



District Department of Transportation

Traffic Safety Review

**Wisconsin Avenue between River Road NW and Whole Foods
Driveway/Best Buy Entrance**

DDOT Traffic Engineering and Safety Team

June 15, 2015

This memorandum summarizes the findings of a preliminary engineering safety analysis into the existing pedestrian safety concerns along Wisconsin Avenue, NW at the intersections with River Road, NW and the Whole Foods driveway/Best Buy entrance. The safety concerns were brought to DDOT TOA's attention in an email from the Office of Councilmember Mary Cheh on March 23, 2015. The email requested a review of the pedestrian safety concerns on Wisconsin Avenue, NW, as well the installation of pavement markings.

The safety concern is primarily concentrated on the southeastbound right-turn from River Road, NW to Wisconsin Avenue, NW. The concerns note that drivers frequently turn right onto Wisconsin Avenue, NW and do not stop at the red-light at the adjacent intersection with the Whole Foods driveway. This creates a conflict between vehicles traveling southbound (through the red light) and pedestrians crossing Wisconsin Avenue, NW (when a pedestrian signal is provided to cross).

During a site visit on Wednesday, April 1, 2015, additional safety concerns were noted. This includes the existing pedestrian crossing on the northbound approach of Wisconsin Avenue, NW across the Whole Foods driveway; there are no pedestrian markings across the driveway, and pedestrian signals are not provided. Additionally, the driveway (adjacent to the Domino's Pizza) at the intersection of Wisconsin Avenue, NW and River Road, NW is not incorporated into the existing signal; there are no pedestrian markings across the alley, and pedestrian signals are not provided. Lastly, north of River Road, NW, access to an existing CVS retail location is provided on the east side of Wisconsin Avenue, NW; the sidewalks are narrow, with pedestrian obstructions, and the driveways are closely-spaced.

This memorandum includes the following information:

- An overview of the study area;
- An outline of the background studies that include the study area;
- A review of the existing crash data;
- An evaluation of the safety concerns at each intersection; and
- A summary of the proposed recommendations, including both short- and long-term improvements, in response to the submitted request.

1. Study Area Overview

The existing study area consists of Wisconsin Avenue, NW between River Road, NW and the Whole Foods driveway/Best Buy entrance. To the north, Wisconsin Avenue, NW intersects Brandywine Street, NW; to the south, Wisconsin Avenue, NW intersects Albermarle Street, NW. The study area is located in the Tenleytown neighborhood, adjacent to the Tenleytown Metrorail Station. Figure 1 shows the boundaries of the study area.

Wisconsin Avenue, NW is oriented north-south with three travel lanes in each direction. The curb lane on east side of Wisconsin Avenue, NW is a travel lane during the afternoon peak period and a parking lane and loading zone during the rest of the day. The curb lane on the west side of Wisconsin Avenue, NW does not allow on-street parking in the study area due to the presence of bus stops at River Road, NW and Albermarle Street, NW.



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Wisconsin Avenue, NW is classified by DDOT as a principal arterial and carries an estimated Average Annual Daily Traffic (AADT) volume of 34,000 vehicles in the study area. River Road, NW is classified as a minor arterial and carries an estimated AADT volume of 8,300 vehicles in the study area. South of the study area, Albemarle Street, NW carries an estimated AADT volume of 3,900 vehicles and is classified as a collector roadway. To the north of the study area, Brandywine Street, NW is classified as a local roadway; no AADT estimates are available.

Figure 2 shows the existing traffic controls in the study area. The intersections of Wisconsin Avenue, NW with River Road, NW and with the Whole Foods driveway are signalized. Crosswalks are provided to cross the northbound approach of Wisconsin Avenue, NW at the Whole Foods driveway and to cross the southbound approach of Wisconsin Avenue, NW at the intersection with River Road; NW. Additional crosswalks are located at the adjacent signalized intersections at Albemarle and Brandywine Streets, NW.

The study area along Wisconsin Avenue, NW is lined with commercial development on the east and west sides of the street. Two schools are located adjacent to the study area: Janney Elementary School and Wilson High School. The American University Tenley Campus is also located less than a quarter-mile from the study area. The Wilson Aquatic Center and Tenley-Friendship Neighborhood Library are located adjacent to the study area.



