



PROJECT PIPELINE NEEDS AND EXISTING CONDITIONS SUMMARY

W Main Street at Pioneer Drive and US 19 Bypass at Regional Park Road
VDOT District: Bristol / Locality: Town of Lebanon

BR-25-04
Sheet 1 of 4

Study Area: W Main Street at Pioneer Drive



VTrans Needs

- Safety Improvement
- Pedestrian Safety Improvement

Safety Needs



Study Area

- Main Street has a medium priority need for Construction District Safety Improvement
- Main Street segment north of Pioneer Drive intersection has a low priority need for Pedestrian Safety Improvement

Main Street & Pioneer Drive Intersection

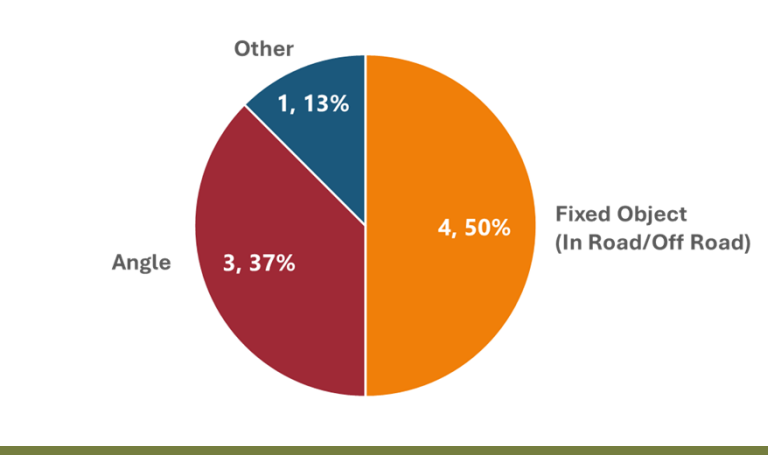
- 8 crashes occurred at Main Street/Pioneer Drive intersection
- 50% of crashes (4 crashes) were angle collisions involving left turns onto Main Street or Pioneer Drive; 2 of these crashes resulted in a visible injury (B) – both in 2020
- A medical emergency caused the severe injury (A) crash
- 75% of crashes (6 crashes) involved young drivers (15-20), likely due to Lebanon High School nearby (0.7 miles west of study area)

Study Purpose, Goals, and Objectives

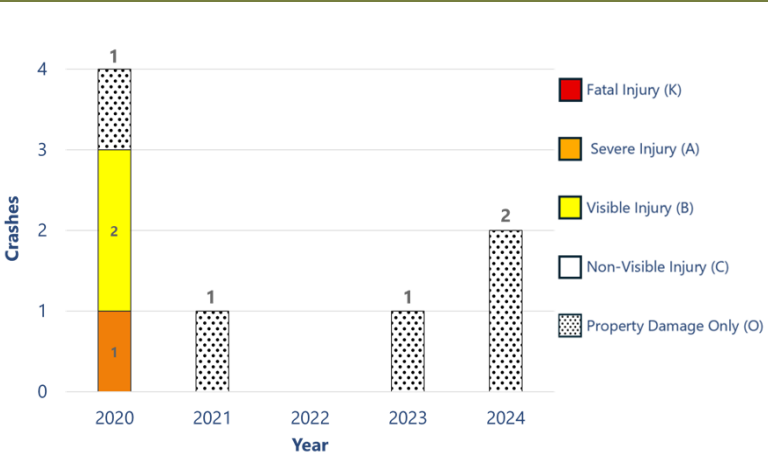
To address road safety and pedestrian safety needs on W Main Street at and adjacent to Pioneer Drive and the US 19 Exit 1 ramps.

