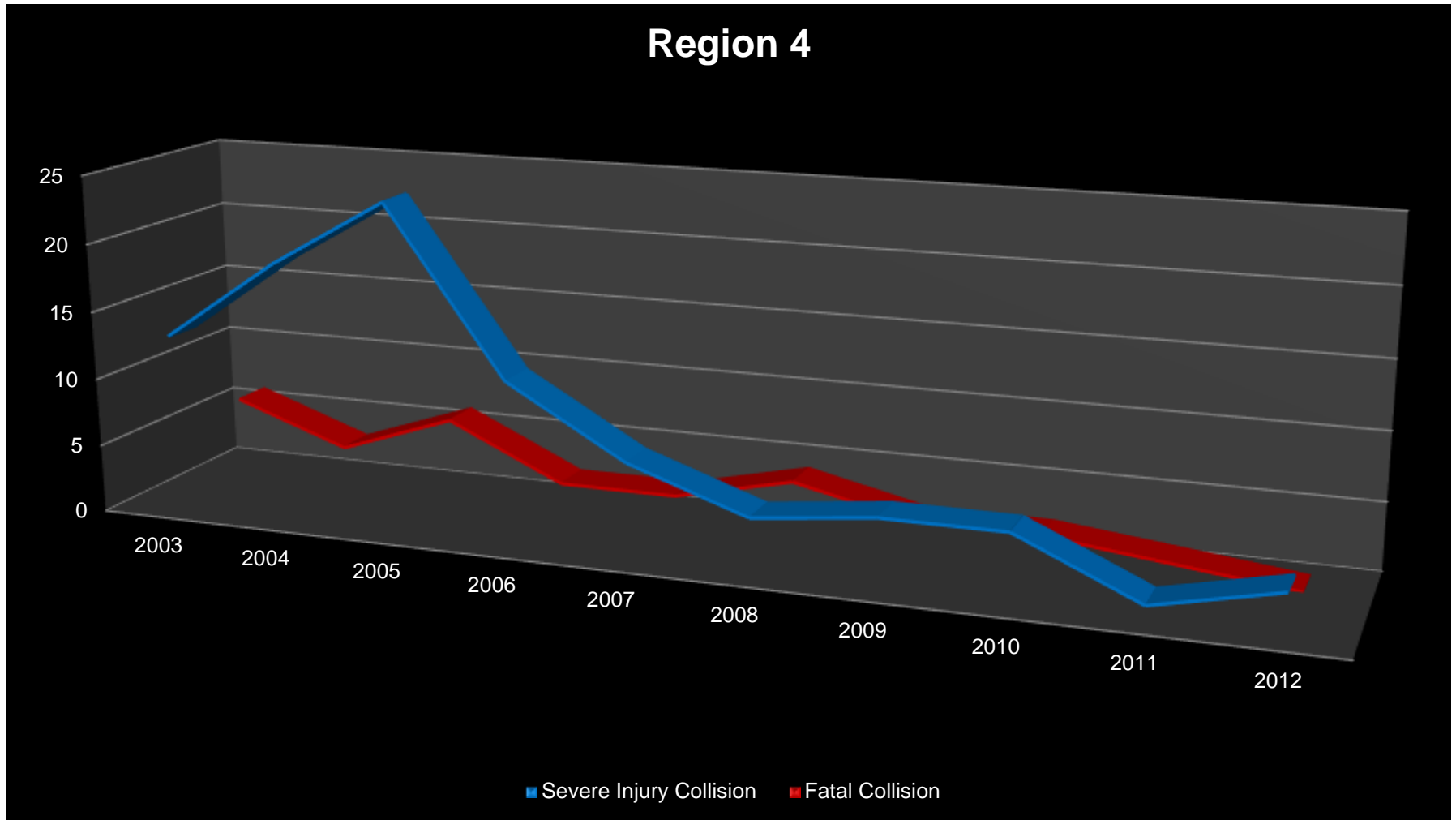
Project, Volume, and Capacity Summary



# REGION 4 / MILEPOST 202-232

<b>PROJECT LOCATION</b>	<b>CONCEPT DESCRIPTION</b>	<b>START DATE</b>	<b>END DATE</b>
US-6; White River to MP 218.73	Widen to Four Lanes ( AC Conversion )	4/2/08	9/2/10
US-6; MP 189.86 to 242.76	Median Rumble Strip	1/1/03	12/31/05
US-6; MP 218.7 TO EMMA PARK ROAD	WIDEN TO FIVE LANES	5/14/09	10/9/09
US-6; Tucker MP 203 to 204.2	Road - Widen to Four Lanes	7/25/09	11/5/10
US-6; MP 220.55 TO 221.91	STONE MATRIX ASPHALT (SMA)	9/10/10	9/25/10