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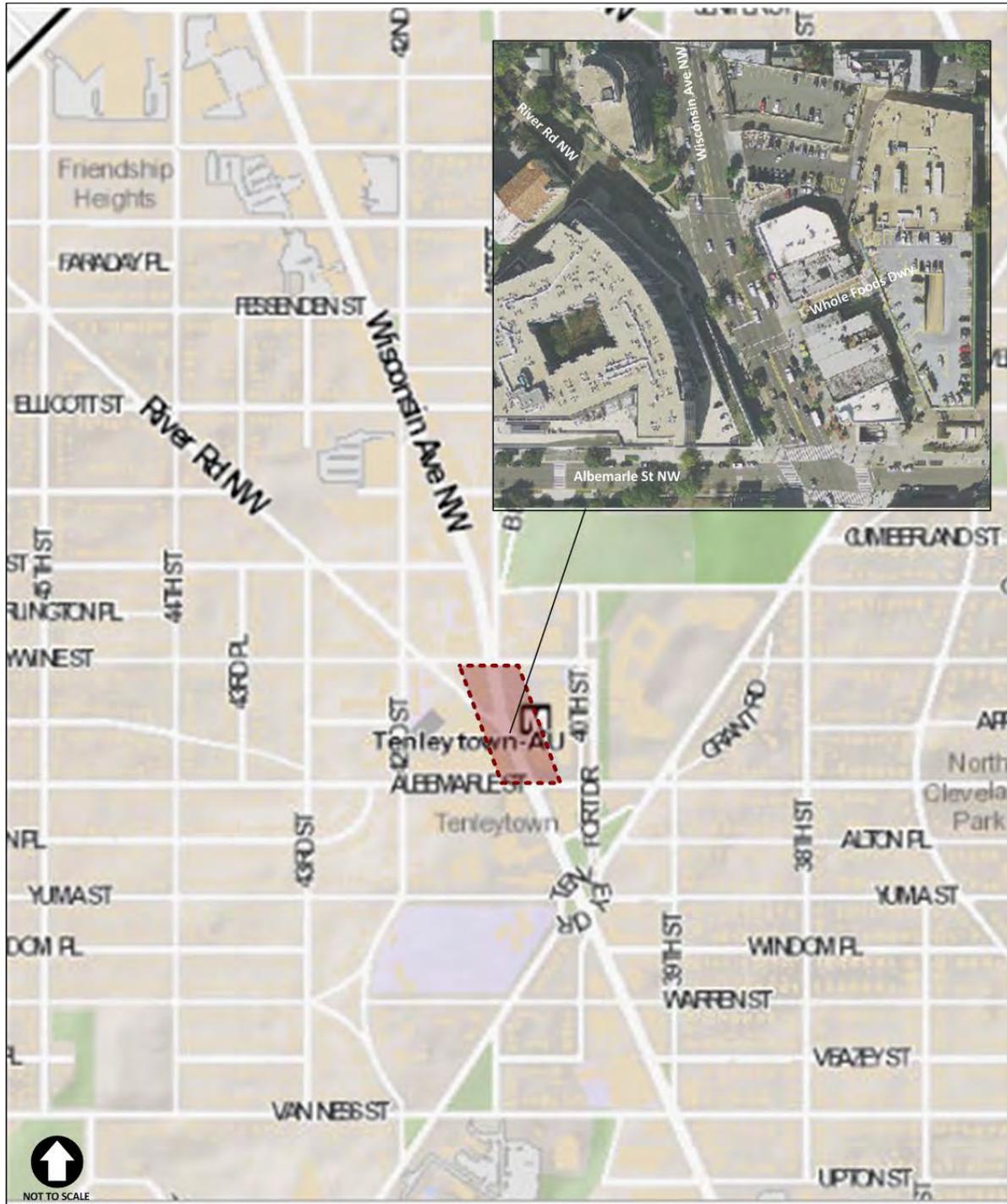


Figure 1: Study Area



Figure 2: Existing Intersection Controls

As noted previously, the study area is located adjacent to the Tenleytown Metrorail Station. The Tenleytown station serves the Red line, with portals located on the northeast corner of the intersection of Wisconsin Avenue, NW and Albermarle Street, NW and on the west side of Wisconsin Avenue adjacent to the Best Buy entrance. Several WMATA Metrobus lines travel along Wisconsin Avenue, NW, including the 30, 31, 33, 37, 96, N2, and X3 routes. Traveling northbound, Metrobus stops are located at Albermarle Street, NW and Brandywine Street, NW. Traveling southbound, Metrobus stops are located at River Road, NW and Albermarle Street, NW. Additional Metrobus routes connect to the Tenleytown Metrorail Station on 40th Street, NW and Fort Drive, NW.

2. Background Studies

The existing study area is included in several background studies, including:

- Wisconsin Avenue Corridor Transportation Study, October 2005;
- District of Columbia Pedestrian Master Plan, April 2009;
- Rock Creek West II Livability Study, February 2011;
- Tenleytown-AU Metrorail Station Access Improvements Study, January 2014; and
- moveDC Multimodal Long-Range Transportation Plan, October 2014.

This section contains a summary of each of these studies as they pertain to the study area.

Wisconsin Avenue Corridor Transportation Study

The Wisconsin Avenue Corridor Transportation Study was published in October 2005 to investigate traffic management and pedestrian safety improvements in the Wisconsin Avenue, NW corridor, in response to citizens' concerns. The main goals of the Study were to examine the existing and future traffic conditions to identify problems and to determine short- and long-term traffic management and infrastructure improvements to address those problems. Of note, the Study was completed before the construction of the Cityline development, on the west side of Wisconsin Avenue, NW between Albermarle Street, NW and River Road, NW.

Figure 3 and Figure 4 show a summary of the study area recommendations from the Study. As shown, the Study includes the following recommendations:

- Restripe pedestrian crossings at intersection of Wisconsin Avenue, NW and River Road, NW;
- Modify curbing layout at the intersection of Wisconsin Avenue, NW and River Road, NW to improve approach angle, turning movement, and pedestrian crossing length;
- Install signal mast arm at the intersection of Wisconsin Avenue, NW and the Whole Foods driveway;
- Install "No Parking signs" at the intersection of Wisconsin Avenue, NW and the Whole Foods driveway; **(this recommendation has been implemented)**



- Restripe pedestrian crossings at the intersection of Wisconsin Avenue, NW and the Whole Foods driveway; **(this recommendation has been implemented)**
- Install pedestrian count down signal across the Whole Foods driveway; and
- Increase radius for right-turn movements from northbound Wisconsin Avenue, NW to Whole Foods driveway.

District of Columbia Pedestrian Master Plan

The District of Columbia Pedestrian Master Plan (Master Plan) was published in April 2009 with two primary goals: 1) to reduce the number of pedestrians killed and injured in crashes with motor vehicles; and 2) to increase pedestrian activity by making walking a comfortable and accessible mode of travel throughout all parts of the District. The Master Plan identified one arterial in each of the District's eight wards; the Wisconsin Avenue, NW corridor from Western Avenue, NW to Woodley Road, NW was chosen as the Priority Pedestrian Corridor for Ward 3.

