


GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION



d. Policy, Planning and Sustainability Administration

MEMORANDUM

TO: Sara Bardin
Director, Office of Zoning

FROM: Samuel Zimbabwe 
Associate Director

DATE: March 6, 2015

SUBJECT: ZC Case No. 14-18 – Brookland Manor/Brentwood Village

PROJECT SUMMARY

Mid-City Financial Corporation (the "Applicant") proposes a mixed-use development on the 20 acre property currently known as Brookland Manor (Square 5862, Lots 137-143; Square 5865, Lots 243, 249, 254, 259, 260-280, 893, 963-978, and 992; Square 3953, Lots 1-3; Square 3954, Lots 1-5 and Parcel 143/45; Square 4024, Lots 1-4; and Square 4025, Lots 1-7) ("Site"). The Site is generally bounded by Rhode Island Avenue NE to the north, Montana Avenue NE to the east, Downing Street NE/14th Street NE/Saratoga Avenue NE to the south, and Brentwood Road NE to the west. This property is currently the location of the Brookland Manor apartment complex (R-5-A zone) and a commercial shopping center (C-2-A zone). A first stage Planned Unit Development (PUD) and a zoning map amendment is sought by the Applicant. The first stage PUD, proposed as Brentwood Village, includes 2,137 residential units and 198,047 square feet of retail space. There are 1,635 proposed residential vehicular parking spaces and 295 retail vehicular parking spaces.

SUMMARY OF DDOT REVIEW

DDOT is committed to achieving an exceptional quality of life in the nation's capital by encouraging sustainable travel practices, constructing safer streets, and providing outstanding access to goods and services. As one means to achieve this vision, DDOT works through the zoning process to ensure that impacts from new developments are manageable within, and take advantage of, the District's multimodal transportation network.

DDOT's review responds to the application as filed October 1, 2014 as well as site design changes included in the in the pre-Hearing filing dated February 24, 2015 and subsequent Applicant adjustments dated March 3, 2015. The Travel Assumptions and Analysis discussed in this memorandum are based on

the Comprehensive Transportation Review (CTR), dated January 30, 2015, with subsequent updates provided in March, which provides a comprehensive overall analysis of the Stage 1 proposal.

The purpose of DDOT's Stage 1 review is to provide an overview of the potential safety and capacity impacts of the proposed action on the District's transportation network and, as necessary, propose additional mitigations that are commensurate with the action.

The transportation analysis for the Stage 1 PUD process generally identifies potential impacts to the transportation network related to the land uses and density of the Site. Due to the size of this project, the details of vehicle parking access have not yet been fully defined, but will be more fully defined through Stage 2 submissions. One of the most critical elements of DDOT's review of project traffic on a project like this is of vehicular parking levels and access points. As such, DDOT will expect a full evaluation of transportation facilities as part of the Stage 2 process, and as necessary an updated suite of proposed mitigations.

After an extensive, multi-administration review of the case materials submitted by the Applicant, DDOT finds:

Site Design

- A robust network of public and private streets is proposed, with an added link connecting 15th Street NE to Rhode Island Avenue;
- The new street network has the potential to disperse site traffic in a way that minimizes the action's impact on the external road network and improves connectivity to the adjacent neighborhoods;
- Sufficient bicycle and pedestrian connections are proposed through the Site;
- Loading for the retail and multi-family residential is generally proposed to occur from existing or proposed public and/or private alleys, which is consistent with DDOT standards and approach;
- The proposed ROW layout for the Site as shown in the March 3, 2015 submittal is consistent with DDOT standards; and
- As design level details for vehicle access are defined in Stage 2, additional traffic analysis will be required.

Travel Assumptions

- The action is expected to generate a significant number of new vehicle, transit, bicycle, and pedestrian trips;
- The number of vehicle trips generated by the Site is reasonable; but
- The amount of vehicle parking for the residential units is somewhat high relative to other recent projects.

Analysis

- The Applicant utilized sound methodology to perform the analysis;
- The action is expected to minimally increase travel delay in most locations and significantly impact operations for at least five intersections, as outlined in the body of this report;
- The Applicant expects site generated transit trips can be served with existing transit service. However, adjacent bus service has not been shown to have the necessary capacity, and Metrorail's service requires a relatively long walk from portions of the development or transferring modes; and

- The additional bicycle demand will necessitate on-street bicycle facilities along with bikeshare service and facilities.

DDOT has no objection to the requested approval with the following conditions:

Mitigations

The Applicant has proposed the following mitigations which DDOT finds appropriate:

- Committed to build all public streets to DDOT ROW and design standards;
- Appropriately mitigated traffic impacts at Montana Avenue and Saratoga Avenue by committing to signalization of the intersection;
- Committed to creation of a modified intersection at 15th Street and Rhode Island Avenue and Brentwood Road. A new signal is also anticipated for this location;
- Committed to adjusting the geometries of various intersections and turn movements to mitigate potential impacts. These adjustments should be further developed during the Stage 2 processes. As needed, additional changes may be requested;
- Potential impacts to bicycle travel are mitigated by the addition of:
 - Two Capital Bikeshare stations, and
 - Multimodal street design of Saratoga Avenue to include bicycle facilities; and
- Offer a good general Transportation Demand Management (TDM) plan that should be refined and augmented during subsequent Stage 2 submissions.

As the project proceeds into Stage 2 applications, the following or similar potential mitigations may also be necessary:

- Additional traffic and safety impact mitigations for impacted intersections not addressed previously. Including at:
 - Montana Avenue & 18th Street/W Street
 - Rhode Island Avenue & Montana Avenue/14th Street
- Additional analysis to verify existing transit service has capacity to accommodate future demand, and identify new demands that may warrant transit adjustments;
- Details on long-term and short-term bicycle parking facilities and for pedestrian and bicycle facilities are expected in Stage 2;
- Improve pedestrian connections to major nearby offsite destinations;
- Commit to inclusion of non-auto incentives for Capital Bikeshare membership and carshare membership to all residential tenants and commercial employees; and
- Adjustments to improve connectivity and safety, such as updated geometry and operations for Brentwood Road north of the Site and coordination with the Fire Department to potentially add an alley at the rear of their property and/or relocate their driveway.
- Fund a transit study examining the proposed extension of a Rhode Island bus to downtown (as found in Appendix 4 of the Final Recommendations of *The Metrobus Rhode Island Avenue-Baltimore Avenue Line Study* by WMATA, 2014) [Estimated cost: up to \$100,000].

The phasing of these improvements or additional analysis will be finalized during the Stage 2 process. Added detail for the above mitigations or additional mitigations may be necessary upon an updated scoping and analysis as part of the Stage 2 PUD process.

