

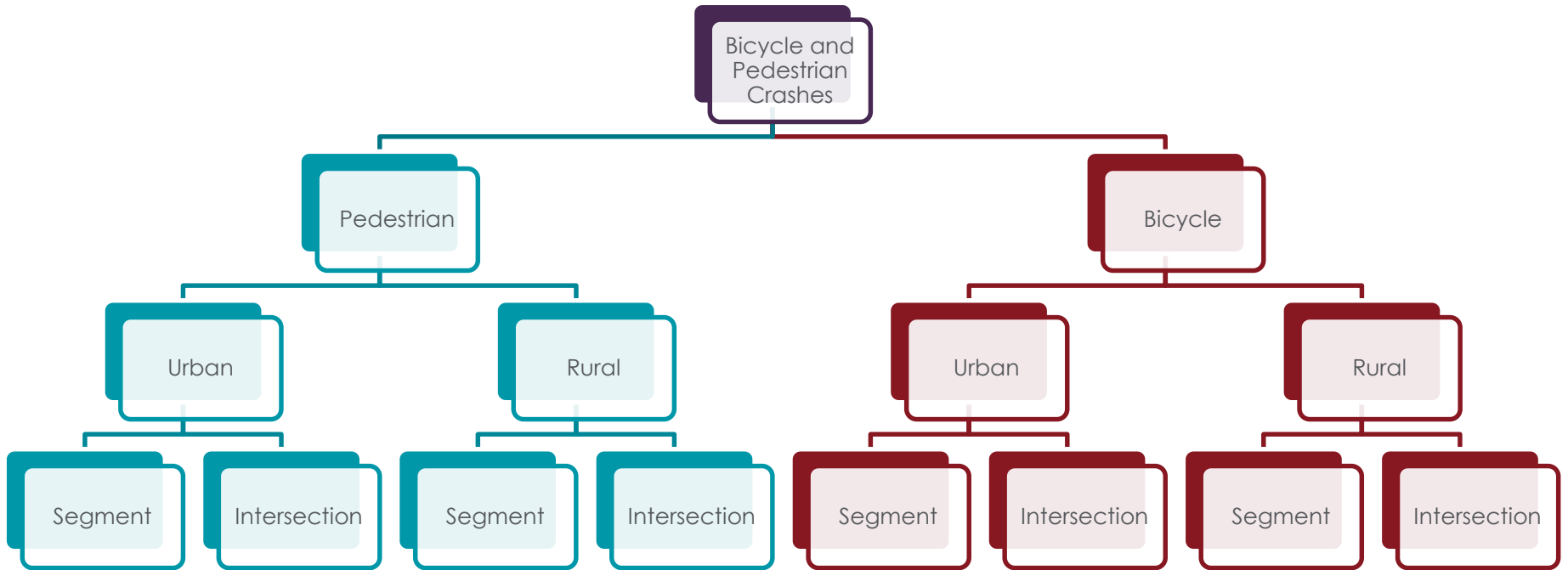


Bicyclists and Pedestrian
Systemic Safety Analysis

 Bicyclist and Pedestrian Systemic Safety Analysis

- Data Sources
 - Crash Data 2009-2018
 - Intersection Database
 - Roadway Data (RAMS)
- Software
 - ArcGIS
 - SQL Developer