Figure 5 shows a summary of the study area recommendations from the Master Plan. As shown, the Master Plan includes the following recommendations:

- Build curb extensions on River Road, NW at the intersection with Wisconsin Avenue, NW;
- Stripe high visibility crosswalk across southbound Wisconsin Avenue, NW at River Road, NW;
- Stripe high visibility crosswalk across northbound Wisconsin Avenue, NW at the Whole Foods driveway; **(this recommendation has been implemented)**
- Stripe high visibility crosswalks along northbound Wisconsin Avenue, NW north of River Road at the existing CVS driveways;
- Stripe high visibility crosswalk across the Whole Foods driveway at Wisconsin Avenue, NW;
- Reconstruct curb ramps for ADA at crosswalk across the Whole Foods driveway at Wisconsin Avenue, NW;
- Restrict right-turn on red at all times on River Road, NW at Wisconsin Avenue, NW;
- Restrict right-turn on red at all times on Whole Foods driveway at Wisconsin Avenue, NW; **(this recommendation has been implemented)**
- Create three-foot minimum clear sidewalk width along northbound Wisconsin Avenue, NW north of River Road at the existing CVS driveways;
- Narrow southern CVS driveway on Wisconsin Avenue, NW north of River Road, NW;
- Re-grade and remove railing on northern CVS driveway on Wisconsin Avenue, NW north of River Road, NW; and
- Trim vegetation along northbound Wisconsin Avenue, NW north of River Road, NW.

Rock Creek West II Livability Study

The Rock Creek West II Livability Study (RCW2 Study) was published in February 2011 to take a big picture look at the street area network and identify concrete actions to increase transportation and safety options for all users in the study area. The RCW2 Study identified several focus areas for detailed study, including River Road, NW from Western Avenue, NW to Wisconsin Avenue, NW due to awkward intersection configurations and speeding motorists.

Figure 6 shows a summary of the study area recommendations from the RCW2 Study. As shown, this includes the following recommendations:



- Add bicycle facility along River Road, NW from Western Avenue, NW to Wisconsin Avenue, NW; and
- Place speed cameras along River Road, NW between Garrison Street, NW and Wisconsin Avenue, NW.

Tenleytown-AU Metrorail Station Access Improvements Study

Phase 1 of the Tenleytown-AU Metrorail Station Access Improvements Study was published in January 2014 to identify station access improvements and to redesign WMATA owned property to better accommodate all modes of access to the station, specifically on Fort Drive, NW and 40th Street, NW. The Study outlines three concepts to improve the circulation of vehicles, bicyclists, and pedestrians along Fort Drive, NW and 40th Street, NW; one of these concepts will be chosen for further study by WMATA, DDOT, and City officials for implementation.

The Study outlines the following improvements to be implemented to improve pedestrian safety on the Wisconsin Avenue, NW side of the station area from the Wisconsin Avenue Corridor Transportation Study:

- Restripe pedestrian crosswalks across Wisconsin Avenue, NW to current DDOT standards at River Road, NW and the Whole Foods driveway;
- Upgrade existing non-conforming wheel chair ramps to improve accessibility;
- Replace faded or missing pavement markings to improve visibility and safety; and
- Install pedestrian count down signals across the Whole Foods driveway.

Additionally, the study outlines the following recommendations:

- Improve and repair the existing station area crosswalk markings and sidewalk pavement which are in a state of disrepair; and
- Add stop bars and/or markings at the driveway exits surrounding the east station entrance in order to reduce auto-pedestrian conflicts, particularly along Wisconsin Avenue, NW.

moveDC Multimodal Long-Range Transportation Plan

The moveDC Multimodal Long-Range Transportation Plan was published in October 2014 to outline the vision and goals for the District's transportation future. The primary vision of the moveDC plan is to provide a world-class transportation system, make the city more livable and sustainable, and offer everyone in the District exceptional travel choices. The goals of the moveDC plan are to achieve 75% of all commute trips in the District by non-auto modes, maximize system reliability and capacity for moving people and goods, support neighborhood vitality and economic development, achieve zero fatalities and serious injuries on the District transportation network, reinforce the District's historic landscapes and quality of neighborhood public space, maximize reliability for all District transportation infrastructure by investing in maintenance and asset management, and invest in transportation to achieve outcomes within the plan horizon.

The moveDC Plan does not outline any specific recommendations for the study area.

