

Harrisonburg Rockingham Metropolitan Planning Organization

**2019 HRMPO Bicycle and Pedestrian Transportation
Project Pipeline- Safety Needs Assessment**
Jonathan Howard, Transportation Planner

Goals:

To update and revise our understanding of regional bicycle and pedestrian transportation safety needs.

Develop a list of candidate project sites for the 2019 Transportation Alternatives Program (TAP) and Highway Safety Improvement Program (HSIP) grant application cycles.

The Needs Assessment:

Is the analytical work element of the HRMPO bicycle and pedestrian Project Pipeline.

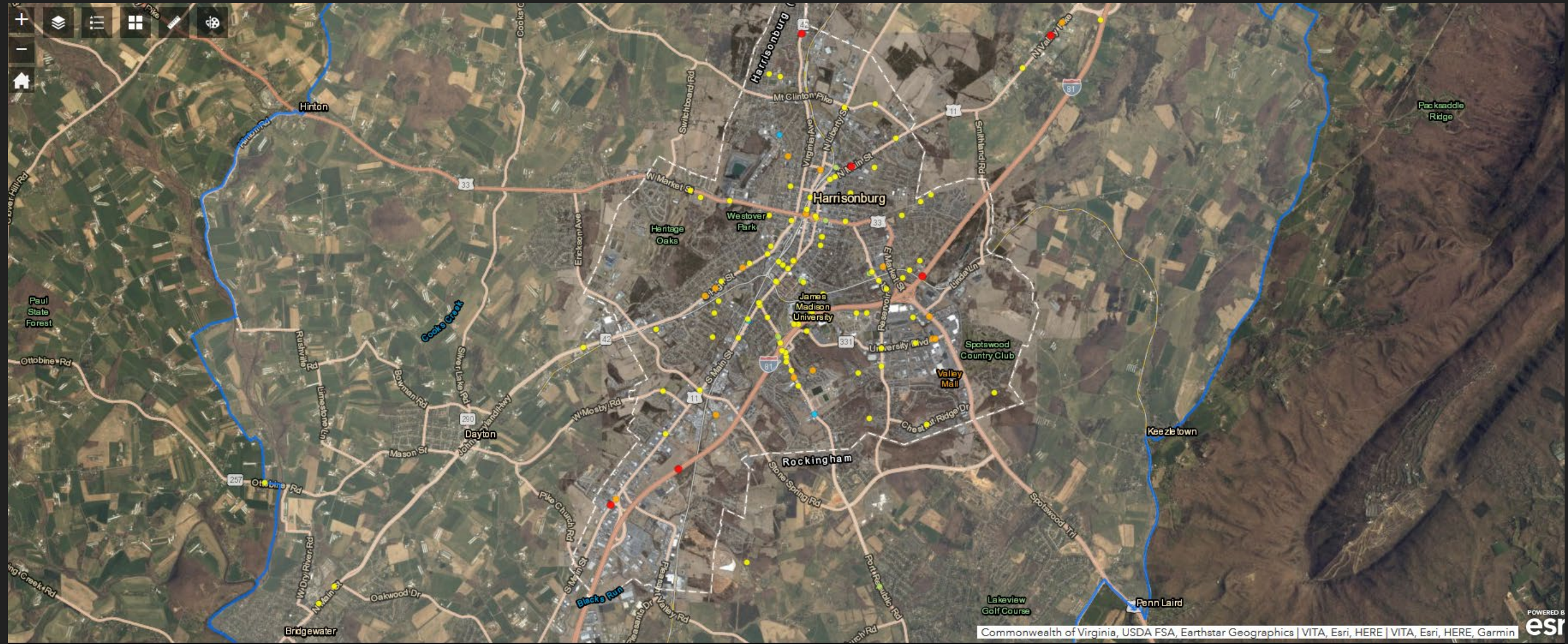
Uses a series of quantitative and qualitative data inputs.

Has its own database, map layers using the latest 2013-2018 crash data.

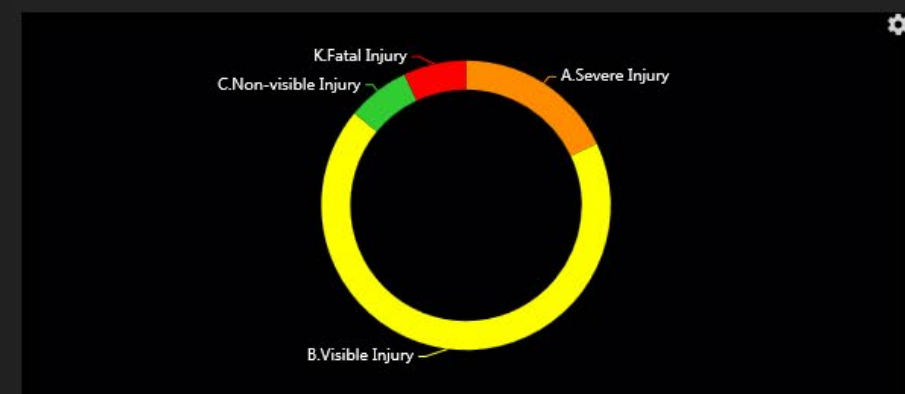
Contains a publicly available ArcGIS Online Web App for [HRMPO Bicycle and Pedestrian Crash Analysis Webmap](#)

*Some crash records do not have coordinates and aren't included in the map or analysis.

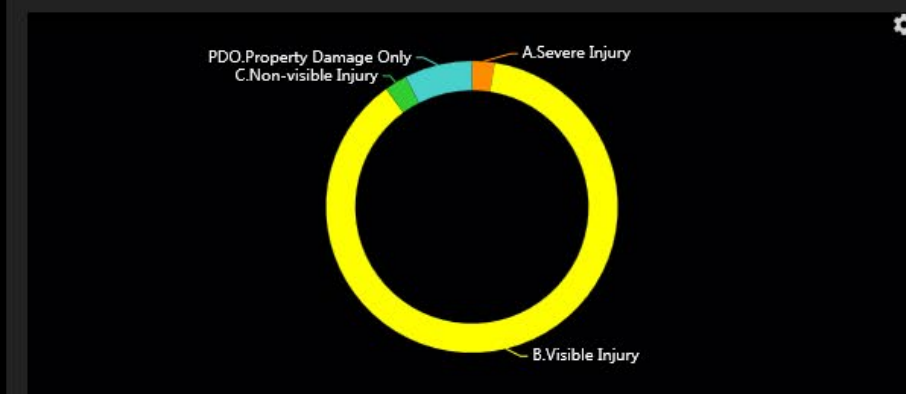
ArcGIS Online Web App for [HRMPO Bicycle and Pedestrian Crashes](#) (weblink)



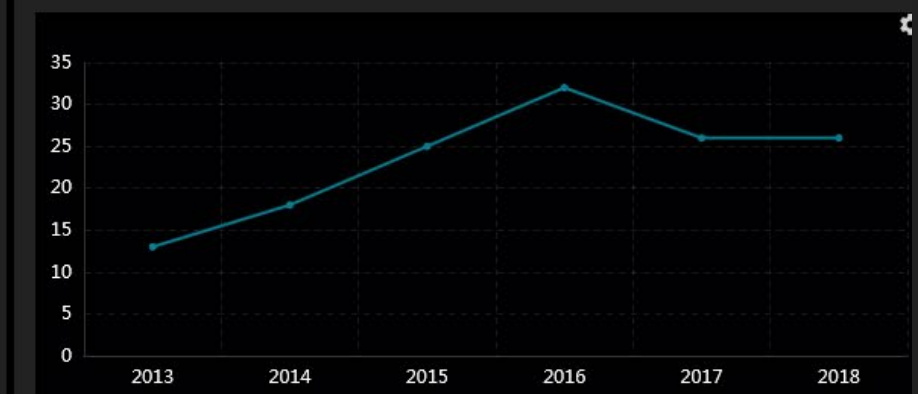
Pedestrian Crashes by Severity



Bicycle Crashes by Severity



HRMPO Bicycle and Pedestrian Crashes 2013-2018



Background

- Collaboration with VDOT Highway Safety Improvement Program (HSIP) Manager on the PSAP spurred the idea for the HRMPO Pipeline.
- Take a deeper look at bicycle and pedestrian crashes, and how projects are being programmed to address them.