Bicyclist and Pedestrian Systemic Safety Analysis



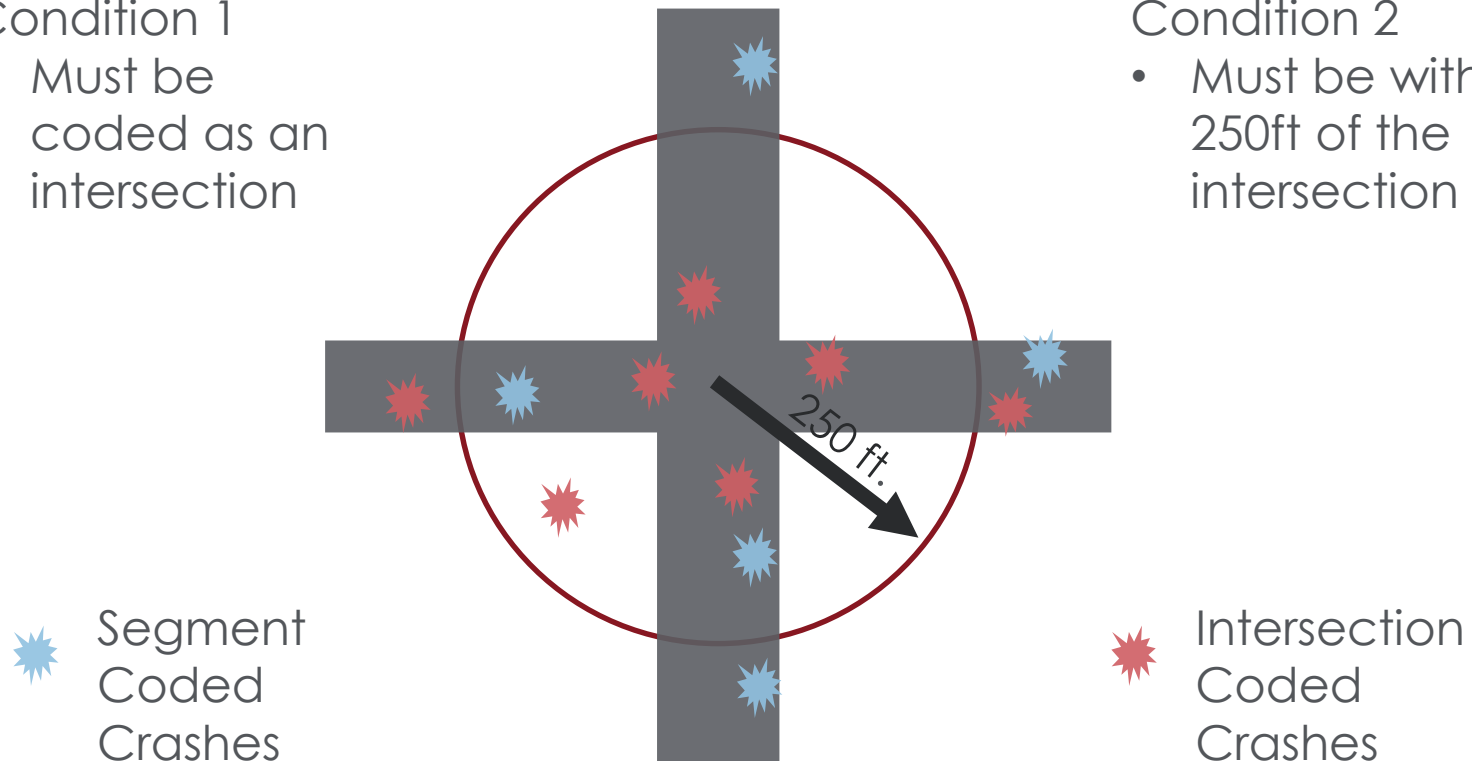
Defining Intersection Crashes

Condition 1

- Must be coded as an intersection

Condition 2

- Must be within 250ft of the intersection



Intersections

- Attributes included
 - AADT
 - Intersection Angle
 - Intersection type
 - Number of Lanes
 - Number of Legs
 - Speed Limit
 - Traffic Control