# REGION 4 / MILEPOST 202-232



# SECONDARY DATA COLLECTION

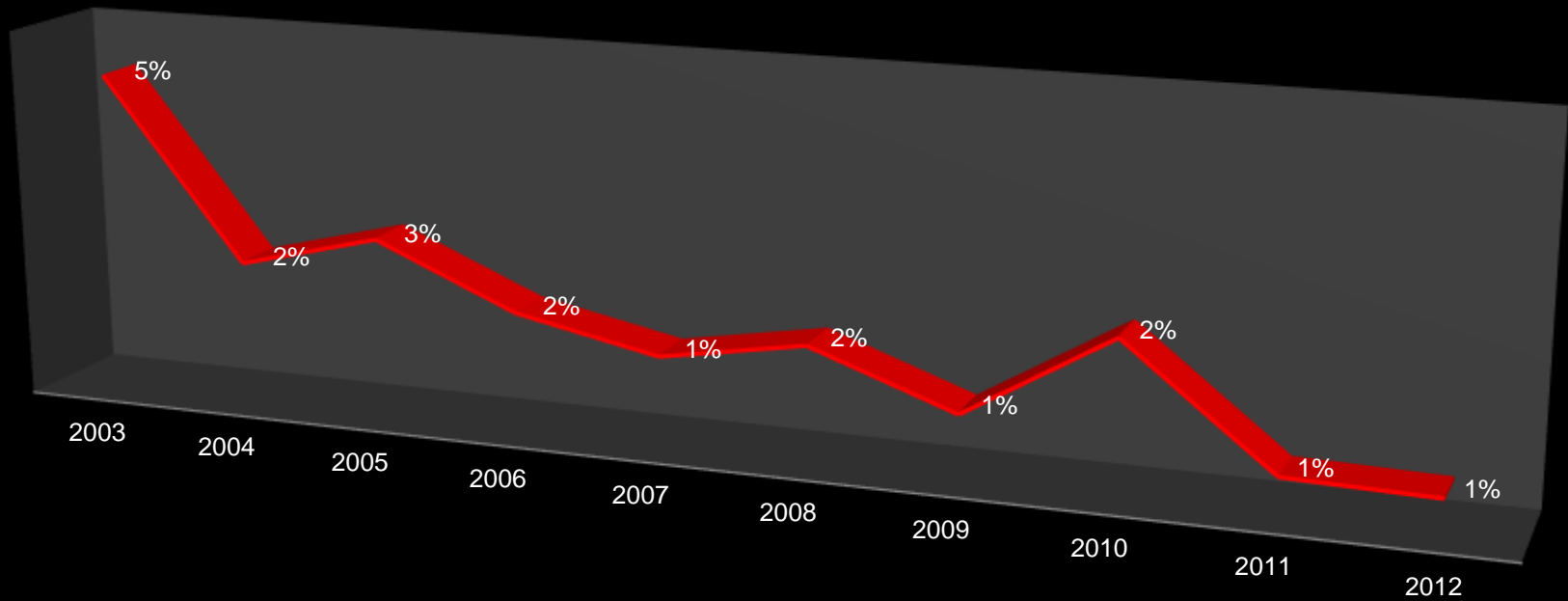
Data obtained from the Utah Department of Transportation (UDOT):

- Defined Data Group Reports
- Vehicle Event Summary Reports
- Crash Type Summary Reports
- Injury Collision/Severity Reports
- Record of Decision
- Maps



