

Congress Heights Station Apartment Renovation/Addition

Transportation Impact Study February 25, 2014

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INTRODUCTION

The following report is a Transportation Study prepared for the Congress Heights Station apartment renovation/addition (herein “site” or “Congress Heights Station residential project”) in Southeast, Washington, D C The site is bounded by 13th Street, SE to the west, apartment buildings to the north and south, and the Malcolm X Elementary School and residential uses to the east Figure 1 provides an illustration of the regional site location

The site is currently comprised of three separate record lots: Square 5914, Lot 1 (Parcel 1), Square 5915, Lot 1 (Parcel 2) and Square 5915, Lot 2 (Parcel 3) providing for 65 residential units within three structures There are 31 units within the building on Parcel 1, 8 units within the building on Parcel 2 and 26 units within the building on Parcel 3 There are surface parking lots in the rear of Parcels 1 and 3 of which both lots are used by building maintenance staff only and are not currently utilized by residents See Figure 2 of an aerial of Parcels 1, 2 and 3,

The applicant, Horizon Hill Ventures, plans to construct a third story duplex addition to two of the three existing apartment buildings (Parcel 1 and Parcel 3) This addition will accommodate 45 additional units on the property for a total of 110 units (an additional 29 units in the building on Parcel 1 and another 16 units in the building on Parcel 3) No additional units are proposed for Parcel 2 In addition to the duplex additions, the applicant is proposing interior renovations to all existing buildings

There are two surface lots on site which are currently utilized by maintenance staff only A total of 76 parking spaces (32 on Parcel 1 and 44 on Parcel 3) will be provided in the future for residents This matter of right residential development will be seeking relief from the Board of Zoning Adjustment (“BZA”) in the following areas

- Parcel 1 will only provide for 32 parking spaces for 60 residential units The zoning requirement is however 1 parking space for each dwelling unit ¹
- Reducing the loading berth from 1 at 55 feet to 1 at 30 feet (Parcel 1)
- Reducing the minimum drive aisle in the parking lot from 20 feet to 16 feet (Parcel 3)

Scope of Study

The applicant has completed the scoping process with the District Department of Transportation (DDOT) The scoping form is attached in the Appendix A This report includes an assessment of

¹ All other parcel will meet the parking zoning requirement

Site Access and Circulation, Roadway Network, Pedestrian/Bicycle Facilities, Transit, Parking,
Transportation Demand Management and Safety

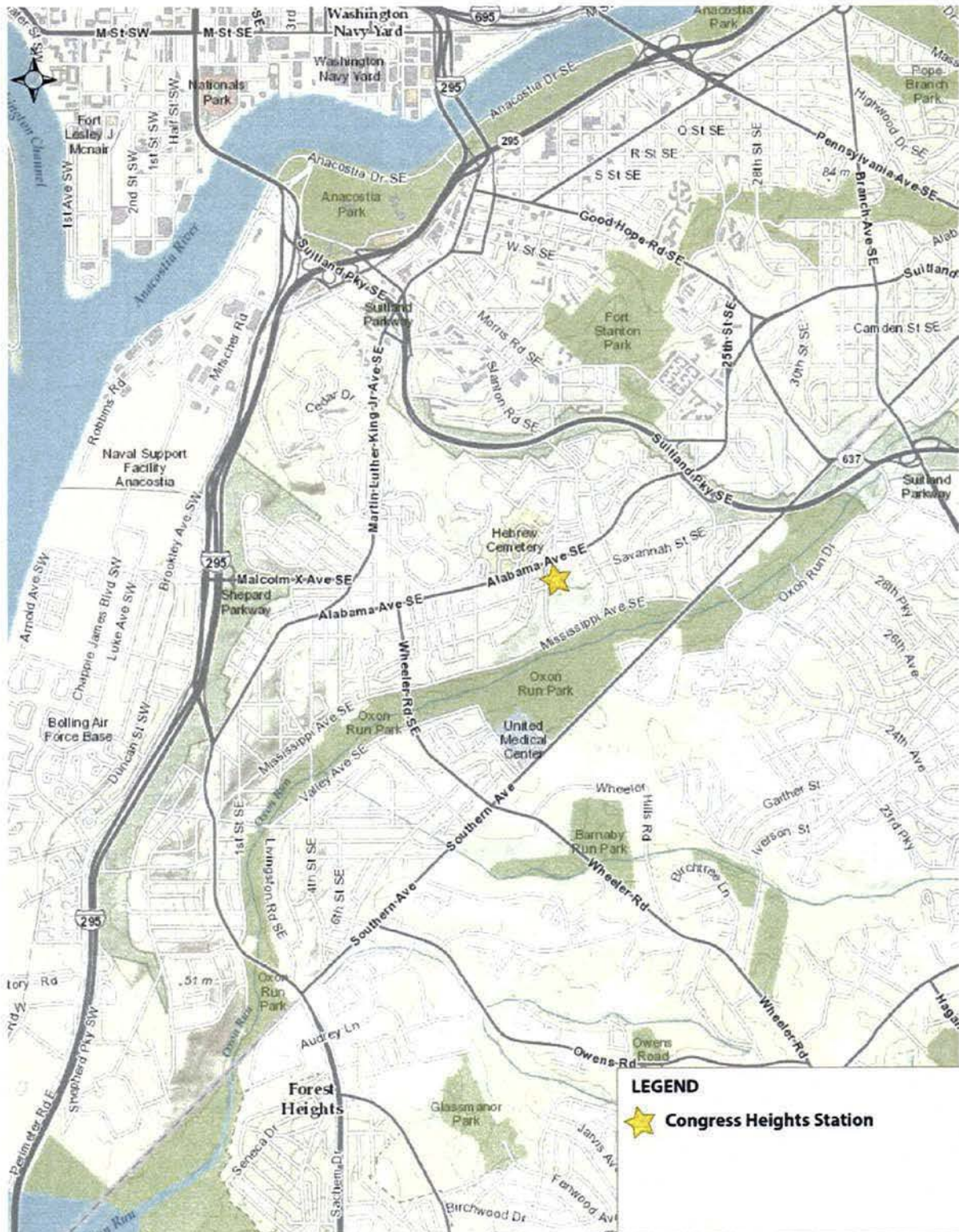


Figure 1: Site Location

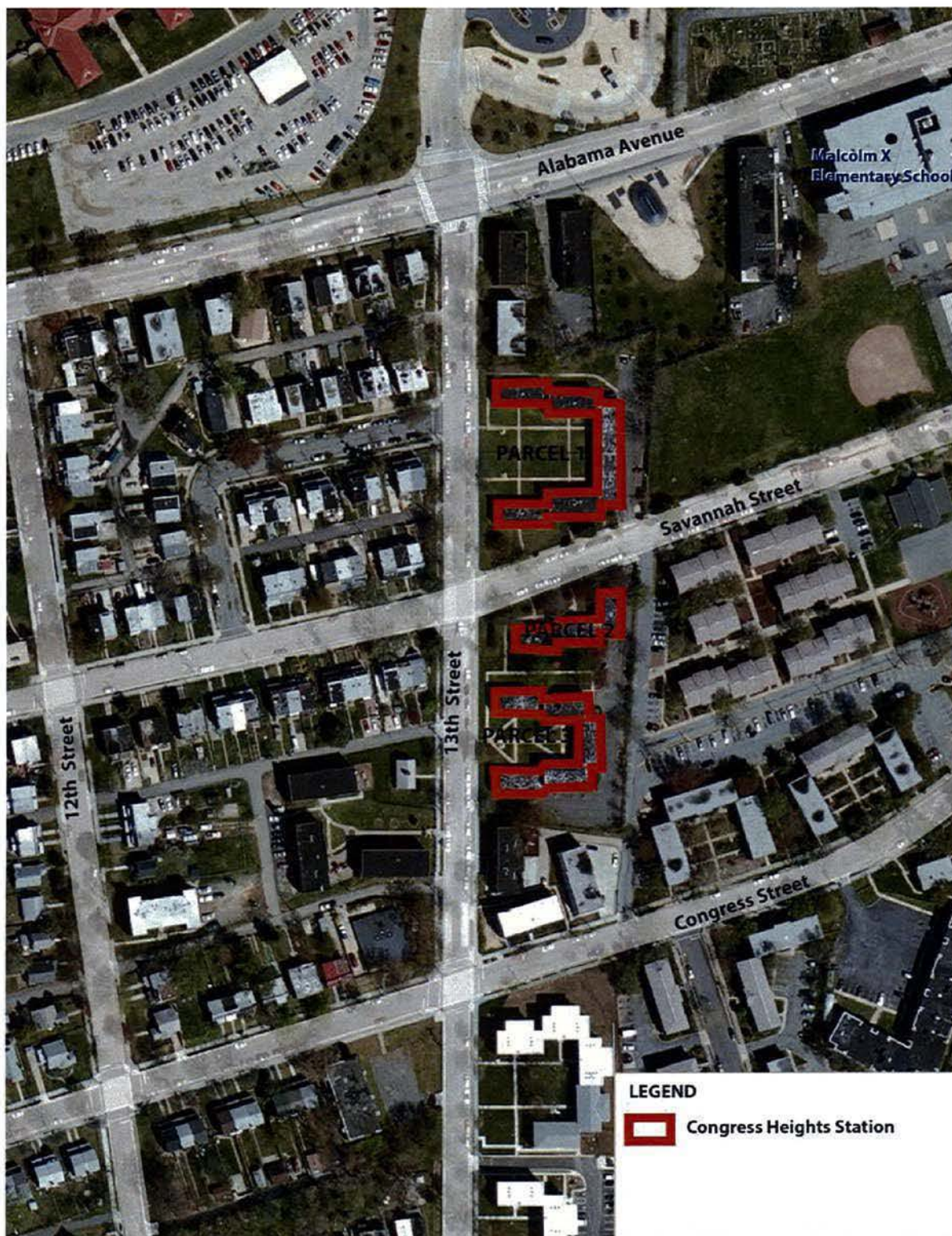


Figure 2: Aerial of Site

EXISTING CONDITIONS

Existing Roadway Network

Regional access to the site is provided via Suitland Parkway and South Capitol Street. Local access is provided by Alabama Avenue, SE (Alabama Avenue), 13th Street, SE (13th Street) and Savannah Street, SE (Savannah Street). The following section includes a description of the aforementioned regional and local roadways.