Continued Coordination

Given the complexity and size of the action, the Applicant is expected to continue to work with DDOT on the following matters:

Project Process

- For each subsequent Stage 2 PUD submission, DDOT expects the Applicant to update its CTR for the specific Stage 2 action while also presenting updated analysis for the entire PUD. It is expected that each submission will present findings in terms of the entire PUD, which may include elements already completed;
- Street closure and rededication will require coordination with DDOT and Council action;
- Coordination is expected to determine curbside management, to include at least metered parking, building entrance zones, potential Residential Permit Parking blocks, loading zone restrictions, etc.; and
- Coordination is expected to locate a relocated bus stop site on Rhode Island Avenue and any other transit adjustments.

Design Elements

- All roadway infrastructure should be designed according to DDOT standards;
- Site design refinements should be coordinated with DDOT such that:
 - Vehicle access minimizes potential impacts to the roadway network,
 - Utility vaults are located in private space, and
 - Loading vehicle movements are accommodated on private space;
- In particular, DDOT will want to analyze the design and operations of new proposed intersections on Brentwood Road NE and Montana Avenue NE;
- Further design development is expected for the proposed operational and geometric changes intended to mitigate impacts;
- Public space, including curb and gutter, street trees and landscaping, street lights, sidewalks, and other features within the public rights of way, are expected to be designed and built to DDOT standards;
- Careful attention should be paid to pedestrian and bicycle connections through and along the Site's perimeter and adjacent infrastructure;
- Locations for Capital Bikeshare stations;
- Signal implementation and modification will be coordinated as part of the Stage 2 PUDs to optimize performance of the road network while providing ample pedestrian crossing time; and
- TDM plans for each building.

TRANSPORTATION ANALYSIS

DDOT requires applicants who request PUD approval from the Zoning Commission complete a Comprehensive Transportation Review (CTR) in order to determine the PUD's impact on the overall transportation network. Accordingly, an applicant is expected to show the existing conditions for each transportation mode affected, the proposed impact on the respective network, and any proposed mitigations, along with the effects of the mitigations on other travel modes. A CTR should be performed according to DDOT direction. The Applicant and DDOT coordinated on an agreed-upon scope for the CTR that is consistent with the scale of the action. Overall agreement on the needed analysis has been reached, but many details remain to be worked out in Stage 2.

The review of the analysis is divided into four categories: site design, travel assumptions, analysis, and mitigations. The following review provided by DDOT evaluates the Applicant's CTR to determine its accuracy and assess the action's consistency with the District's vision for a cohesive, sustainable transportation system that delivers safe and convenient ways to move people and goods, while protecting and enhancing the natural, environmental, and cultural resources of the District.

Site Design

Site design, which includes site access, loading, and public realm design, plays a critical role in determining a proposed action's impact on the District's infrastructure. While transportation impacts can change over time, the site design will remain constant throughout the lifespan of the proposed development, making site design a critical aspect of DDOT's development review process. Accordingly, new developments must provide a safe and welcoming pedestrian experience, enhance the public realm, and serve as positive additions to the community.

Site Access

The planned Brentwood Village site will consist of new public and private streets that connect the Site to the existing street grid. The Site is accessible, via surrounding arterials, to several regional roadways such as New York Avenue (US 50) and Rhode Island Avenue (US 1). Proposed streets include a new southeast-northwest street extension of 15th Street NE to Rhode Island Avenue, two new private east-west streets, pedestrian and alley connections throughout the Site, and the creation of a public street around a park at the center of the development. Overall, the project will add area to the public ROW of the Site, and lays out the roads in a manner that improves connectivity for drivers, bicyclists, and pedestrians. Parking facilities and loading docks will be served via the new alley network. At this stage, however, details on the size, locations, and access for these facilities is not yet defined, and more detailed review will be made in Stage 2 as to the operations of the alley network with the surrounding streets.

Figure 1 shows the existing layout and conditions at the Site, while Figure 2 shows the proposed roadway network to replace the existing links.

The Applicant proposes all public streets within the PUD shall be designed and constructed to DDOT standards. Typical sections as submitted on March 3, 2015 for streets in the development are generally consistent with DDOT standards. However, greater detail on the design of these streets, including every alley, is expected in Stage 2. DDOT anticipates a full review of each street and alley's layout at that time.

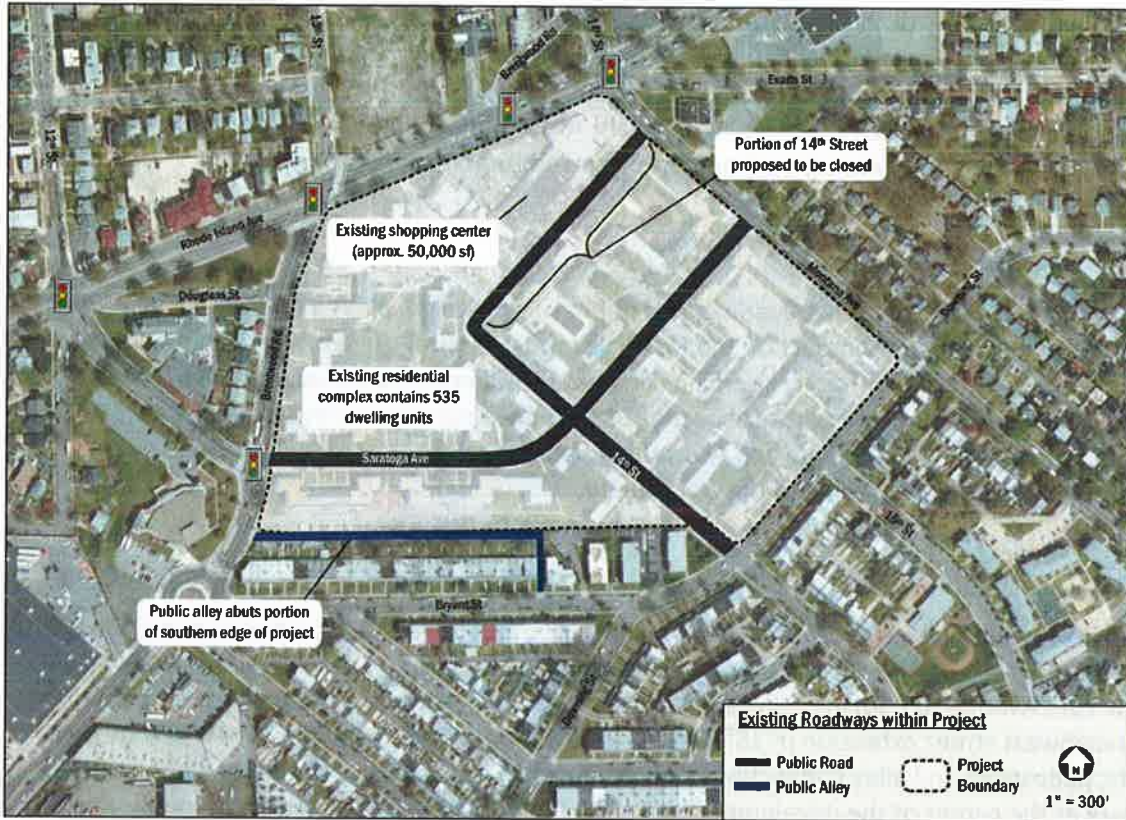


Figure 1. Existing Site Conditions (Source: Applicant)

