Horizontal Deflection				
Type	**Pro**	**Con**	**Included in Concept Plan**	**Decision Rational**
Corner Extension / Bulb-Out	• Can achieve greater speed reduction if combined with vertical deflection. • Smaller curb radii can slow turning vehicles which improves pedestrian safety at points of conflict. • Shorter pedestrian crossing distances can improve pedestrian safety by reducing exposure time and increased visibility to traveling vehicles (daylighting). • More pedestrian waiting areas may become available. • Provides opportunity for landscaping. • Retains sufficient width for ease of emergency-vehicle access.	• Must check drainage due to possible gutter realignment. • Major utility relocation may be required, especially drainage inlets. • Effects on vehicle speeds are limited due to lack of deflection. • May require some parking removal adjacent to intersections. • Effects on through vehicle speeds are limited due to lack of deflection.	Yes	• Anticipated speed reduction effect is similar to providing Chockers due to intersection proximity and repeated implementation. • Proposed combination with vertical deflection. • Addresses concern of pedestrian / bicycle crossing. • Addresses concern of intersection sight distances for all road users. • Can provide buffers for vehicles parked at the limits of on-street parking. • Minimal effect on on-street parking compared to Chicane, Chocker, Lateral Shift, and Median Island.
Median Island	• Can be placed mid-block or on the approach to an intersection. • Safety can be improved without substantially increasing delay. • Shortens pedestrian crossing distances. • Appropriate for any speed limit. • Appropriate along bus routes.	• May impact access to properties adjacent to islands. • No significant impact on vehicle speeds beyond the island. • Little impact on traffic volume diversion. • May require removal of some on-street parking. • May require relocation of drainage features and utilities.	No	• Would adversely affect presence of on-street parking. • Anticipated similar impact to drainage and utilities as Corner Extension / Bump-Out.

https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/

Notes:

- This decision Matrix only includes the rationale for existing treatments or are included in the proposed plan. Other traffic calming measures such as Chicane, Choker / Neck Down, and Lateral Shift were not considered for the concept plan due to the roadway width, impacts to private right-of-way (ROW), adverse effects to on-street parking, and did not address resident concerns of pedestrian/bicyclist safety and connectivity.
- Consideration for when a Traffic Calming Measure may require bicycles to share the roadway with vehicles was not a factor as no separate bicycle facilities are currently provided nor are they proposed.
- No Traffic Calming Measures were considered where turning movements would be restricted.
- Presence of On-Street Parking will be maintained along Parkwood Drive to the greatest extent possible.

Vertical Deflection				
Type	**Pro**	**Con**	**Included in Concept Plan**	**Decision Rational**
Speed Hump	• Appropriate for mid-block placement. • Work well in combination with curb extensions. • No impact on non-emergency access. • Average speeds between humps reduced between 20 and 25 percent. • Traffic volumes diversion estimated around 20 percent; average crash rates reduced by 13 percent.	• Not appropriate at intersections. • Not recommended for grades greater than 8 percent. • Impacts to ease of emergency-vehicle. Approximate delay between 3 and 5 seconds per hump for fire trucks and up to 10 seconds for ambulances with patients.	Yes	• MCDOT approved treatment under Executive Regulation 5-24. • Complimentary treatment with Curb Extensions.
Speed Table / Raised Crosswalk	• Work well in combination with textured crosswalks, curb extensions, and curb radius reductions. • No impact on non-emergency access. • Average traffic volumes diversions of 20 percent when a series of speed tables are implemented. • Average crash rate reduction of 45 percent on treated streets. • Increase pedestrian visibility and likelihood of driver yield compliance. • Typically preferred by fire departments over speed humps, but not appropriate for primary emergency vehicle routes; typically less than 3 seconds of delay per table for fire trucks.	• Careful design is needed for drainage. • Speeds reductions typically less than for speed humps (typical traversing speeds between 25 and 27 miles per hour). • Not recommended for grades greater than 8 percent.	No	• Not an approved treatment by MCDOT outside of Capital Improvement Projects (CIP).

https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/

Notes:

- This decision Matrix only includes the rationale for existing treatments or are included in the proposed plan. Other traffic calming measures such as Raised Intersection, Realigned Intersection and Raised Crosswalk were not considered for the concept plan due to conflicts with horizontal deflection treatments, concerns about adversely affecting drainage structures, and did not address resident concerns of pedestrian/bicyclist safety and connectivity.