- Suitland Parkway is a limited-access parkway that generally runs east-west between South Capitol Street and MD Route 4 (near Andrews Air Force Base) in Prince Georges County, Maryland. The cross-section of Suitland Parkway varies from four lanes east of I-295 to six lanes west of I-295. Annual Average Daily Traffic (AADT) from DDOT's 2010 Traffic Volume map on Suitland Parkway near the site vicinity is 52,200 vehicles per day. The speed limit on Suitland Parkway is 45 miles per hour (MPH).
- South Capitol Street is classified as a freeway north of Firth Sterling Avenue, SE and transitions to a minor arterial with four travel lanes (two northbound and two southbound). The AADT on South Capitol Street within the site vicinity is 23,800 vehicles per day². The Malcolm X Avenue interchange provides access from South Capitol Street to the site. The posted speed limit is 30 mph.
- Alabama Avenue is an east-west minor arterial servicing 19,700 vehicles per day west of Wheeler Road, SE and 12,900 vehicles per day east of Stanton Road, SE. Within the vicinity of the site, the arterial extends from Martin Luther King Jr. Avenue to the west and continues east of Suitland Parkway. Curb parking is permitted along sections of the roadway and the posted speed limit is 25 miles per hour.
- 13th Street is a two-lane north-south local road that runs from the Congress Heights Metrorail Station to the north and continues south to Mississippi Avenue. The Congress Heights Station residential project is directly fronted by 13th Street. Residential Permit Parking (RPP) Zone 8 is permitted along both sides of the road. Generally the speed limit is 25 MPH; however, the speed limit is reduced to 15 MPH in the presence of school children.
- Savannah Street is a two-lane east-west local road adjacent to the site. Savannah Avenue serves as the southern border of Parcel 1 and the northern border of Parcels 2 and 3. The

² Per DDOT's 2010 Traffic Volume Map shown in Appendix B

roadway supports vehicular access to the existing surface lots and RPP Zone 8 parking is permitted along both sides of the road

- Congress Street, SE runs east-west between 10th Place and Alabama Avenue Curb parking is permitted and the posted speed limit is 25 miles per hour

Lane configuration and traffic control for the local roadways are shown in Figure 3

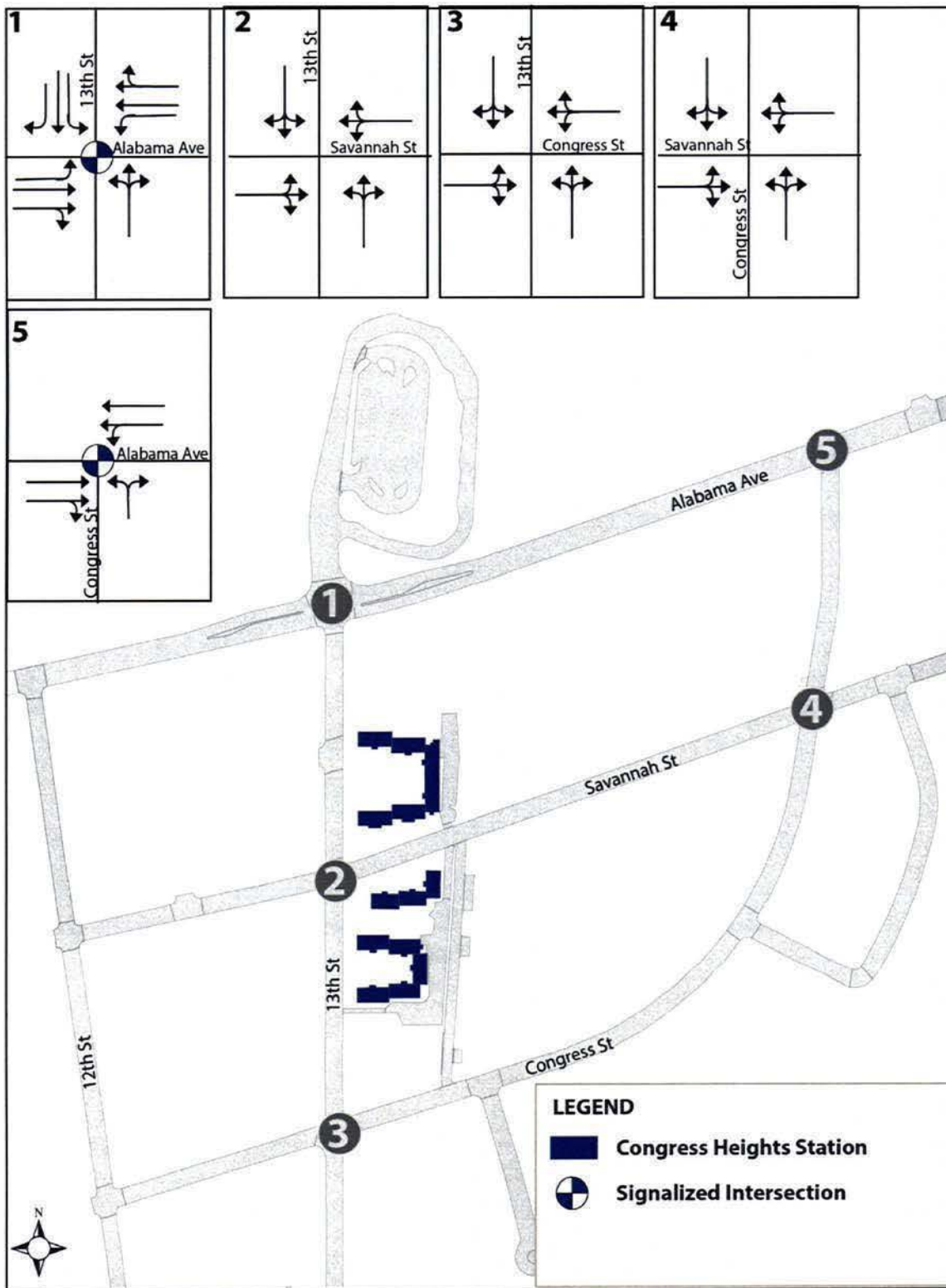


Figure 3: Lane Configuration and Traffic Control

Transit Services

The site is well served by Washington Metropolitan Area Transit Authority (WMATA) Metrorail and Metrobus. The Congress Heights Metrorail station on WMATA's Green line is approximately a 700-foot walking distance (from the corner of 13th Street and Savannah Street to the Metrorail entrance on the south side of Alabama Avenue) and is about a 3 minute walk (assuming a 4 foot per second walking pace).

Several WMATA Metrobus routes also service the site and the surrounding area. Metrobus routes, key destinations and service headways are shown in Table 1.

Table 1: Metrobus Routes, Key Destinations and Service Headways

ROUTE	ROUTE NAME	KEY DESTINATIONS	SERVICE HEADWAYS (WEEKDAY PEAK)
W2/W3 ³	United Medical Center – Anacostia Line	• Southern Ave Station • Congress Heights Station • Naylor Gardens • Fort Stanton • Anacostia Station • St. Elizabeth's Hospital	18 minutes
W4	Deanwood-Alabama Ave. Line	• Deanwood Station • Benning Road Station • Congress Heights Station • Joint Base Anacostia-Bolling • Anacostia Station	10 – 16 minutes
M8/M9 ⁴	Congress Heights Shuttle Line	• Washington Highlands • Congress Heights • Congress Heights Station	18 minutes
92/93 ⁵	U Street – Garfield Line	• Congress Heights Station • Navy Yard • Eastern Market Station • Gallaudet University • NoMa-Gallaudet U Station • U Street Station • Duke Ellington Bridge	15 minutes ⁶

³ W3 operates from approximately 9:09 AM to 3:24 PM.

⁴ The M8 and M9 lines operate on the same route in opposite directions.

⁵ The 93 line runs between 12:52 AM and 4:57 AM on the weekdays and 24 hours on the weekends.

⁶ Outside of the peak period the 92 operates with 18-22 minute headways.

Bus Stops are provided at the Congress Heights station and along 13th Street, Congress Street and Alabama Avenue. Bus stops located at the Congress Heights Metrorail station are sheltered and contain benches for patrons to sit on while waiting. The other bus stops in the area are not sheltered nor are there any additional amenities.

WMATA bus routes and bus stop locations are illustrated in Figure 4. The WMATA DC Bus route map is attached in Appendix C.

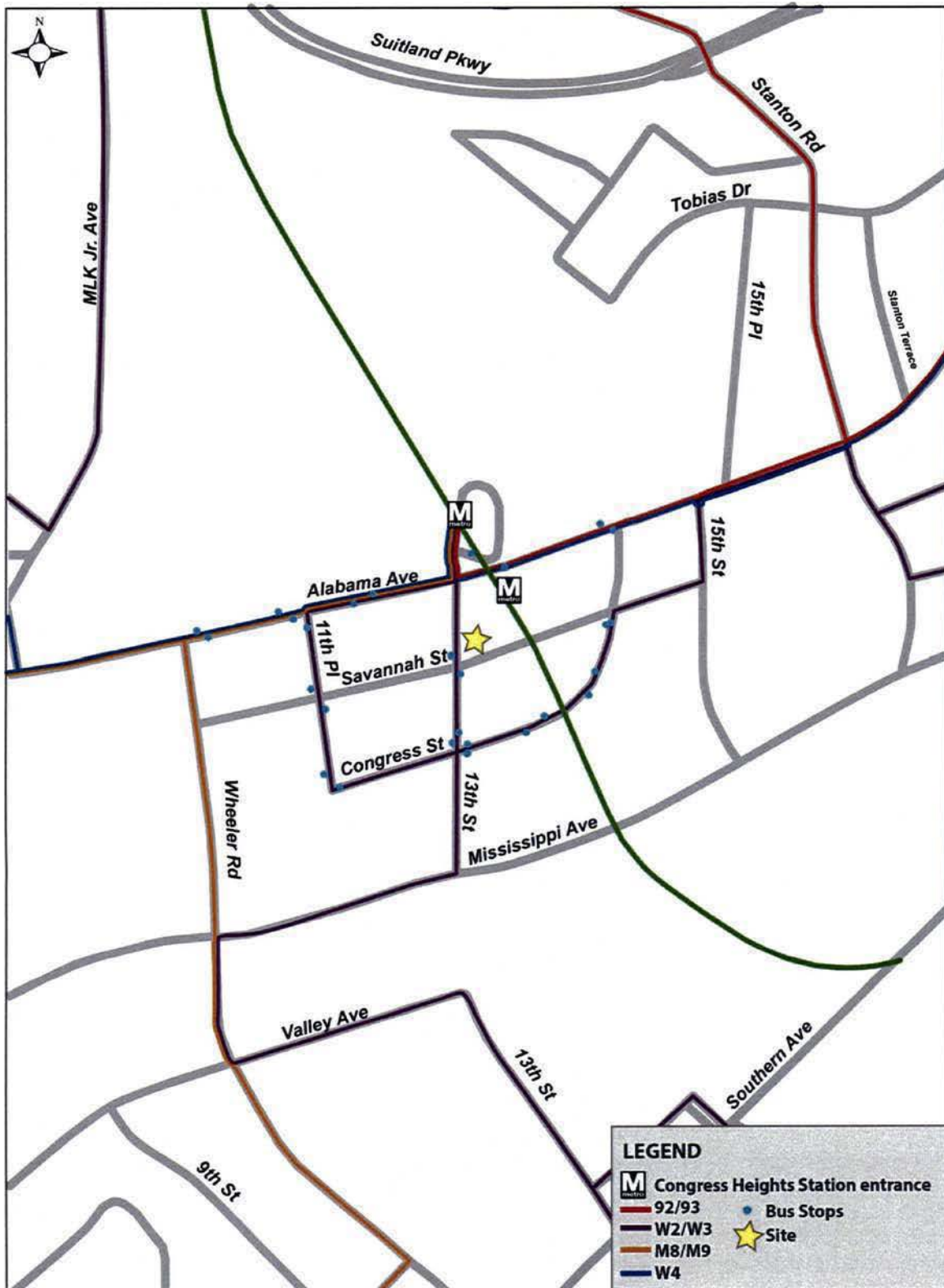


Figure 4: Transit Services

Pedestrian Facilities and Conditions

The presence of sidewalks, trails, crosswalks and pedestrian signals were identified along the following roadway sections:

- Alabama Avenue (between 12th Street and Congress Street)
- 13th Street (between Alabama Avenue and Congress Street)
- Savannah Street (between Congress Street and 12th Street)
- Congress Street (between 12th Street and Savannah Street)

Sidewalks are provided along Alabama Avenue, 13th Street, Savannah Street and Congress Street. All sidewalk widths in the study area are six feet wide except in the following locations:

- The sidewalk along the south side of Alabama Avenue east of 13th Street is 5.5 feet wide. It is however noted the sidewalk is 10 feet wide in front of Malcolm X Elementary School
- The sidewalk along the north side of Alabama Avenue east of 13th Street is 8 feet wide in front of the Metrorail station, 6 feet wide east of the Metrorail station but has an effective width of 3 feet in most places (see photograph in Figure 5.)



