

# STONEFIELD

April 23, 2023

South Orange Maplewood School District  
Attn: Eric Burnside  
School Business Administrator / Board Secretary  
525 Academy Street  
Maplewood, NJ 07040

**RE: Hazardous Routes Evaluation – Corridor Evaluation  
Township of South Orange and Township of Maplewood, Essex County, New Jersey  
SE&D Job No. RUT-220523**

Dear Mr. Burnside,

Stonefield Engineering and Design, LLC (“Stonefield”) has prepared this evaluation to determine the safety of the fourteen routes for students within South Orange and Maplewood. The roadways were selected as the roadways with the highest traffic volumes, the busiest intersections to cross, and the most likely roadways to be traversed by students. Note that this report contains an evaluation of corridors within the school district evaluating hazardous roadway conditions along the corridors, focused (but not limited to) roadside conditions, accident history, roadway volumes, and roadway speeds. A companion report focused on each individual intersection along the corridors and potential alternate routes avoiding hazardous crossing has also been prepared for the School District.

## **Methodology**

On December 29, 2022, and January 5, 2023, February 3, 2023, February 8, 2023, February 27, 2023, and March 8, 2023 our office conducted a study to determine the safety for school aged pedestrian along various roadways throughout Maplewood and South Orange. Included within this study was observations both during periods when students were present walking, as well as when students were not present to understand the characteristics of the roadways from a driver and pedestrian point of view. Meetings were held with South Orange Police Department on March 29, 2023 and April 6, 2023 and with the Maplewood Police Department on April 6, 2023 and April 20, 2023 to elicit feedback and on-the-ground knowledge of the roadways studied, discuss crossing guard staffing, and share with earlier versions of this report. Accident data and traffic data was collected from the local police departments as well as NJDOT databases for the roadway studied.

An evaluation of these intersections was conducted to determine the safety of students crossing potentially hazardous roadways when traveling to their schools. We utilized 10 standard safety criteria for determining if the intersection is considered hazardous or not. The criteria included the presence of the following along the roadway; Roadway Volumes, Crossing Type, Roadway Speeds, Existence and Adequate Sidewalks, Sight Distance Concerns, Bridges / Overpasses, Train Tracks, Accident History, and Crossing Busy Roads / Highways. As part of the evaluation pedestrian infrastructure that was present, such as Rapid Flashing Beacons, High Visibility Crosswalks, Pedestrian Crossing Warning Signs, Traffic Signals, Pedestrian Beacons and Crossing Guards were noted.

Crossing Guards play a key role in helping to mitigate hazardous conditions along the studied corridors and intersections. It is noted that in Maplewood, the police department does “rounds” ensuring all crossing guards are on their posts, and if not, they act as a crossing guard at the locations with missing guards or guards that have called out. In South Orange, crossing guards have an app to “check-in” with the Police Department upon arriving at their post. The South Orange Police Department does fill-in at posts when guards are not present.

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A summary evaluation is found below based upon our initial evaluation. It is recommended that this initial evaluation be shared with the local police departments to further explore if any remedies to alleviate hazardous rounds or if additional data may result in a route to be newly classified as a hazardous route.

## **Roadways Evaluated for Safety Concerns**

The following is a list of the roadways that have been evaluated for safety concerns:

1. Prospect Street
2. Parker Avenue
3. Valley Street
4. Walton Avenue
5. South/North Ridgewood Road
6. North/South Wyoming Avenue
7. Baker Street
8. Jefferson Avenue
9. Boyden Avenue
10. Irvington Avenue
11. Scotland Road
12. South Orange Avenue (Route 510)
13. Ward Place
14. Centre Street

## **Executive Summary of Results**

The majority of the routes studied has adequate or enhanced pedestrian infrastructure which is key to ensuring safe routes for students to school. This includes, but is not limited to having sidewalks on both sides of the roadway, wider than minimum width sidewalks (4 feet) or a grass buffer separating vehicular traffic from pedestrians, high intensity crosswalks, high intensity or active pedestrian warning signage, and stop control or signal controlled intersection. The majority of the roadways as part of this study were one lane in each direction and of lower speeds, which also helps reduce potential hazardous conditions. Stretches of roadways that were deemed hazardous often had sidewalk only on one side of the street, with sparsely or an absence of locations for safe crossings to the side of the street with the sidewalk. It is noted that most of the higher volume and wider roadways such as South Orange Avenue (Route 510) and Route 124, had crossing guards present. If those crossing guards were not present those roadways would be considered part of hazardous routes.