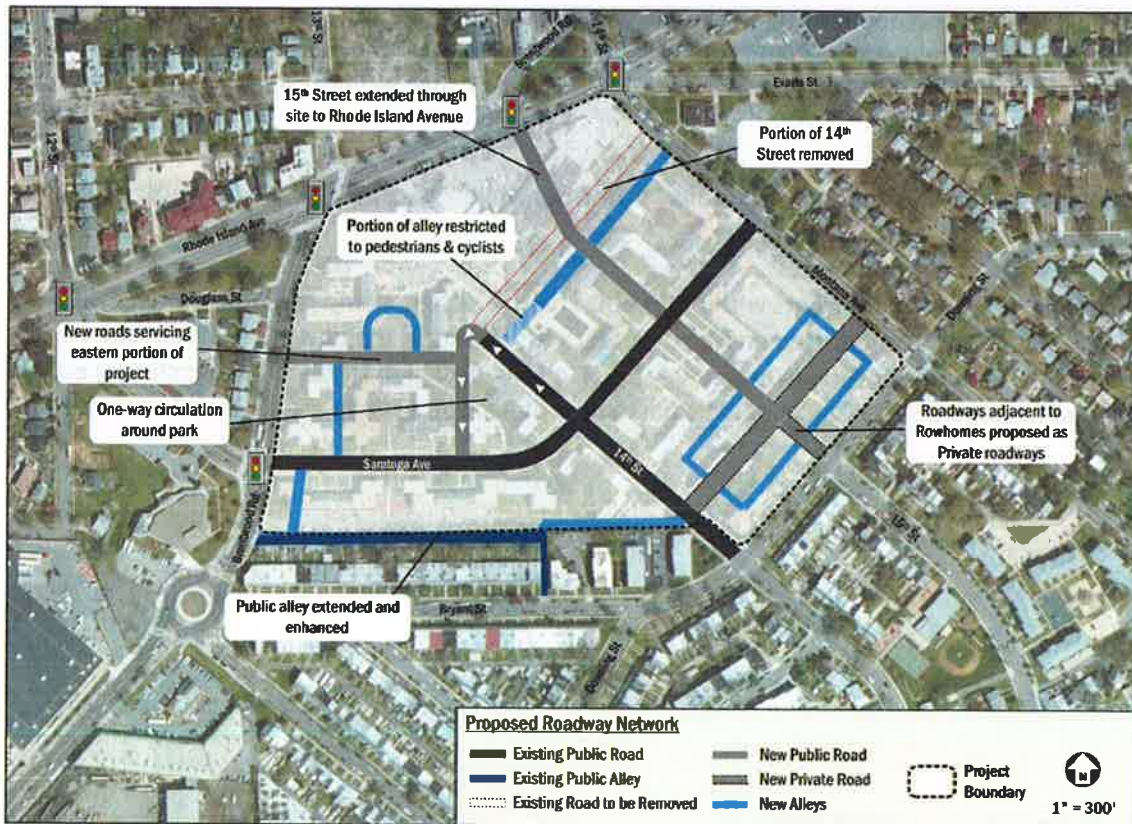


Figure 2. Proposed Roadway Network (Source: Applicant)

The new street network has the potential to disperse Site traffic throughout the Site in a way that minimizes the action's impact on the road network in the vicinity. The new roads will serve as vehicle, bicycle, and pedestrian access points for the Site.

Details on proposed curbside management within the Site are anticipated during Stage 2. The Applicant has noted the area will include new metered locations. Further, the Applicant has expressed willingness to price parking at market rates and unbundling parking from the costs of residential units, the details of which will be coordinated in Stage 2.

Loading

DDOT's practice is to accommodate vehicle loading in a safe and efficient manner, while at the same time preserving safety across non-vehicle modes and limiting any hindrance to traffic operations. For new developments, DDOT requires that loading take place in private space and that no back-up maneuvers occur in the public realm. This often results in loading being accessed through an alley network, as proposed in this action.

The Applicant's proposed loading locations within an alley network would comply with DDOT's loading requirements. Loading and trash collection via the Site alleys would allow these activities to occur off the street network. However, as noted within the Site Access section, details on the specific locations of loading are not yet defined. As these locations are designed during Stage 2, evaluation of their adequacy and accessibility will be requisite. This analysis will include evaluation of ingress and egress routes for all trucks servicing the Site. The Applicant notes that, in order to access some of the loading docks on the Site, it is anticipated that current truck restrictions in place on Saratoga Avenue between Brentwood Road and Montana Avenue may be lifted. This change should be coordinated with the local ANC and community representatives, and will require further coordination with DDOT to finalize.

DDOT expects the Applicant to comply with DDOT's standards for loading for the entire Site. Design of loading access will be addressed as part of the Stage 2 PUD.

Streetscape and Public Realm

In line with District policy and practice, any substantial new building development or renovation is expected to rehabilitate streetscape infrastructure between the curb and the property lines. This includes curb and gutters, street trees and landscaping, street lights, sidewalks, and other appropriate features within the public rights of way bordering the Site. The Brentwood Village PUD proposes a comprehensive reconstruction of these elements of their Site. However, details beyond very conceptual illustrations will not be available until Stage 2.

The Applicant must work closely with DDOT and the Office of Planning at that time to ensure that the design of the public realm meets current standards and will substantially upgrade the appearance and functionality of the streetscape for public users needing to access the property or circulate around it. In conjunction with the District of Columbia Municipal Regulations, DDOT's *Design and Engineering Manual* will serve as the main public realm references for the Applicant. DDOT staff will be available to provide additional guidance during the public space permitting process.

As such, all public space shall be designed and constructed to DDOT standards whereby final design is approved or accepted in the street dedication process. DDOT notes the importance of maximizing the

width of sidewalks within and along the perimeter of the Site to accommodate pedestrian and bicycle activity. It is expected that all layouts will generally honor the ROW distribution for streets within the Site. Where there is not a specified distribution, consideration for the distribution adjacent to the Site should be made.

All tree planting and tree survey issues will be addressed at the time of the Stage 2 PUD submission, at which point the Applicant will submit an application to DDOT for removal of street trees and special trees. Finally, DDOT expects utility vaults to be accommodated on private property. All proposed curb cuts are subject to the public space permitting process. Final design of the public space will be determined during DDOT's public space permitting process.