Figure 5: Photograph of Sidewalk along Alabama Avenue north side looking east

There are crosswalks to facilitate pedestrian crossing at all approaches within the immediate vicinity of the site, which can be seen in figure 4. Ladder-style high visibility crosswalks are in place at the intersection with Alabama Avenue at 13th Street and Congress Street and the intersection at Savannah Street and Congress Street.

Pedestrian generators near the site include the Congress Heights Metrorail Station and the Malcolm X Elementary School. Sidewalks and crosswalks provide a continuous route to/from the site and both generators. During field observations residents were observed walking to the Metrorail Station and to the Elementary School. There are pedestrian countdown signals in place along all approaches of the 13th Street/ Alabama Avenue intersection.

Pedestrian countdown signals are in place at all approaches of the intersections with 13th Street and Alabama Avenue and Congress Street.

Curb ramps are located at all intersections to facilitate crossing. The curb ramps at the following intersections do not meet current ADA guidelines as outlined in the DDOT Design and Engineering Manual (Chapter 29):

- Congress Street/13th Place is a T-intersection. There are no detectable warning surfaces on the curb ramps crossing 13th Place.
- Savannah Street/ 12th Place is a T-intersection. There are no detectable warning surfaces on the curb ramps crossing 12th Place.
- Savannah Street/12th Street – There are no detectable warning surfaces on the curb ramps crossing all four approaches of the intersection.
- Congress Street/Savannah Street – There are no detectable warning surfaces on the curb ramps on the NE, NW, and SW corners. The ramp on the SW corner leads pedestrians diagonally into the intersection.

All other curb ramps within the study area meet ADA compliance. Figure 6 is an illustration of pedestrian facilities including sidewalks, crosswalks and ADA ramps along the studied roadway sections.

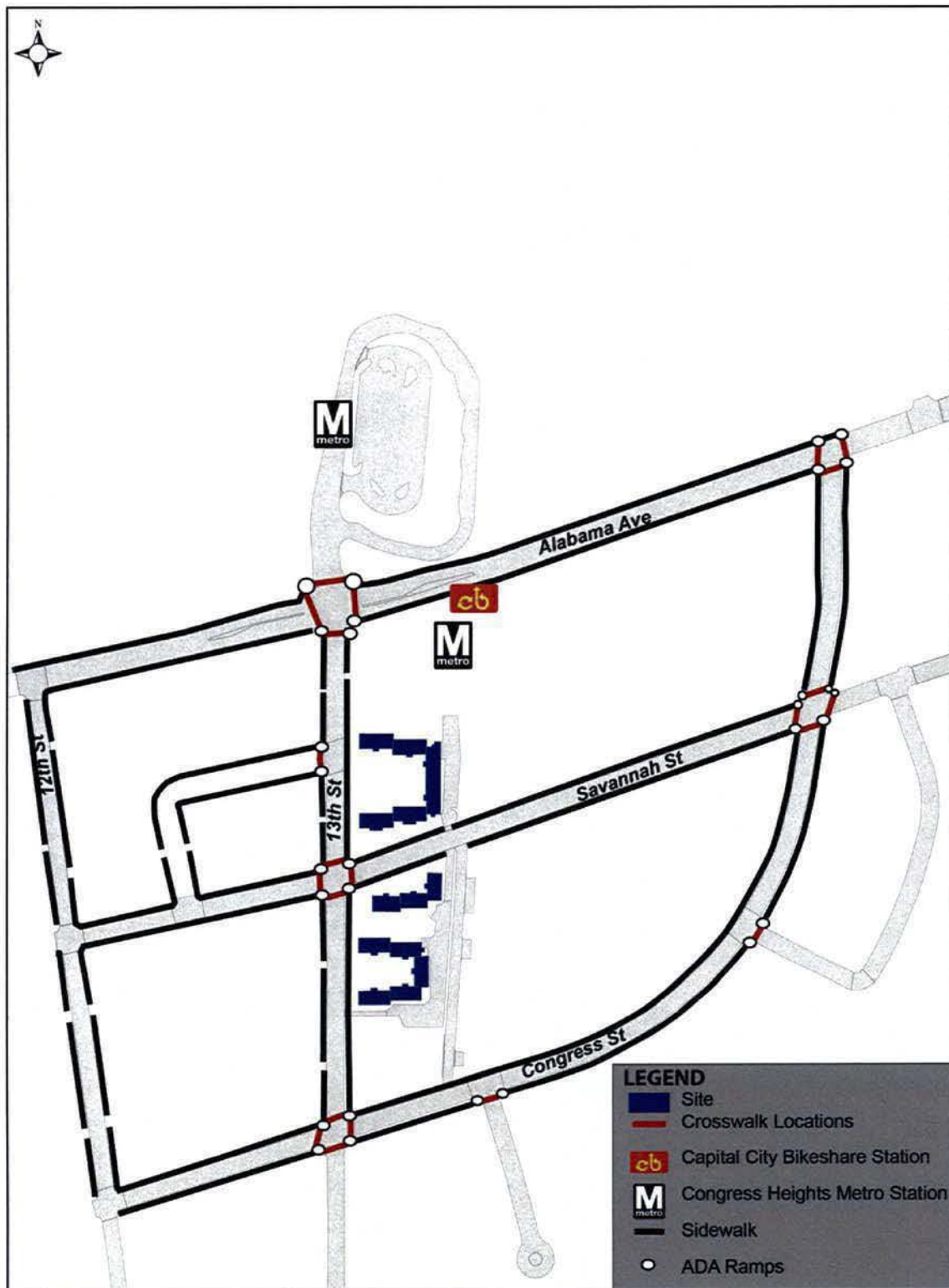


Figure 6: Pedestrian Facilities

Bicycle Facilities

There are currently no designated bike lanes or routes in the vicinity of the site. Per DDOT's proposed bicycle facilities map, a bike is proposed on 13th Street from Alabama Avenue to Mississippi Avenue.

A number of bicycle facilities are provided at the Congress Heights Metrorail Station including a Capital Bikeshare station that furnishes 15 bicycles and 8 U-shaped bicycle racks near the bus bays. During field observations conducted on Thursday, January 30th during the morning peak period, 4 of 15 bikes were available for use.

The 2011 District of Columbia Bicycle Map rates traffic conditions for bicycling near the Congress Heights Station residential project as fair on Alabama Avenue. Traffic conditions for bicycling along 13th Street, Congress Street and Savannah Street are rated as good.

Parking

Off-Street

There is currently no off-street parking on the premises for residents. There are paved surface lots in the rear of Parcels 1 and 3 but there are no marked spaces and these areas are used by building maintenance staff only.

On-Street

A survey of on-street parking conditions including supply, parking restrictions/control and utilization was conducted on local roadways surrounding the Congress Heights Station residential project. Figure 7 illustrates streets included in the parking study area.

Parking utilization was observed on January 28, 2014 at 7:00 PM and 10:00 PM. Parking supply and control are shown in Table 2. Table 3 summarizes parking utilization during each survey period.

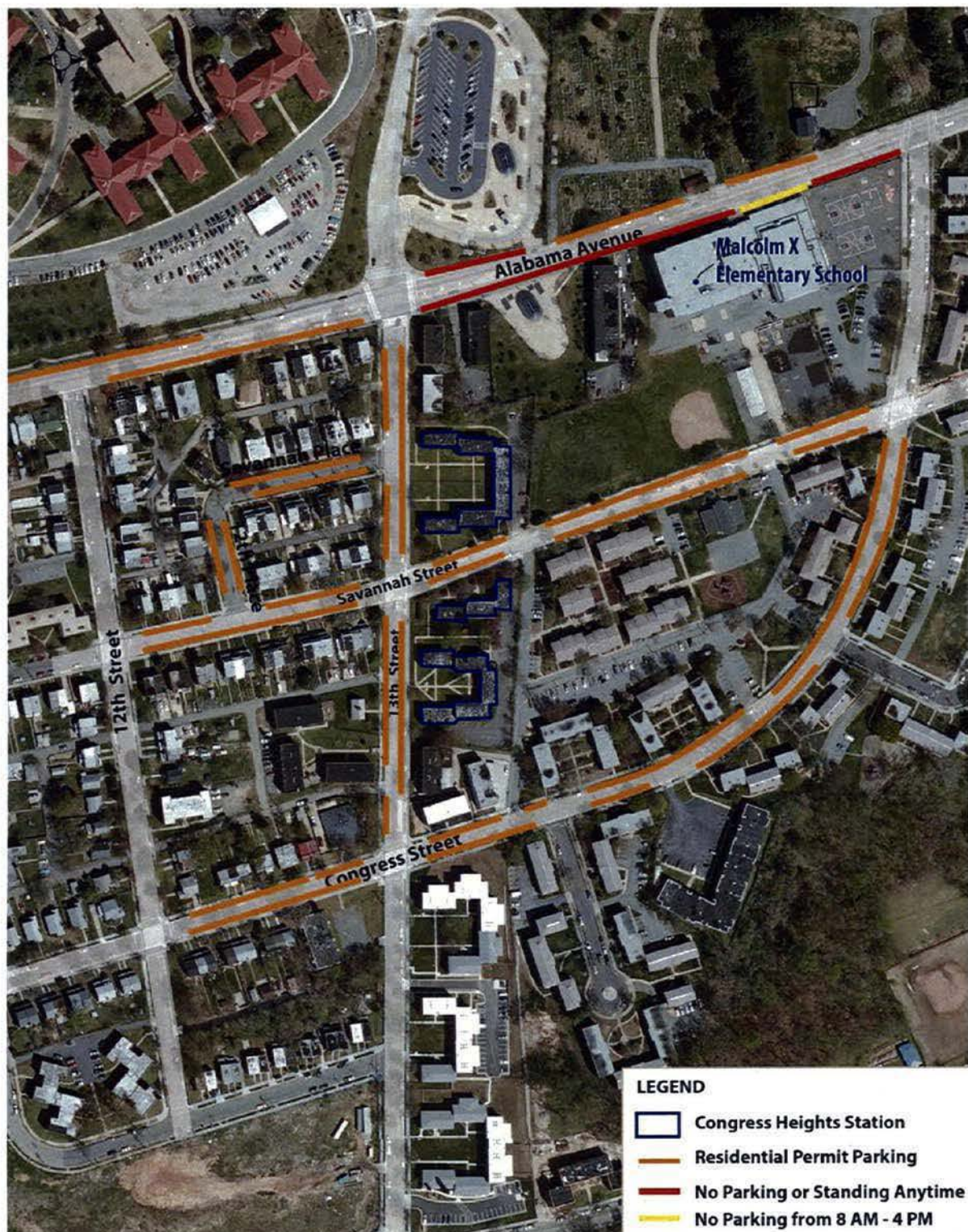


Figure 7: Parking Study Area

Table 2: Parking Supply and Control

Street	Parking Control/Restrictions	Approximate Supply ⁷
Alabama Avenue (12th Street to Congress Street)	Two Hour Parking Limit In Zone 8 (7AM – 8:30PM M-F)	43
13 th Street (Alabama Avenue to Congress Street)	Two Hour Parking Limit In Zone 8 (7AM – 8:30PM M-F)	50
Savannah Street (12th Street to 13 th Street)	Two Hour Parking Limit In Zone 8 (7AM – 8:30PM M-F)	95
Congress Street (12th Street to Savannah Street)	Two Hour Parking Limit In Zone 8 (7AM – 8:30PM M-F)	104
12 th Place (Savannah Street to Savannah Place)	Two Hour Parking Limit In Zone 8 (7AM – 8:30PM M-F)	10
Savannah Place (12 th Place to 13 th Street)	Two Hour Parking Limit In Zone 8 (7AM – 8:30PM M-F)	20

Curbside parking surrounding the Congress Heights Station residential project is RPP Zone 8. There are a few locations where parking is restricted at all times such as sections of Alabama Avenue between 13th Street and Congress Street fronting the Metrorail Station and a section of the Malcolm X Elementary School⁸.