Study Facts

Major Study Intersections	2
Length of Study Area	0.3 mile
Classification	Minor arterial (Main Street) Minor collector (Pioneer Drive)
2023 AADT (Average Annual Daily Traffic)	Main Street: 7,900 Pioneer Drive: 2,400
Speed Limits	Main Street: 35 MPH Pioneer Drive: 35 MPH
Crash Type	8 Crashes (2020 – 2024)



Crash Severity 8 Crashes (2020 – 2024)





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Study Area: W Main Street at Pioneer Drive

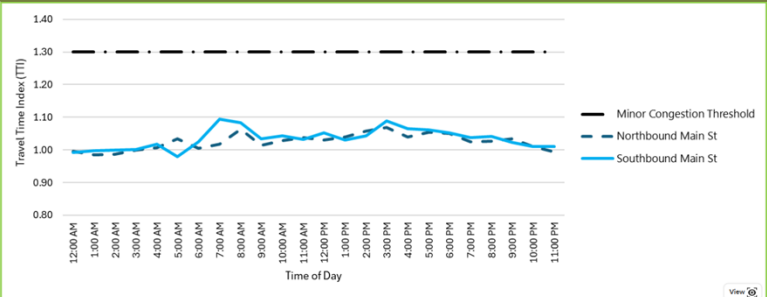
Summary of Needs Identified Through Public Outreach

- Survey date: May 27 – June 10, 2025
- Number of participants: 211
- Mode(s) of travel: Personal vehicle (100%, 74 respondents), truck/commercial vehicle (15%, 11 respondents), walking (7%, 5 respondents)
- 97% of survey respondents (97 respondents) agreed that safety improvements was a corridor need
- Highest ranked needs: Reducing traffic congestion, corridor/intersection safety, pedestrian safety and accessibility
- Lack of sidewalks was identified as the top safety concern
- Sudden stopping and rear-end crashes were identified as the second highest safety concerns. Respondents shared congestion related crashes occur at the Pioneer Drive and Main Street intersection
- School hour congestion and turning onto Main Street were additional concerns expressed by respondents
- Crosswalks/pedestrian signals (76%, 45 respondents) and sidewalks (73%, 43 respondents) were the highest ranked multimodal facilities needed in the areas

Operations Summary and Congestion Needs

- Network peak hours: 7:45-8:45AM, 3:00-4:00PM, early afternoon peak corresponds with Lebanon High School
- The eastbound left-turn at the Main Street and Pioneer Drive intersection has a poor level of service in the AM (F) and PM (D) peak hours and experiences higher delays with 59.1 seconds and 25.5 seconds, respectively.
 - Peak hour volume (~300) headed southbound on Main Street restricts left turn access on to Pioneer Drive
 - Delay caused for vehicles turning left off Main Street, but smaller volume (~50-100) does not impose significant queue
- Travel time index for the study area is below the minor congestion threshold of 1.3

Travel Time Index*



*Travel Time Index (TTI) is the ratio of the travel time during the referenced time period to the travel time during typical conditions. For example, a TTI of 1.5 means a trip takes 50% longer than it would in free-flow conditions.

Proposed Solutions to Evaluate in Phase 2



Safety Improvements

- 1 Restripe Main Street to remove lane drop from functional area of intersection

Note: this safety improvement will be developed with a goal of being implemented during the next repaving schedule. The existing conditions data does not appear to support the funding viability of a larger capital improvement project at this location.



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W Main Street at Pioneer Drive and US 19 Bypass at Regional Park Road
VDOT District: Bristol / Locality: Town of Lebanon

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Study Area: US 19 Bypass at Regional Park Road



Study Purpose, Goals, and Objectives

To address road safety needs at the US 19 Bypass and Regional Park Road intersection.