1. Prospect Street – Not a Hazardous Route
2. Parker Avenue – Not a Hazardous Route
3. Valley Street – West Side between Parker Avenue and 4<sup>th</sup> Street is hazardous due to the numerous commercial driveways, however safe crossings to east side is available.
4. Walton Avenue – East side from Audley Street to Maplewood Avenue and crossing of Maplewood Avenue is hazardous, but limited impact. Would improve with crosswalk and signage for Maplewood Avenue crossing.
5. South/North Ridgewood Road – Children walking along western side South Ridgewood Road between Clinton Avenue and Lenox Avenue for extended periods would be a hazardous condition. Would not recommend children crossing Ridgewood Road at Curtiss Place without additional visibility and/or crossing guard as there is a sight distance concern with a vertical curve.
6. North/South Wyoming Avenue – Children on Crestwood, Tower Drive, Lewis Drive, and Woodhill Drive would have a hazardous route to get to the east side of North. Crossing from Twin Oak Road,

Redmond Road, Blanchard Road, and Brookwood Road across North Wyoming Avenue. Some of the walking paths could be diverted to Tillou Road or South Orange Avenue depending on their path of travel.

7. Baker Street – Not a Hazardous Route
8. Jefferson Avenue – Not a Hazardous Route
9. Boyden Avenue – Not a Hazardous Route
10. Irvington Avenue – Not a Hazardous Route
11. Scotland Road – Not a Hazardous Route
12. South Orange Avenue (Route 510) – Would be a Hazardous Route without Crossing Guards
13. Ward Place – Not a Hazardous Route
14. Centre Street – Not a Hazardous Route

**TABLE IA – Prospect Street (South Orange Avenue to Irvington Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	South Orange Avenue and Irvington Avenue (Signalized)
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalks provided on both sides of the roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant curvature
<b>Roadway Width</b>	Generally a three lane roadway section – one lane in each direction with a turn lane.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 4 Ped/Bike Accidents at South Orange Avenue, 2 Ped/Bike Accidents at Irvington Avenue
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	High Volume Intersection at South Orange Avenue has Crossing Guards. Without Crossing Guards that would be a hazardous intersection.