⁷ Parking supply was determined by measuring the length of available space to park with a measuring wheel. Interruptions such as driveways, fire hydrants and no-parking zones were not included in the allowable space to park. The total segment measured was then divided by 25 feet, to account for an average size car and additional buffer space. This number provided an approximate parking supply for each street section.

⁸ Parking is prohibited on the south side of the street with the exception of a small segment by the school when parking is permitted outside of 8:00 AM to 4:00 PM. This small segment was not included in the parking supply count.

Table 3: Parking Occupancy

		7:00 PM		10:00 PM	
Street	Supply	Occupied Spaces	% Occupied	Occupied Spaces	% Occupied
Alabama Avenue					
12 th to 13 th	27	14	52%	24	89%
13 th to Congress	16	2	13%	4	25%
Total	43	16	37%	28	65%
13 th Street					
Alabama to Savannah	26	11	42%	13	50%
Savannah to Congress	24	15	63%	17	71%
Total	50	26	52%	30	60%
Savannah Street					
12 th to 13 th	33	19	58%	27	82%
13 th to Congress	62	25	40%	35	56%
Total	95	44	46%	62	65%
Congress Street					
12 th to 13 th	28	13	46%	22	79%
13 th to Savannah	76	24	32%	27	36%
Total	104	37	36%	49	47%
12 th Place	10	7	70%	7	70%
Savannah Place	10	12	60%	15	75%
Total Study Area	322	142	44%	191	59%

Within the identified parking study area, there is space to accommodate approximately 322 curb spaces. Demand for on-street parking was at 44% and 59% during the 7:00 PM and 10:00 PM occupancy surveys, respectively. This demand includes existing residents of the Congress Heights Station buildings as all residents with a car currently park on the Street. The property manager estimates, one-third of residents currently own a vehicle.

There was adequate curb parking available (more than 130 spaces) during both of the observed survey periods.

Refuse and Recycle Collection

Trash/Recycle collection for the complex occurs twice per week on Tuesdays and Thursdays. A trash dumpster servicing Parcel 1 is located in the rear of the site and accessed via Savannah Street. For Parcels 2 and 3, there is a dumpster/recycle bin located on the corner of Parcel 3. All loading associated with trash and reception collection occurs on-site. No loading occurs on the public roadway.

Pavement Markings

The following section provides an assessment of pavement markings including crosswalks, stop bars and lane markings at intersections in proximity to the Congress Heights Station residential project. Field observations were conducted to inventory the location and general conditions of pavement markings at the following intersections:

- 13th Street and Alabama Avenue
- 13th Street and Savannah Street
- 13th Street and Congress Street
- Congress Street and Savannah Street
- Congress Street and Alabama Avenue

13th Street and Alabama Avenue

As shown in Figure 8, there are ladder style crosswalks along each approach of the 13th Street/Alabama Avenue intersection. The crosswalks are presently in a good to fair condition.

Stop lines are also marked along all approaches of the intersection and are in good to fair condition. Travel lane markings are present along Alabama Avenue, but not on 13th Street.



Figure 8: Pavement Conditions - 13th Street and Alabama Avenue (looking west)

13th Street and Savannah Street

There are minimal pavement markings at the 13th Street/Savannah Street intersection. There are crosswalks and stop bars of which are in good to fair condition. A photograph of the 13th Street/Savannah Street intersection is shown in Figure 9.



Figure 9: Pavement Conditions - 13th Street and Savannah Street (looking southwest)

13th Street and Congress Street

Crosswalks and stop bars are in place at all approaches of the intersection and are in fair condition. A photograph of the 13th Street/Congress Street intersection is shown in Figure 10.



Figure 10: Pavement Conditions - 13th Street and Congress Street (looking northeast)

Congress Street and Savannah Street

There are ladder style crosswalks and stop bars at all approaches of the intersection. Sections of the pavement markings are in poor condition as shown in Figure 11.



Figure 11: Pavement Conditions: Savannah Street and Congress Street (looking northwest)

Congress Street and Alabama Avenue

There are ladder style crosswalks and stop bars at all approaches of the intersection which are presently in a good to fair condition. Travel lane markings are present along the eastbound and westbound approaches of Alabama Avenue, but not on Congress Street. See Figure 12 for a photograph of the intersection.



Figure 12: Pavement Conditions: Alabama Avenue and Congress Street (looking northwest)

Signage

The inventory of signage within proximity to the Congress Heights Station residential development is illustrated in Figure 13⁹.

⁹ The illustration does not include RPP Zone 8 signage. Information on RPP locations and operations are presented in the parking section of this report.

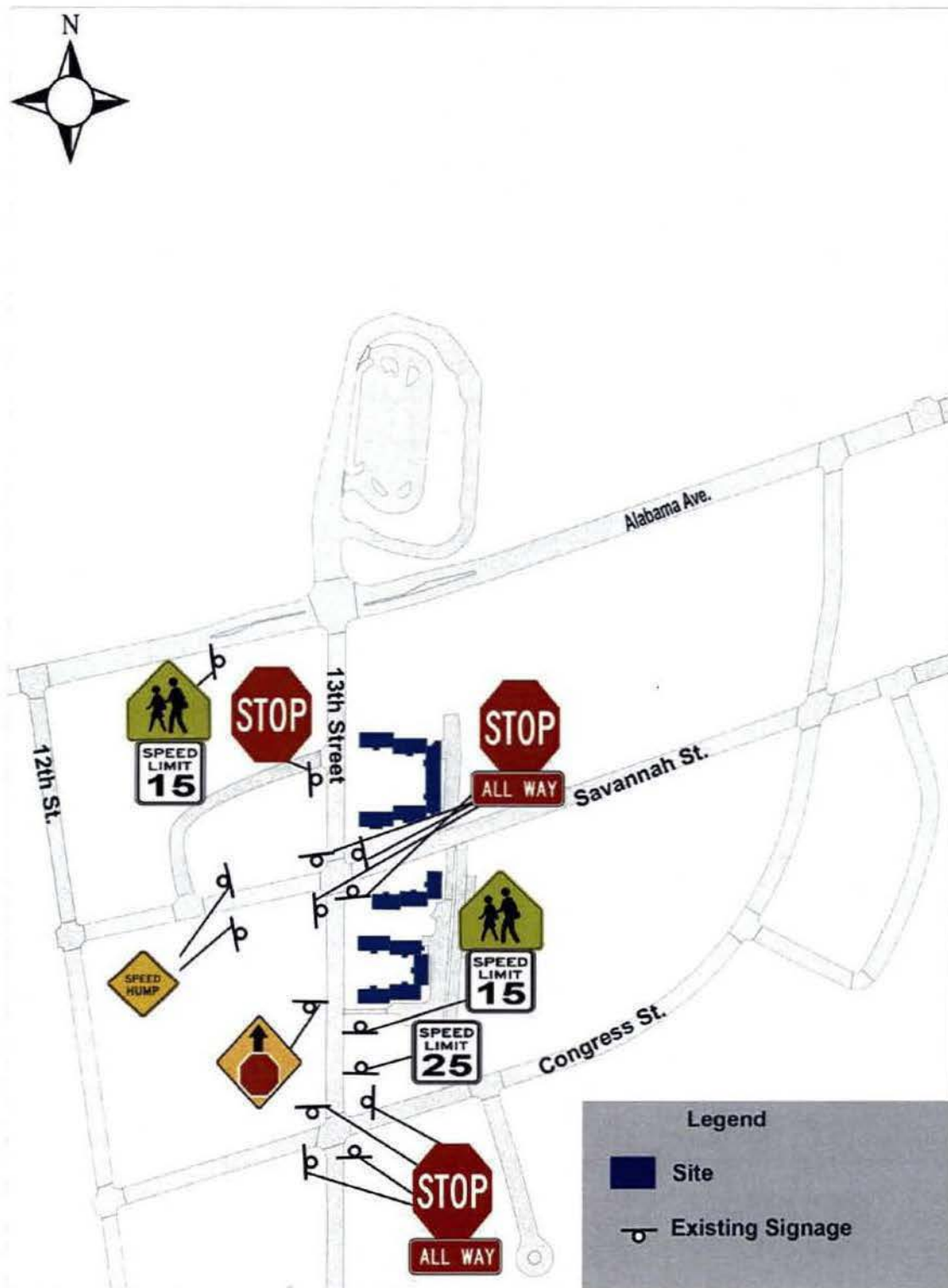


Figure 13: Traffic Control Signage Inventory

SAFETY

Crash History

Table 4 provides a summary of accident history (within a three year period)¹⁰ for the following intersections:

- 13th Street/ Alabama Avenue
- 13th Street/ Savannah Street
- 13th Street/ Congress Street
- 13th Street/ Mississippi Avenue

This data is based on reports received from the DDOT's Traffic Accident Report and Analysis System. Accident reports are provided in Appendix I.

The intersection crash rate was calculated for the 13th Street/ Alabama Avenue intersection and the procedure used to calculate the rate is shown in Appendix J. ADT data was not available for other local Streets thus crash rates could not be calculated.

Table 4: Summary of Accident History (total over a three year period)

Intersection	Number of Accidents	Number of Injuries	Number of Pedestrians/Bicyclists and/or Motorcycles Involved	Predominant Types of Accidents
13 th Street/ Alabama Avenue	18	7	0	• 12 Rear-ends • 4 Sideswipes • 1 Left Turn • 1 Unspecified
13 th Street/ Congress Street SE	7	1	0	• 4 Sideswipes • 2 Backing • 1 Left Turn
13 th Street/ Savannah Street	3	2	0	• 2 Parked Vehicle • 1 Sideswipe
13 th Street/ Mississippi Avenue	7	6	0	• 3 Fixed Object • 2 Ran Off Road • 1 Right Angle • 1 Unspecified

¹⁰ January 1, 2011 to December 31, 2013

The highest occurrence of accidents was recorded at 13th Street and Alabama Avenue. There were 18 accidents and 7 injuries. Rear-end collisions accounted for 66% of all accidents at this intersection. According to the Institutes of Transportation Engineer's (ITE's) *Traffic Engineering Handbook* (5th edition), some potential causal factors for rear-end crashes at signalized intersections include large turn volumes, slippery surface, crossing pedestrians and poor traffic control device visibility. The crash rate¹¹ is 1.27 million entering vehicles (MEV). Generally, industry-standards suggest a crash rate of 1.00 per MEV as an overall threshold for planning and traffic impact studies purposes. Thus, the calculated crash rate exceeds the typical threshold.

There were 7 accidents at the 13th Street/Mississippi Avenue intersection over a 3 year period. Fixed-object collisions made up 43% of the accidents at this intersection. According to the *Traffic Engineering Handbook*, some potential causal factors for fixed object collisions include fixed objects in close proximity of the road, inadequate pavement marking, inadequate signs, delineators and guard rails, inadequate lighting and slippery surface.

Sideswipes were the predominate type of collision that occurred at 13th Street and Congress Street. Curbside parking is permitted along more than one approach at this intersection. According to the *Traffic Engineering Handbook*, potential causative factors that contribute to the occurrence of sideswipes include excessive speed and inadequate lighting.