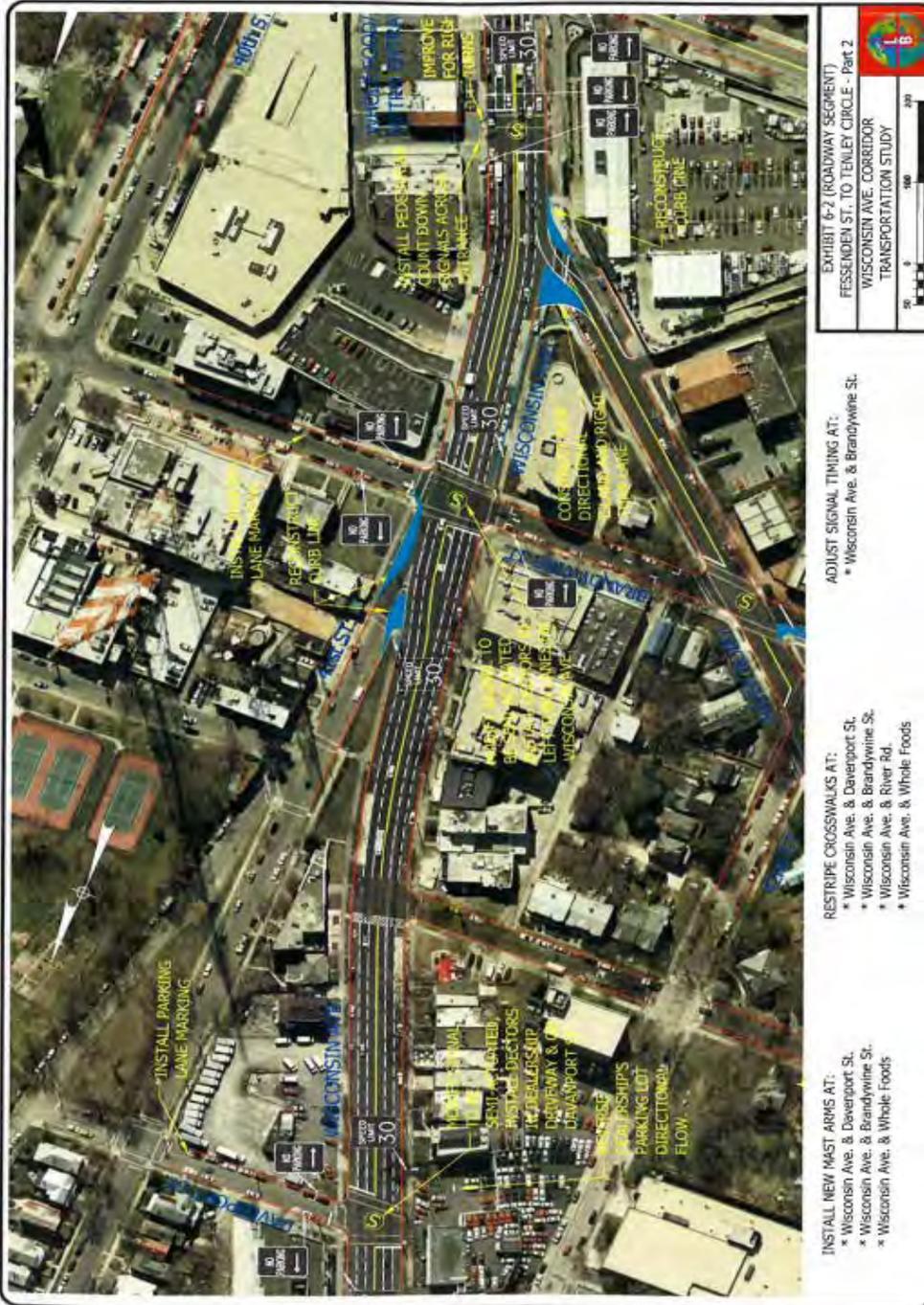


Figure 3: Study Area Recommendations from Wisconsin Avenue Corridor Transportation Study