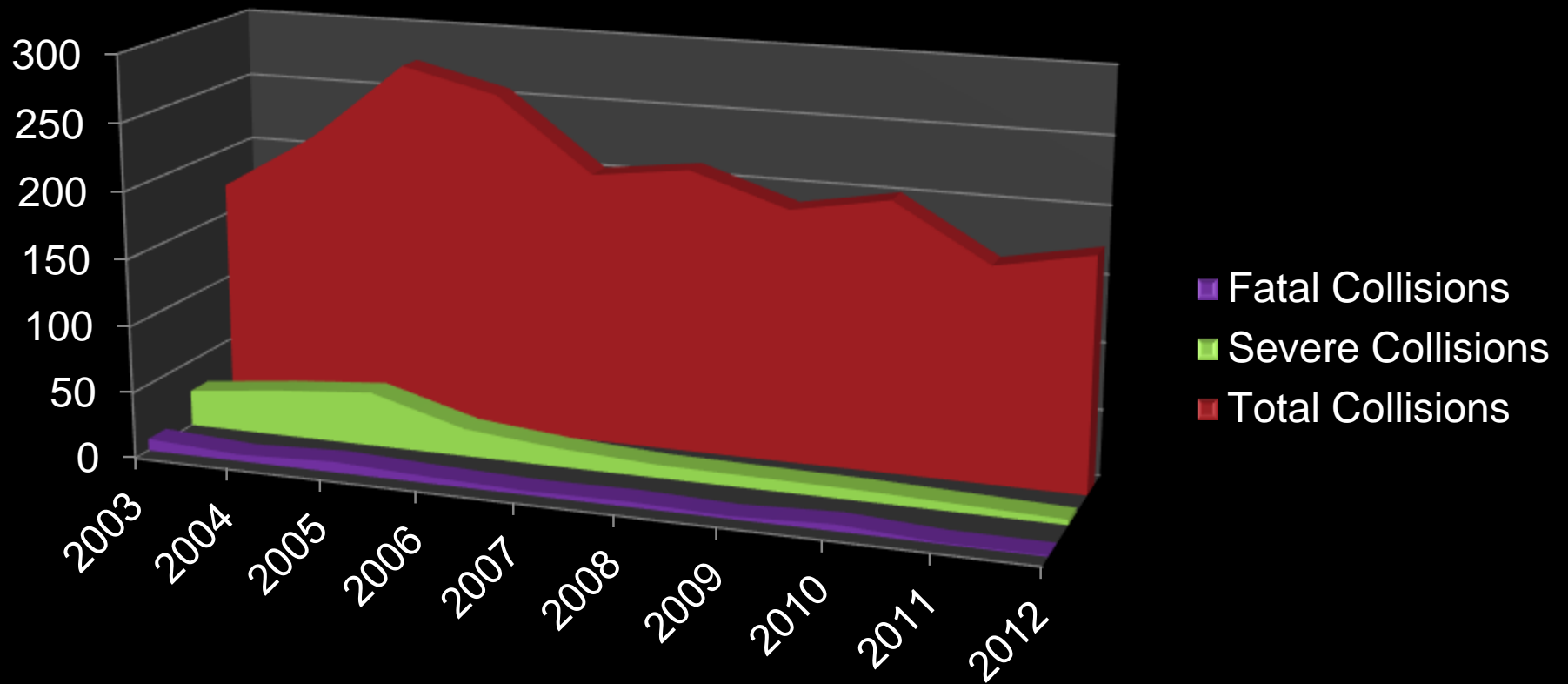
# FINDINGS

## Fatal Collisions



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fatal Collisions	5%	2%	3%	2%	1%	2%	1%	2%	1%	1%

# FINDINGS





# PRIMARY DATA COLLECTION

Conducted personal field observation to determine average speed limits throughout different sections of Highway 6.

- Used LiDar, operated by a certified police officer, to measure highway speeds
- Observed the number of vehicles traveling in that area for a one hour time frame
  - Time frame and locations were chosen from analyzing data from the U.D.O.T. reports.

# SPEED OBSERVATIONS

Average speed at MP197.5 was 62.5 MPH. Posted speed 60 MPH

Ran LiDar on 308 vehicles. 15 of the 308 vehicles were exceeding the posted speed limit by 10mph

The weather conditions for this section were sunny skies with scattered clouds.

Speed limits on the studied sections have been the same over the last 12 years.

Posted recommended speed limits have changed (for around corners, on steep hills, etc.) after construction was finished.

Average speed at MP 200 was 64.36 MPH. Posted speed 60 MPH

Ran LiDar on 313 vehicles. 47 of the 313 vehicles were exceeding the posted speed limit by 10mph

The weather conditions for this section were heavy rain fall and dark clouds, roads were significantly wet.

# SPEED OBSERVATIONS

MP 197



MP 200



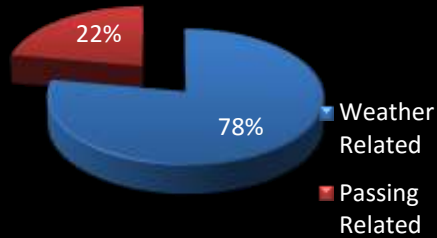
# UNSAFE PASSING RELATED HEAD ON COLLISION REDUCTION IN REGIONS 3 & 4

COLLISION 2003-2005

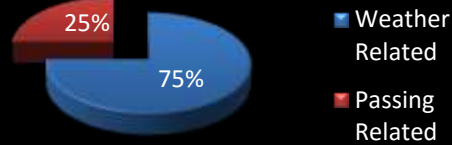
COLLISIONS 2006-2009

COLLISIONS 2010-2013

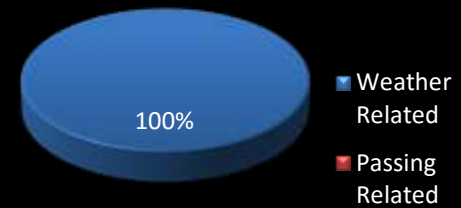
**Pre Construction  
Head-on / Side-  
swipe Causation**



**Under Construction  
Head-on / Side-  
swipe Causation**



**Post Construction  
Head-on / Side-  
swipe Causation**



# CONCLUSION SUMMARY

- Based on the obtained data fatal accidents due to fewer travel lanes have shown a reduction with the addition of more travel lanes in the higher risk areas of region 3 & 4.
- The impact of speed manipulations was null: No speed reductions occurred in our tested areas during or after construction.
- Future works: More observations would be useful in determining If there is a correlation to weather conditions and speeds traveled.