



TECHNICAL MEMORANDUM

TO: Fairfield at Capitol Commerce Center Team

FROM: Gorove/Slade Associates

DATE: July 12, 2005

SUBJECT: Fairfield at Capitol Commerce Center
Preliminary Transportation Analysis Findings

INTRODUCTION

This memorandum summarizes the preliminary findings of a traffic impact analysis conducted in conjunction with the Fairfield at Capitol Commerce Center Planned Unit Development (PUD) and zoning map amendment application. The Site, Lot 815 in Square 3576, is located in the Eckington area of Ward 5 in Washington DC and consists of approximately 187,958 square feet of land area (see Figure 1, attached). The Site is presently in the M Zone District. The Applicant, Fairfield Residential (FF) LLC, proposes to construct a mixed-use project that will include approximately 675 to 700 residential units and approximately 10,600 square feet of neighborhood-serving retail. The Applicant also proposes to rezone the Subject Property to the C-3-C Zone District.

Scope of Study

Gorove/Slade met with representatives from DDOT on May 3, 2005 to discuss this project and the assumptions/methodology to be followed in the traffic impact analyses. A follow-up letter was sent on May 24th outlining the study scope; a copy of this letter is attached. DDOT has since agreed to the scope outlined in the letter, with the addition of two intersections to the study area. Figure 1 shows the locations of final list of study area intersections.

As seen from on Figure 1, this study focuses on the neighborhood streets and intersections between Rhode Island and Florida Avenues. The reasoning behind this was the scope of the on-going New York Avenue corridor study being performed by DDOT, which is taking an in-depth look at the New York Avenue and Florida Avenue intersection, in the manner beyond a traditional impact analysis scope. With this study already well underway, a decision was made to focus the efforts of this impact analysis on the neighborhoods streets, which were not included in the scope of the larger New York Avenue study.

EXISTING CONDITIONS

The roadways included in this analysis are primarily neighborhood streets; they are oriented on a city grid, and generally have one or two travel lanes in a direction controlled by stop signs. Two traffic signals are

within the study area, both located on 4th Street NE. The Annual Average Daily Traffic (AADT) volume on the portion of Rhode Island Avenue included in the study area is approximately 27,000 vehicle trips, with traffic flow oriented westbound in the mornings and eastbound during the afternoon peak hours

Data Collection

Existing AM and PM peak hour traffic counts were conducted at eleven (11) study intersections on Thursday, June 2, Tuesday June 7, and Thursday, June 9, 2005, between the hours of 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM. These intersections, shown on Figure 1 include Rhode Island Avenue/4th Street, T Street/4th Street, T Street/3rd Street, T Street/2nd Street, R Street/3rd Street, R Street/2nd Street, R Street/Eckington Place, Q Street/Eckington Place, Harry Thomas Way/Eckington Place, Rhode Island Avenue/2nd Street, and Rhode Island Avenue/3rd Street. In addition to collecting turning movement counts, the geometry of the study area, and traffic control information including signal timings were collected. Peak hour observations were also made of localized congestion and queuing.

Traffic Capacity Analyses

The existing traffic counts and observations were input into the Synchro/SimTraffic 6 traffic analysis software to calculate existing delays and levels of service (LOS) for the study intersections. LOS is a 'letter-grade' given to intersections ranging from A to F, based on the delays motorists experience traveling through them. LOS A represents little to no delay; LOS F represents failing conditions. DDOT generally considers LOS D acceptable; although in heavily urban areas, LOS E is also considered acceptable.

Table 1 shows the results of the existing LOS and delay calculations (figures of existing volumes and calculation worksheets will be provided in the final report). The preliminary analysis reveals that traffic generally operates at or above acceptable levels of service during both the AM and PM peak periods. The signalized intersections located on 4th Street NE with Rhode Island Avenue and T Street currently operate at acceptable levels in both peaks, with no long queues. The remaining intersections, which are unsignalized, operate above acceptable levels with little delay. Note that the LOS E experienced on northbound vehicles during the evening at the unsignalized intersection of 3rd Street NE with Rhode Island Avenue is not considered an unacceptable condition because of the location of a signalized intersection with Rhode Island Avenue one block away at 4th Street NE.