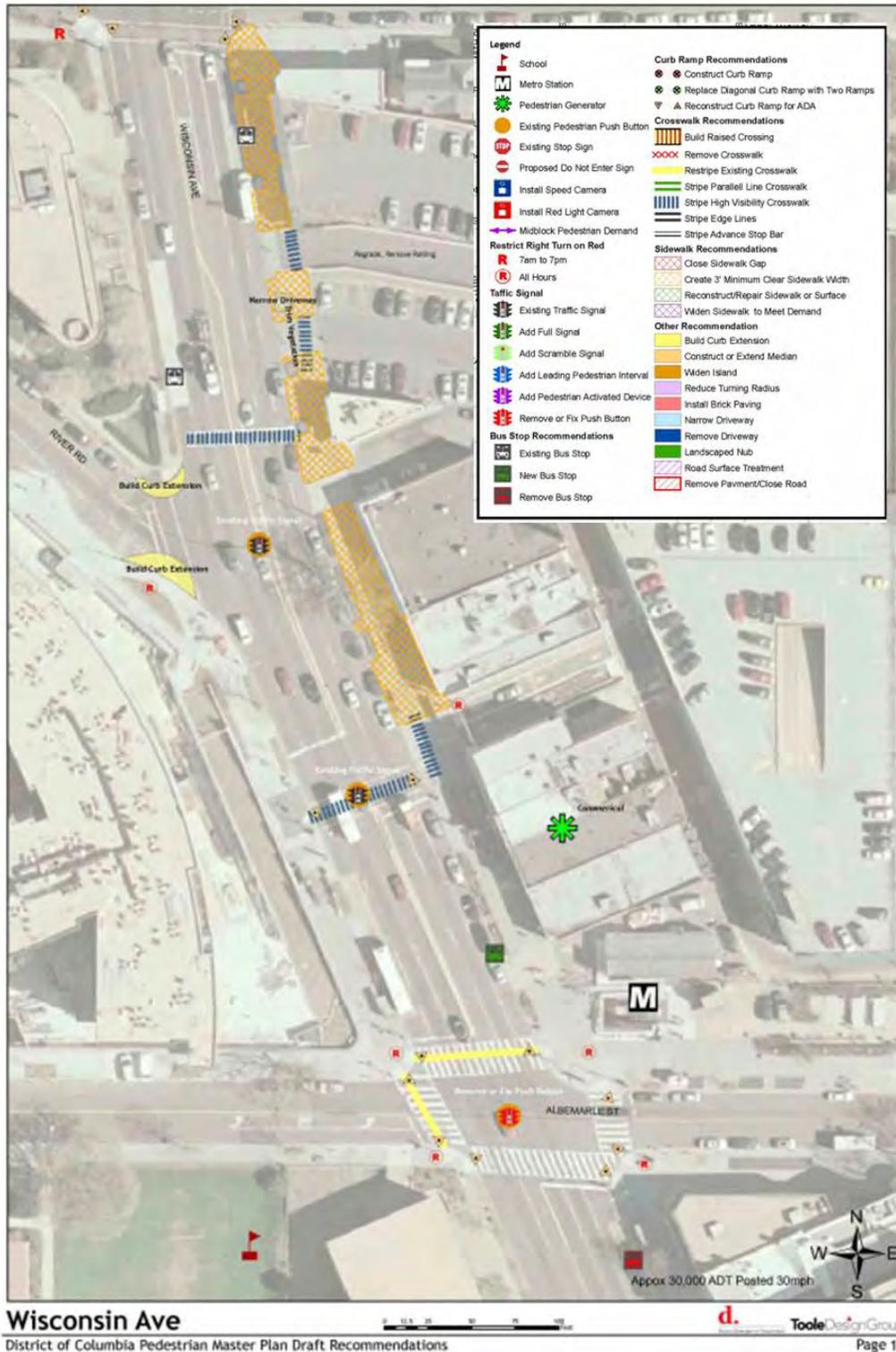


Figure 4: Study Area Recommendations from DC Pedestrian Master Plan

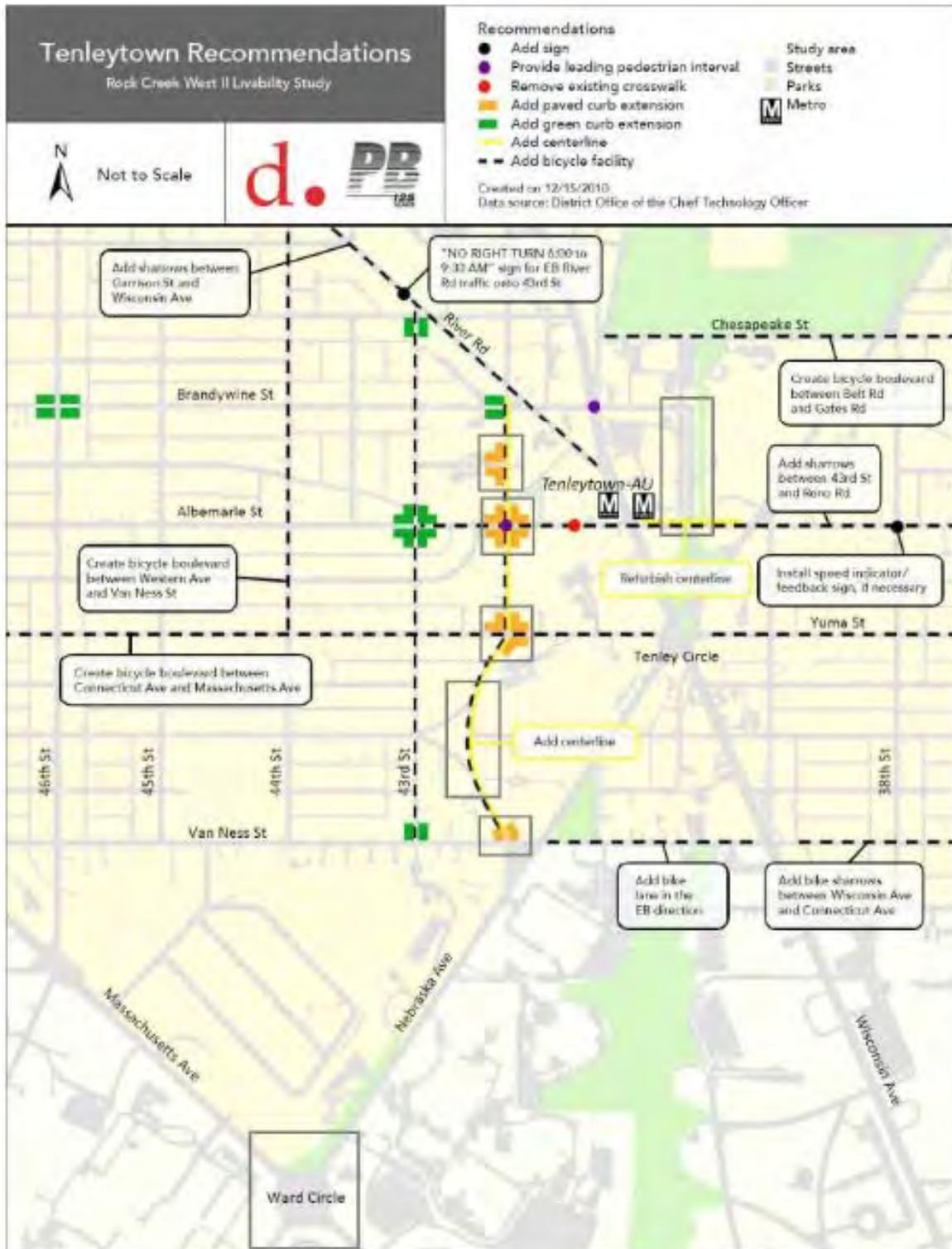




Figure 5: Study Area Recommendations from Rock Creek West II Livability Study

3. Existing Crash Data

Crash data was examined for the study intersections for the three-year period of 2012 through 2014. The crash data provides a summary of the date and time of the accident, the location, the type of accident (right-angle, rear-end, etc.), the number of vehicles and pedestrians involved, and the number of injuries that occurred.

Table 1 shows a breakdown of the number of accidents and resulting injuries at each intersection along Wisconsin Avenue, NW, as well as the number of pedestrians and bicycles involved. Over the three-year period, 41 accidents were recorded at the intersection of Wisconsin Avenue, NW and Albermarle Street, NW. These accidents resulted in a total of 11 injuries. Of the 41 accidents, four pedestrians and two bikes were involved. At the intersection of Wisconsin Avenue, NW and River Road, NW, 19 accidents were reported, which resulted in six injuries. Of the 19 accidents, three pedestrians, one bike, and one motorcycle were involved.

Table 1: Summary of Crash Data

Intersection	Number of Accidents	Number of Injuries	Number of Pedestrians Involved	Number of Bicycles Involved
Wisconsin Avenue, NW and Albermarle Street, NW	41	11	4	2
Wisconsin Avenue, NW and River Road, NW	19	6	3	1

As shown in Table 1, the intersection of River Road, NW and the Whole Foods driveway is not included in the DDOT crash database. Therefore, the number of accidents recorded along Wisconsin Avenue, NW between Albermarle Street, NW and River Road, NW were compiled. Over the three-year period, 53 accidents were recorded along the Wisconsin Avenue, NW between Albermarle Street, NW and River Road, NW. These accidents resulted in a total of 16 injuries. Of the 53 accidents, six pedestrians, three bikes, and one motorcycle were involved.

Of note, as the Wisconsin Avenue, NW approaches to the intersections with Albermarle Street, NW and River Road, NW are included in this segment, the number of accidents recorded along this segment also includes accidents recorded at each intersection, duplicating the number of accidents reported.

The *Traffic Safety Statistics Report for the District of Columbia (2010-2012)*, published in March 2014, ranks the high hazard intersections based on crash rate, crash cost, crash frequency, and composite index. None of the study area intersections are identified in the DDOT list of top one hundred high hazard locations.



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4. Review of Safety Concerns

As noted previously, the intersection of Wisconsin Avenue, NW and River Road, NW is signalized. The intersection is programmed to provide two phases: the first phase provides green time for north-south movement along Wisconsin Avenue, NW and pedestrians to cross River Road, NW; and the second phase provides green time for River Road, NW and for pedestrians to cross the southbound approach of Wisconsin Avenue, NW. Photo 1 shows the River Road, NW approach, and Photo 2 shows the southbound approach of Wisconsin Avenue, NW.