**TABLE 1B – Prospect Street (Irvington Avenue to Parker Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	Approximately 9,000 Vehicles Per Day, 600-700 vehicles between 7 AM and 8 AM, 800-900 vehicles between 8 and 9 AM, 700-800 vehicles between 3 PM and 4 PM
<b>Crossing Types (if Applicable)</b>	Irvington Avenue (Signalized)  Parker Avenue (Signalized)  Prospect Street is the Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH posted speed limit. Actual roadway speeds during school arrival the 10 MPH Pace Range is 21-30 MPH.
<b>Existence and Adequate Sidewalk</b>	Both sides - 4 to 5 foot sidewalks, grass buffer between curblines
<b>Roadway Width</b>	1 lane each direction, shoulder/parking lane
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Garfield Place and Prospect Street only intersection affected by horizontal sight distance. No issue at other intersections
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 5 Ped/Bike Accidents, Additional 2022 Accident at Garfield/Prospect
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 1C – Prospect Street (Parker Avenue to Route 124)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	Around 10,000 VPD
<b>Crossing Type (if Applicable)</b>	Tuscan Road (Signalized) Harvard Avenue (All-Way Stop) Route 124 (Signalized) Prospect Street is the Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Both sides - 4 to 5 foot sidewalks, grass buffer between curblines
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Horizontal Curvature affects sight distance at Sommer Avenue – but no pedestrian crossing at that location
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 1 Ped/Bike Accident
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 2A – Parker Avenue (Maplewood Avenue to Valley Street)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	<p>Parker Avenue intersects Valley Street at a signalized intersection.</p> <p>Parker Avenue operates under stop control at intersection with Maplewood Avenue</p> <p>Parker Avenue is a Through Street at all other Stop Controlled Intersections</p>
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk along both sides of the roadway other than 2 non-consecutive properties on the north side. “Desire Path” worn into vegetation where sidewalk is missing.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No Horizontal Curvature, Vertical curvature does not effect pedestrian sight distance
<b>Roadway Width</b>	Generally 1 lane each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 1 Ped/Bike Accident
<b>Train Tracks</b>	Grade Separated
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 2B – Parker Avenue (Valley Street to Clinton Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	7,000 vehicles per day
<b>Crossing Type (if Applicable)</b>	Parker Avenue intersects Valley Street, Prospect Street, and Boyden Avenue at signalized intersections.  Parker Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalks provided on both sides of the roadway, with a grass buffer.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Generally gradual curvature that does not effect pedestrian sight distance
<b>Roadway Width</b>	Generally one lane in each direction with areas of on-street parking
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 7 Bike/Ped Accidents
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 3A – Valley Street (Millburn Avenue to Oakland Road)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	19,000 Vehicles Per Day
<b>Crossing Type (if Applicable)</b>	Valley Street intersects Millburn Avenue, Tuscan Road, Baker Street, Oakview Avenue, and Oakland Road at signalized intersections.  Valley Street is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH/30 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk is provided along both sides of the roadway with a grass buffer
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Gradual curvature, no impacts to sight distance of pedestrians
<b>Roadway Width</b>	Generally one lane in each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 7 Bike/Ped Accidents
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	Intersection with Millburn Avenue is a busy roadway.



**TABLE 3B – Valley Street (Oakland Road to South Orange Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	12,000-16,000 vehicles per day 700-800 vehicles between 7 AM and 8 AM, 800-900 vehicles between 8 AM and 9 AM, 900-1,000 vehicles between 3 PM and 4 PM
<b>Crossing Type (if Applicable)</b>	Valley Street intersects Oakland Road, Parker Avenue, Third Street, and South Orange Avenue at signalized intersections.  Valley Street is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH Posted Speed, Actual roadway speeds during school arrival the 10 MPH Pace Range is 21-30 MPH.
<b>Existence and Adequate Sidewalk</b>	Sidewalk provided along both sides of the roadway, typically where no buffer is provided the sidewalk with wider in “downtown” sections.  A lot of commercial driveways between Parker Avenue and 4 <sup>th</sup> Street along the western side of the roadway.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Limited curvature that does not affect pedestrian sight distance
<b>Roadway Width</b>	Generally one lane in each direction, occasional areas of on-street parking
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 17 Bike/Ped Accidents (10 of which occurred at 1 <sup>st</sup> Street and South Orange Avenue)
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	High Volume Intersection at South Orange Avenue has Crossing Guards. Without Crossing Guards that would be a hazardous intersection.

**TABLE 4 – Walton Avenue (Jefferson Avenue to South Ridgewood Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	4,000-7,000 Vehicles Per Day
<b>Crossing Type (if Applicable)</b>	Walton Avenue is Stop Controlled at Jefferson Avenue  Walton Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	Posted Speed Limit 25 MPH / Actual roadway speeds during school arrival the 10 MPH Pace Range is 26-35 MPH.
<b>Existence and Adequate Sidewalk</b>	Both sides - 4 to 5 foot sidewalks, grass buffer between curblines with exception of east side of Walton Avenue between Audley Street and Maplewood Avenue
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No pedestrian sight distance issues at crossings due to sight distance
<b>Roadway Width</b>	One lane in each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	None
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None
<b>Conclusion</b>	<b>East side from Audley Street to Maplewood Avenue and crossing of Maplewood Avenue is hazardous, but limited impact. Would improve with crosswalk and signage for Maplewood Avenue crossing.</b>