Pedestrian Safety Action Plan (PSAP) 2012-2016

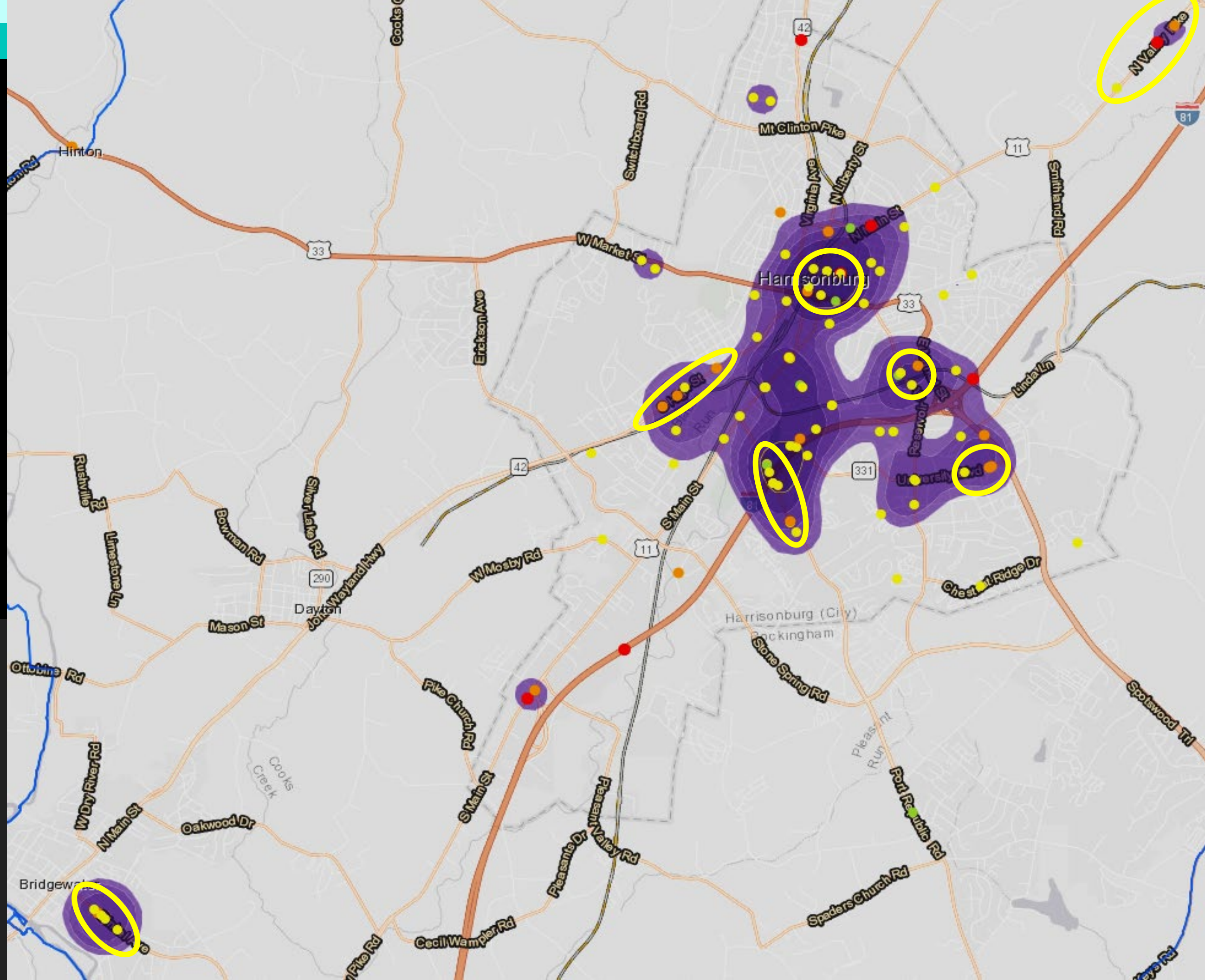


HRMPO Pedestrian Crash Density Analysis

- 100 Crashes
- Needs Areas in yellow

HRMPO Bike & Ped Crashes

- K.Fatal Injury
- A.Severe Injury
- B.Visible Injury
- C.Non-visible Injury
- PDO.Property Damage Only