At 13th Street and Savannah Street there were two accidents with a parked vehicle and one sideswipe collision. According to the (ITE's) *Traffic Engineering Handbook*, some potential causal factors for accidents involving parked vehicles are excessive speed and inadequate parking clearance at driveways.

It is noted potential causative factors identified are general as listed in the *Traffic Engineering Handbook* and is not necessarily applicable for the intersections studied. In order to make a finite conclusion on causative reasons for collisions, review of accident reports prepared at the time of each accident (in lieu of accident report summaries) and additional review of traffic control and roadway configuration would be required.

¹¹ The crash rates are expressed in terms of crashes per million entering vehicles (MEV), for instance if an intersection had a crash rate of 1, for every 1 million vehicles entering the intersection, 1 vehicle will be involved in a collision. The crash rate was calculated by estimating average daily volumes (from 2009 daily peak hour volumes data collected in another project) and Accident Summary Reports (R-7)'s supplied by DDOT.

CONGRESS HEIGHTS STATION APARTMENT RENOVATION/ADDITION

The planned Congress Heights Station development will accommodate 45 additional units in the future for a total of 110 units. An additional 29 units will be included in the building on Parcel 1 and 16 more units in the building on Parcel 3.

Site Access

Vehicular access to the site will remain consistent with existing curb cuts. There are no proposed changes and the applicant will not introduce any new curb cuts. Site access and circulation is shown on the site plans in Figures 14 and 15.

Inbound and outbound access to Parcel 1 is provided via Savannah Street. Access to Parcel 2 and 3 is provided via Savannah Street and 13th Street. The driveway to Parcels 2 and 3 from Savannah Street will support inbound access only and the driveway along 13th Street will support outbound only.

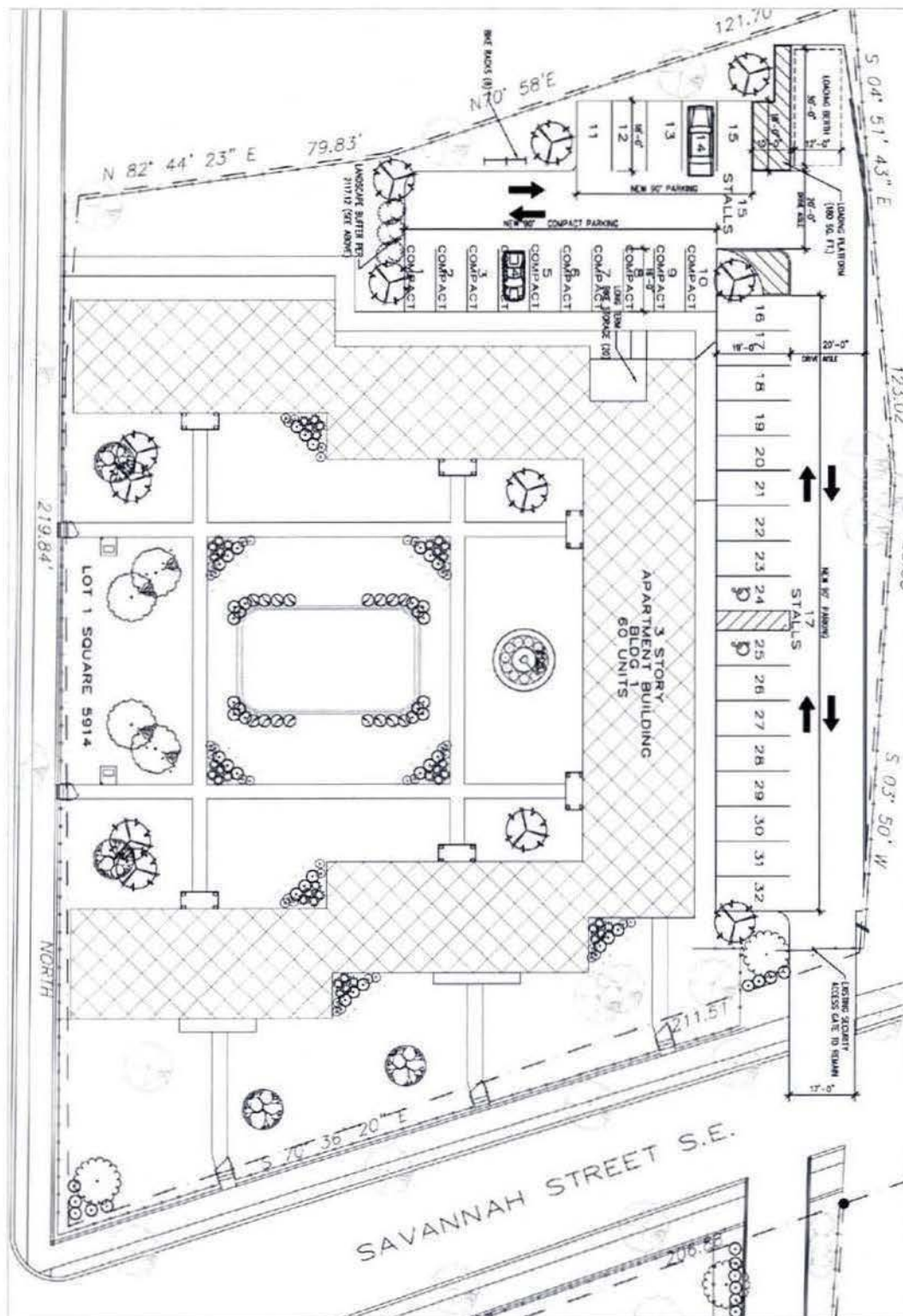


Figure 14: Congress Heights Station Site Plan (Parcel 1)

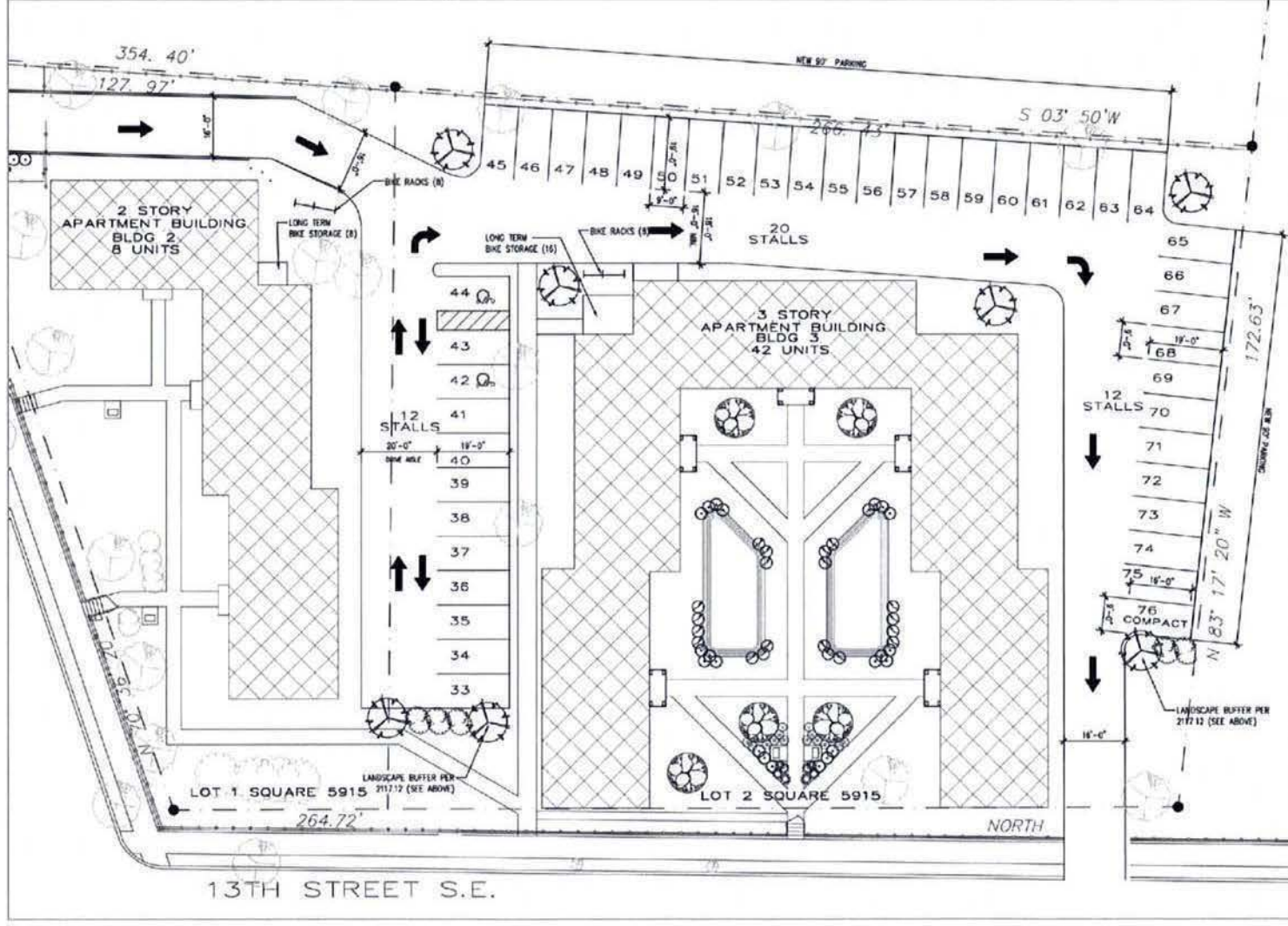


Figure 15: Congress Heights Station Site Plan (Parcels 2 and 3)

Future Parking Supply

The number of spaces required by zoning, future parking supply/demand and parking ratio are shown in Table 5. The parking demand was calculated using car ownership statistics provided by the property manager. Management estimates one-third of existing residents have a vehicle and park on the public street. It is assumed that future tenants would have the same car ownership rates. The following section provides a description of the drive aisle variance and supporting justification:

1. Reduce the minimum drive aisle in the parking lot from 20 feet to 16 feet (Parcel 3) – The parking area on Parcel 3 incorporates a one-way circulation pattern. Parking stalls on the east side of the lot are oriented at a 90 degree angle in relation to the drive aisle. The driving aisle width in this section is 18 feet. The south side of Parcel 3 provides angled parking in relation to the drive aisle. The drive aisle width in this section varies from 24 feet to 16 feet. Compact vehicle parking stalls are provided in locations where the drive aisle reduces to 16 feet. Parking maneuvering diagrams (see Appendix K) show that vehicles are able to exit the parking spaces in Parcel 3 without encroaching on adjacent vehicles and have sufficient room in the narrowed drive aisle to safely maneuver from the parking stalls. Thus the proposed 16 foot drive aisle width is sufficient for one-way circulation.

The requested parking variance would not cause any adverse conditions on-site.

Table 5: Parking Required by Zoning, Future Supply/Demand and Parking Ratio

	Units	Spaces Required by Zoning	Future Supply	Projected Parking Demand	Parking Ratio
Parcel 1	60	60	32	20	0.53
Parcel 2	8	0	0	3	0
Parcel 3	42	42	44	14	1.05
Total	110	102	76	37	0.69

As shown in Table 2, the Congress Heights Station residential project will consists of 110 units and will provide 76 parking spaces. Based on existing car ownership statistics, the future parking supply is adequate to serve the needs of the project as there would be a demand for only 37 residential spaces. In the future, on-street parking utilization would decrease as residents currently parking on public streets would be relocated to the 76 parking spaces on-site.

Loading

A 30-foot loading berth will be provided in the northeast corner of Parcel 1 as shown in Figure 14. As shown in the attached loading maneuvering diagrams (Appendix K), a 30-foot truck can adequately maneuver into and out of this loading area.

All loading associated with trash and reception collection will continue to occur on-site. No loading will occur on the public roadway.