Sustainable Transportation Elements

Sustainable transportation measures target promotion of environmentally responsible types of transportation in addition to the transportation mode shift efforts of TDM programs. These measures can range anywhere from practical implementations that would promote use of vehicles powered by alternative fuels to more comprehensive concepts such as improving pedestrian access to transit in order to increase potential use of alternative modes of transportation. Within the context of DDOT's development review process, the objective to encourage incorporation of sustainable transportation elements into the development proposals is to introduce opportunities for improved environmental quality (air, noise, health, etc.) by targeting emission-based impacts.

Based on the size of the proposed development and the number of vehicular parking spaces, DDOT recommends that the Applicant consider providing 240-volt electric car charging stations in the following approximate magnitudes: at least eight spaces in residential building parking garages, two in the grocery store/retail parking garage, and perhaps one on the street adjacent to the community park.

Travel Assumptions

The purpose of the CTR is to inform DDOT's review of a proposed action's impacts on the District's transportation network. To that end, selecting reasonable and defensible travel assumptions is critical to developing a realistic analysis.

Background Developments and Regional Growth

As part of the analysis of future conditions, DDOT requires applicants to account for future growth in traffic on the network or what is referred to as background growth. The Applicant coordinated with DDOT on the appropriate background developments to include in the analysis. The following projects were considered for inclusion in the analysis: Rhode Island Avenue Gateway, Brookland Square, Life Learning Center, Square 4268, and Hecht's Warehouse.

DDOT also requires applicants account for regional growth. This can be done by assuming a general growth rate or by evaluating growth patterns forecast in MWCOC's regional travel demand model. The Applicant coordinated with DDOT on use of the regional travel demand model as an appropriate tool to assess regional growth that accurately accounted for background developments. The travel assumptions included growth as well as trip distribution assumptions based on the regional model.

Off-Street Vehicle Parking

The overall parking demand created by the development is primarily a function of land use, development square footage, and price/supply of parking spaces. However, in urban areas, other factors contribute to the demand for parking, such as the availability of high quality transit, frequency of transit service, and proximity to transit.

There are 1,635 proposed residential vehicular parking spaces and 295 proposed retail vehicular parking spaces at the Site. However, details on the specific locations of these spaces are not yet defined. This equates to approximately 0.76 spaces per residential unit, which is higher than recent trends in the District given the Site's proximity to transit and the surrounding multimodal network. DDOT finds that parking may be provided at a higher rate than what is needed for this Site. Additionally, curbside parking provided, as described in greater detail in Curbside Parking section of this memorandum, must be considered. This consideration could result in an even greater supply of available parking in the area.

The Applicant should reexamine the proposed parking supply for the Stage 2 PUD based on an analysis of expected residential parking utilization and considering the need of future retail tenants. Reducing the supply of parking would serve to reduce vehicle traffic and thus the impact on the District's roadways. As details of parking distribution are updated in Stage 2, updated CTR analysis will be required.

Curbside Parking

For parking relief actions or larger developments that may have a greater impact on the local neighborhood, the evaluation of the supply of and demand for curbside parking spaces is appropriate. Based on the quantitative analysis provided, the CTR should provide an evaluation of the adequacy of curbside parking to accommodate excess demand generated by an action.

All of the proposed public streets are designed to provide parking on both sides of the street. While DDOT generally tries to limit vehicle parking supply as a means of reducing vehicle trip generation, the inclusion of on-street parking supply is necessary. It is expected that a full-scale analysis of on-street parking availability and surrounding utilization will be conducted during Stage 2 to help gauge the appropriateness of overall parking provision at the Site.

Trip Generation

The Applicant provided trip generation estimates utilizing the Institute of Traffic Engineers (ITE) Trip Generation Manual and the assumed mode split to convert base vehicular trips to base person trips using average auto occupancy data and then back to vehicular trips. The Applicant utilized the following ITE land uses in their trip generation estimation:

- Residential: Multistory buildings and townhouses; Apartment (Code 220);
- Grocery: Supermarket (Code 850); and
- Other Retail: Shopping center (Code 820)

DDOT generally finds the use of these ITE codes appropriate, but notes the lack of dependable information on trip generation in urban contexts. Thus, the methodology was supplemented to account

for the urban nature of the Site and to split the trips into the appropriate mode. Existing trips were also based on ITE trip generation rates to calculate the volume of added trips based on the proposed development.

Each trip a person makes is made by a certain means of travel, such as vehicle, bicycle, walking, etc. The means of travel is referred to as a 'mode' of transportation. A variety of elements impact the mode of travel, including density of development, diversity of land use, design of the public realm, availability and cost of parking, among many others.

The Applicant developed the following mode split assumptions informed by the *Census Transportation Planning Products (CTPP)* data.

Table 1. Mode Split Assumptions (Source: Applicant)

Area	Mode			
	Drive	Transit	Bike	Walk
Residential	45%	45%	1%	9%
Neighborhood Retail	35%	40%	1%	24%
Grocery	55%	20%	1%	24%

Based on the trip generation and mode split assumptions discussed above, the Applicant predicted the following level of weekday peak hour trip generation.

Table 2. Multimodal Trip Generation Summary (Source: Applicant)

Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Auto	175 veh/hr	373 veh/hr	548 veh/hr	547 veh/hr	405 veh/hr	952 veh/hr
Transit	220 ppl/hr	527 ppl/hr	747 ppl/hr	733 ppl/hr	534 ppl/hr	1267 ppl/hr
Bike	6 ppl/hr	10 ppl/hr	16 ppl/hr	17 ppl/hr	14 ppl/hr	31 ppl/hr
Walk	106 ppl/hr	126 ppl/hr	232 ppl/hr	295 ppl/hr	267 ppl/hr	562 ppl/hr

The proposed action is expected to generate a significant number of transit, vehicular, and walking trips during the morning and evening peak hours. The number of pedestrian trips routed along Rhode Island Avenue is expected to be very high. The transit trips were distributed between Metrorail and Metrobus according to expected splits based on US Census data, which indicates near even distribution.

As previously described, the development is proposing a total of 1,930 off-street vehicular parking places. Further, the transit demand anticipated is noted to be significant. Further consideration of these items, as well as additional adjustments to mode split assumptions may also be necessary during Stage 2. For each subsequent Stage 2 PUD submission, DDOT expects the Applicant to evaluate its consistency with the Stage 1 analysis, and DDOT may request updated trip generation analysis accordingly.

Study Area and Data Collection

The Applicant in conjunction with DDOT identified 24 intersections where detailed vehicle, bicycle, and pedestrian counts would be conducted and a level of service analysis would be performed. These intersections are immediately adjacent to the Site and include intersections radially outward from the

Site that have the greatest potential to see moderate to significant increases in vehicle delay. DDOT acknowledges that not all affected intersections are included in the study area and there will be intersections outside of the study area which realize new trips. However, DDOT expects minimal to no increase in delay outside the study area as a result of the proposed action. The Applicant collected weekday intersection data in December 2014. In general, DDOT agrees with the timeframe and collection dates.

