ISLE OF WIGHT
Safety Action Plan

Safety Countermeasures Toolkit

In developing the Safe Street for All (SS4A) Safety Action plan, Isle of Wight County has created a Safety Countermeasure Toolkit that incorporates Federal Highway Administration's (FHWA) and Virginia Department of Transportation (VDOT) proven Safety Countermeasures that can effectively mitigate specific crash types that were found to be the most prevalent in the County based on an assessment of the County's crash history.

The Safety Countermeasures provided in the Toolkit are generally quick build safety solutions that are affordable, rapidly deployed, can be temporary and are proven to be as effective as long-term permanent capital investments. Some mid to long term solutions such as new or enhanced traffic control devices are also recommended to improve awareness and operations for the most vulnerable road users such as County's pedestrians and cyclist. In some cases, an engineering study may be required to determine if certain Safety Countermeasures are feasible.

The countermeasures provided in this toolkit are based on industry best practices, but some may be suitable to migrate a specific safety concern at one site but may not be feasible at another site due to limits and restrictions that may be identified during the engineering analysis.

Local Roots, Global Reach
ISLE OF WIGHT
COUNTY, VIRGINIA

WALLACE MONTGOMERY

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Crash Type: Rear End Crashes

Crashes that occur when one vehicle strikes the rear of another vehicle resulting from sudden braking, following too closely, excessive speeding, or lack in awareness of an approaching intersection.

Potential Treatments:

| Advanced Warning Signs



Description: Roadway signs that bring awareness to approaching traffic control devices and/or alert drivers of any changes to traffic conditions.
Source: https://mutcd.fhwa.dot.gov/pdfs/11th_Edition/Chapter2c.pdf

| Retroreflective Backplates



Description: Reflective treatment to improve the visibility of signal heads (during night and daytime conditions) and bring awareness for vehicles approaching a signal-controlled intersection.
Source: https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/HVSB_VDOT_One-Pager.pdf

| Signal Timing Modifications



Description: Recalibration of existing signal timing to allow more green time at travel lane approach.
Source: https://ops.fhwa.dot.gov/publications/fhwahop08024/chapter5.htm

| Speed Management Strategies



Description: Speed management ensures drivers have enough reaction time to be able to stop when necessary.
Source: https://highways.dot.gov/safety/speed-management/speed-management-countermeasures-more-just-speed-humps

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Crash Type: Angle Crashes

Crashes that occur when two motor vehicles impact at or near a right angle. Angle crashes can result from failing to obey a stop sign or traffic signal; a vehicle not having enough time to enter a major roadway; vehicle crossing multiple travel lanes; and drivers having low visibility at intersections.

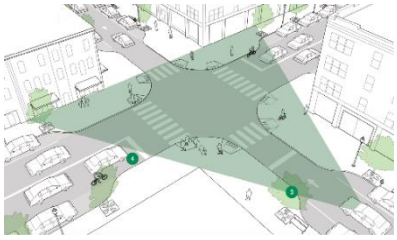
Potential Treatments:

| Improved Traffic Control Devices



Description: Traffic Control devices clearly define the traffic operations at an intersection by directing vehicles when to stop and yield which reduces collisions with opposing traffic.
Source:https://www.fhwa.dot.gov/resourcecenter/teams/safety/saf_11TCD.pdf

| Ensuring Adequate Sight Distance



Description: Removing obstacles close to an intersection improves a driver's ability to effectively see opposing traffic. Sight distance can be improved at intersections by removing on-street parking close to an intersection, cutting trees, or other methods to increase visibility.



Daylighting is also a common method to improve sight distance by prohibiting vehicle parking adjacent to crosswalks and intersections.
Source: https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/visibility-sight-distance/

Roadway Markings



Description: Roadway markings clearly delineate designated lane controls along roadways (or at an intersections) which reduces conflicts with opposing vehicles.
Source: https://mutcd.fhwa.dot.gov/htm/2009/part3/part3b.htm

Median Crossover Improvements



Description: Median improvements to eliminate crashes that are caused by vehicles crossing multiple lanes of traffic. The median can be improved through markings, delineated posts, and/or physical hardening.
Source: https://highways.dot.gov/safety/proven-safety-countermeasures/median-barriers

Regulatory Roadway Signs



Description: Roadway signs that re-enforce designated vehicle movements and define user right-of-way to reduce conflicts with opposing or turning vehicles.
Source: https://mutcd.fhwa.dot.gov/pdfs/11th_Edition/Chapter2b.pdf

Advanced Warning Signs



Description: Roadway signs that bring awareness to approaching traffic control devices and/or alert drivers of any changes to traffic conditions.
Source: https://mutcd.fhwa.dot.gov/pdfs/11th_Edition/Chapter2c.pdf

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Crash Type: Excessive Speeding

Crashes that occur when vehicles speeds are in excess of the posted speed limit which causes a driver to lose control and reduces reaction time.