The following provides a description of the relief area related to loading and supporting justification for the variance:

1. Reduce the loading berth from one at 55-foot to one at 30-foot (Parcel 1) – The applicant will provide for one 30-foot loading berth. Parcel 1 will consist of studios, one and two bedroom units. U-Hauls trucks typically used for residential move-ins for one to three bedroom residences range from 10' to 26'¹². Given the proposed type of units, the 30 foot loading berth would be adequate to accommodate residential move-ins at the Congress Heights Station site.

The requested loading variance would not cause any adverse conditions on-site.

Trip Generation

Existing site trips associated with the Congress Heights Station residential project were determined using two methodologies: 1) the Institute of Transportation Engineers Manual Trip Generation Manual 8th Edition with Multi-modal reduction (based on WMATA's 2005 Ridership Study) and 2) based on door counts and transportation surveys issued at all access points to the existing complex.

A summary of ITE methodology is as follows:

ITE's trip generation manual was used to determine future peak hour person and vehicle trips. Land Use code 223 Mid-Rise Apartment was applied. See Appendix F for a copy of the Land Use code AM and PM peak hour of adjacent street traffic trip equations.

¹² Per U-Haul dimensions provided on website

The sample sites identified in the ITE manual do not reflect the multi-modal transportation options available in urban areas. The Congress Heights Metrorail Station residential project is located approximately 500 linear feet from the entrance to the Congress Heights Metrorail station and there are several Metrobus routes that service the area, mode share reductions were applied using WMATA's *Development Related Ridership Survey II*. The straight line distance from the Metrorail station, as defined in the WMATA ridership survey, is 500 feet. While this distance is used to determine the percentage of trips that would use transit it is noted 700 feet is the actual walking distance using the sidewalks from the center of the site (assumed to be the 13th and Savannah Street intersection) to the metro station entrance on the south side of Alabama Avenue.

Summary Table C-37 on page C-76 (included in Appendix G) generalizes mode share for residential locations within 500 feet from a Metrorail station as:

- 50% Metrorail
- 1% Metrobus
- 33% Automobile
- 16% non-Automobile trips

The above listed Metrorail, Metrobus and Walk/Bike reductions were applied to the subtotal trip generation calculated using the ITE land use code. Table 6 summarizes weekday peak hour trip generation for the Congress Heights Station residential project with aforementioned mode share reductions.

Table 6: Future Peak Hour Trip Generation (Using ITE and WMATA mode share reductions)

Residential	Units	AM Peak			PM Peak		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Mid-Rise Apartments	110	10	22	32	24	18	42
Metrorail, Metrobus and Other Transit Reduction		-5	-11	-16	-12	-9	-21
Non-Automobile Trips (i.e. bicycle and walk)		-2	-3	-5	-4	-3	-7
Total		3	8	11	8	6	14

With a total of 110 units, the Congress Heights Station residential project will generate 11 AM and 14 PM peak hour trips.

A summary of the methodology used to determine existing and future person trips and vehicle trip generation is as follows

- Person counts and mode split surveys were used to determine total existing person trips, mode split and vehicle trips NOTE The existing surface lots to each building are not currently in use so vehicle counts could not be conducted
- Two surveyors were stationed at all entrances to Parcels 1, 2 and 3 during the AM (7 00 AM – 9 00 AM) and PM (4 00 PM to 6 00 PM) peak periods on Tuesday, January 28, 2014 Figure 16 provides an illustration of where surveyors were stationed¹³ Per DDOT's request, an additional AM and PM peak period count and survey was conducted on Tuesday, February 4, 2014 considering extremely cold weather conditions on the previous survey day Raw count and survey data is provided in Appendix D
- Surveyors polled residents asking what mode of transportation they plan to use to get to their next destination and/or what mode of transportation they utilized to arrive to the complex In circumstances when persons entering and/or exiting chose not to respond to the question, surveyors were instructed to attempt to determine the travel mode of that individual by making observations The Congress Heights Metrorail Station and a number of Metrobus routes service the area and are within the sight line of where surveyors were stationed In addition, there was ample available parking fronting the complex thus a surveyor could easily view residents getting into and out of cars In instances, where a surveyor was able to visually confirm a person got into a car the surveyor was instructed to record the person as a HOV passenger Persons walking northbound along 13th Street in the direction of the Congress Heights Metrorail station were assumed to take some form of transit (bus or rail) It is noted some residents walking northbound along 13th Street in the direction of the Congress Heights Metrorail station may have been recorded as a transit trip but however walked to their destination This trip was still recorded as a non-automobile trip

¹³ A site visit was conducted prior to the counts/surveys to account for all access points to Parcels 1, 2 and 3 During this site visit, all trips from Parcels 2 and 3 headed in the northbound direction along 13th Street, which again held true during surveys conducted on Tuesday, January 28th and on Tuesday, February 4th Thus It was determined that stationing a surveyor on the corner of 13th and Savannah Street would still allow a surveyor to account for all trips from both Parcels 2 and 3

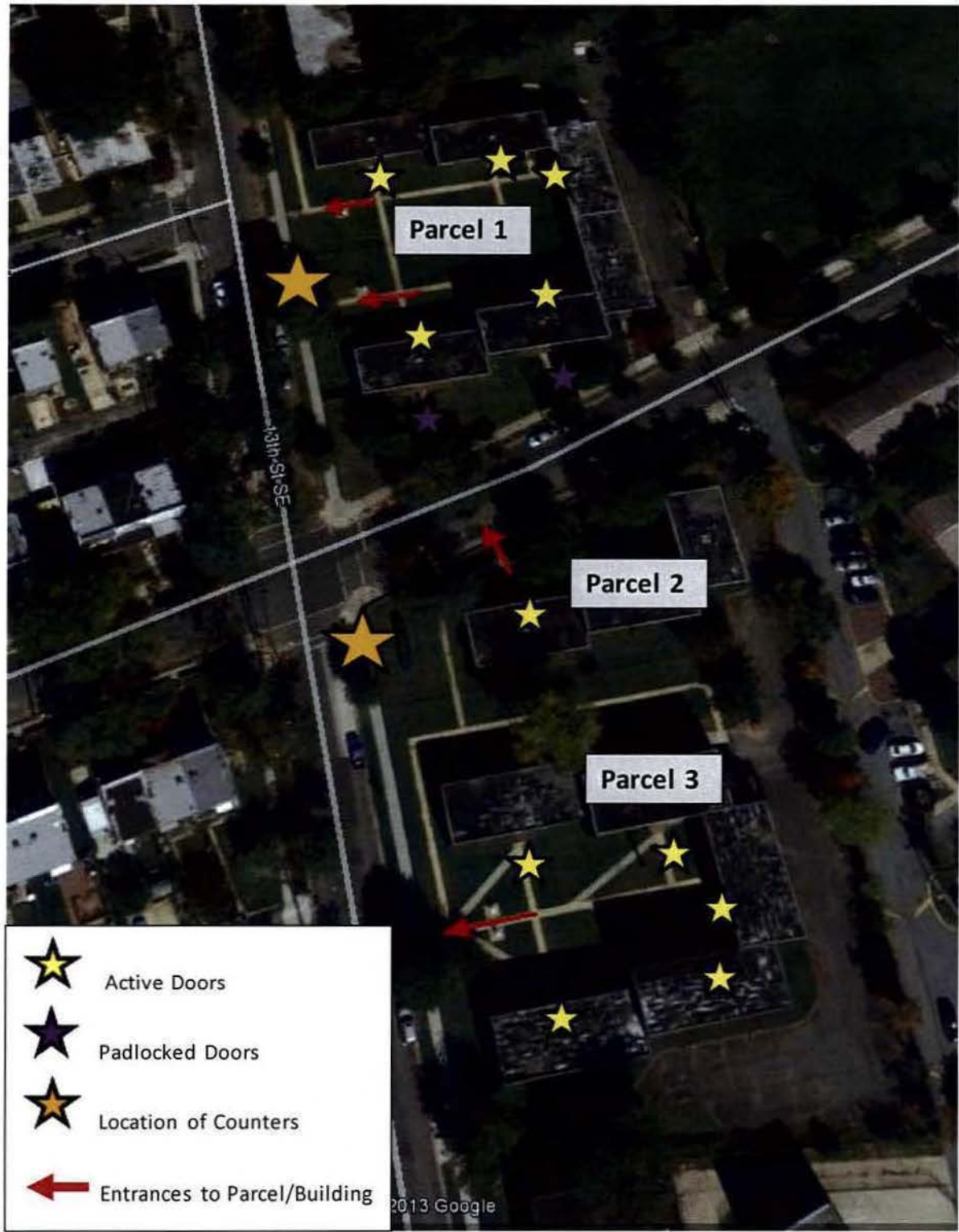


Figure 16: Congress Heights Station Active Doors and Surveyor Stations

A summary of existing and future total person counts for the complex (Parcels 1, 2 and 3) for both the January 28th and February 4th observation days are shown in Table 6. Summary tables are also provided in Appendix E. The net increase in person site trips were projected by applying the percent incremental increase in units (100%) from existing (55 occupied units) to future (110) and multiplying that increase by the person trips. The incremental increase was added to existing to determine total future person site trip generation.

Table 6: Existing and Future Peak Hour Person Trips (January 28th and February 4th 2014)

Date	Time Period	Existing			Future		
		In	Out	Total	In	Out	Total
01/28/14	Daily	285	285	570	480	480	960
	AM Peak Hour (8:00-9:00)	11	46	57	19	78	96
	PM Peak Hour (4:15-5:15)	40	17	57	68	29	96
02/04/14	Daily	375	375	750	750	750	1500
	AM Peak Hour (7:15-8:15)	6	69	75	12	138	150
	PM Peak Hour (4:30-5:30)	36	31	67	72	62	134

As shown in Table 6, site trips were higher on Tuesday, February 4th. The site generated 75 person trips during the AM and 67 person trips during the PM peak hours. In the future (with the additional units), there would be 150 and 134 person trips during the AM and PM peak hours, respectively. This represents a net increase of no more than 75 trips in any peak hour.

Daily future trip generation was calculated by multiplying the higher of the total AM and PM peak hour trips (150) by 10¹⁴. In the future, a total of 1,500 daily trips could be expected.

Residents were surveyed to determine existing mode of travel to/from their next/previous destinations (i.e. vehicle, bicycle, walking and transit). Transportation modal split (based on the survey data for both the January 28th and February 4th observation days) is shown in Tables 7 and 8. Detailed survey sheets for data collected at each Parcel and for the total complex are provided in the appendix.

¹⁴ The American Association of State Highway and Transportation Officials Geometric Design of Highways and Streets states two-way design hourly volume may be determined by applying a representative percentage (usually 8 to 12 percent in urban areas) to the ADT.

Table 7: Existing Transportation Modal Split (Based on January 28th in-person surveys)

Mode Share	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Vehicle (Drive Alone and HOV Driver)	0%	11%	21%	28%
Carpool Passengers and Shared Vehicle	0%	19%	36%	7%
Transit	82%	46%	14%	36%
Bike	0%	0%	0%	0%
Walking	18%	24%	29%	29%
Total	100%	100%	100%	100%

Table 8: Existing Transportation Modal Split (Based on February 4th in-person surveys)

Mode Share	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Vehicle (Drive Alone and HOV Driver)	33%	16%	8%	13%
Carpool Passengers and Shared Vehicle	0%	7%	39%	26%
Transit	17%	23%	25%	13%
Bike	0%	0%	0%	0%
Walking	50%	42%	22%	48%
School Bus	0%	12%	6%	0%
Total	100%	100%	100%	100%

Modal split data from the February 4th survey, shown in Table 8, was utilized since this dataset is representative of travel patterns on the higher of the two observations days. As shown in Table 8, 65% of AM outbound and 47% of PM inbound trips were made using non-automobile travel options (i.e. transit and walking). In addition, approximately 40% of PM inbound and 26% of PM outbound residents were carpool passengers and/or utilized shared vehicles.