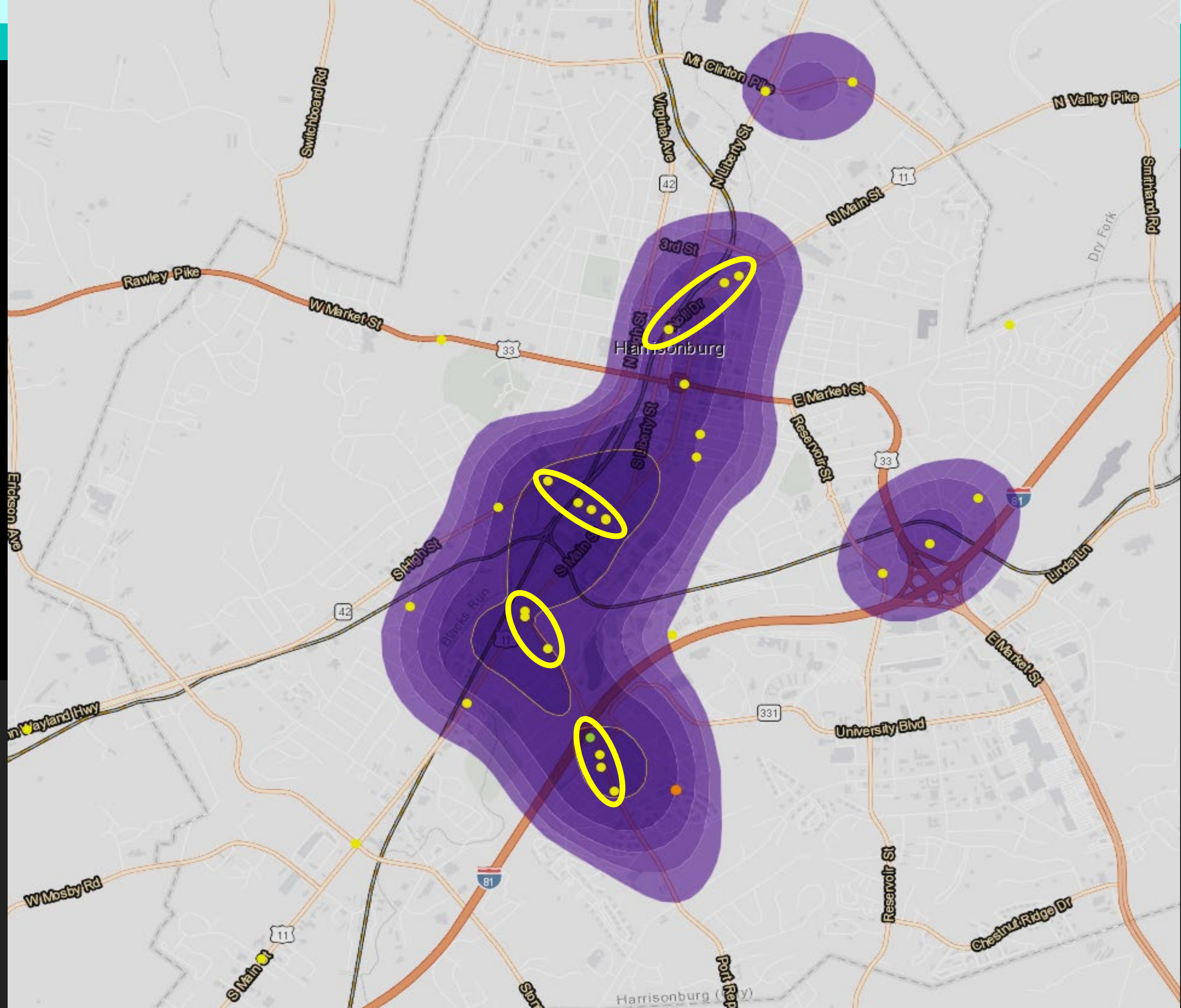


HRMPO Bicycle Crash Density Analysis

- 40 crashes
- Needs Areas in yellow

HRMPO Bike & Ped Crashes

- K.Fatal Injury
- A.Severe Injury
- B.Visible Injury
- C.Non-visible Injury
- PDO.Property Damage Only



METHODOLOGY

After Crash Density Analysis, perform Trend Search:

- SEVERITY- Multiple visible injury (B) crashes or higher.
- PROXIMITY- Crashes are reasonably clustered. Within 1/3 mile.
- FREQUENCY- Crashes occur in consecutive years.
- POTENTIAL FOR SAFETY IMPROVEMENT (PSI)- A VDOT measure, used to indicate an existing safety issue at the location.
- QUALITATIVE COMPONENT- Locally identified problems, or crash descriptions indicate drivers failing to yield, visibility, lighting, sight distance issues, traffic light issues, etc.

MAP LEGEND

- K.Fatal Injury
- A.Severe Injury
- B.Visible Injury
- C.Non-visible Injury
- PDO.Property Damage Only

HRMPO Bike Crashes



HRMPO Ped Crashes



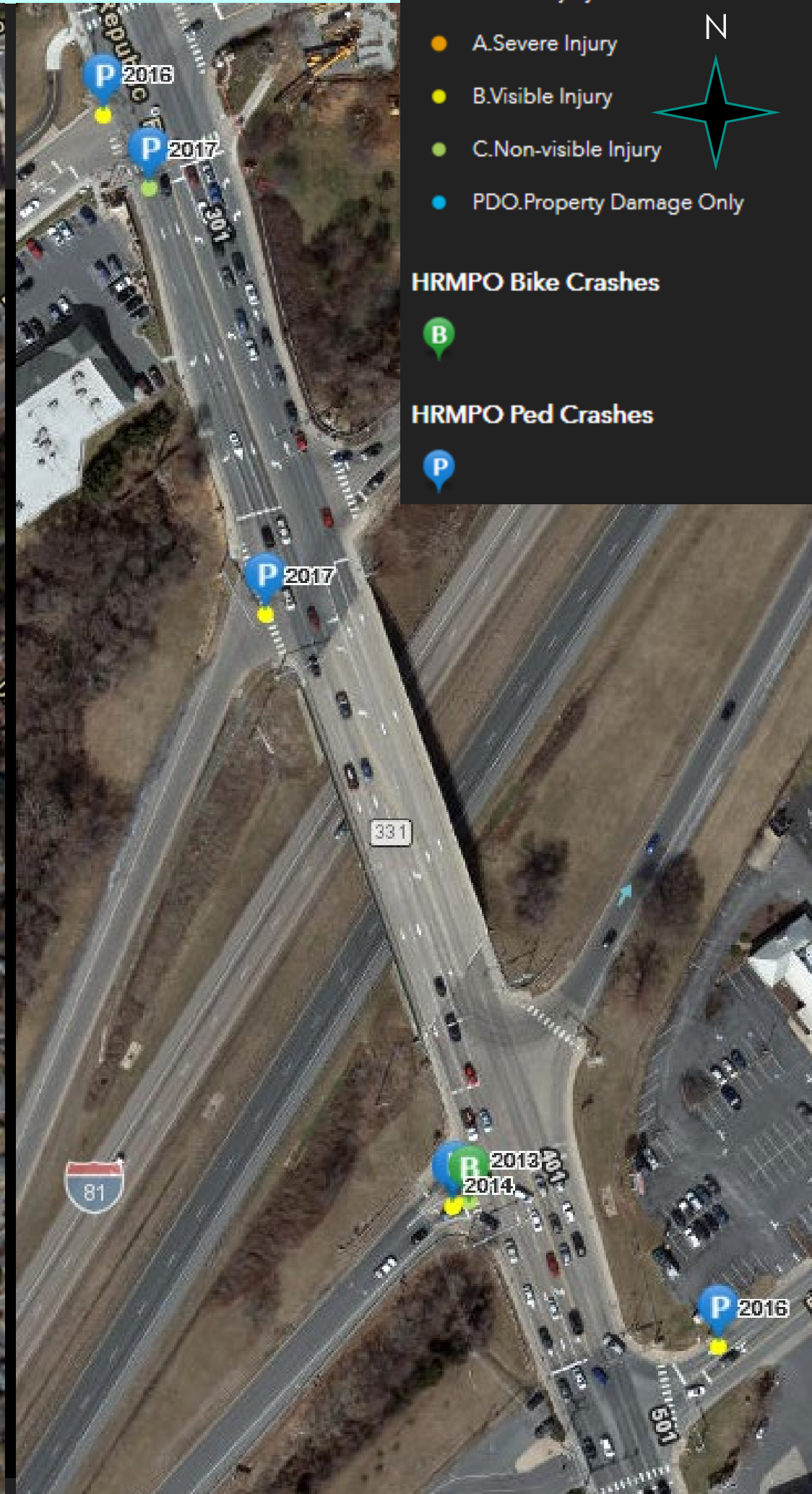
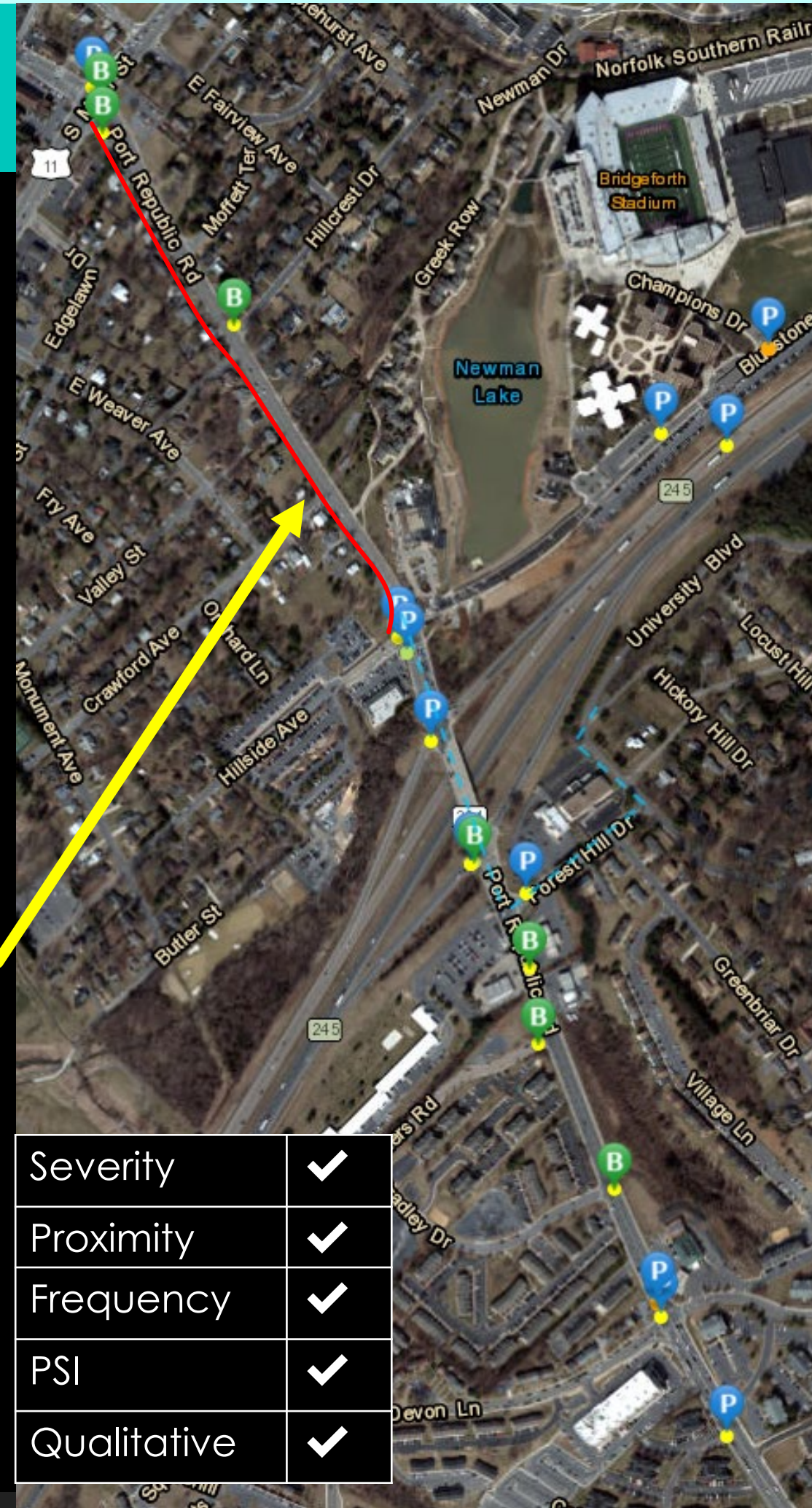
| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | ✓ |
| PSI | ✓ |
| Qualitative | ✓ |