Table 1: Existing Capacity Analysis Results

Intersection (Approach)	Existing Conditions			
	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	Level of Service	Delay (sec/veh)	Level of Service
Rhode Island, NE & 4 th Street, NE				
Overall	28.2	C	23.2	C
Eastbound	24.7	C	21.7	C
Westbound	30.9	C	22.9	C
Northbound	15.6	B	18.3	B
Southbound	27.3	C	37.2	D
T Street, NE & 4 th Street, NE				
Overall	8.5	A	10.6	B
Eastbound	11.8	B	13.1	B
Westbound	17.4	B	18.8	B
Northbound	7.3	A	8.5	A
Southbound	5.4	A	5.6	A
T Street, NE & 3 rd Street, NE				
Overall	5.9	A	5.4	A
Eastbound	6.5	A	6.6	A
Westbound	6.7	A	5.5	A
Northbound	4.4	A	5.0	A
T Street, NE & 2 nd Street, NE				
Overall	6.5	A	5.7	A
Eastbound	5.4	A	5.7	A
Westbound	7.1	A	6.8	A
Southbound	6.2	A	3.6	A
R Street, NE & 3 rd Street, NE				
Overall	4.9	A	5.9	A
Eastbound	3.7	A	6.1	A
Westbound	2.8	A	3.5	A
Northbound	5.5	A	5.6	A
R Street, NE & 2 nd Street, NE				
Overall	5.9	A	5.4	A
Eastbound	5.6	A	6.0	A
Southbound	6.0	A	4.8	A
R Street, NE & Eckington Place, NE				
Overall	6.6	A	6.2	A
Eastbound	6.9	A	8.2	A
Westbound	6.2	A	5.1	A
Northbound	6.9	A	5.9	A
Q Street, NE & Eckington Place, NE				
Eastbound	5.1	A	4.0	A
Northbound Left Turn	3.2	A	2.8	A
Harry Thomas Way & Eckington Place, NE				
Westbound	8.2	A	8.0	A
Southbound Left Turn	4.7	A	2.9	A
Rhode Island, NE & 3 rd Street, NE				
Northbound	15.8	C	48.3	E
Southbound	25.2	D	17.7	C
Eastbound Left Turn	17.5	C	11.4	B
Rhode Island, NE & 2 nd Street, NE				
Westbound Left Turn	9.6	A	25.1	D

FUTURE CONDITIONS

This analysis compared two future conditions; (1) 'Background' conditions, with no development on the site and (2) 'Total Future Conditions' assuming PUD approval. Background conditions are not necessarily the same as 'without PUD approval' because the property could still be developed as a matter-of-right development. Rather, it serves as a comparison of before and after the development of the PUD, in order to gauge traffic impacts.

Background Conditions (Without Proposed PUD)

The Background conditions are based on the existing conditions analysis with two additions: (1) approved and funded infrastructure improvements, and (2) traffic generated by approved nearby developments. During the scoping meeting with DDOT, several improvements and developments were discussed. Gorove/Slade is still acquiring information on some of the improvements and developments; most importantly information on the PEPCO site and the Eckington Traffic Calming Study.

A preliminary review of these studies and developments show that most will not impact the neighborhood streets near the site. Most development has yet to be approved or is located south of Florida Avenue. It is possible that in the completed study, these nearby developments will be accommodated by an assumed growth in through traffic on study area streets, representing a small increase in traffic.

Two infrastructure improvements that directly impact the site are detailed below.

New York Avenue Study

Although still in the draft phase, the New York Avenue plan has considered several options for the New York Avenue and Florida Avenue intersection. Complicating the situation is the presence of I-395 nearby and the desire to create an enhanced connection to the freeway from New York Avenue. The current draft for the report lists the recommendation for this intersection as:

"Given the size of a grade-separated traffic circle necessary to provide safe/efficient traffic flow along New York Avenue, it was agreed that a diamond interchange should be investigated further for this location. In addition, both improving the existing at-grade intersection and further extending the proposed I-395 tunnel (see discussion of I-395 below) were carried forward."