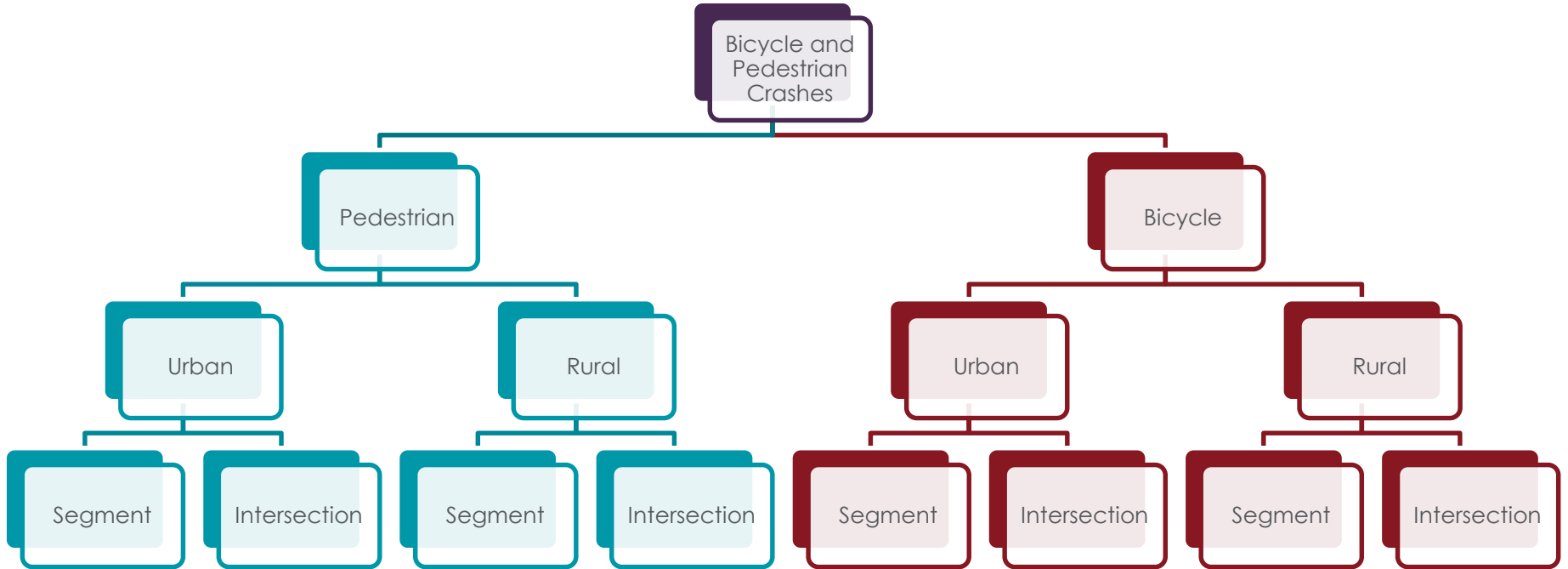
Segments

- Attributes included
 - AADT
 - Median Type
 - Number of Lanes
 - Parking Type
 - Shoulder Rumble
 - Shoulder Type
 - Shoulder Width
 - Speed Limit

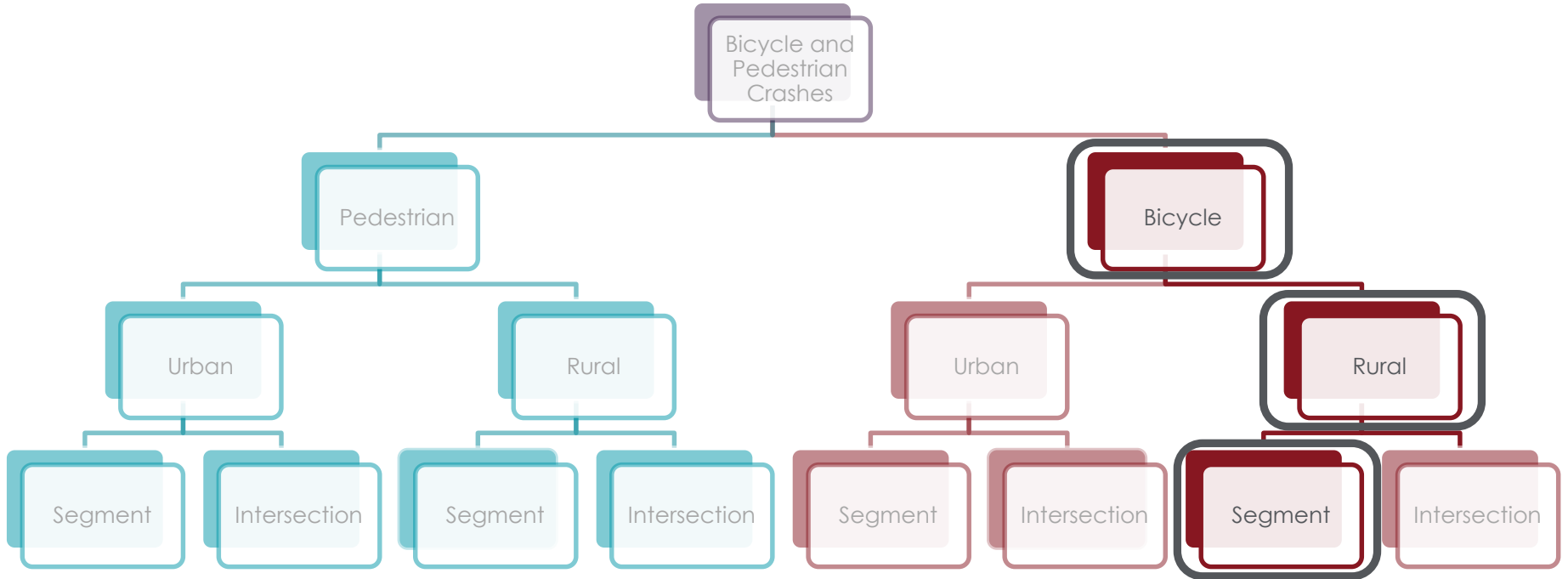
Normalization, Weighting, and Composite score