Port Republic Road

S Main St to Neff Ave

SUMMARY:

- 10 Ped Crashes, 7 Bike Crashes= 17 TOTAL
- Concentration between Bluestone Dr and Forest Hill Rd
- Harrisonburg Bike-Ped Plan Project PS-8 and PS-9 (top 5 score). HRMPO Bike-Ped Plan Project H-16B
- City drafting an HSIP project for 5-foot sidewalk, 2 foot grass buffer on the SB side of Port from S Main St to Hillside Ave. Project also includes pedestrian improvements to the S Main St Intersection



● K.Fatal Injury
● A.Severe Injury
● B.Visible Injury
● C.Non-visible Injury
● PDO.Property Damage Only

B HRMPO Bike Crashes
P HRMPO Ped Crashes

N

| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | ✓ |
| PSI | ✓ |
| Qualitative | ✓ |

Rock Street

- K.Fatal Injury
- A.Severe Injury
- B.Visible Injury
- C.Non-visible Injury
- PDO.Property Damage Only



HRMPO Bike Crashes



HRMPO Ped Crashes



SUMMARY:

Rock Street between Mason and N. Liberty Street. 5 pedestrian crashes and one bicycle crash between 2017-2018 despite improvements made by the city. Two crashes were alcohol related, including a fatality.

A lack of lighting has been cited as an issue at the Rock St and Mason St intersection.



| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | ✓ |
| PSI | |
| Qualitative | ✓ |

JMU Campus

SUMMARY:

(1) Bicycle crash and (1) Skateboard crash near the crosswalk of Hanson Hall. Skateboarder was in bike lane headed Southbound, sideswiped and/or nearly doored by a Southbound Bus making a stop.

(2) Pedestrian crashes near the Student Success Center, The C crash involved a vehicle exiting a parking lot

(1) Pedestrian Crash and (1) Skateboard Crash at Duke Drive Crosswalk, near Ikenberry Service Dr



| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | ✓ |
| PSI | |
| Qualitative | ? |

