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SUMMARY of Road Safety Audit REPORT

Road Safety Audit on US 29 Albemarle County, Virginia

Project Data

Date: August 21 – 22, 2007

RSA Team and Participants:

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Background:

The Road Safety Audit was conducted along a 2.5 segment of US 29 in Albemarle County, Virginia and included evaluations of the highway's intersection with Seminole Court, Woodbrook Drive, and Branchlands Boulevard/Premier Circle. These intersections qualified for the list of critical intersections in the region and were ranked based on three years of crash data (June 2004 – May 2007).

RSA Process:

The process detailed in the *FHWA Road Safety Audit Guidelines* (Publication FHWA-SA-06-06) was utilized for conducting this RSA. A crash risk assessment was conducted for each issue with the assessment based on the expected crash frequency and severity. Each safety issue was assigned a ranking from lowest to highest crash risk and priority. For each safety issue identified, possible mitigation measures were suggested. The suggestions focused on measures that can be cost-effectively implemented.

RSA Stage: Existing Road

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Major RSA Findings

Issue 1: Uncontrolled access to properties adjacent to US 29 increases risk of conflicts and collisions.

Location: Multiple Locations along US 29 (Albemarle County)

Description of Safety Issue: General properties adjacent to US 29, including numerous commercial developments, have direct and uncontrolled access to the highway throughout the corridor. In addition, local roads intersect US 29 frequently along the corridor. Drivers turning right, onto or off of the highway, at a series of virtually continuous, unmarked, and uncontrolled access points may conflict with through vehicles on the highway, other vehicles entering or exiting the highway, or pedestrians walking on the sidewalk.



Suggestion:

Develop an access management plan to reduce the number of current access points and consider opportunities to consolidate adjacent access points to reduce the number of conflict points.

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Issue 2: Signing and Pavement Marking

Location: Multiple Locations along US 29 (Albemarle County)

Description of Safety Issue:

The RSA Team observed worn or missing signs and pavement markings, which may limit driver guidance, especially at night. The team also noticed that lane use signage is inconsistent on mainline and side streets. Additional driver confusion may be caused by obsolete signage that increases visual clutter.



Suggestion:

The RSA Team suggests taking measures to improve signing and marking. Existing signing and pavement markings should be reviewed and VDOT should develop an action plan as part of the RSA report. These corrections are relatively low cost and include the maintenance of pavement markings, installation of proper signs, and removal of obsolete signs.

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Issue 3: Drainage and Maintenance

Location: Multiple Locations along US 29 (Albemarle County)

Description of Safety Issue:

Several sections of the roadway exhibited poor drainage due to what appears to be insufficient and improperly placed drainage inlets in the study area. Overgrown roadside vegetation was also found on the corridor, reducing sight distance and blocking guide signs in several locations. Maintenance of pavement may be an issue in some areas of the corridor from pavement rutting along portions of the study section.



Suggestion:

Consider measures to improve drainage, including a comprehensive review of the existing drainage structures. Also remove or cut-back vegetation to improve sight distance and sign visibility and ensure the current vegetation maintenance program adequately addresses issues. The Team also suggests reviewing the pavement management plan to determine the next scheduled overlay. Pavement repair (short term) and rehabilitation/reconstruction (long term) can be considered by VDOT.

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Issue 4: Operations and Design

Location: Multiple Locations along US 29 (Albemarle County)

Description of Safety Issue:

While recommendations for operational improvements are not the primary objective of the RSA, there are several operational issues that may be adversely affecting safety including the following.

- Peak period turning volumes exceed the capacity of the turn lanes and queues for through vehicles extend between intersections.
- Right-turn lanes are being used as a passing lane by some drivers.
- The far right lane does not reinforce the four-lane cross-section to motorists.
- U-turn vehicles are conflicting with right-turn on red vehicles.
- There is an inconsistent cross-section in the southbound direction.
- The posted speed limit along US 29 (45 mph) may be creating a dilemma zone for drivers.
- Traffic signal coordination is causing drivers to stop at consecutive traffic signals.



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Suggestion:

Several measures are recommended by the Team to improve safety. Recommendations include the following.

- Extend right- and left-turn lanes to accommodate peak demand.
- Use enforcement to mitigate illegal maneuvers.
- Revise signal operations and lane configurations to clear queues.
- Provide consistent cross-sections and lane use markings.
- Separate right-turn lanes from through lanes.
- Sign for U-turns or RTOR.
- Review the yellow phase to ensure adequate time to eliminate the dilemma zone.
- Optimize signal timing and adjusting offsets.
- Consider installation of VMS signs to warn motorists of congestion and stopped vehicles.

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Issue 5: Lighting

Location: Multiple Locations along US 29 (Albemarle County)

Description of Safety Issue:

Overhead lighting is not present along the entire study area, which is inconsistent with other similar facilities in the area where overhead lighting is provided. Lighting is a particular concern at intersections, especially where pedestrian crossings are likely to occur.



Suggestion:

Assess the feasibility of lighting. VDOT should conduct a study to assess the feasibility of providing lighting along the corridor. Lighting on the corridor will help increase the conspicuity of turning vehicles entering the roadway from the numerous access points along the corridor.

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Issue 6: Pedestrian Facilities

Location: Multiple Locations along US 29 (Albemarle County)

Description of Safety Issue:

The design of some pedestrian facilities may limit their usefulness. While sidewalks are provided along both sides of US 29, there are no crosswalks or pedestrian signals at any of the intersections in the study area. There are several bus stops along US 29, but these facilities are not always clearly marked and are sometimes not located near intersections where pedestrians typically cross. Furthermore, bus stops are sometimes placed in locations where there are multiple access points. Additionally, some pedestrian facilities need to be upgraded to current accessibility standards.



Suggestion:

Place continental/ladder crosswalk pavement markings. Place pedestrian push-button activated signals with pedestrian countdown signals at major intersections along US 29 where practical and feasible after properly considering the safety, demand, timing, and signal coordination issues. Consider improvements to bus stops to improve pedestrian safety by 1) moving bus stops closer to intersections to discourage mid-block crossings, and 2) ensuring bus stops are well lit with an adequate waiting area. The team also suggests installing street lighting.