As analysis continues in Stage 2, it is expected additional intersections internal to the Site will be analyzed further, and adjustments to the study area intersections analyzed may be appropriate.

Trip Distribution and Assignment

The Applicant assumed that trips related to each of the land uses would travel to and from different parts of the region in a manner specific to the land use. Therefore, the Applicant created unique trip distribution rates for retail and residential trips. The Applicant estimated trip distribution for the Site based on: (1) CTPP TAZ flow data, and (2) existing traffic volumes and travel patterns in the study area. This flow information showed significant commuting patterns to downtown DC, Washington Hospital Center, and suburban Maryland.

DDOT is in agreement with the methodology used to determine trip distribution. However, in conjunction with potential trip generation changes in Stage 2, it is possible trip distribution patterns may need to be updated as a fuller understanding of the Site layout details and component uses and anticipated demographics become better specified.

Analysis

To determine the action's impacts on the transportation network, a CTR includes an extensive multi-modal analysis of the existing baseline conditions, future conditions without the proposed action, and future conditions with the proposed development. The Applicant completed their analysis based on the assumptions described above.

Roadway Capacity and Operations

DDOT aims to provide a safe and efficient roadway network that provides for the timely movement of people, goods and services. As part of the evaluation of travel demand generated by the Site, DDOT requests analysis of traffic conditions for the agreed upon study intersections for the current year and after the facility opens both with and without the site development or any transportation changes. For this development, there are three phases anticipated:

- Phase I – Block 7, which includes a senior residential building and other residential uses,
- Phase II – Blocks 2, 3, 5, 6, and 8, which include the main retail component and central community park and additional residential, and
- Phase III – The final two multi-family residential Blocks 1 and 4.

The block and program summary are shown in Figure 3.

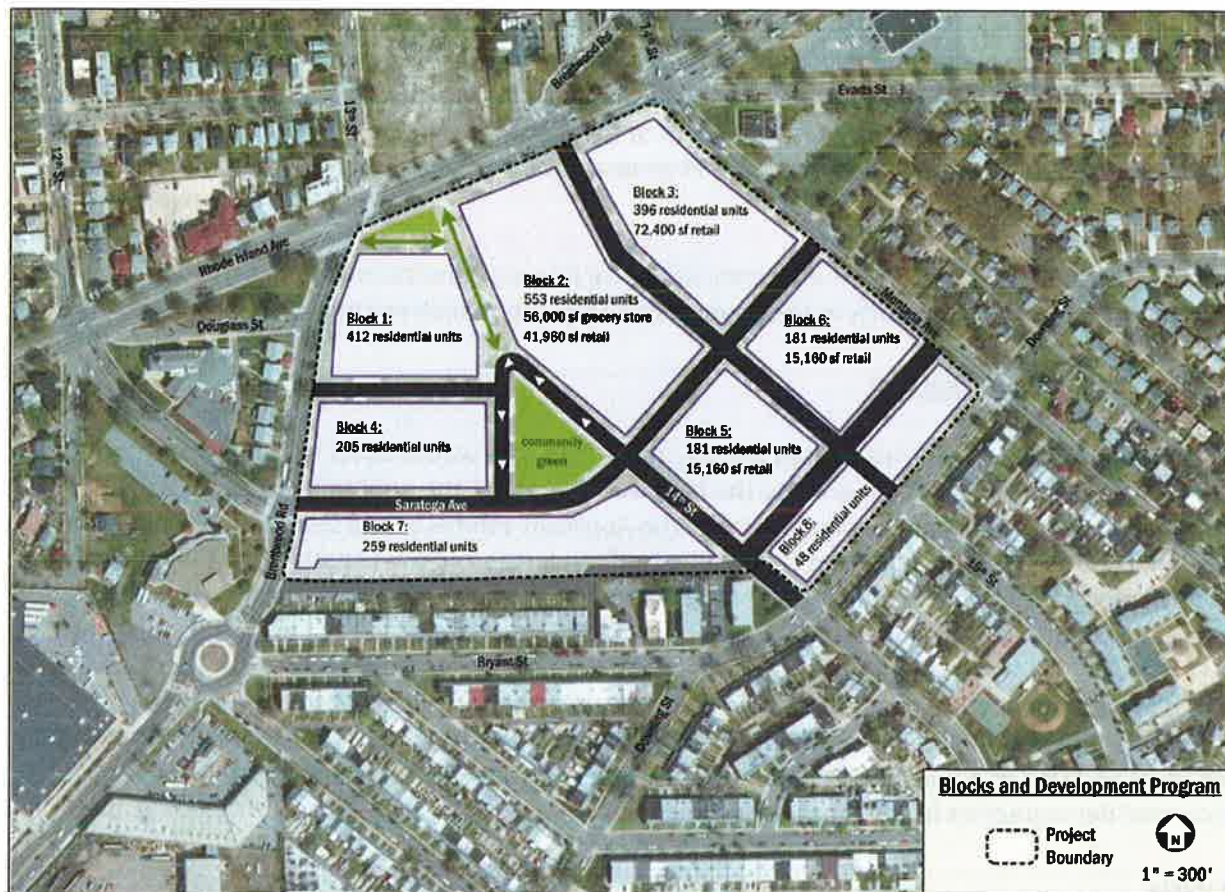


Figure 3. Block and Program Summary (Source: Applicant)

Based on these phases, eight traffic scenarios were assumed for capacity analyses. These scenarios include:

1. 2014 Existing Conditions
2. 2019 Background Conditions (without the PUD)
3. 2019 Future Conditions (with Phase 1 of the PUD)
4. 2022 Background Conditions (with Phase 1 of the PUD)
5. 2022 Future Conditions (with Phase 1 and 2 of the PUD)
6. 2025 Background Conditions (with Phase 1 and 2 of the PUD)
7. 2025 Future Conditions (with full build-out of the PUD)
8. 2040 Horizon Conditions (with full build-out of the PUD)

Analysis provided by the Applicant shows that vehicle traffic impacts from the action will impact the operations of intersections in the study area as measured by Level of Service (LOS). Impacted intersections in each respective year of analysis include:

- 2019 – none
- 2022 – Five intersections (Rhode Island Avenue & Brentwood Road/13th Street, Rhode Island Avenue & Brentwood Road/Fire Station, Rhode Island Avenue & Montana Avenue/14th Street, Montana Avenue & Saratoga Avenue, Montana Avenue & 18th Street/W Street)
- 2025 – One intersection (Montana Avenue & 18th Street/W Street)

Intersection configurations used are existing for offsite intersections, with onsite intersections configured as currently conceptually planned. Based on the results of the analysis above, several potential geometric or operational changes will make sense to mitigate the effects of background growth as well as site impacts. Full exploration of the detailed proposals will be conducted in Stage 2 analysis. The proposed changes include:

- Creation of a left turn pocket for northbound 12th Street to Franklin Street;
- Install a traffic signal at the intersection of Saratoga Avenue and Montana Avenue;
- Incorporate 15th Street extended as the fourth leg of the intersection of Rhode Island Avenue with Brentwood Road, and provide new traffic signal accordingly; and
- Install lane marking and striping changes at two intersections: Rhode Island Avenue and Montana Avenue/14th Street, and 18th Street/W Street and Montana Avenue.