- Normalization
 - For each element a rate is developed based on the number of crashes and associated mileage related to that attribute.
 - A normalized Score of 1-10 is developed based on the range of possible values for each element attribute.
- Weighting
 - Once all the elements have been normalized to a common scale a weighting multiplier is applied.
 - This is essentially done for two reasons
 - To eventually have a composite score from 0-100
 - In the future the ability to emphasize elements over each other.
- Composite Scores
 - After weighting, all the weighted element scores are added together for each segment or intersection which makes up a composite score.

Bicyclist and Pedestrian Systemic Safety Analysis



Bicyclist and Pedestrian Systemic Safety Analysis

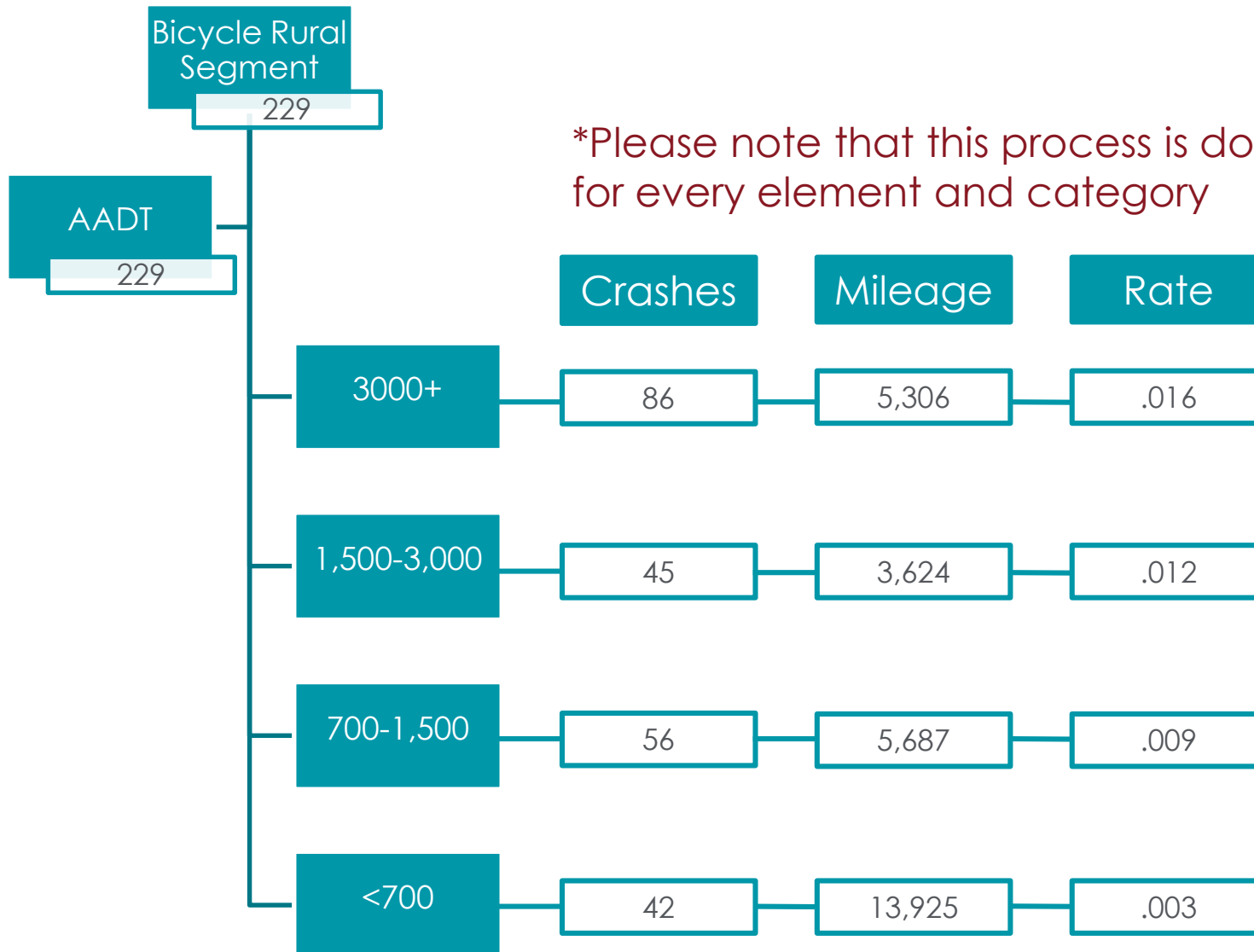


Segments

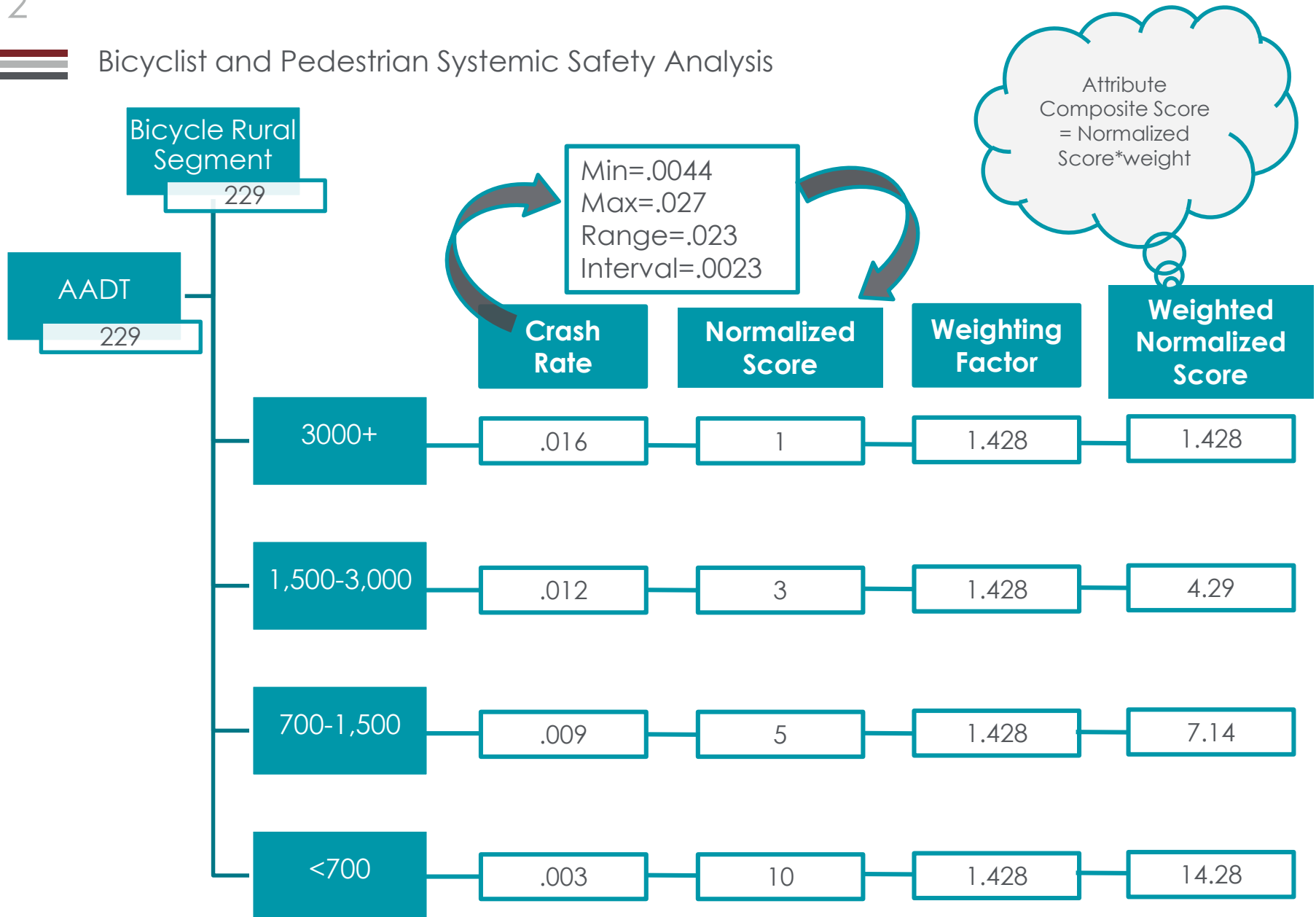
- Attributes included
 - AADT
 - Median Type
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*Please note that this process is done for every element and category