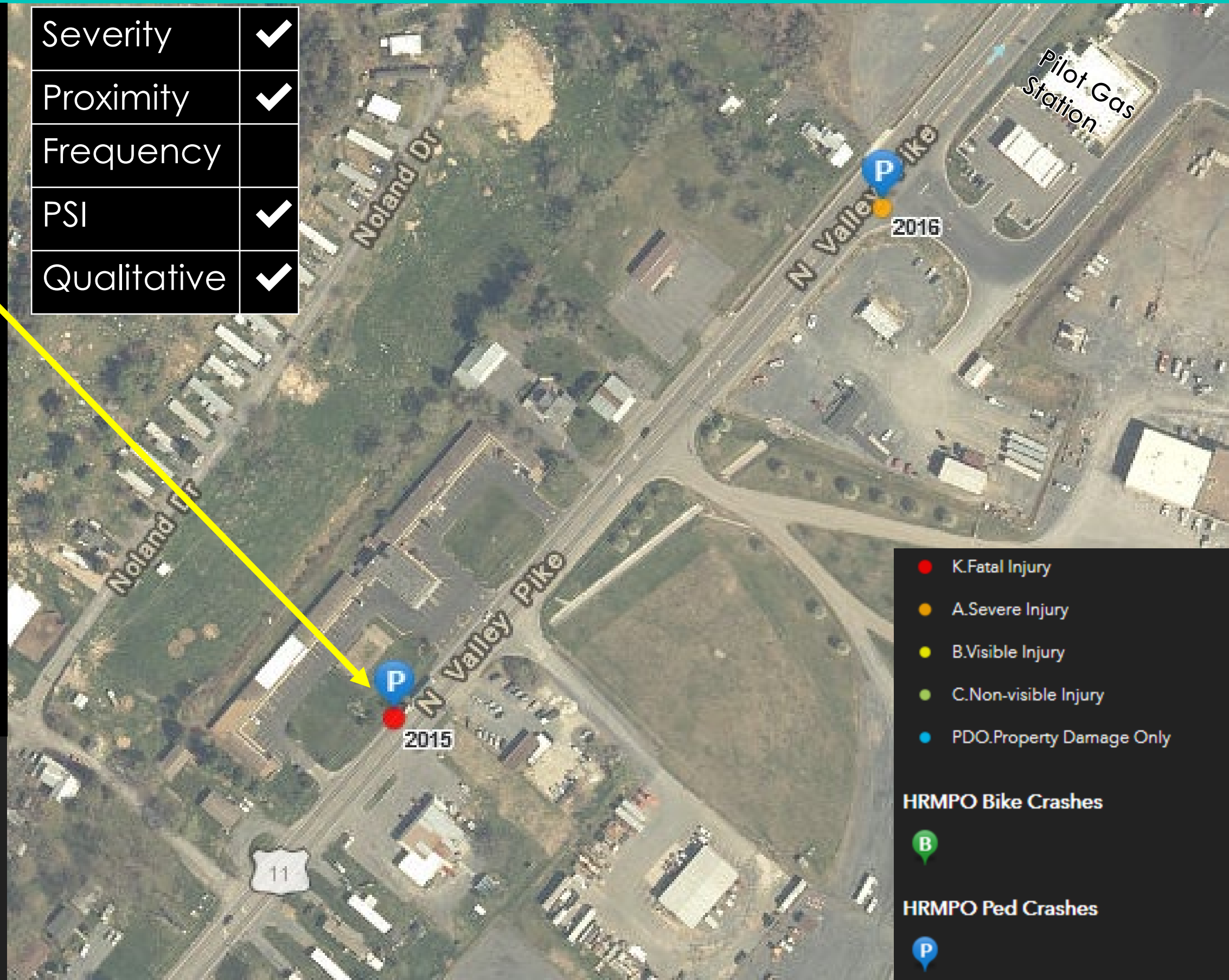
North Valley Pike at Northwood Lane



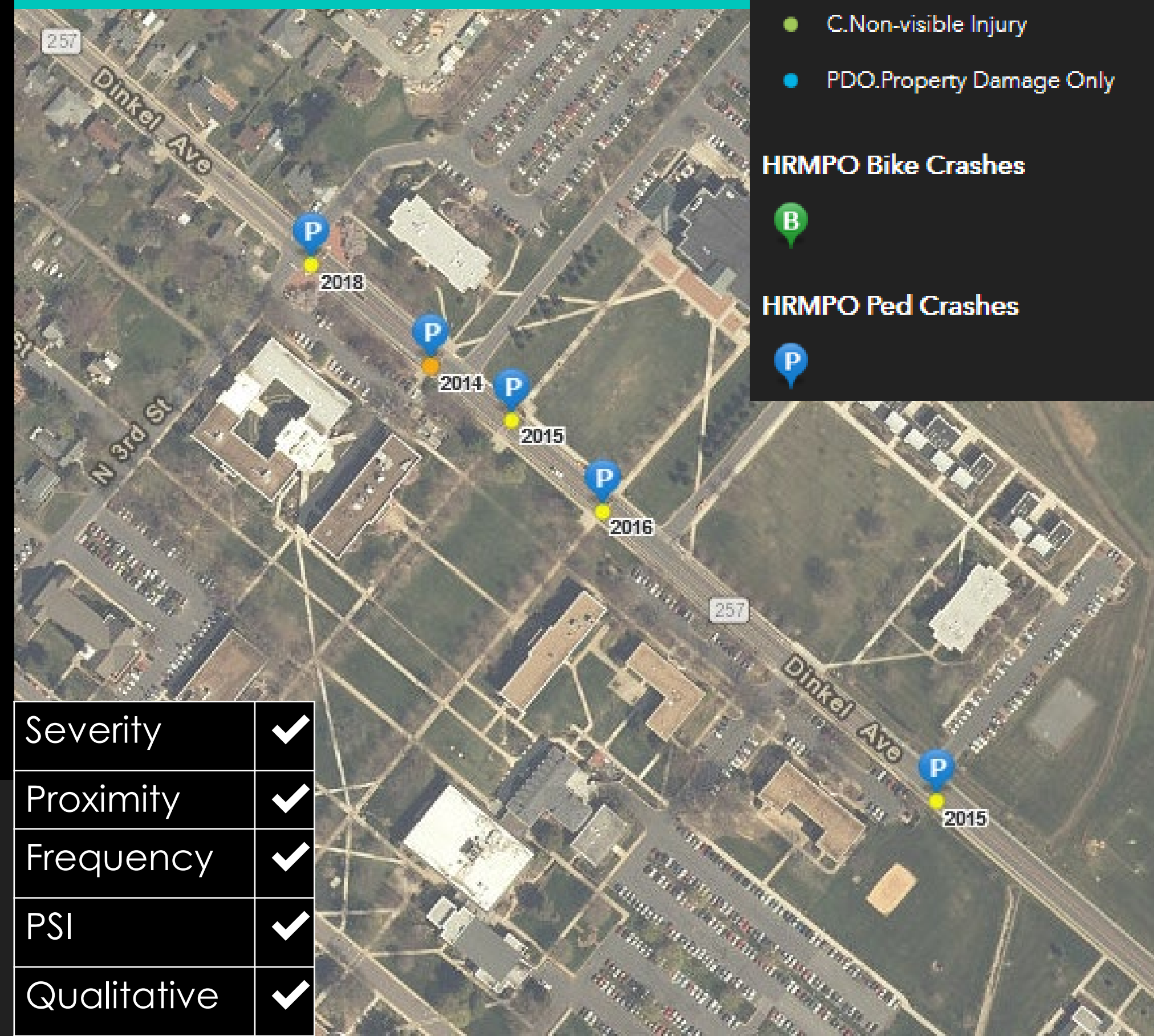
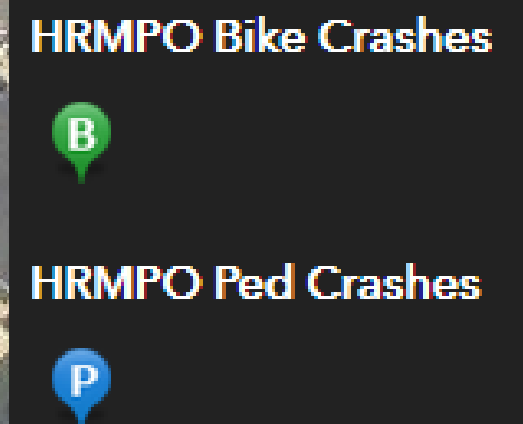
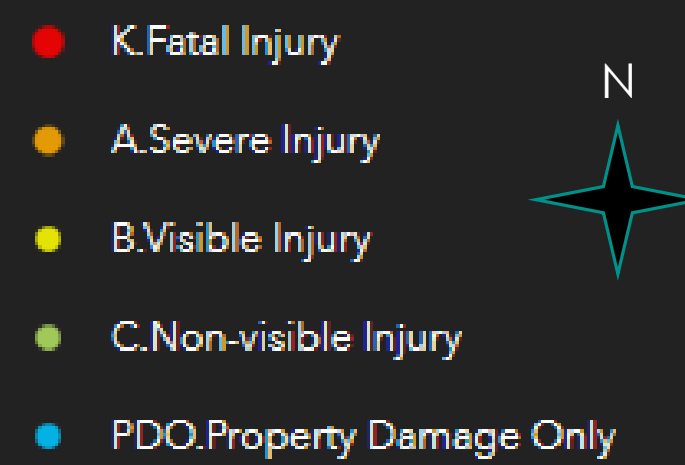
SUMMARY

- Pedestrian Walking southbound, hit by southbound vehicle. Hit and Run.
- HRMPO Bike-Ped Plan Project ID# R-6, Wide Shoulders
- County SMART SCALE Project #3962 N Valley Pike Sidewalk, Recommended for Funding to the south of this location, construction in 2027

| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | |
| PSI | ✓ |
| Qualitative | ✓ |



Dinkel Ave at Bridgewater College



Indicators

- HRMPO Bike-Ped Plan Project ID# R-48-A, Bike Lane
- Parking lots on one side of an arterial, attractions on the other.
- See JMU Carrier Drive Master Plan Project for a potential solution idea.
- Access Management needs to be studied at this location.