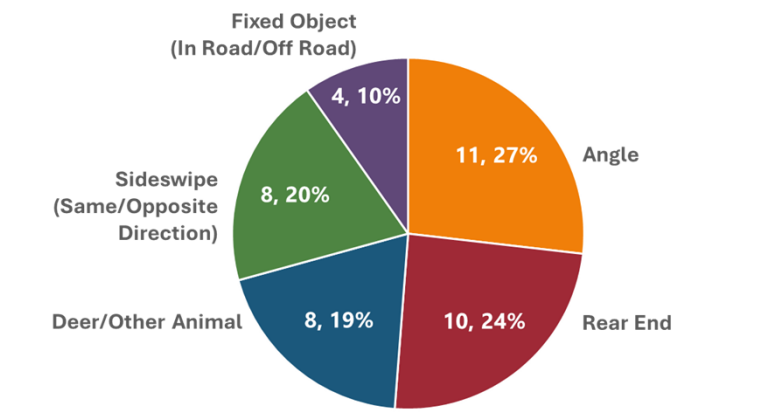
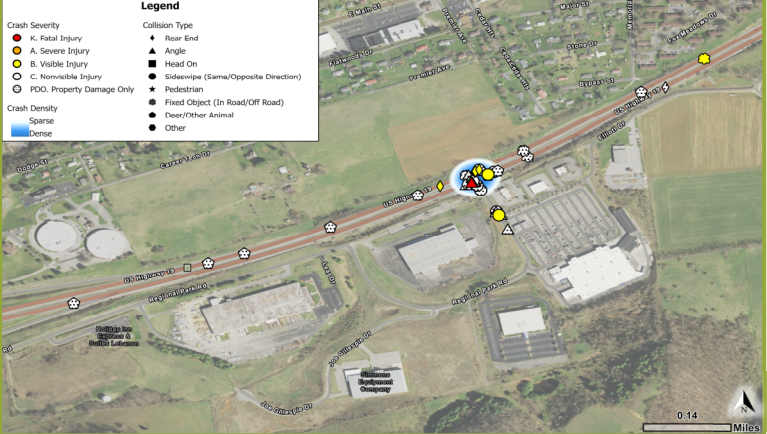
Study Facts

Major Study Intersections	2
Length of Study Area	1.0 mile
Classification	Freeway (US 19 Bypass)
2023 AADT (Average Annual Daily Traffic)	US 19 Bypass: 10,000
Speed Limit	US 19 Bypass: 55 MPH
Crash Type	41 Crashes (2020 – 2024)

VTrans Needs

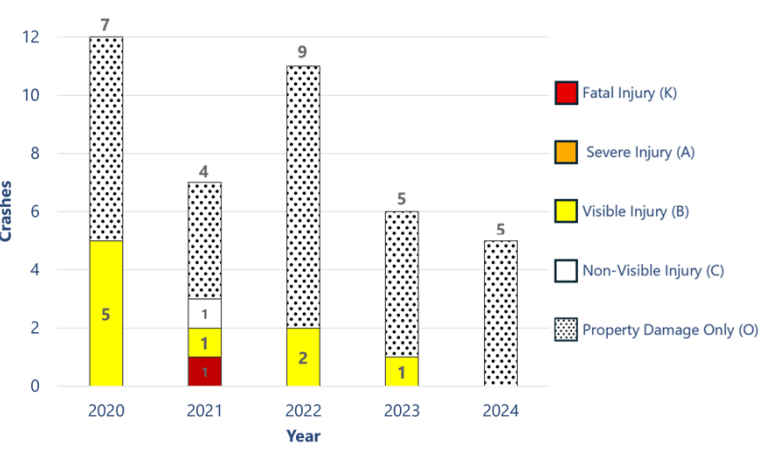
Safety Improvement

Safety Needs



- Study Area:**
- Segment east of signal is medium (northbound US 19) and low (southbound US 19) priority need for Construction District Safety Improvement
 - 41 crashes (2020-2024)
 - 32% of crashes (13 crashes) involved a distracted driver
 - 20% of crashes (8 crashes) involved a deer/animal and all occurred on US 19 Bypass
 - 27% of crashes (11 crashes) resulted in a fatality or injury
- US 19 Bypass & Regional Park Road:**
- Identified as one of the highest Potential for Safety Improvement (PSI) intersections in Bristol District; PSI rank 10
 - 68% of crashes (23 crashes) occurred at the intersection
 - 29% of intersection crashes (8 crashes) were an angle collision; 1 fatal injury (K) crash due to illegal left turn resulting in 3 fatalities
 - 6 red light running crashes, all angle collisions

Crash Severity 41 Crashes (2020 – 2024)