**TABLE 5A – South Ridgewood Road (Clinton Avenue to Lenox Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	All-Way Stop at Lenox Avenue  South Ridgewood Road is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	15 MPH and 25 MPH
<b>Existence and Adequate Sidewalk</b>	4 to 5 foot sidewalk with grass buffer on both sides.  No sidewalk on western side of the street except between Curtiss Place and Hickory Drive. 4 to 5 foot sidewalk with grass buffer on eastern side.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Generally gradual curves, concern with crossing of Curtiss Place due to proximity of vertical curve when driving in the southbound direction
<b>Roadway Width</b>	1 lane each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 3 Ped/Bike Accidents
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None
<b>Conclusion</b>	<b>Children walking along western side for extended periods would be a hazardous condition.</b>  <b>Would not recommend children crossing Ridgewood Road at Curtiss Place without additional visibility and/or crossing guard.</b>

**TABLE 5B – South Ridgewood Road (Lenox Avenue to Walton Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	All-Way Stop at Lenox Avenue
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	4 to 5 foot sidewalk with grass buffer on both sides.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Significant horizontal and vertical curvature between Edgewood Terrace and Walton Avenue, however no pedestrian crossing is affected – there is no crosswalk across Ridgewood Road at Rynda Road..
<b>Roadway Width</b>	1 lane each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	None
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 5C – South Ridgewood Road (Walton Avenue to South Orange Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	<p>South Ridgewood Avenue at South Orange Avenue is under signal control.</p> <p>South Ridgewood Avenue is under Stop Control at the intersection at Walton Avenue</p> <p>South Ridgewood Avenue is a Through Street at all other Stop Controlled Intersections</p>
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk provided on both sides of roadway. Where grass buffer does not exist, there is greater than 4 feet sidewalk
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant curvature that impacts pedestrian sight distance
<b>Roadway Width</b>	Generally one lane in each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 1 Ped/Bike Accident at South Orange Avenue
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	High Volume Intersection at South Orange Avenue has Crossing Guards. Without Crossing Guards that would be a hazardous intersection.

**TABLE 5D – North Ridgewood Road (South Orange Avenue to Walnut Court)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	North Ridgewood Avenue at South Orange Avenue is under signal control.  South Ridgewood Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Generally sidewalk along both sides of the roadway except between Tillou Road and Beech Spring Road and between Melrose Place and Walnut Court on the westside of the roadway.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Curvature does not impact pedestrian visibility
<b>Roadway Width</b>	Generally 1 lane in each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 2 Ped/Bike Accidents
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	High Volume Intersection at South Orange Avenue has Crossing Guards. Without Crossing Guards that would be a hazardous intersection.

**TABLE 6A – Wyoming Avenue (Clinton Avenue to South Orange Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	8,000 vehicles per day
<b>Crossing Type (if Applicable)</b>	Wyoming Avenue operations under signal control at the intersection with South Orange Avenue.  Wyoming Avenue is a Through Street at all other stop controlled intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk on western side only from Clinton Avenue to Claremont Avenue. Sidewalk on eastern side only from Claremont Avenue to approximately South Orange border. 5 foot or wider sidewalk or 4 to 5 foot sidewalk with grass buffer between South Orange border and South Orange Avenue.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant horizontal curves. Gradual vertical grade change with greatest change nearest South Orange Avenue.
<b>Roadway Width</b>	1 lane each direction with full shoulder/parking lane
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 2 Ped/Bike Accidents
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None
<b>Pedestrian Infrastructure</b>	No Crosswalks across Wyoming Avenue at Woodhill Drive, Lewis Drive and Crestwood Drive
<b>Conclusion</b>	<b>Students on Crestwood, Tower Drive, Lewis Drive, and Woodhill Drive would have a hazardous route to get to the east side of Wyoming Avenue</b>