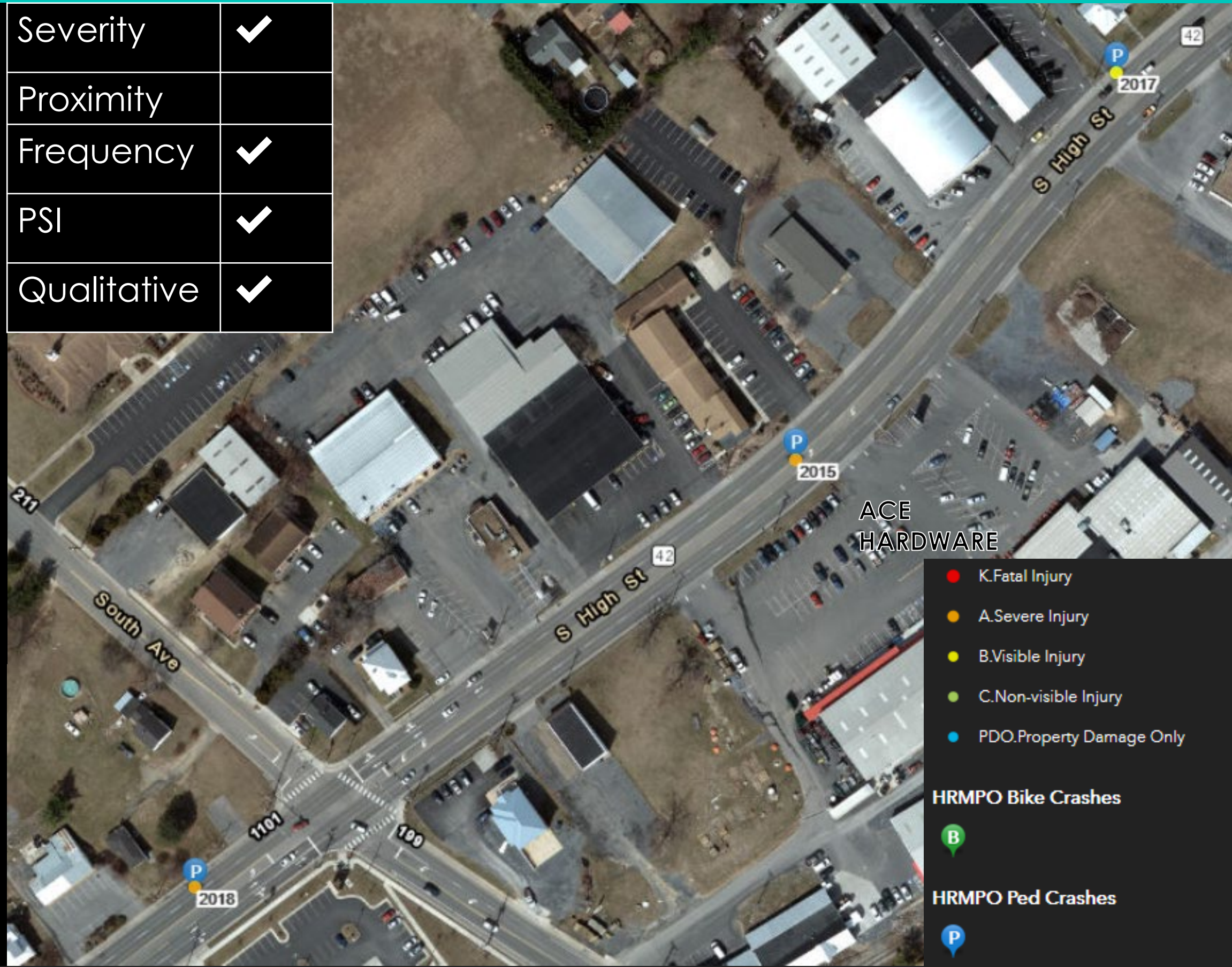
| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | ✓ |
| PSI | ✓ |
| Qualitative | ✓ |

VA 42 South High Street near South Avenue



- 2 severe pedestrian injury mid-block crossings.
- Crash reports suggest pedestrians are struck while running across the street, or as they walk on the sidewalk across a driveway/entrance.
- Harrisonburg Bike-Ped Plan project PS-11

| | |
|-------------|---|
| Severity | ✓ |
| Proximity | |
| Frequency | ✓ |
| PSI | ✓ |
| Qualitative | ✓ |



- K.Fatal Injury
 - A.Severe Injury
 - B.Visible Injury
 - C.Non-visible Injury
 - PDO.Property Damage Only
- HRMPO Bike Crashes
- B
- HRMPO Ped Crashes
- P

VA 42 road segment info:

- 0.25 miles in length
- 17,000 vehicles per day
- 35 MPH

University Boulevard

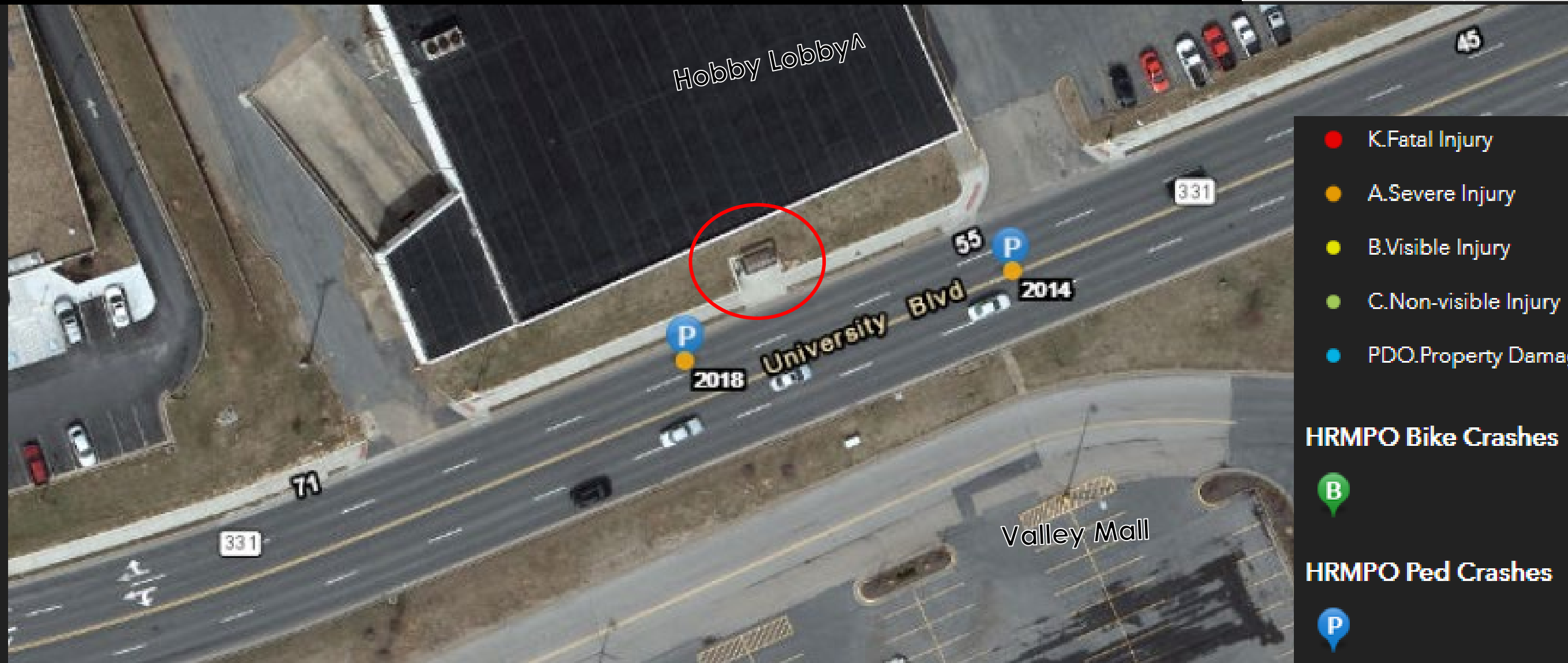


SUMMARY:

University Blvd Severe Pedestrian Crashes as they cross University Boulevard.