Details on this study are on the DDOT website: <http://www.ddot.dc.gov/ddot/cwp/view,A.1247,Q.560773.asp>.

Since the improvements recommended in this report are long-term in nature, Gorove/Slade is communicating with DDOT to determine what interim improvements are being considered.

Metropolitan Branch Trail

The Metropolitan Branch Trail (MBT) MBT is an important non-motorized transportation route under development providing direct pedestrian and bicycle access from Northeast DC neighborhoods to the heart of Washington and seven of Metrorail's Red Line stations. The Metropolitan Branch Trail (MBT) will significantly enhance pedestrian and bicycle access between the Fairfield at Capitol Commerce Center site and the New York Avenue Metrorail station.

Figure 2, attached to this memorandum shows a diagram of existing and planned MBT facilities. The grade-separated design of the MBT segment between the new Metrorail Station and the PUD site eliminates the need for pedestrians and bicyclists to cross the intersection of New York and Florida Avenues. A recently completed elevated trail structure takes the Trail over M Street NE, and Florida Avenue NE. A portion of the Trail currently funded and under design will then pass under the existing New York Avenue, NE Bridge, adjacent to the Metrorail and other railroad tracks. The elevator and stairs at the Station entrance will provide ADA accessible Trail and street-level access.

The short segment of the Trail from New York Ave to Harry Thomas Way is being designed and implemented by DDOT. It will connect the recently-completed elevated section adjacent to the new Metrorail station with the street system in the Eckington neighborhood, including designs for a connecting asphalt path at Harry Thomas Way and a trail entrance at R Street.

Total Future Conditions (With PUD Approval)

The Total Future Conditions consist of the Background conditions with the addition of traffic generated by the proposed development.

Transportation Features of Fairfield at Capitol Commerce Center

Internal Roadways

The Fairfield at Capitol Commerce Center PUD development establishes a network of roadways within the site in the fashion of an urban neighborhood grid. Instead of creating a large 'block' of development, the site is broken up in a similar fashion to the surrounding streets. From a traffic standpoint, this is beneficial for several reasons. First, it separates the access points for the parking facilities, which helps minimize localized queues and concentrations of traffic. Second, it provides several options for motorists to disperse within the street grid, which shortens the overall trip length (fewer cars have to 'circle the block' to get to their parking spot).

Parking

Auto ownership tends to be relatively low at apartment and condominium developments within cities when adjacent to good public transportation services. Renters and condo owners trade off the cost and convenience of owning a car so they can pay higher rents or mortgage payments for in-town living. They have conveniences within walking distance and are more dependent on public transportation. Recently, the availability of car-sharing services like Flexcar and Zipcar has provided another mobility dimension. As a result, the trend in new development has been to lower parking ratios (number of spaces provided per unit). This also enables the developer to lower construction and ongoing maintenance costs and offer units at lower prices. The supply of parking at each apartment project creates a self-enforcing mechanism: apartment dwellers who desire more parking than what's available will seek another location.

Zoning within the District encourages this market-based approach to determining the number of spaces to provide. The parking required for a C-3-C zone is one space for every four units, a parking ratio of 0.25. Additionally, the 2000 Census reported that an average of 50% of total households in Census Tract 87.02, which contains the Fairfield-CSX development site, own automobiles.

Fairfield at Capitol Commerce Center will provide approximately 800 underground parking spaces, with 750 spaces for residents and guests. This equates to a parking ratio of more than one space per unit, around 1.1 depending on the final unit and space amount. This exceeds the zoning requirements of the District, and measures favorably when compared to other recently approved developments. Table 2 below shows the parking ratios of twelve comparable developments in the District with an average of 0.88 parking spaces per unit. The proposed Fairfield development would be on the high end of parking ratios for new developments within the District.

