Vision Zero Madison

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3 Main Part:

- Intersection Crash
- Car to Truck Crash
- Bike Crash Analysis
Intersection Crash

- Fail to yield: 68.9%
- Inattentive driving: 31.0%
- Following too close: 0.1%
- Disrgd traffic cntl
- Failure to control vehicle
- Improper turn
- Too fast for conditions
- Driver condition
- Exceed speed limit
- Improper overtake
- Unsafe backing
- Left of center
- Physically disabled
- In conflict
- Other

Number of Accident

- 0
- 1000
- 2000
- 3000
- 4000
- 5000
- 6000
- 7000

Fatal

Injured

Property Damage
The Most Dangerous Intersections

City Street: Mineral Point Rd & Pleasant View Rd

- 2009 - 2018
- Total: 272
- Fail To Yield: 65%

- 2015 - 2018
- Enter Loop vs. On Loop: 35%

Highway: E Washington Ave. & S Stoughton Rd.

- 2009 - 2018
- Total: 346
- Inattentive Driving: 26%

- 2015 - 2018
- Go Straight vs. Left Turn: 20%
Car to Truck Crash

Different Types of Accidents and Light Conditions

- Dark
- Dusk
- LIGHT

Number of Accidents

Vehicle Involved:
- carToBike
- carToBus
- carToCycle
- carToTruck
Data for CarToTruck Accidents Happened in Dark Time

I-90

I-39
The Severity of Accidents Involved with Different Types of Vehicles

- **cartobike**: 80% Injured, 20% Property Damage
- **cartobus**: 60% Injured, 40% Property Damage
- **cartocar**: 50% Injured, 50% Property Damage
- **cartocycle**: 40% Injured, 60% Property Damage
- **cartottruck**: 30% Injured, 70% Property Damage
Bike Crash Analysis

Clarence
Among all the accidents, only 0.7% of them involved bikes. However, 88.7% of the bike accidents ended up in injury or death.
Dangerous sections

- N Shermens Ave
- S Park Street
- S Whitney Way
- S Garmmon Rd
- E Washington Ave
Analysis and Ranking

1. Check current status of the target
   a. Google maps
   b. Dane County Bike Map

1. Is there enough room for new bike facilities?
   a. Check traffic load/ lane for availability:
      i. The average theoretical maximum saturation flow rate per lane is 1800 vehicles/ hour
      ii. Assume 70% of the daily traffic load occurred within 3 hours of peak time.

\[
Loading = \frac{0.7 \times \text{daily loading}}{3 \text{ hours} \times \text{num of Lanes}}
\]

a. Calculate score:

\[
Score = \frac{\text{Average accident count}}{\text{Length}}
\]

The higher the score, the higher the priority.
Since the road is narrow and its loading is high, we recommend installing some isolation.
2. South Park Street

South Park St. has a section without bike lane that might be the major cause for bike crashes.
Similarly, South Whitney Way also has the same condition as South Park St.
4. South Gammon Road

Comment

This section is near a big shopping mall. We recommend installing separators for bikes.
4. South Gammon Road

Extra Bike Lane

Crossing Watts Rd, the bike lane continued for a short distance and disappeared. It might be better to remove it.
5. East Washington Avenue

- N Sherman Ave: Isolator
- S Park St: New bike lane
- S Whitney Way: New bike lane
- S Gammon Rd: Isolator
- E Washington Ave: Discrete bike path
5. East Washinton Avenue

- **Disconnected Bike Lane**

The bike lane comes to a sudden stop at the cross of E Springs Drive. We suggest connecting it with adjacent bike lanes.
Conclusion

Loading = \frac{0.7 \times \text{daily loading}}{3 \text{ hours} \times \text{num of Lanes}}

N Sherman Ave: Isolator
S Park St: New bike lane
S Whitney Way: New bike lane
E Washington Ave: Discrete bike path

N Sherman Ave
Load/lane: ☢️ Accident rate: ⫸
Rank: 1

S Park Street
Load/lane: ☢️ Accident rate: ⫸
Rank: 2

S Whitney Way
Load/lane: ☢️ Accident rate: ⫸
Rank: 3

S Gammon Rd: Isolator
Accident rate:
Rank: 4

Load/lane:
Accident rate:
Rank: 5
References

- Dane County Bike Map

  https://cityofmadison.maps.arcgis.com/apps/webappviewer/index.html?id=5d9b5793e6404b8c89872c06bd5f26c2

- Open Data Madison

  https://data-cityofmadison.opendata.arcgis.com/

- Google Maps

  https://www.google.com/maps

- Distance calculator

  https://www.movable-type.co.uk/scripts/latlong.html
Thank you!