As shown in the photos, pedestrian signals and ADA ramps are provided at the crosswalks across southbound Wisconsin Avenue, NW and across River Road, NW. However, the crosswalks across are striped only as parallel lines.

The existing driveway, as shown in Photo 3, that is constructed as the fourth leg of the intersection does not have any signal heads for outbound movements; drivers exiting the driveway are not provided with an indication of a green signal. Pedestrian signals are also not provided to cross the driveway. Additionally, while the existing driveway appears wide enough to accommodate inbound and outbound vehicles, the angled parking adjacent to the Domino's Pizza is located on the left side of the driveway.



Photo 1: River Road, NW at Wisconsin Avenue, NW



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Photo 2: Looking Southbound on Wisconsin Avenue, NW at River Road, NW



Photo 3: Driveway at Intersection of River Road, NW and Wisconsin Avenue, NW

The intersection of Wisconsin Avenue, NW and the Whole Foods driveway is signalized. The existing intersection is controlled by the same signal controller as the intersection of Wisconsin Avenue, NW and Albermarle Street, NW. The intersection is programmed to provide two phases: the first phase provides green time for north-south movement along Wisconsin Avenue, NW; and the second phase



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provides green time vehicles to enter (southbound left-turn) and exit (westbound right-turn only) the Whole Foods driveway. The second phase also provides time for pedestrians to cross the northbound approach of Wisconsin Avenue, NW. Photo 4 and Photo 5 show the north- and southbound approaches of Wisconsin Avenue, NW, respectively.

Photo 6 and Photo 7 show the existing driveway from Wisconsin Avenue, NW. The existing driveway is configured as one lane inbound and one lane outbound. As noted, inbound movements are allowed from both directions of Wisconsin Avenue, NW (southbound left-turn and northbound right-turn); however, exiting the driveway, vehicles are prohibited from turning left and must turn right to northbound Wisconsin Avenue, NW.

As shown in the photos, pedestrian signals are provided at the crosswalk across northbound Wisconsin Avenue, NW. Additionally, ramps are provided at the crosswalk, but they are not ADA compliant. Similar to the intersection with River Road, NW, pedestrian signals are not provided to cross the Whole Foods driveway. Of note, the existing crosswalk across the northbound approach of Wisconsin Avenue, NW (shown in Photo 6) has been striped as a high-visibility ladder crosswalk, which is not shown in the photo.



Photo 4: Looking Northbound on Wisconsin Avenue, NW at Whole Foods Driveway



Photo 5: Looking Southbound on Wisconsin Avenue, NW at Whole Foods Driveway

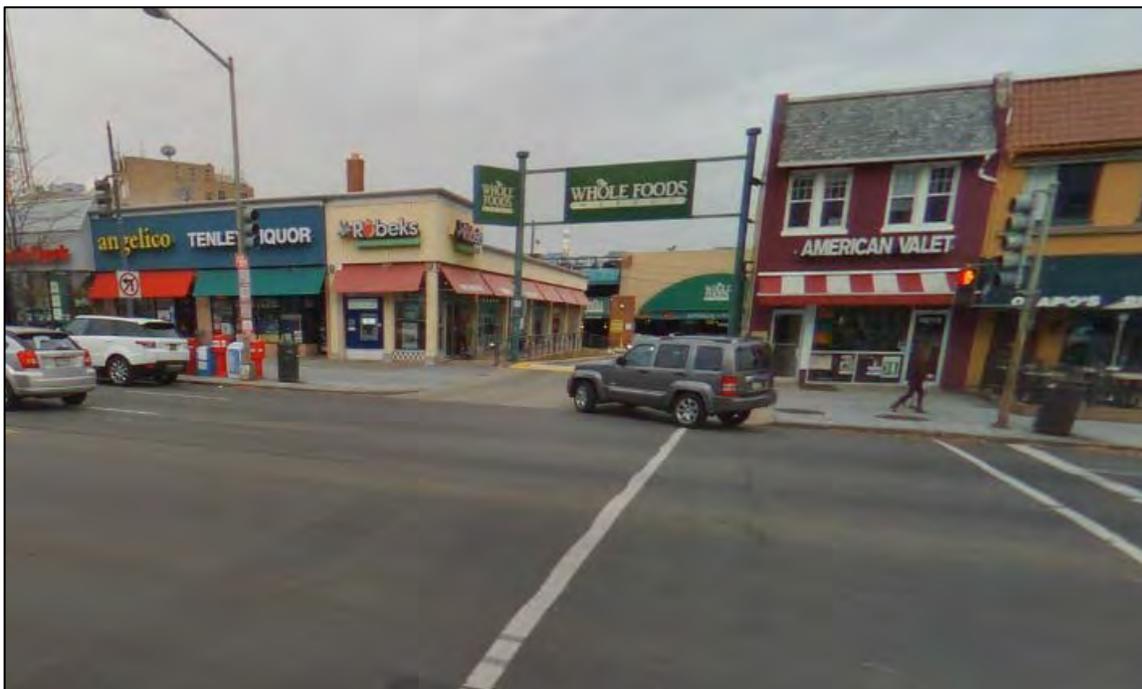


Photo 6: Whole Foods Driveway at Wisconsin Avenue, NW

During the site visit, drivers were observed not complying with the existing no right-turn on red restriction for the Whole Foods driveway; drivers were observed to pull past the stop bar and block the sidewalk. Additionally, drivers making the northbound right-turn into the driveway were observed driving over the crosswalk ramp to execute the turn maneuver.



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On Wisconsin Avenue, NW, north of River Road, NW, there are two closely-spaced intersections that provide access to the CVS located on the southeast corner of Wisconsin Avenue, NW and Brandywine Street, NW, as shown in Photo 8. Photo 9 shows the existing narrow sidewalk along northbound Wisconsin Avenue, NW between River Road, NW and Brandywine Street, NW.