Existing AM and PM Peak Hour Vehicular trip generation was calculated using survey data and is shown in Table 9. As with the calculation to determine future person trips, the percent incremental increase in units (100%) from the number of occupied units (55) to the future unit total (110) was multiplied by the existing vehicle trips and then added to determine total future vehicle trip generation.

Table 9: Existing and Future Peak Hour and Daily Vehicle Trip Generation

Date	Time Period	Existing			Future		
		In	Out	Total	In	Out	Total
01/28/14	Daily	65	65	130	110	110	220
	AM Peak Hour	0	5	5	0	8	8
	PM Peak Hour	9	4	13	15	7	22
02/04/14	Daily	65	65	130	130	130	260
	AM Peak Hour (7:15-8:15)	2	11	13	4	22	26
	PM Peak Hour (5:00-6:00)	3	3	6	6	6	12

With the proposed increase in units, there will be 22 inbound and 4 outbound vehicle trips during the AM peak hour with 6 inbound and 6 outbound vehicle trips during the PM peak. This represents a 0.24 AM and 0.11 PM peak hour trip rate.

In accordance with DDOT's Comprehensive Transportation Review Requirements, projects that have the following characteristic may not be required to conduct a full traffic analysis:

- Generate fewer than 25 peak hour trips in the peak direction. The project is projected to generate 22 vehicle trips in the peak direction during the AM peak hour (7:15-8:15) and 12 vehicle trips in the peak direction during the PM peak hour (5:00-6:00). NOTE: The totals include existing trips that were counted plus future additional trips.

The project does not meet the threshold criterion.

TRANSPORTATION DEMAND MANAGEMENT

The Transportation Demand Management (TDM) Plan is an active program used to foster alternative transportation choices that are more environmentally friendly than driving alone. *DDOT's TDM in the Development Process Report* was used as a reference to guide development of this TDM plan. The applicant will provide all expected TDM measures as outlined in the TDM Recommendations Matrix based on the projected number of vehicle trips for the project (less than 50 trips).¹⁵ The following is the expected measure:

- Comply with Zoning Requirement to provide bicycle parking/storage facilities- The applicant will exceed the required bicycle parking spaces and provide for a total of 68 bicycles spaces. Of which, 44 are long term which will be covered and the remaining 24 will be short term. Long term spaces will be provided in the north east corner in the rear of building one and in the rear of buildings two and three. Zoning requires one space for every three units.

In addition to the above expected measure, to manage parking, the applicant will allow residents of Parcel 1 to also utilize parking spaces on Parcels 2 and 3.

¹⁵ Reference Table 2 TDM Recommendation Matrix, Incorporation of Transportation Demand Management into the Development Review Process Final Report and Recommendations (October 2010)

CONCLUSIONS

Overview

- Horizon Hill Ventures plans to construct a third story duplex addition to two of the three existing apartment buildings (Parcel 1 and Parcel 3). This addition will accommodate 45 additional units on the property for a total of 110 units (an additional 29 units in the building on Parcel 1 and another 16 units in the building on Parcel 3).
- The Congress Heights Station residential project is well served by WMATA Metrorail and Metrobus. The Congress Heights Metrorail station is a 700-foot walking distance from the site and is about a 3 minute walk.
- There are two surface lots on site which are currently utilized by maintenance staff only. In the future, 76 parking spaces (32 on Parcel 1 and 44 on Parcel 3) will be provided for residents. Based on existing car ownership statistics, the future parking supply is adequate to serve the needs of the project as there would be a demand for only 37 spaces. In the future, on-street parking utilization would also decrease as residents currently parking on public streets would be relocated on-site.
- Currently the complex generates 75 person trips during the AM and 67 person trips during the PM peak hours. In the future (with the additional units), there would be 150 and 134 person trips during the AM and PM peak hours, respectively. More than 60% of AM outbound and 47% of PM inbound trips are currently by way of non-automobile travel options (i.e. transit and walking). In addition, approximately 40% of PM inbound and 26% of PM outbound residents are carpool passengers and/or utilize shared vehicles.
- With the proposed increase in units, there will be 22 inbound and 4 outbound vehicle trips during the AM peak hour with 6 inbound and 6 outbound vehicle trips during the PM peak. This represents a 0.24 AM and 0.11 PM peak hour trip rate.

Requested Relief

- This matter of right residential development will be seeking relief from the Board of Zoning Adjustment ("BZA") in the following areas:
 - Parcel 1 will only provide for 32 parking spaces for 60 residential units. The zoning requirement is however 1 parking space for each dwelling unit.¹⁶
 - Reducing the loading berth from 1 at 55 feet to 1 at 30 feet (Parcel 1)
 - Reducing the minimum drive aisle from 20 feet to 16 feet (Parcel 3)
- The requested variances will not cause any adverse impact on or off site.

¹⁶ All other parcels will meet the parking zoning requirement.

TDM

- The applicant will exceed the required bicycle parking spaces and provide for a total of 68 bicycles spaces
- As a parking management measure, the applicant will allow residents of Parcel 1 to also utilize parking spaces on Parcels 2 and 3

Congress Heights Station
Apartment Renovation/Addition

Technical Appendix
February 25, 2014

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Suite 900
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Appendix A. Approved Scoping Form

Project Name& Applicant Team:	Congress Heights Station Horizon Hill Ventures
Case Type& No. (PUD, LTR, etc....)	BZA Case No. 18731
Street Address:	3232-3242, 3310-3318 13 th Street , SE Washington, DC & 1301-1305 Savannah Street, SE Washington, DC
Estimated Date of Hearing:	March 18, 2014
Meeting Type/Date (Concept Meeting, Scoping Meeting, etc.):	Scoping Meeting
Description of Project:	The Congress Heights Station site is comprised of three separate record lots; Square 5914, Lot 1 (Parcel 1), Square 5915, Lot 1 (Parcel 2) and Square 5915, Lot 2 (Parcel 3) containing three apartment buildings. The site is bounded by 13th Street, SE to the west, apartment buildings to the north and south, and the Malcolm X School and residential uses to the east. The apartment buildings house 65 units; 31 units in the building on Parcel 1, 8 units in the building on Parcel 2 and 26 units in the building on Parcel 3. The applicant, Horizon Hill Ventures, plans to construct a third story duplex addition on Parcel 1 and Parcel 3. This will accommodate 45 additional units on the property for a total of 110 units. An additional 29 units will be included in the building on Parcel 1 and 16 more units in the building on Parcel 3. Moreover, the applicant is proposing interior renovations for Parcels 1, 2 and 3. A total of 76 parking spaces (32 on Parcel 1 and 44 on Parcel 3) will be provided in the future. The applicant is seeking relief from the Board of Zoning Adjustment (BZA) in the following areas: • <i>Parking</i> - Parcel 1 will only provide for 32 parking spaces for 60 residential units. The zoning requirement is however 1 parking space for each dwelling unit.¹ • <i>Loading</i> - Reduce the loading berth from 1 at 55 feet to 1 at 30 feet (Parcel 1). • <i>Access</i>- Reduce the minimum drive aisle from 20 feet to 16 feet (Parcel 3).

¹ All other parcels will meet the parking zoning requirement.

Meeting Summary:

Meeting Attendees

Name	Representing:	Phone:	Email:

Guidelines & Proposed Scope/Discussion Items	DDOT Comments/Action Items
Planning Documents Guidelines: The study should address how the proposed development considers the primary planning documents of the District, as well as localized studies. It is important that the applicant references any planning documents relating to both city-wide initiatives as well as more localized issues. Documents that reference these specific areas include but are not limited to The Comprehensive Plan, District of Columbia Small Area Plans, the DDOT Design and Engineering Manual, the Public Realm Manual, and Green Streets literature. Proposed Documents: • The Comprehensive Plan • DDOT Comprehensive Transportation Review Requirements • DDOT Design and Engineering Manual • DC Pedestrian Master Plan • DDOT Bicycle Master Plan • DC Transit Future System Plan • Master Plan Amendment East Campus North Parcel Final Environmental Impact Statement Volume II B- Appendix C	• Include the standard ITE trip generation rates for vehicle trip generation as well as the survey data provided as the survey data methodology has not been accepted as a DDOT standard for data collection to date. LB/PPSA
Roadway Capacity & Operations Guidelines: Study Area The study area should include intersections where site impacts are most likely to occur, including: • All site access points • Adjacent streets/intersections at the boundary of the site • The nearest potentially affected streets Additional intersections may be appropriate given the projected trip generation of the project. Proposed Scope: • No roadway capacity analysis required. Refer to the Site Trip Generation section of this form for a summary of person and vehicle trip generation based on ITE trip rates (with WMATA reductions) and door counts/ in-person transportation surveys. Detailed sheets are attached.	
Development Scenarios Typically, all studies should include the following scenarios: • Existing conditions • Future conditions, at the anticipated build-out year of the development, <u>without</u> the construction of the development (Background Conditions) • Future conditions, at the anticipated build-out year of the development, <u>with</u> the construction of the development (Total Future Conditions) • Forecast year If the proposed development will be in stages, with significant trip generation for each stage, individual phases will need to be examined individually.	

Proposed Scope • N/A	
<u>Hours of Analysis</u> Typically, the peak hour of commuter traffic should be used, for both AM and PM rush hours. Other hours of analysis may be appropriate given the overall trip generation of the proposed development, and the expected hours of vehicular demand to and from the site. Land use may also determine the appropriate hours of analysis as some uses experience their peak demand on weekends and off-peak from the typical uses. For instance, proposed developments that may include commercial or retail use should include weekend hours in the analysis.	
Proposed Scope • N/A <u>Data Collection</u> Turning Movement Counts (TMCs) of study area intersections are usually conducted from 7-9am and 4-6pm on a typical weekday (Tues/Wed/Thurs), when Congress and public schools are in session. If the site generates existing traffic, all current site access driveways should be included in the TMCs. Other data collection may be necessary depending on the project (such as weekly ATR counts, counts of comparable site trip generation, parking occupancy counts, etc.).	• Include the standard ITE trip generation rates for vehicle trip generation as well as the survey data provided as the survey data methodology has not been accepted as a DDOT standard for data collection to date. LB/PPSA • Conduct vehicle counts unless they were included in the survey data. LB/PPSA • Provide additional information to support the data survey including the number of counters, the counter locations and the percent of residents surveyed. LB/PPSA • The survey data was collected on Tuesday, January 28, 2014. On that day the DC area had a winter storm warning and school districts in the area had a 2-hour delayed opening with the exception of DCPS. The near frigid weather and delayed openings may not represent a typical commuting day. Select another date to collect survey data during the week.

	of February 3 rd Conduct vehicle counts during the survey LB/PPSA
Area Roadway Improvements The study should account for approved and funded transportation improvement projects within the study area. Other planned, but not approved improvements may be appropriate to include. Proposed Scope • N/A	
Background Developments The study should account for traffic generated by developments in the study area that have an origin/destination within the study area. Typically, only approved/entitled developments are included in the list of background developments. Proposed Scope • N/A	
Background Growth The study should account for through traffic within the study area from future developments that do not have origins or destinations within the study area. Proposed Scope • N/A	
Site Trip Generation Typically, site trip generation is performed using ITE's <i>Trip Generation</i>. However, recent academic literature may suggest other appropriate site trip generation rates. ITE also provides methodologies for calculating internal capture/synergy for mixed-use developments and pass-by percentages for retail establishments. Mode splits are typically estimated using WMATA's <i>Ridership Survey</i>. Alternatives include using data from comparable sites, or published in other sources. All assumptions should be detailed in the study. All data source choices must also be justified within the study. Proposed Scope • Existing site trips associated with the Congress Heights Station residential project were determined using two methodologies 1) the Institute of Transportation Engineers Manual Trip Generation Manual 8th Edition with Multi-modal reduction (based on WMATA's 2005 Ridership Study) and 2) based on door counts and transportation surveys issued at all access points to the existing complex.	• Include the standard ITE trip generation rates for vehicle trip generation as well as the survey data provided as the survey data methodology has not been accepted as a DDOT standard for data collection to date. LB/PPSA

- ITE's trip generation manual was used to determine future (assuming the addition is complete and full at 110 units) peak hour person and vehicle trips. Land use code 223 Mid-Rise Apartment² was applied. A copy of rate is attached.
- The Congress Heights Station residential project is located within 500 feet from the entrance to the Congress Heights Metrorail station and there are several Metrobus routes service the area, thus mode share reductions were applied using WMATA's *Development Related Ridership Survey II*. Summary Table C-37 on page C-76 generalizes mode share for all residential locations within 500 feet from a Metrorail station as:
 - 50% Metrorail
 - 1% Metrobus
 - 33% Automobile
 - 16% Walk/Bike

Table 1 summarizes weekday peak hour trip generation for the Congress Heights Station residential project with aforementioned mode share reductions.