Bicyclist and Pedestrian Systemic Safety Analysis



Composite Scoring

- Elements

- AADT  14.28
- Speed Limit  12.85
- Number of Lanes  14.28
- Shoulder Width  1.42
- Shoulder Type  12.85
- Median Type  1.42
- Shoulder Rumble  14.28

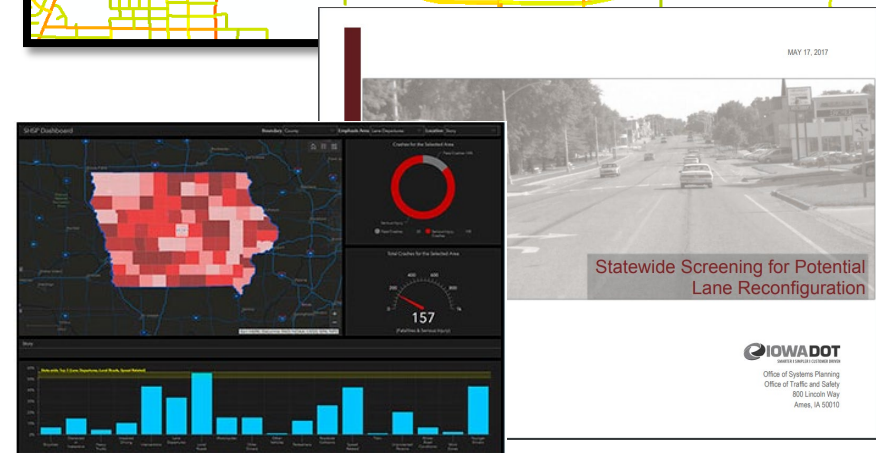
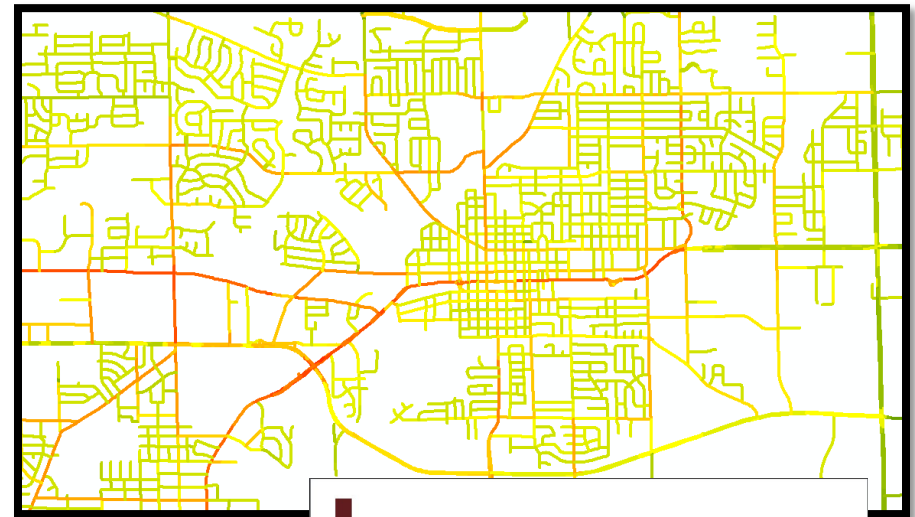
= 71.38

Additional Elements to Consider

- Spatial Elements
 - Proximity to existing non-motorist infrastructure
 - Proximity to transit stops
 - Proximity to schools
- Crash Data
 - Segment level non-motorist crashes
- Estimated exposure
 - University of Iowa study/analysis

Anticipated Outputs

- Segment and intersection based results
 - Statewide network screening
- Deliverables
 - Technical memo
 - Interactive online maps
 - Special Requests
- Emphasis
 - User friendly
 - Interactive





THANK YOU FOR YOUR TIME AND ATTENTION



Samuel Sturtz
Transportation Planner
Systems Planning Bureau
515-239-1788
Samuel.sturtz@iowadot.us