Potential Treatments:

| Context Sensitive Speed Limits



Description: Slower speed limits that are appropriate for a road's functional classification, surrounding land uses, and activity level (level of current or future pedestrian and bicycle activity on a roadway) is essential for reducing speed-related accidents on the road. A speed study which uses a context zone classification system to help determine the appropriate speed limit of the roadway, which is set on factors such as building density, land use, setbacks, and the presence of pedestrian facilities.
Source: City Limits Quick Guide - NACTO

| Enhanced Curve Delineation



Description: Enhanced curve delineation can be helpful for controlling speeding on high-speed curves, through the use of pavement markings, curb markers (chevrons), or advanced warnings.
Source: https://highways.dot.gov/safety/proven-safety-countermeasures/enhanced-delineation-horizontal-curves

| Speed Safety Cameras



Description: Speed safety cameras are a highly effective means of enforcing speed limits on high-speed roads. In Virginia, speed cameras are allowed in work zones and school zones.
Source: https://highways.dot.gov/safety/proven-safety-countermeasures/speed-safety-cameras

Diver Feedback Boards/Signs (DFBs)



Description: DFBs brings awareness to speeding conditions and manage traffic speeds by using a radar to measure and report traveling speeds.
Source: https://highways.dot.gov/safety/speed-management/speed-management-countermeasures-more-just-speed-humps

Raised Crosswalks



Description: Raised crosswalks are elevated crossings that are placed in the roadway to improve safety, slow and manage vehicle speeds, and provide a level path for pedestrians. Raised crosswalks are more noticeable than regular pedestrian pavement markings, making drivers more aware of pedestrians crossing. These crossings are very effective in school zones and areas where there are high pedestrian crossings.
Source: https://highways.dot.gov/media/11856

Road Diets



Description: Road diets are an effective way of improving safety, calming traffic, and encouraging multiple travel modes. They are best suited on low-speed and low-volume roadways.
Source: https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/Road-Diets-Local-Agency-One-Pager_acc050222.pdf

Targeted Enforcement Areas



Description: Targeted enforcement areas are locations with high traffic speeding violations and crashes that need increased patrols to enforce compliance of traffic laws and prevent violations. Areas that typically warrant targeted enforcement are locations where there are patterns of elevated speeds that are over 10 mph from the posted speed limit and have an history of fatal and serious injuries.
Source: https://www.nhtsa.gov/enforcement-justice-services/high-visibility-enforcement-hve-toolkit

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Crash Type: Red Light Running

Crash resulting from a vehicle running a red light at a signalized intersection.

Potential Treatments:

| Retroreflective Backplates



Description: Reflective treatment to improve the visibility of signal heads (during night and daytime conditions), and bring awareness for vehicles approaching a signal controlled intersection.
Source: https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/HVSB_VDOT_One-Pager.pdf

| Signal Timing Modifications



Description: Recalibration of existing signal timing to allow more green time at travel lane approach.
Source:https://ops.fhwa.dot.gov/publications/fhwahop08024/chapter5.htm

| Advanced Warning Signs



Description: Roadway signs that bring awareness to approaching traffic control devices and/or alert drivers of any changes to traffic conditions.
Source: https://mutcd.fhwa.dot.gov/pdfs/11th_Edition/Chapter2c.pdf

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Crash Type: Stop Sign Running

Crash resulting from a vehicle failing to come to a complete stop at a stop sign.

Potential Treatments:

| Vertical Traffic Calming – Along Minor Street Approaches



Description: Vertical traffic calming devices can force vehicles to slow down in advance of a stop-controlled intersection.
Source: https://nacto.org/publication/urban-street-design-guide/street-design-elements/vertical-speed-control-elements/

| Advanced Warning Signs



Description: Roadway signs that bring awareness to approaching traffic control devices and/or alert drivers of any changes to traffic conditions.
Source: https://mutcd.fhwa.dot.gov/pdfs/11th_Edition/Chapter2c.pdf

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Crash Type: Bike Involved

Crashes which involve a collision with a bicyclist.

Potential Treatments:

Designated Bike Lanes



Description: Bike lanes allow bicyclists to have their own right-of-way, reducing the possibility of a crash when motorists pass them. Bike lanes can be protected or unprotected.
Source:https://highways.dot.gov/sites/fhwa.dot.gov/files/Bicycle%20Lanes_508.pdf

Road Diets



Description: Road diets are an effective way of improving safety, calming traffic, and encouraging multiple travel modes by narrowing the horizontal configuration of a roadway. They are best suited on low-speed and low-volume roadways.
Source:https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/Road-Diets-Local-Agency-One-Pager_acc050222.pdf

Continuous Lighting



Description: Continuous lighting increases visibility and awareness for pedestrian and bicyclist. It is especially helpful near intersections, crosswalks, walkways and bike lanes.
Source:https://highways.dot.gov/safety/other/visibility/roadway-lighting

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Crash Type: Pedestrian Involved

Crashes which involve collisions with pedestrians.

Potential Treatments:

| Crosswalk Visibility Enhancements

Description: Crosswalk visibility enhancements, including advanced warning signs, regulatory signs, and reflective pavement markings can alert drivers of pedestrian presence.
Source: https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/Ped_Crossings_VDOT_One-Pager.pdf



| Enhanced Pedestrian Traffic Control Device

Description: Enhanced pedestrian traffic control devices such as Rectangular Rapid Flashing Beacons (RRFBS) and Pedestrian Hybrid Beacons (HAWK) increases awareness and visibility for pedestrians to drivers by providing a controlled phase for pedestrian crossings.
Source: https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/Ped_Crossings_VDOT_One-Pager.pdf



| Leading Pedestrian Intervals

Description: Leading pedestrian intervals allow pedestrians to get a "head start" at a crosswalk, thus making them more visible to vehicle turning movements at signalized intersections.
Source: https://highways.dot.gov/safety/proven-safety-countermeasures/leading-pedestrian-interval



Medians/Pedestrian Refuge Islands



Description: Pedestrian refuge islands split a long pedestrian crossing into two shorter crossings.
Source: https://highways.dot.gov/safety/proven-safety-countermeasures/medians-and-pedestrian-refuge-islands-urban-and-suburban-areas

Continuous Lighting



Description: Continuous lighting increases visibility and awareness for pedestrian and bicyclist. It is especially helpful near intersections, crosswalks, walkways and bike lanes.
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