Stop Sign's Role as Traffic Control

Traffic Control Devices are governed by the Maryland Manual on Uniform Traffic Control Devices (MdMUTCD). These devices include signs, markings, Traffic Signals, Temporary Traffic Control, Traffic Control for School Areas, Traffic Control for Railroad and Light Rail Transit Grade Crossings, and Traffic Control for Bicycle Facilities. Montgomery County Department of Transportation (MCDOT) operates in accordance with State and local regulations within the "Uniform Vehicle Code" to provide consistent facilities for all users.

MCDOT has provided additional context shown in **BOLD** text below:

Section 2B.04 Right-of-Way at Intersections

Stop signs are designated as Traffic Control Devices. Their utility establishes the *"right-of-way rule at intersections having no regulatory traffic control signs such that the driver of a vehicle approaching an intersection must yield the right-of-way to any vehicle or pedestrian already in the intersection"* (MdMUTCD Section 2B.04.01). Guidance is provided for engineering judgement to establish intersection control includes the following factors:

A. Vehicular, bicycle, and pedestrian traffic volumes on all approaches;
B. Number and angle of approaches;
C. Approach speeds;
D. Sight distance available on each approach; and
E. Reported crash experience.

In most cases, the roadway carrying the lowest volume of traffic should be controlled.

"A YIELD or STOP sign should not be installed on the higher volume roadway unless justified by an engineering study" (MdMUTCD Section 2B.04.08).

The following are considerations that might influence the decision regarding the appropriate roadway upon which to install a YIELD or STOP sign where two roadways with relatively equal volumes and/or characteristics intersect:

A. *Controlling the direction that conflicts the most with established pedestrian crossing activity or school walking routes;*
   For example, the Parkwood Drive / Saul Road and Franklin Street / Saul Road intersections operate under all-way stop (AWS) control because of their proximity to Kensington Parkwood Elementary School where pedestrian walking routes converge.
B. Controlling the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds; and

C. Controlling the direction that has the best sight distance from a controlled position to observe conflicting traffic.

Controlling the Parkwood Drive approaches to the remaining study area intersections are not required because there are no vision obstructions requiring drivers to lower operating speeds. However, the side street approaches to Parkwood Drive are properly Stop controlled for a driver to observe any conflicting traffic before entering the roadway.

Section 2B.07 Multi-Way Stop Applications

"Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal" (MdMUTCD Section 2B.07.01).

The MdMUTCD provides guidance for factors to be considered as part of an engineering study to determine if multi-way stop control should be installed.

A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*

   Does not apply to study area

B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*

   MCDOT review of the 10-year police reported crash history determined a total of 6 crashes between 2015-April 2026 occurred within the study area (0.6 collisions per year). Approximately 33 percent (2 of 6) resulted in personal injury. One of the injury related crashes involved a driver operating under the influence of drugs striking a parked vehicle. Fifty percent (3 of 6) involved collisions with parked vehicles.

   Approximately 33 percent (2 of 6) of collisions were reported where roadway surfaces were wet. However, no collisions were reported where weather conditions were reported as raining. No collisions were reported involving pedestrians or cyclists or influence by adverse roadway conditions.

C. Minimum volumes:

1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and

2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

MCDOT performed multiple turning movement counts at the study intersections which determined that over 70% of traffic through the intersections was along Parkwood Drive. Conditions A through D were not met at study intersections which did not already have all-way stop control.

Option:

Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;

MCDOT review of the 10-year police reported crash history determined that no angled collisions were reported.

B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;

MCDOT review of the 10-year police reported crash history determined that no pedestrian/cyclist collisions were reported.

C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and

MCDOT evaluated sight distances at all intersections and confirmed adequate stopping sight distance (SSD) and intersection sight distance (ISD) are provided.

D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

MCDOT confirmed that Parkwood Drive (between Saul Road and Knowles Avenue) and Saul Road (between Parkwood Drive and Cedar Lane) are classified as Neighborhood Connectors.