**TABLE 6B – Wyoming Avenue (South Orange Avenue to Brookwood Road)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	10,000 – 12,000 vehicles per day
<b>Crossing Type (if Applicable)</b>	Wyoming Avenue intersects South Orange Avenue at a signalized intersection.  Wyoming Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	Actual roadway speeds during school arrival the 10 MPH Pace Range is 31-40 MPH.
<b>Existence and Adequate Sidewalk</b>	Both sides between South Orange Avenue and Overhill Road. Remainder of roadway has sidewalk with grass buffer along the eastern side of the roadway.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Gradual vertical grade change, no crossings in areas of horizontal curvature.
<b>Roadway Width</b>	1 lane each direction with generally 5-8 feet wide shoulder
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 9 Ped/Bike Accidents, 1 2022 Accident at Tillou Road
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None
<b>Pedestrian Infrastructure</b>	No crosswalks across Wyoming Avenue at Overhill Road, Twin Oak Road, Redmond Road, Blanchard Road, and Brookwood Road.
<b>Conclusion</b>	<b>Crossing from Twin Oak Road, Redmond Road, Blanchard Road, and Brookwood Road across Wyoming Avenue. Some of the walking paths could be diverted to Tillou Road or South Orange Avenue depending on their path</b>



**TABLE 7 – Baker Street (Ridgewood Road to Valley Street)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	9,000 vehicles per day
<b>Crossing Type (if Applicable)</b>	Baker Street is under stop control at Maplewood Avenue.  Baker Street intersects Valley Street at a signalized intersection.  Baker Street is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk on both sides of roadway. Sidewalk is either 4 feet wide minimum with a grass buffer or at least 6 feet wide.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Unusual geometry at Maplewood Avenue and Dunnell Road intersections and under railroad crossing.
<b>Roadway Width</b>	One lane in each direction, areas of on-street parking, and pedestrian bumpouts to reduce crossing distances.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 4 Ped/Bike Accidents
<b>Train Tracks</b>	Grade separated
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 8 – Jefferson Avenue (Ridgewood Road to Valley Street)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	<p>Jefferson Avenue is under stop control at Ridgewood Road and Valley Street.</p> <p>Jefferson Avenue intersects Maplewood Avenue at an all-way stop intersection.</p> <p>Jefferson Avenue is a Through Street at all other Stop Controlled Intersections</p>
<b>Roadway Speeds</b>	15 MPH/25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk only along north side of Jefferson Avenue between Ridgewood Road and Dunnell Road. Sidewalk on both sides of roadway east of Dunnell Road.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Vertical curve under railroad bridge, but does not impact visibility at pedestrian crossings.
<b>Roadway Width</b>	Generally 1 lane in each direction with a shoulder on the south side
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 2 Ped/Bike Accidents
<b>Train Tracks</b>	Grade Separated
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 9A –Boyden Avenue (Irvington Avenue to Elmwood Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	8,000 vehicles per day
<b>Crossing Type (if Applicable)</b>	Boyden Avenue intersects Irvington Avenue, Parker Avenue, and Elmwood Avenue at signalized intersections  Boyden Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk with grass buffer provided on both sides of the roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Minimal vertical grade change on the roadway. Horizontal curvature exists proximate near the Parker Avenue and Elmwood Avenue signalized intersections
<b>Roadway Width</b>	1 lane in each direction, generally a shoulder in the southbound direction.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 1 Ped/Bike Accident
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 9B –Boyden Avenue (Elmwood Avenue to Route 124)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	Boyden Avenue intersects Elmwood Avenue and Route 124 at signalized intersections  Boyden Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk with buffer provided on both sides of the roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant curvature
<b>Roadway Width</b>	1 lane in each direction with 2-4 foot wide shoulder
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 6 Ped/Bike Accidents (5 At Route 124)
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	High Volume Intersection at Route 124 has Crossing Guards. Without Crossing Guards that would be a hazardous intersection.