Photo 7: Whole Foods Driveway at Wisconsin Avenue, NW

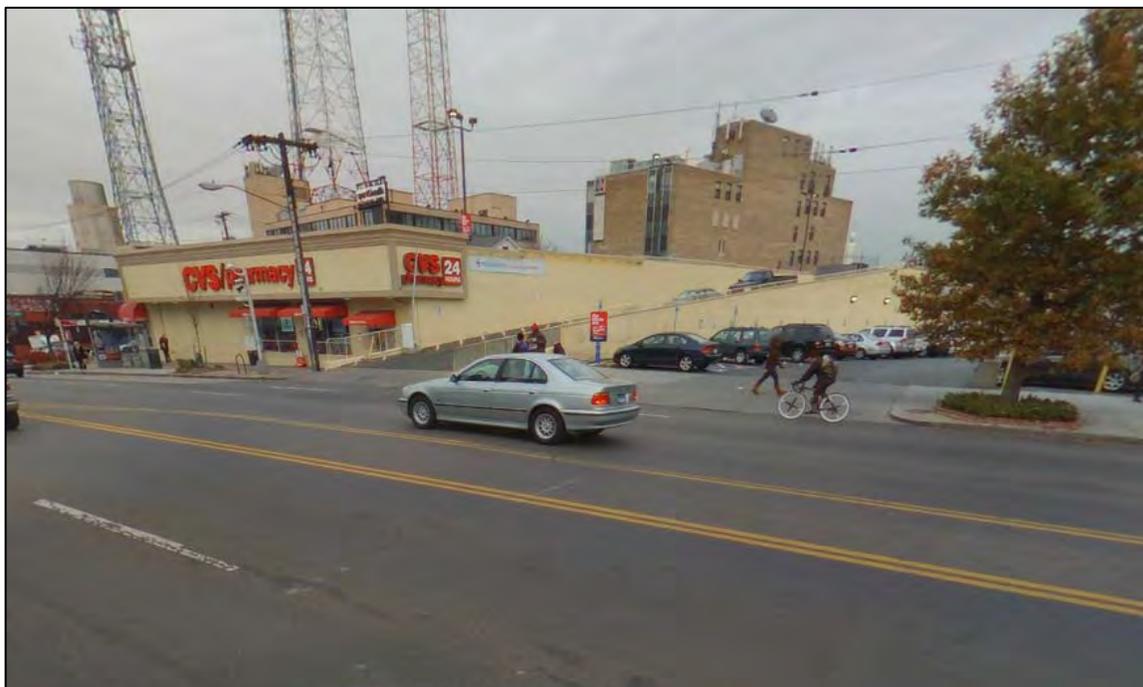


Photo 8: Looking Northbound on Wisconsin Avenue, NW north of River Road, NW



Photo 9: Sidewalk on Northbound Wisconsin Avenue, NW between River Road, NW and Brandywine Street NW

5. Recommended Improvements

The following short-term signing and striping improvements are recommended to enhance the pedestrian environment in the study area:

Install high-visibility ladder crosswalks: The existing crosswalks at the intersection of Wisconsin Avenue, NW and River Road, NW are striped as parallel lines. It is recommended that the crosswalks be restriped as high-visibility ladder crosswalks, as shown on Figure 7. This recommendation was also included in the DC Pedestrian Master Plan. It is also recommended that the existing high-visibility ladder crosswalk at the intersection of Wisconsin Avenue, NW and the Whole Foods driveway be restriped.

Install pedestrian warning signage: In order to increase the visibility of the crosswalk across the northbound approach of Wisconsin Avenue, NW north of the Whole Foods driveway, pedestrian warning signage is recommended, as shown on Figure 8. This pedestrian warning signage would replace the existing school zone signage; the existing school zone signage would remain where it is currently installed at the intersection with the Whole Foods driveway.

Install “BE PREPARED TO STOP” signage on River Road, NW: As outlined previously, existing drivers run the red light on southbound Wisconsin Avenue, NW after turning from River Road, NW. In order



to warn drivers of the signal at the Whole Foods driveway, it is recommended that signage be installed on River Road, NW that warns drivers to “BE PREPARED TO STOP AFTER TURN”, as shown on Figure 9.

Install “STOP HERE ON RED” signage on Whole Foods driveway: A “STOP HERE ON RED” sign is recommended on the Whole Foods driveway. As noted previously, drivers were observed stopping in front of the stop bar and blocking the sidewalk in spite of the right-turn on red restriction. Installation of a sign, as shown on Figure 10, reinforces the location of the stop bar. Additionally, a “NO RIGHT TURN ON RED” sign is recommended at the driveway. This recommendation requires coordinating with the property owners as the existing driveway is located on private property.

Install pedestrian markings across Whole Foods driveway: In order to alert drivers to the presence of the sidewalk across the driveway, it is recommended that the “walking man” symbol be installed. In order to increase visibility, the symbol may be painted yellow or green. In addition, it is recommended that “LOOK” symbols be painted on the sidewalk to alert pedestrians to the presence of turning vehicles. These improvements are shown on Figure 11.

Install pedestrian markings across driveway at River Road, NW: Similar to the Whole Foods driveway, it is recommended that the “walking man” and “LOOK” symbols be installed across the driveway at the intersection of Wisconsin Avenue, NW and River Road, NW. These improvements are shown on Figure 11.

Convert driveway to one-way: It is recommended that the existing driveway at the intersection with Wisconsin Avenue, NW and River Road, NW be converted to one-way eastbound. This will reduce the conflicts between vehicles exiting the driveway and pedestrians walking along northbound Wisconsin Avenue, NW, as well as remove the immediate need for signal heads facing the driveway for exiting vehicles. Drivers exiting the parking lot may use the curb cut to the north, which provides access for the CVS. This recommendation includes installing one-way signage along the driveway, as shown in Figure 12, and coordinating with the property owners as the existing driveway is located on private property.