DDOT does not yet agree that these are the only changes needed nor that all proposed changes are needed. The Applicant proposes most of these changes to occur as part of Phase II, when most of the development comes online, but this timing will be determined during Stage 2. DDOT expects the Applicant to coordinate with DDOT to develop acceptable final design of these and other changes, which will require DDOT approval, and may need revisions beyond what the Applicant offers.

Transit Service

The District and Washington Metropolitan Area Transit Authority (WMATA) have partnered to provide extensive public transit service in the District of Columbia. DDOT’s vision is to leverage this investment to increase the share of non-automotive travel modes so that economic development opportunities increase with minimal infrastructure investment.

The northern edge of the Site is located approximately 0.6 miles from the Rhode Island Metro Station on the Red Line, which provides access to Downtown, as well as Maryland.

The Site is also well-served by high-frequency bus routes. These routes are adjacent to the Site, and generally terminate at the Rhode Island Metro Station. No bus stops are currently located within the interior of the Site, but several exist along the perimeter. Bus routes include:

Route Number	Route Name
81,82,83,86	College Park Line
B8,B9	Fort Lincoln Shuttle Line
D8	Hospital Center Line
E2,E3	Military Road-Crosstown Line
H6	Brookland-Fort Lincoln Line
H8,H9	Park Road-Brookland Line
P6	Anacostia-Eckington Line
T14	Rhode Island Ave-New Carrollton Line
T18	Annapolis Road Line

The Applicant considered whether the added volume of transit riders from this development would impact the transit options available based on anticipated usage. The Rhode Island Metrorail station is

not expected by WMATA¹ to have high volume-to-capacity ratios nor are any nearby buses operating with near unacceptable load factors. The Applicant thus concludes that the added trips will not negatively impact transit services, and bus routes serving the Site have sufficient capacity under current conditions to accommodate the expected increase. However, additional analysis will be necessary in Stage 2 to verify existing transit service has capacity to accommodate future site demand, and new demands may warrant transit adjustments.

DDOT is also concerned that bus service from the Site requires a transfer to another bus or to Metrorail to reach the Central Business District, and this may discourage transit use from the Site at the levels projected. Consideration for optimized transit services at this location in light of the new project should be made. Considering the relative lack of direct downtown bus service from this location (most routes conclude or turn around at the Rhode Island Metro) it is appropriate to fund a transit study reexamining the proposed extension of a Rhode Island bus to downtown (as found in Appendix 4 of the Final Recommendations of *The Metrobus Rhode Island Avenue-Baltimore Avenue Line Study* by WMATA), providing updated ridership numbers based on the transportation analysis of this proposal. This should be completed in Stage 2.

At least one bus stop shift was also recommended. The Applicant will need to work closely with WMATA and DDOT's Mass Transit division if the stop is relocated. There is currently no shelter at the bus stop, but depending on predicted bus ridership, the addition of a bus shelter can be evaluated during Stage 2. The Developer will need to coordinate with DDOT's IPMA division regarding the installation of the bus pad prior to the relocation of the bus stop. The Developer will also be responsible for the relocation and restoration of all of the necessary regulatory signs (No Parking No Standing Metrobus Zone) at each bus stop at or near the site. Further study in Stage 2 is needed to assess the Applicant's recommended and potential further needed changes. The Applicant should work with WMATA and DDOT in the permitting process to determine the optimal bus routing and stop locations.

Pedestrian Facilities

The District is committed to enhance the pedestrian accessibility by ensuring consistent investment in pedestrian infrastructure on the part of both the public and private sectors. DDOT expects new developments to serve the needs of all trips they generate, including pedestrian trips. Walking is expected to be an important mode of transportation for this development.

The proposed Site design includes many opportunities to promote walking. New sidewalks that accompany the Site's street network as well as additional pedestrian connections provided offer excellent pedestrian facilities internal to the Site. The Applicant also performed an inventory of the pedestrian infrastructure in the vicinity and noted any substandard conditions. Improvement to pedestrian routes towards key destinations is pertinent to this project. Potential pedestrian pathways are shown in Figure 4.