Table 2: Parking Ratio of New District Developments

Development	Address	Located in CBD?	Parking Ratio (Spaces/Unit)
400 Massachusetts Avenue	400 Mass Ave, NW	Yes	0.85
Andover, The	1200 14th St, NW	No	1.00
Capitol Hill Towers	140 L St, SE	Yes	0.67
Fort Totten Metro Station Development	Fort Totten Metro Station	No	1.00
Highland Park	3000 14th St, NW	Yes	1.18
The Lexington and Concord Condos	800 3rd St, NE	Yes	1.11
Madrigal, The	811 4th St, NW	No	1.00
Massachusetts Court	300 Mass Ave, NW	Yes	0.84
Post Massachusetts Avenue	1499 Massachusetts Ave, NW	No	0.70
Radius at Logan Circle	1300 N St, NW	No	0.59
Sovereign at 2400 M Street	2400 M St, NW	Yes	0.58
Whitman, The	9th and M Streets, NW	No	1.10
Average			0.88 spaces/unit

National trends also support this 1.0 to 1.1 parking ratio. Information contained in the Institute of Transportation Engineer's *Parking Generation*, 3rd Ed., report the results of vehicle ownership per household in urban areas. Within a third of a mile of a rail transit station and 10 miles of the center city, the average household owned 0.8 to 1.2 vehicles.

Based on this information, a parking ratio of one space per unit is adequate for the proposed development.

Mode Split

Due to the location of the proposed development, the percent of residents using transit is expected to be higher than the District average of 30 to 35%. An estimate of Metrorail use was obtained using the "Development-Related Ridership Survey II", a study conducted by the Washington Metropolitan Area Transit Authority (WMATA). Based on mode split equations provided in this study, 63.7% of residents will utilize the Metrorail station during the commuter rush hours. In addition, due to the location of this site near the Metropolitan Branch Trail and several large office buildings, a percentage of residents will most likely walk or bicycle to work. For the trip generation analysis, a conservative alternative mode estimate of 50% was used.

Trip Generation

The number of trips anticipated to be generated by the new development was estimated using the Institute of Transportation Engineers (ITE) 7th edition *Trip Generation* rates/equations and the mode split assumptions summarized above. Table 3 shows the results of these calculations.

Table 3: Fairfield at Capitol Commerce Center Trip Generation

PUD Component	ITE Code	Amount	Trip Generation					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Daily Total
High-Rise Apartment	222	700 Units	53	157	210	144	92	2,802
Retail (specialty)	814	10,600 SF	5	4	9	21	26	492
Subtotal			58	161	219	165	118	3,294
Alt Mode Reduction		50%	-29	-80	-109	-82	-59	-1,647
Total			29	81	110	83	59	1,647

Note: 700 High-Rise Apartments were used as the conservative estimate; final unit count will be between 675 & 700 units.

The trip generation for the PUD represents a 62% decrease in daily trips compared to the potential matter-of-right development level of 1,127,748 square feet of office space. Table 4 contains a comparison.

Table 4: Comparison of Trip Generation between PUD and Matter-of-Right

Site Development	Trip Generation						
	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Proposed Development (Table 3)	29	81	110	83	59	142	1,647
Matter-of-Right (1,127,748 SF Office)	574	78	652	114	557	671	4,309
Difference	(545)	3	(542)	(31)	(498)	(532)	(2,662)
Percent Difference	(94%)	4%	(83%)	(27%)	(89%)	(79%)	(62%)

Note: Office trip generation includes a 50% reduction for use of alternate modes

Trip Distribution and Impacts

Preliminary analysis reveals that these additional trips can be adequately accommodated on the road network with little change in existing operating conditions. Only 11% of the total trips (AM or PM) generated by the new development will pass through the Rhode Island Avenue/4th Street signalized intersection. Less than 10% of the traffic would use 2nd and 3rd Streets in the PM peak, or less than 18 vehicles per hour for any peak hour (AM or PM). This represents less than one vehicle every three minutes. The distribution of traffic throughout the several adjoining neighborhood streets and alternate paths to and from the development aids in limiting impact. Based on the delays and LOS information contained in Table 1, traffic from the proposed development will not negatively impact traffic capacity on neighborhood streets.

Approximately half of the peak hour trips generated by Capitol Commerce Center would utilize the New York Avenue and Florida Avenue intersection, around 825 trips daily. Based on data within the New York Avenue Corridor study, approximately 100,000 vehicles per day use this intersection; traffic generated by the PUD would constitute less than 1% of daily traffic. Thus, development of the proposed development would not affect any of the on-going planning efforts or recommendations already being studied by DDOT.