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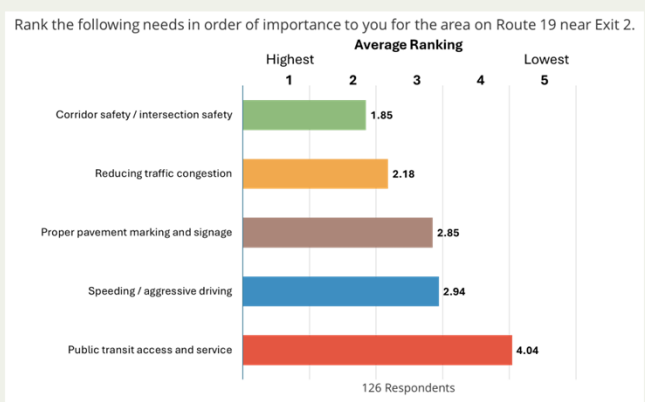
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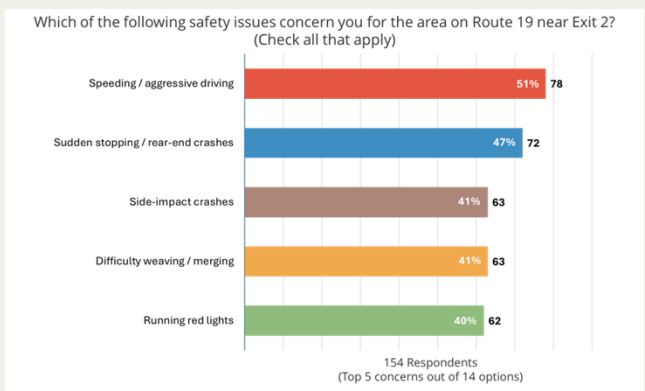
Study Area: US 19 Bypass at Regional Park Road

Summary of Needs Identified Through Public Outreach

- Survey date: May 27 – June 10, 2025
- Number of participants: 211
- Mode(s) of travel: Personal vehicle (99%, 138 respondents), truck/commercial vehicle (10%, 14 respondents), walking (3%, 4 respondents)
- All survey respondents agreed that safety improvements were needed within the study area
- Highest ranked needs: Corridor/intersection safety and reducing traffic congestion



- Speeding/aggressive driving was the highest ranked safety concern. Respondents noted seeing drivers running lights or speeding to get through signal changes
- Sudden stopping/rear-end crashes was the second highest ranked safety concern. Respondents reported drivers cutting them off

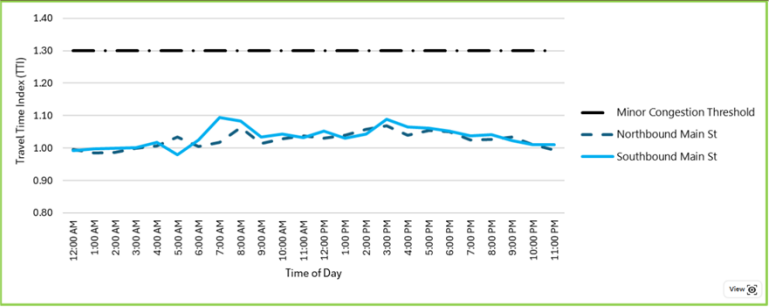


- Sun glare limiting signal visibility on US 19 Bypass was an additional safety concern expressed by respondents
- Respondents identified weekday morning rush (6 am – 9am) and weekday afternoon rush (4pm – 7pm) as the top hours for experiencing congestion and mobility issues

Operations Summary

- Peak hours: 8:00-9:00AM, 4:30-5:30PM
- No significant level of service and delay at either intersection
- No significant queue at either intersection
- US 19 Bypass speeds:
 - 85th percentile operating speeds of 70 MPH at Exit 2 ramps
 - 65 MPH speed limit zone ends at Exit 2 ramps
 - 55 MPH speed limit zone through intersection
 - 45 MPH speed limit zone starts east of intersection, approaching Main Street signal
- Significant proportion of traffic uses outside lane on dual lefts from Regional Park Road, likely heading to Exit 2 ramp
- Travel time index for the study area is below the minor congestion threshold of 1.3

Travel Time Index*



*Travel Time Index (TTI) is the ratio of the travel time during the referenced time period to the travel time during typical conditions. For example, a TTI of 1.5 means a trip takes 50% longer than it would in free-flow conditions.

Proposed Solutions to Evaluate in Phase 2



- #### Safety Improvements
- ① Dynamic All Red Extension (DARE) for traffic signal
 - ② Supplemental traffic signal heads not located in the horizon line

Note: these safety improvements will be developed with a goal of submitting for Virginia's Highway Safety Improvement Program (VHSIP) funding. The predominant needs identified at this location – red light running and rear end crashes partially caused by driver behavior and sun glare issues – are best addressed by these types of safety improvement projects.