¹ DC's Transit Future System Plan (2010, DDOT), as per the Applicant

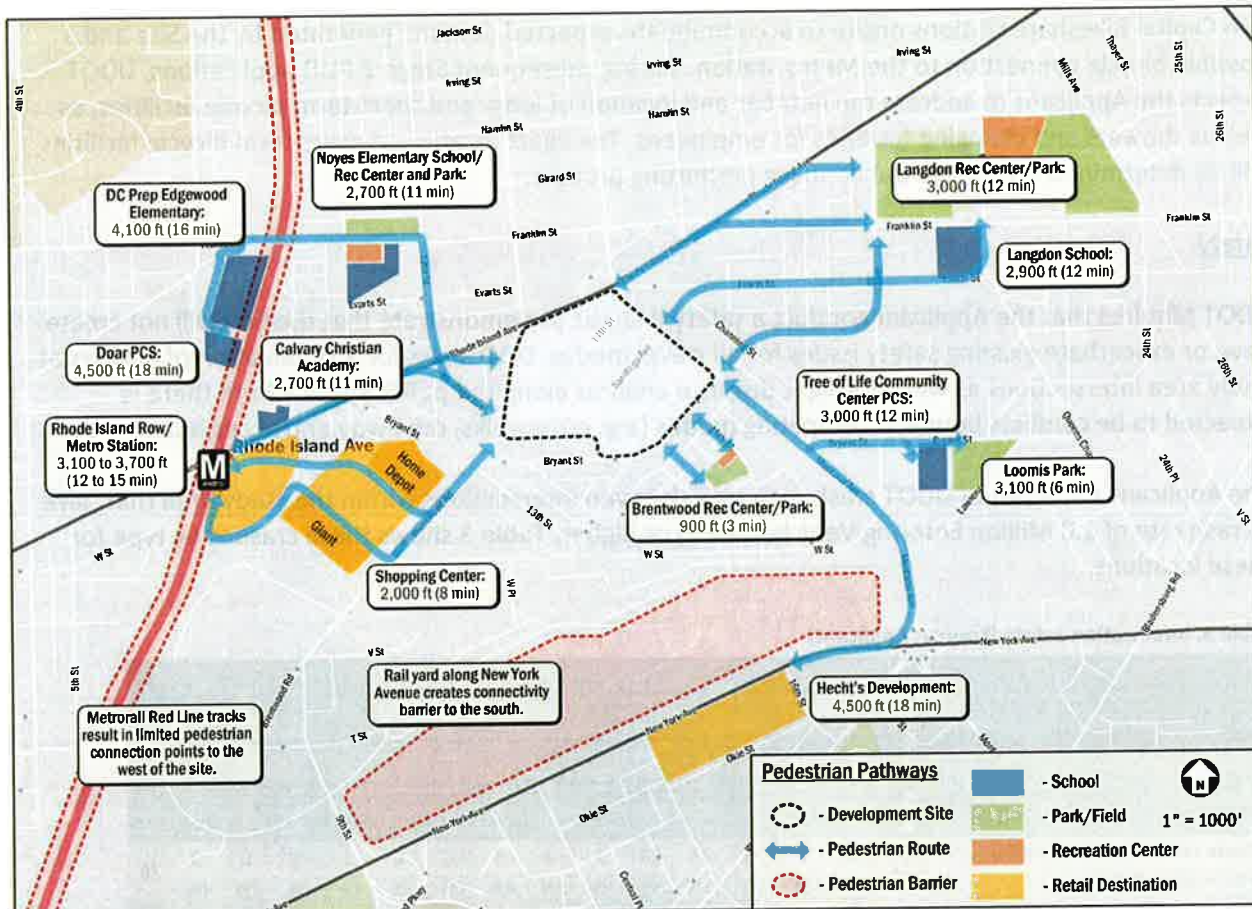


Figure 4. Pedestrian Pathways (Source: Applicant)

As discussed in the Site Access section, the Applicant is expected to work with DDOT through the public space permitting process and/or street dedication process to ensure that pedestrian access points provide safe and convenient Site access, with a focus on connecting to adjacent neighborhoods and connections to major trip production or attraction areas such as the Metro station. DDOT expects the Applicant to meet all DDOT standards for pedestrian facilities.

In this area, the key destinations are the Metrorail station as well as the local elementary school. DDOT expects the Applicant improve the pedestrian infrastructure along these routes to DDOT standards.

Bicycle Facilities

The District of Columbia is committed to enhance bicycle access by ensuring consistent investment in bicycle infrastructure on the part of both the public and private sectors. DDOT expects new developments to serve the needs of all trips they generate, including bicycling trips. The Site is currently located 0.6 miles from the Metropolitan Branch Trail along the Red Line, however there are limited other bicycle facilities in the area. The Applicant proposes a new bike route along Saratoga Avenue, connecting the 12th Street and 18th Street bicycle facilities, with corollary improvements at the Brentwood Road/Saratoga Avenue intersection and through the Site.

Currently three Capital Bikeshare stations are located within approximately one-half mile of the Site. A Capital Bikeshare station is located at the Rhode Island Metro Station. The Applicant proposes providing

two Capital Bikeshare stations onsite to accommodate expected demand generated by the Site and a possible bicycle connection to the Metro station. During subsequent Stage 2 PUD applications, DDOT expects the Applicant to address the number and location of long- and short-term bicycle facilities, as well as showers and changing facilities for employees. The exact location of short-term bicycle facilities will be determined during the public space permitting process.

Safety

DDOT requires that the Applicant conduct a safety analysis to demonstrate that the Site will not create new, or exacerbate existing safety issues for all travel modes. DDOT asks for an evaluation of crashes at study area intersections as well as a sight distance analysis along the public space where there is expected to be conflicts between competing modes (e.g. crosswalks, driveway entrances, etc.)

The Applicant’s analysis of DDOT crash data reveals seven intersections within the study area that have a crash rate of 1.0 Million Entering Vehicles (MEV) or higher. Table 3 shows these crashes by type for these locations.

Table 3. Intersection Safety (Source: Applicant)

Intersection	Rate per MEV	Right Angle	Left Turn	Right Turn	Rear End	Side Swiped	Head On	Parked	Fixed Object	Ran Off Road	Ped. Involved	Backing	Non-Collision	Under/Over Ride	Unspecified	Total
Rhode Island Ave & Reed St/ Washington Pl NE	2.12	4 5%	9 12%	4 5%	22 29%	18 24%	1 1%	4 5%	3 4%	0 0%	6 8%	1 1%	1 1%	0 0%	3 4%	76
Franklin St & 14th St NE	1.16	3 18%	3 18%	0 0%	3 18%	3 18%	1 6%	1 6%	0 0%	0 0%	1 6%	0 0%	0 0%	0 0%	2 12%	17
Brentwood Rd & Saratoga Ave NE	1.26	1 3%	0 0%	3 10%	9 30%	6 20%	1 3%	6 20%	2 7%	0 0%	0 0%	2 7%	0 0%	0 0%	0 0%	30
Montana Ave & Downing St/Douglas St NE	1.68	7 35%	0 0%	1 5%	4 20%	2 10%	0 0%	2 10%	1 5%	0 0%	0 0%	1 5%	0 0%	0 0%	2 10%	20
Montana Ave & W St/18th St NE	1.85	2 6%	3 9%	0 0%	6 18%	13 39%	1 3%	1 3%	3 9%	0 0%	1 3%	1 3%	1 3%	0 0%	1 3%	33
Saratoga Ave & 14th St NE	3.57	1 10%	0 0%	0 0%	1 10%	5 50%	0 0%	1 10%	0 0%	0 0%	1 10%	0 0%	0 0%	0 0%	1 10%	10
Downing St/Bryant St & 14th St NE	1.88	0 0%	0 0%	0 0%	0 0%	2 67%	0 0%	0 0%	0 0%	0 0%	1 33%	0 0%	0 0%	0 0%	0 0%	3

The proposed site design and operations may result in a reduction of the vehicle crash rates along the perimeter of the Site. Specific geometric improvements to mitigate safety concerns at these seven intersections should be detailed during Stage 2. The Applicant will be required to coordinate with DDOT during the Stage 2 PUD and the public space permitting process to ensure that safe design is incorporated into new streets and vehicular access points.

Mitigations

As part of all major development review cases, DDOT requires the Applicant to mitigate the impacts of the development in order to positively contribute to the District’s transportation network. The mitigations must sufficiently diminish the action’s vehicle impact and promote non-auto travel modes.

This can be done through Transportation Demand Management (TDM), physical improvements, operations, and performance monitoring.