NEXT STEPS

This technical memorandum is planned to be update with a full report which will include the following additions:

1. Details on the remaining background developments and improvements;
2. Figures of study area intersections, including traffic volumes for existing and future scenarios; and
3. Full capacity analysis details and worksheets.

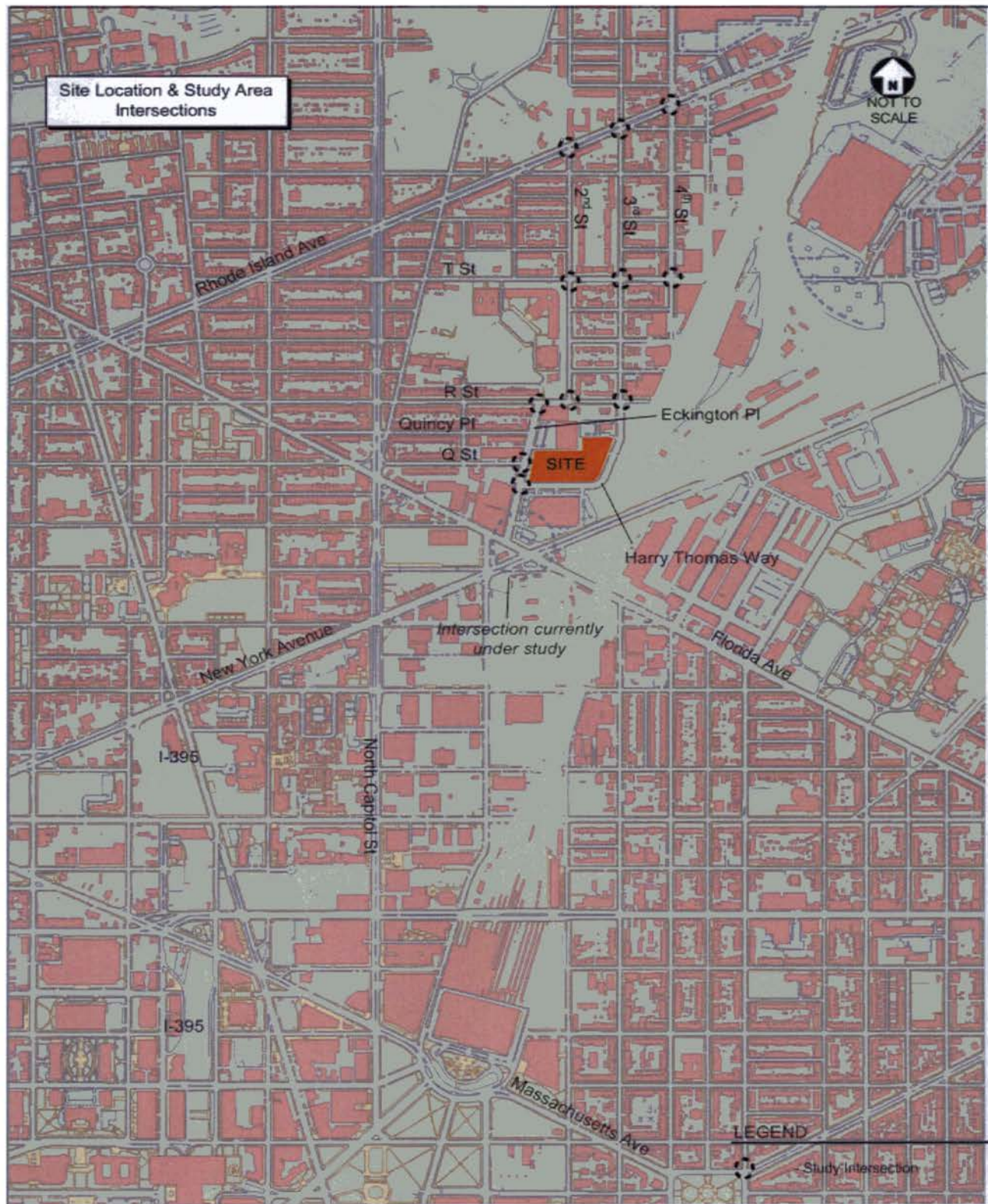


Figure 1 – Site Location & Study Intersections

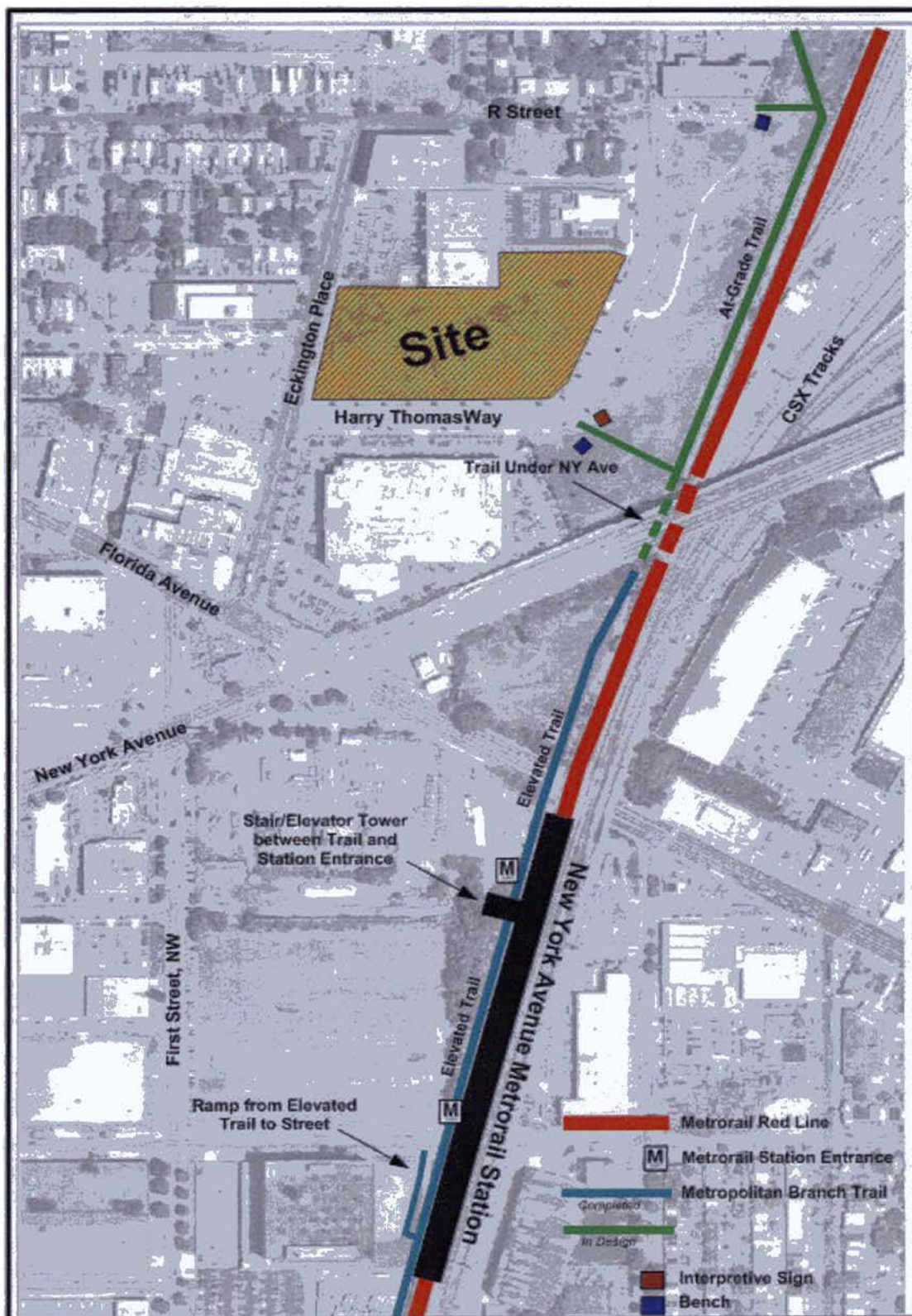


Figure 2 – Metropolitan Branch Trail/Metro connection