**TABLE 9C –Boyden Avenue (Route 124 to Evelyn Court)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	Boyden Avenue at Route 124 is a signalized intersection  Boyden Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk on both sides of roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Horizontal curve between Harding Street and Hughes Street but no crossing of Boyden Avenue exists in the area with difficult sight distance
<b>Roadway Width</b>	2-15 foot wide lanes
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 6 Ped/Bike Accidents
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	High Volume Intersection at Route 124 has Crossing Guards. Without Crossing Guards that would be a hazardous intersection.

**TABLE 10A –Irvington Avenue (South Orange Avenue to Norman Road)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	Irvington Avenue at Prospect Street and Tichenor Avenue/Riggs Place, Ward Place, Manor Drive/Boyden Avenue, and Norman Road are signalized intersections  Irvington Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk on both sides of roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Significant horizontal curvature in the area of Normal Road, but traffic signal mitigates pedestrian crossing concerns. All other curvature is gradual
<b>Roadway Width</b>	Primarily 1 lane in each direction with some areas of on-street parking.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 8 Ped/Bike Accidents, 2 2022 Accident with Bicyclist, 1 at Prospect Street and 1 north of Prospect Street, 1 2022 Pedestrian Accident at Prospect Street, 1 2002 Pedestrian Accident at Ward Place
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 10B –Irvington Avenue (Norman Road to Clinton Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	11,000 vehicles per day
<b>Crossing Type (if Applicable)</b>	Irvington Avenue at Norman Road and Clinton Avenue are signalized intersections  Irvington Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk on both sides of roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Significant horizontal curvature in the area of Normal Road and Clinton Avenue, but traffic signal mitigates pedestrian crossing concerns.
<b>Roadway Width</b>	Varied width near intersections
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 3 Ped/Bike Accidents,
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 11 –Scotland Road (South Orange Avenue to Randolph Place)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	9,000-15,000 vehicles per day 400-500 vehicles between 7 AM and 8 AM, 600-700 vehicles between 8 AM and 9 AM, 700-800 vehicles between 3 PM and 4 PM
<b>Crossing Type (if Applicable)</b>	Scotland Avenue at South Orange Avenue and Montrose Avenue are signalized intersections  Scotland Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	Posted Speed Limit 25 MPH / Actual roadway speeds during school arrival the 10 MPH Pace Range is 21-30 MPH.
<b>Existence and Adequate Sidewalk</b>	Sidewalks present on both sides of the roadway. North of Montrose Avenue there is no buffer between the sidewalk and the curb on the east side of the roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Generally slight gradual curvature, no curvature affects sight distance
<b>Roadway Width</b>	Generally 1 lane in each direction with a 1-3 foot shoulder
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 1 Ped/Bike Accident, 1 2022 Accident North of Taylor Place
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	High Volume Intersection at South Orange Avenue has Crossing Guards. Without Crossing Guards that would be a hazardous intersection.



**TABLE 12A – Route 510/South Orange Avenue (Glenview Road to Ridgewood Road)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	South Orange Avenue at Glenview Road, Wyoming Avenue (South and North), and Ridgewood Road are signalized intersections  South Orange Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	40 MPH / 30 MPH / 25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk present on both sides of roadway within South Orange.  Between Glenview Road and Stone Hill Drive there is no buffer area between curb and sidewalk, however there is a shoulder.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Significant grade change and curvature along roadway. Limits areas of safe crossing of South Orange Avenue.
<b>Roadway Width</b>	Varies often multiple lanes, generally with shoulders west of Harding Drive.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 1 Ped/Bike Accident
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	All intersections are High Volume Intersections. Only non-hazardous crossing condition would be at traffic signal and with Crossing Guards present.