DDOT preference is to mitigate vehicle traffic impacts first through establishing an optimal site design and operations to support efficient Site circulation. When these efforts alone cannot properly mitigate an action's impact, TDM measures may be necessary to manage travel behavior to minimize impact. Only when these other options are exhausted will DDOT consider capacity-increasing changes to the transportation network because such changes often have detrimental impacts on non-auto travel and are often contrary to the District's multi-modal transportation goals.

The following analysis is a review of the Applicant's proposed mitigations and a description of DDOT's suggested conditions for inclusion in the PUD.

Site Circulation, Operations, and Design

The Site should be designed in a manner to facilitate internal movement of people and vehicles such that the potential impacts to the external transportation network are minimized. When potential impacts are unavoidable, operational changes, such as limitations on turn movements or changes in directionality of roadways, are an effective way to manage a Site's potential transportation impact.

Several operational or geometric changes are proposed by the Applicant to which DDOT generally concurs. However, DDOT does not yet agree to the design and operational changes. Further evaluation of design and operations changes should occur during Stage 2. These proposals include:

- Install a traffic signal at the intersection of Saratoga Avenue and Montana Avenue;
- Incorporate 15th Street extended as the fourth leg of the intersection of Rhode Island Avenue with Brentwood Road. During the Stage 2 application, work with DDOT and WMATA to relocate the bus stop, determine the need for separate right and left turn lanes on 15th Street extended, and determine if a left turn lane from Rhode Island Avenue onto 15th Street extended is necessary;
- Install lane marking and striping changes at two intersections: Rhode Island Avenue and Montana Avenue, and 18th Street and Montana Avenue;
- Install lane markings, striping, and signing improvements as needed to establish an official bike route between 12th Street and 18th Street through the Site;
- Coordinate with DDOT during Stage 2 PUD applications on the following:
 - Amount and size of loading facilities
 - Maneuvering analyses of trucks to and from loading facilities
 - Amount of off-street parking (this may require an inventory and occupancy count of on-street facilities to help determine the appropriate amount of parking and potential spillover impacts)
 - Layout of internal streets, including curbside management
 - Transportation Demand Management plans for each building
 - Amount of secure off-street bicycle parking in each building
 - Locations and amount of on-street bicycle racks
 - Locations for Capital Bikeshare stations
- Creation of a new bicycle route through the Site along Saratoga connecting the 12th Street and 18th Street bicycle facilities. The proposed bicycle facilities on Saratoga Avenue are appropriate. The specific design elements should be addressed in the Stage 2 process;

- Secure bicycle parking and bicycle racks will be placed throughout the Site, as well as two Capital Bikeshare stations, the locations of which will be addressed in Stage 2 and the permitting process; and
- Provide showers and changing facilities in commercial buildings for employees.

The phasing and details of these improvements will be finalized during the Stage 2 process. Additional consideration of further geometric and operation adjustments may also be necessary. These may include:

- Adjustments to improve connectivity and safety, such as conversion of Brentwood Road north of the Site to two-way traffic or coordination with the Fire Department to add an alley at the rear of their property and/or relocate their driveway.
- Additional traffic and safety impact mitigations for impacted intersections not fully addressed previously. Including at:
 - Montana Avenue & 18th Street/W Street,
 - Rhode Island Avenue & Montana Avenue/14th Street,
 - And all intersections along Brentwood Avenue and Montana Avenue beside the Site;
- Additional analysis to verify existing transit service has capacity to accommodate future demand, and identify new demands that may warrant transit adjustments;
- Details on long-term and short-term bicycle parking facilities and for pedestrian and bicycle facilities are expected in Stage 2;
- Improve pedestrian connections to major nearby offsite destinations; and
- Adjustments to improve connectivity and safety, such as updated geometry and operations for Brentwood Road north of the Site and coordination with the Fire Department to potentially add an alley at the rear of their property and/or relocate their driveway.

The Applicant shall design streets to DDOT standards, and signal modifications will be coordinated as part of the Stage 2 PUDs to optimize performance of the road network while providing ample pedestrian crossing time. The Applicant should also work with DDOT to improve pedestrian connections to the Rhode Island Metro Station and Noyes Elementary School and add the bicycle facilities along Saratoga Avenue as identified above. Site design and similar elements, in particular where Site streets intersect major surrounding streets, will be further coordinated as part of Stage 2.

Transportation Demand Management

As part of all major development review cases, DDOT requires the Applicant to produce a comprehensive Transportation Demand Management (TDM) plan to help mitigate an action's transportation impacts. TDM is a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length in order to help achieve highly efficient and sustainable use of transportation facilities. In the District, this typically means implementing infrastructure or programs to maximize the use of mass transit, bicycle and pedestrian facilities, and reduce single occupancy vehicle trips during peak periods. The Applicant's proposed TDM measures play a role in achieving the desired and expected mode split.

The specific elements within the TDM plan vary depending on the land uses, site context, proximity to transit, scale of the development, and other factors. The TDM plan must help achieve the assumed trip generation rates to ensure that an action's impacts will be properly mitigated. Failure to provide a

robust TDM plan could lead to unanticipated additional vehicle trips that could negatively impact the District's transportation network.

The Applicant has offered potential TDM measures. Per the Applicant, the types of elements that may be appropriate include:

- "TDM Coordinators
- Pricing parking at market rates and unbundling parking from the costs of residential units
- Providing bicycle parking exceeding minimums
- Funding the installation of Capital Bikeshare stations
- Placing electronic message boards in the building lobbies"

These types of TDM measures are appropriate, but the ultimate TDM plan will be determined as part of the Stage 2 analysis, as more is understood of the development details. Performance monitoring, as described later in the memorandum, may also be necessary as determined through an updated CTR during the Stage 2 PUD.

Additionally, DDOT requests that the following element be added to the Applicant's TDM plan as a condition of approval:

- Commit to inclusion of non-auto incentives for Capital Bikeshare membership and carshare membership to all residential tenants and commercial employees.
- Fund a transit study reexamining the proposed extension of a Rhode Island bus to Downtown (as found in Appendix 4 of the Final Recommendations of *The Metrobus Rhode Island Avenue-Baltimore Avenue Line Study* by WMATA), providing updated ridership numbers based on the transportation analysis of this proposal.

Additional TDM measures may be necessary as determined during the analysis of a revised CTR during the Stage 2 PUD.

Performance Monitoring

The CTR provides a projection of an action's likely transportation impacts. However, in an urban environment that is rapidly developing and changing, the projections may not provide enough certainty to reveal the true future impacts of an action, particularly at the scale of this PUD. A performance monitoring plan provides the framework for increasing the level of certainty concerning expected impacts so that DDOT and the public can have a better idea of expected future travel conditions. A performance monitoring plan establishes thresholds for new trips an action can generate, defines post-completion evaluation criteria and methodology, and establishes potential remediating measures.

A performance monitoring plan may be necessary as a result of potential impacts determined in the CTR of the Stage 2 PUD.

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