In addition to the short-term improvements, the following long-term improvements are recommended for further study:

Intersection redesign: It is recommended that the intersection of Wisconsin Avenue, NW and River Road, NW be redesigned to incorporate the existing driveway. This includes installing pedestrian signals across the driveway. During the intersection redesign, the driveway one-way configuration may be reexamined and incorporated into the signal. It is also recommended that the intersection of Wisconsin Avenue, NW and the Whole Foods driveway be redesigned to incorporate pedestrian signals across the driveway.

Reconstruct River Road, NW curb line: It is recommended that the existing curb line on River Road, NW at Wisconsin Avenue, NW be reconstructed to improve the intersection alignment. This recommendation was included in the Wisconsin Avenue Corridor Transportation Study, as shown previously in Figure 3. Additionally, the DC Pedestrian Master Plan recommended curb extensions be installed at this location, as shown previously in Figure 5. It is recommended that the redesign of the curb be studied further to determine the preferred intersection alignment and curb line.

Reconstruct Whole Foods driveway curb line: It is recommended that the existing curb on the southeast corner of the intersection of Wisconsin Avenue, NW and the Whole Foods driveway be

reconstructed to improve the right-turn radius.

Additionally, during this reconstruction, ADA ramps are recommended at the crosswalk on the southeast and southwest corners of the intersection. This recommendation was included in the Wisconsin Avenue Corridor Transportation Study, as shown previously in Figure 4. The reconstruction of the ramps to be ADA compliant is also included in the DC Pedestrian Master Plan.

Widen sidewalk: It is recommended that the existing sidewalk along northbound Wisconsin Avenue, NW be widened. This improvement is included in the DC Pedestrian Master Plan, as shown previously on Figure 5, and will require coordination with the property owners along the roadway.



Figure 6: Recommended Improvement – Install High-Visibility Ladder Crosswalk



Figure 7: Recommended Improvement – Install Pedestrian Warning Signage



Figure 8: Recommended Improvement – Install Regulatory Signage on River Road, NW

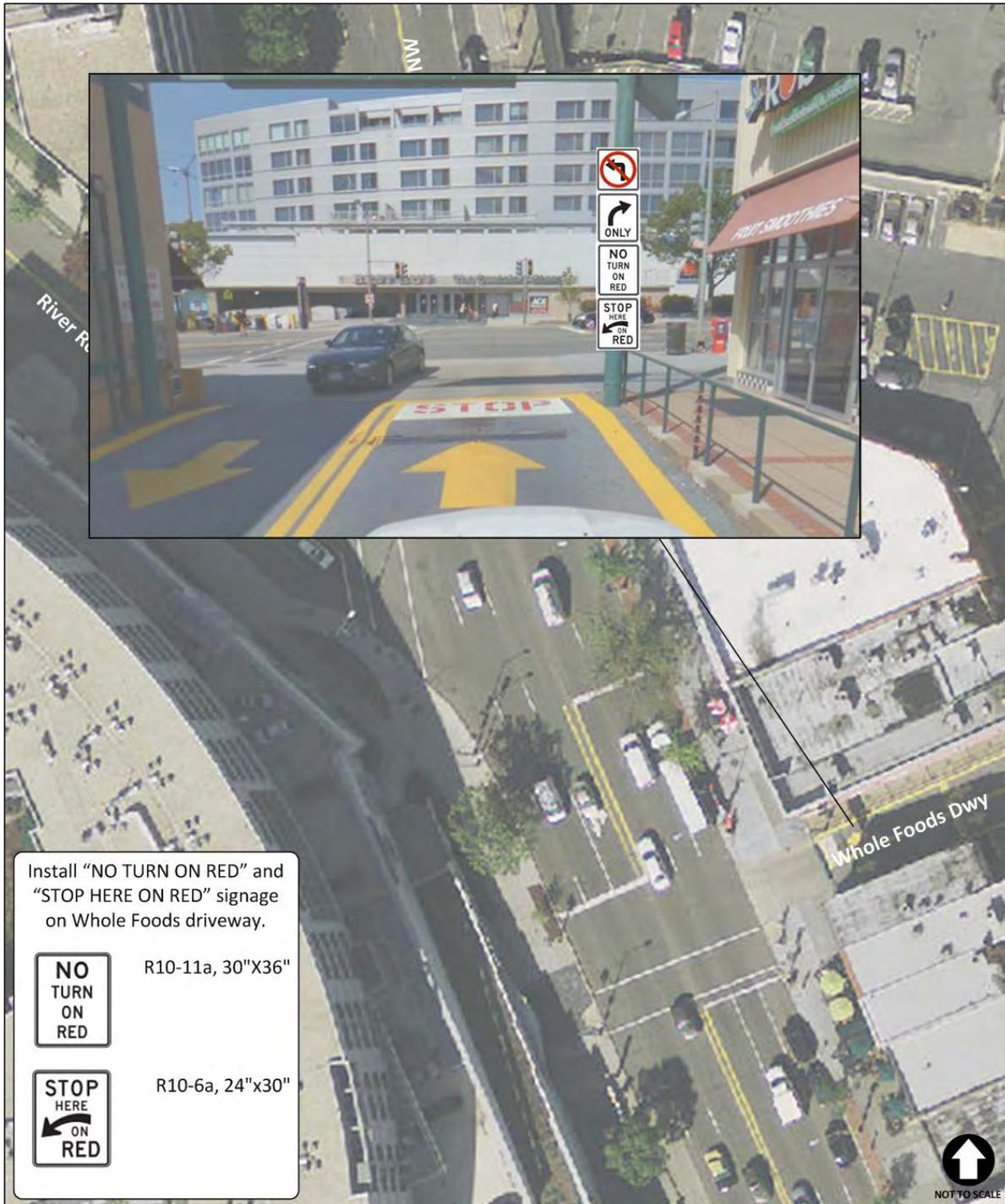


Figure 9: Recommended Improvement – Install Regulatory Signage on Whole Foods Driveway



Figure 10: Recommended Improvement – Install Pedestrian Markings



Figure 11: Recommended Improvement – Convert Driveway to One-Way