- Near HDPT Transit at Gabe's/Hobby Lobby stop across from Valley Mall
- City Bike-Ped Plan Project PS-16
- SMART SCALE Project APP ID #3588 Recommended for funding. University Blvd Road Diet (see next slide)

| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | |
| PSI | |
| Qualitative | ✓ |



- K.Fatal Injury
- A.Severe Injury
- B.Visible Injury
- C.Non-visible Injury
- PDO.Property Damage Only

HRMPO Bike Crashes



HRMPO Ped Crashes



University Blvd Transit Stop



- SMART SCALE Project APP ID #3588, funded, University Blvd Road Diet
- Construction in 2027
- Part of City Bike-Ped Plan Project PS-16
- Recommend an additional unsignalized crosswalk at the Gabe's/Hobby Lobby transit stop.



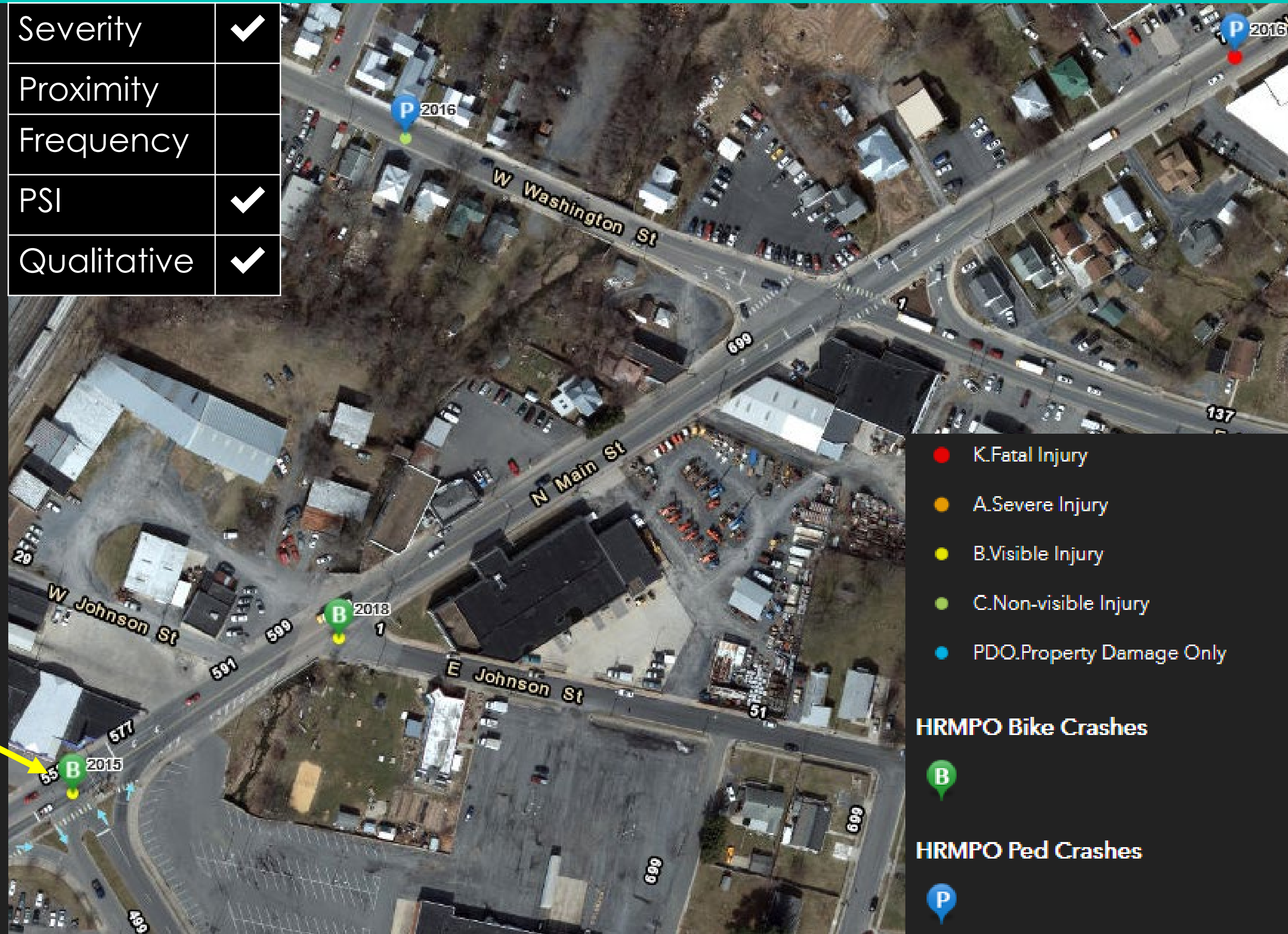
North Main St from North Mason to Monroe St



Indicators

- Identified for a Bike Lane, HRMPO Bike-Ped Plan Project ID# H-5
- Harrisonburg Bike-Ped Plan Project PS-41, improved pedestrian segment
- Northbound Bicyclist Hit on Permissive Left Turn Green Ball

| | |
|-------------|---|
| Severity | ✓ |
| Proximity | |
| Frequency | |
| PSI | ✓ |
| Qualitative | ✓ |



HRMPO Bike Crashes



HRMPO Ped Crashes



Martin Luther King Jr. Way and Reservoir St



- Crash reports indicate the vehicles a turning left from reservoir on green ball and hitting peds in the crosswalk.
- Consecutive years
- Identified for a Shared Use Path in HRMPO Bike-Ped Plan Project ID# H-25
- NB dual lane permissive/protected with FYA added on Reservoir St in 2018.

| | |
|-------------|---|
| Severity | |
| Proximity | ✓ |
| Frequency | ✓ |
| PSI | |
| Qualitative | ✓ |



| | |
|------------------------|-----------------|
| ● K.Fatal Injury | Pedestrian Only |
| ● A.Severe Injury | |
| ● B.Visible Injury | Bicycle Only |
| ● C.Non-visible Injury | |

West Grace Street from South High Street to South Main Street



- 5 bicycle crashes between VA 42 South High Street and US 11 South Main Street.
- Highest concentration of Bicycle Crashes.
- All crashes were motorized vehicles failing to yield right of way.
- 4 out 5 occurred when bicyclists were traveling east on the segment.
- **New Bike Lanes and Apartments installed in 2016, no new crashes since**

Road SEGMENT INFO:

- 3000 ADT, 0.3 miles
- 25 MPH

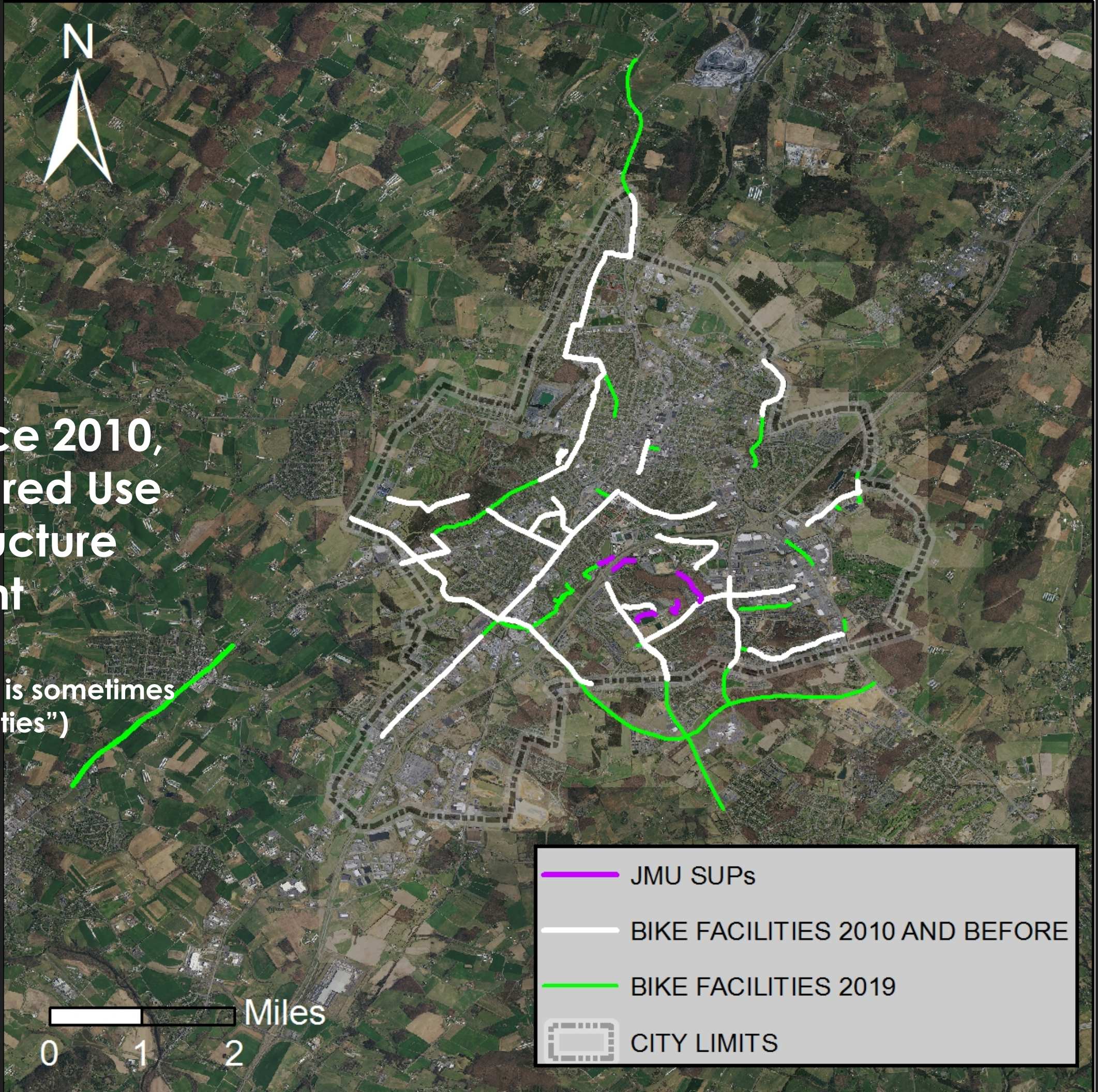





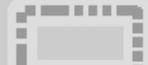
| | |
|-------------|---|
| Severity | ✓ |
| Proximity | ✓ |
| Frequency | |
| PSI | |
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Progress Since 2010, Bicycle/ Shared Use Path Infrastructure Development

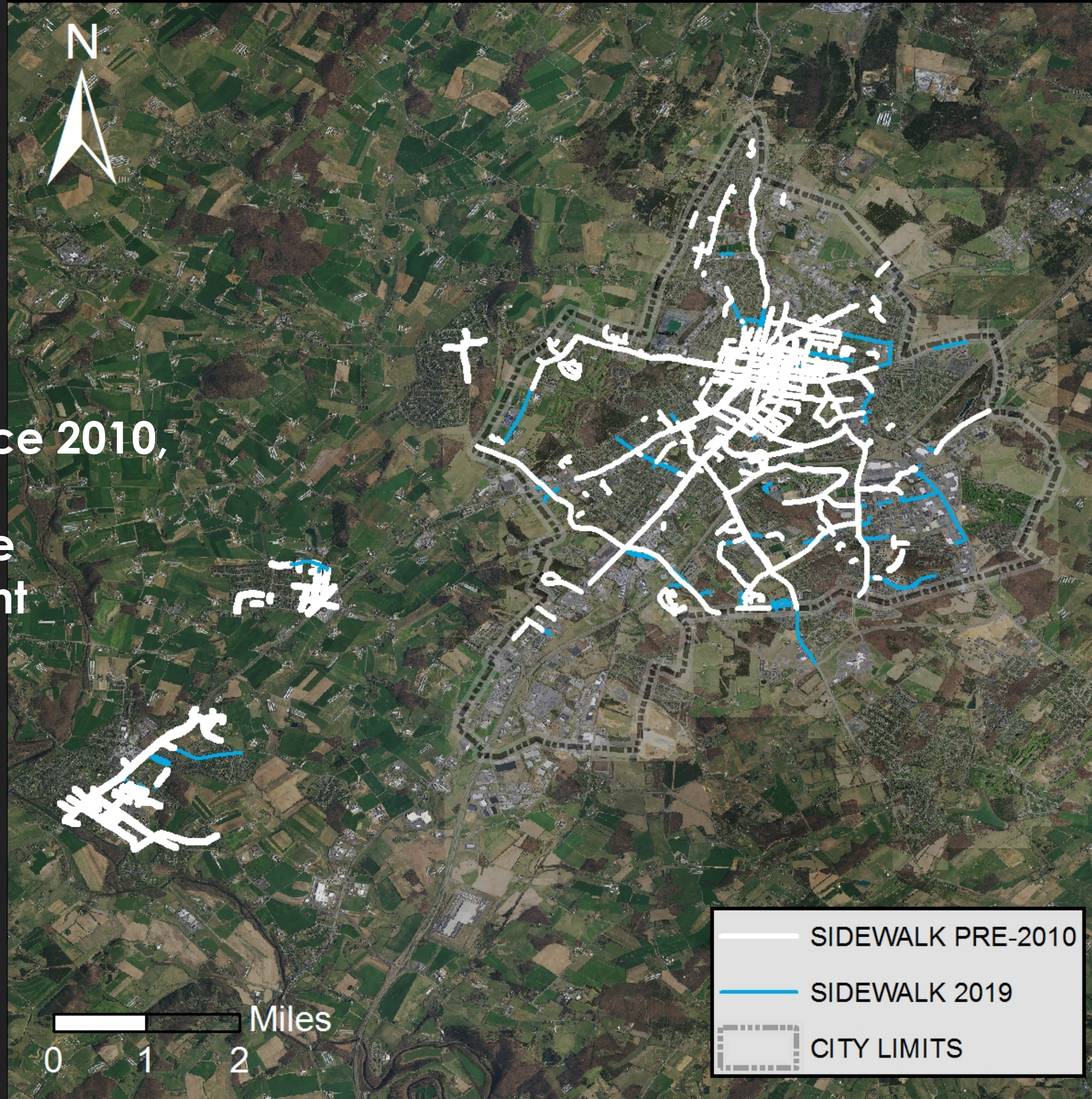
Note: (Infrastructure is sometimes
referred to as "Facilities")



-  JMU SUPs
-  BIKE FACILITIES 2010 AND BEFORE
-  BIKE FACILITIES 2019
-  CITY LIMITS

0 1 2 Miles

**Progress Since 2010,
Pedestrian
Infrastructure
Development**



CONSIDERATIONS

- Findings need validation and input of users of the non-motorized system. Distribute survey to local bicycle-pedestrian groups and committees in November 2019.
- Findings should not be used to infer non-motorized travel behavior.

QUESTIONS?

THANK YOU!

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