**TABLE 12B – Route 510/South Orange Avenue (Ridgewood Road to Grove Road)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	16,000 Vehicles Per Day
<b>Crossing Type (if Applicable)</b>	South Orange Avenue at Ridgewood Road, SOPAC driveway, Sloan Street, Vose Avenue and Valley Street/Scotland Road, and Prospect Street are signalized intersections  South Orange Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	30 MPH/25 MPH
<b>Existence and Adequate Sidewalk</b>	Either significantly wide “downtown” style sidewalk or sidewalk with grass buffer is provided along both sides of the roadway.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant curvature affecting pedestrian sight distance.
<b>Roadway Width</b>	Generally one lane in each direction with additional turn lanes and parking lanes. Two lanes in each direction east of Prospect Street.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 18 Ped/Bike Accidents, 1 2022 Accident At Grove Road, 2 2022 Accident at Vose Avenue (1 Pedestrian did not follow signal)
<b>Train Tracks</b>	Grade Separated
<b>Crossing Busy Roads/Highways</b>	Only non-hazardous crossing condition for movements across South Orange Avenue would be at traffic signal and with Crossing Guards present. Minor Street “T” crossings generally are lower volume crossings.

**TABLE 12C – Route 510/South Orange Avenue (Grove Road to Holland Road)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	South Orange Avenue at Riggs Place, Ward Place, and Seton Drive/Centre Street are signalized intersections  South Orange Avenue is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	30 MPH/25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalks are provided along both sides of the roadway with a grass buffer between the curb and the sidewalk.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	Significant horizontal curvature in the area of Seton Drive, but traffic signal mitigates pedestrian crossing concerns.
<b>Roadway Width</b>	Generally two travel lanes in each direction with occasional turn lanes.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 7 Ped/Bike Accidents, 1 2022 Accident with a bicyclist
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	Only non-hazardous crossing condition for movements across South Orange Avenue would be at traffic signal and with Crossing Guards present. Minor Street “T” crossings generally are lower volume crossings.

**TABLE 13A – Ward Place (Montague Place to Irvington Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	Ward Place at Irvington Avenue are signalized intersections.  Ward Place and Montague Place is an all-way stop intersection.  Ward Place is a through street at all other intersections.
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk with a grass buffer is provided along both sides of the roadway.
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant curvature.
<b>Roadway Width</b>	Less than 30 feet in width with one lane in each direction and parking on one side.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 0 Ped/Bike Accident, 1 2022 Accident
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	None

**TABLE 13B – Ward Place (Irvington Avenue to South Orange Avenue)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	8,000-11,000 Vehicles Per Day
<b>Crossing Type (if Applicable)</b>	Ward Place at Irvington Avenue and South Orange Avenue are signalized intersections.  Ward Place is a through street at all other intersections.
<b>Roadway Speeds</b>	Posted Speed Limit 25 MPH / Actual roadway speeds during school arrival the 10 MPH Pace Range is 26-35 MPH and 21-30 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk with grass buffer is provided along both sides of the roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant grade difference is affecting sight distance.
<b>Roadway Width</b>	Generally one lane in each direction with a shoulder or parking lane.
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 1 Ped/Bike Accident
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	Crossing at South Orange Avenue is a high volume crossing. Would need a crossing guard present to be a non-hazardous crossing.

**TABLE 14 – Centre Street (South Orange Avenue to Finlay Place)**

<b>Reviewed Characteristic</b>	<b>Observation</b>
<b>Roadway Volumes</b>	
<b>Crossing Type (if Applicable)</b>	Centre Street at South Orange Avenue is a signalized intersection  Centre Street is a Through Street at all other Stop Controlled Intersections
<b>Roadway Speeds</b>	25 MPH
<b>Existence and Adequate Sidewalk</b>	Sidewalk with grass buffer is provided along both sides of the roadway
<b>Sight Distance Concerns (Horizontal/Vertical Curvature)</b>	No significant grade difference is affecting sight distance.
<b>Roadway Width</b>	Generally 1 lane in each direction
<b>Bridges/Overpasses</b>	None
<b>Accident History</b>	NJDOT – 3 Ped/Bike Accidents
<b>Train Tracks</b>	None
<b>Crossing Busy Roads/Highways</b>	Crossing at South Orange Avenue is a high volume crossing. Would need a crossing guard present to be a non-hazardous crossing.

Please do not hesitate to contact our office if there are any questions.

Best regards,



Matthew J. Seckler, PE, PP, PTOE  
**Stonefield Engineering and Design, LLC**