Table 1: Future Peak Hour Trip Generation (Using ITE and WMATA mode share reductions)

Residential	Units	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Mid-Rise Apartments	110	10	22	32	24	18	42
Metrorail, Metrobus and Other Transit Reduction		-5	-11	-16	-12	-9	-21
Walk/Bike		-2	-3	-5	-4	-3	-7
Total		3	8	11	8	6	14

With 110 units, the Congress Heights Station residential project will generate 11 AM and 14 PM peak hour trips.

² Insert description of Land use code 223 for Mid-Rise Apartments

- Person counts and mode split surveys were used to determine total existing person trips, mode split and vehicle trips. NOTE: The existing surface lots to each building are not currently in use so vehicle counts could not be conducted.
- Two surveyors were stationed at all entrances to Parcels 1, 2 and 3 during the AM (7:00 AM – 9:00 AM) and PM (4:00 PM to 6:00 PM) peak periods on Tuesday, January 28, 2014. A figure in the attached methodology provides an illustration of where surveyors were stationed³. Per DDOT's request, an additional AM and PM peak period count and survey was conducted on Tuesday, February 4, 2014 considering extremely cold weather conditions on the previous survey day.
- A summary of existing and future total person counts for the complex (Parcels 1, 2 and 3) for both the January 28th and February 4th observation days are shown in Table 2.

Table 2: Existing and Future Peak Hour Person Trips (January 28th and February 4th 2014)

Date	Time Period	Existing			Future		
		In	Out	Total	In	Out	Total
01/28/14	Daily*	285	285	570	480	480	960
	AM Peak Hour (8:00-9:00)	11	46	57	19	78	96
	PM Peak Hour (4:15-5:15)	40	17	57	68	29	96
02/04/14	Daily*	375	375	750	750	750	1500
	AM Peak Hour (7:15-8:15)	6	69	75	12	138	150
	PM Peak Hour (4:30-5:30)	36	31	67	72	62	134

³ A site visit was conducted prior to the counts/surveys to account for all access points to Parcels 1, 2 and 3. During this site visit, all trips from Parcels 2 and 3 headed in the northbound direction along 13th Street, which again held true during surveys conducted on Tuesday, January 28th and on Tuesday, February 4th. Thus it was determined that stationing a surveyor on the corner of 13th and Savannah Street would still allow a surveyor to account for all trips from both Parcels 2 and 3.

* Daily future trip generation was calculated by multiplying the higher of the total AM and PM peak hour trips (150) by 10⁴. The inbound/outbound split is assumed to be 50%/50%.

- The net increase in person site trips was projected by applying the percent incremental increase in units (100%) from existing occupied units (55) to future (110) and multiplying that increase by the person trips. The incremental increase was added to existing to determine total future person site trip generation.
- Residents were surveyed to determine existing mode of travel to/from their next/previous destinations (i.e. vehicle, bicycle, walking and transit). Transportation modal split (based on the survey data for both the January 28th and February 4th observation days) is shown in Tables 3 and 4. Detailed survey sheets for data collected at each Parcel and for the total complex are provided in the appendix.

Table 3: Existing Transportation Modal Split (Based on January 28th in-person surveys)

Mode Share	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Vehicle (Drive Alone and HOV Driver)	0%	11%	21%	28%
Carpool Passengers and Shared Vehicle	0%	19%	36%	7%
Transit*	82%	46%	14%	36%
Bicycle	0%	0%	0%	0%
Walking	18%	24%	29%	29%
Total	100%	100%	100%	100%

* Some of the transit trips were assumed by use of visual observations by surveyors as shown in the attached methodology document.

⁴ The American Association of State Highway and Transportation Officials Geometric Design of Highways and Streets states two-way design hourly volume may be determined by applying a representative percentage (usually 8 to 12 percent in urban areas) to the ADT.

Table 4: Existing Transportation Modal Split (Based on February 4th in-person surveys)

Mode Share	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Vehicle (Drive Alone and HOV Driver)	33%	16%	8%	13%
Carpool Passengers and Shared Vehicle	0%	7%	39%	26%
Transit*	17%	23%	25%	13%
Bicycle	0%	0%	0%	0%
Walking	50%	42%	22%	48%
School Bus	0%	12%	6%	0%
Total	100.0%	100.0%	100.0%	100.0%

*Some of the transit trips were assumed by use of visual observations by surveyors as shown in the attached methodology document.

- Existing AM and PM Peak Hour Vehicular trip generation was calculated using survey data and is shown in Table 5. Table 5 also provides a comparison of vehicle trips for each survey day and using ITE's trip rate with WMATA reductions. As with the calculation to determine future person trips, the percent incremental increase in units (100%) from the number of occupied units (55) to the future unit total (110) was multiplied by the existing vehicle trips and then added to determine total future vehicle trip generation.

Table 5: Existing and Future Peak Hour and Daily Vehicle Trip Generation

Date	Time Period	Existing			Future		
		In	Out	Total	In	Out	Total
01/28/14	Daily*	65	65	130	110	110	220
	AM Peak Hour	0	5	5	0	8	8
	PM Peak Hour	9	4	13	15	7	22
02/04/14	Daily*	65	65	130	130	130	260
	AM Peak Hour (7:15-8:15)	2	11	13	4	22	26
	PM Peak Hour (5:00-6:00)	3	3	6	6	6	12
ITE	AM Peak Hour adjacent street traffic	----	-----	-----	3	8	11
	PM Peak Hour adjacent street traffic	----	----	----	8	6	14

*Daily Vehicle Trip Generation was calculated by multiplying the higher of the total AM and PM peak hour trips (22) by 10.⁵

In comparing all three methods of determining the peak hour vehicular trip generation, the highest calculated was by way of the door counts and surveys conducted on February 4th. With the proposed increase in units, there will be 22 outbound and 4 inbound vehicle trips during the AM peak hour with 6 inbound and 6 outbound vehicle trips during the PM peak.

In accordance with DDOT's Comprehensive Transportation Review Requirements, projects that have the

⁵ The American Association of State Highway and Transportation Officials Geometric Design of Highways and Streets states two-way design hourly volume may be determined by applying a representative percentage (usually 8 to 12 percent in urban areas) to the ADT.

following characteristics may not be required to conduct a full comprehensive transportation review: • Generate fewer than 25 peak hour trips in the peak direction. The project is projected to generate 22 vehicle trips in the peak direction during the AM peak hour (7:15-8:15) and 6 vehicle trips in the peak direction during the PM peak hour (5:00-6:00). NOTE: The totals include existing trips that were counted plus future additional trips. The project does not meet this threshold criterion, thus it is proposed to omit traffic counts and roadway capacity analyses.	
<u>Site Trip Distribution & Assignment</u> Trips generated by the site should be distributed throughout the study area network, based on one or a combination of the following • Existing count patterns • Prior studies of similar land uses near the site • Market studies • Regional models Market studies and regional models are generally used for larger developments Proposed Scope: • N/A	
<u>Analysis Methodology</u> Capacity analyses are typically performed using Highway Capacity Manual (HCM) methodologies using an industry recognized software package Any overall intersection approach LOS that is shown at grade "F" should be highlighted in the study Proposed Methodology: • N/A	

Safety Guidelines: The study should present the results of the safety analysis that demonstrates that the site will not create or exacerbate existing safety issues for all modes of travel. The analysis shall include applicable elements of the Highway Safety Manual and consider at least typical geometry, traffic composition, traffic control, user demographics, and other local conditions. The analysis should also include three years of crash data for all intersections within the roadway operations study area. Proposed CTR Scope: • We have obtained crash data from DDOT. The Transportation Assessment will include a summary of crash history and crash rates for the following intersections: ○ 13th Street, SE/ Alabama Avenue, SE ○ 13th Street, SE/ Savannah Street, SE ○ 13th Street, SE/ Congress Street, SE ○ 13th Street SE/ Mississippi Avenue, SE • The study will outline typical crash countermeasures based on identified crash types.	
Bicycle & Pedestrian Facilities Guidelines: The study should identify existing and proposed pedestrian & bicycle service to the site. The study should highlight both the bicycle and pedestrian study areas (block radii, etc.). The site plan's accommodation of pedestrians and bicycles should be discussed, including identifying widths of sidewalks, any on-site bicycle pathways, and short and long-term bicycle parking. For larger developments or campus plans, the study should take the multi-modal trip generation estimates (described above) and distribute them onto the network to identify the potential major and minor routes that people will use to and from the proposed development. Proposed CTR Scope: • The Pedestrian and Bicycle study area is as follows: ○ Alabama Ave (Between 12th St – Congress St) ○ 13th St (Between Alabama Ave – Congress St) ○ Savannah St (Between 12th St – Congress St) ○ Congress St (Between 12th St – Savannah) ○ Pedestrian route to Congress Heights Metrorail Station ○ Pedestrian route to Malcolm X School • We will identify existing sidewalks, bicycle lanes, trails, crosswalks, and pedestrian signals in the vicinity of the site. • We will identify missing ADA ramps or other pedestrian access issues along pedestrian routes to transit. • We will identify proposed bicycle rack locations. The project will include 60 bicycle storage spaces. • We will document planned bicycle facilities such as the bike lane along 13th Street.	

Transit Service Guidelines: The study should identify existing and proposed transit facilities that serve the site. Any plans for new facilities should be included, such as bus stops and shelters. The routes associated with any new or existing facilities should be addressed, including frequency of trips and destination points. The site plan's accommodation of transit service, including any changes to bus stops or other transit infrastructure necessary due to development should be discussed. For larger developments or campus plans, the study should take the multi-modal trip generation estimates (described above) and distribute them onto the network to identify the potential amount of new transit riders per route that people will use to and from the proposed development. Proposed CTR Scope: Based on the transportation modal split, more than 30% of peak hour inbound/outbound site trips are by way of transit thus the transit study area will include areas within a 0.25 mile radius of the site. We will document the distance between the site and the Congress Heights Metrorail Station and will identify Metrobus routes, key destinations of each route and frequency. We will also identify bus stop locations and amenities.	
Site Access & Loading DDOT requires that loading take place in private space and that no back-up maneuvers take place in the public realm, whether in public space or in areas of private spaces accessible to the general public unless the Applicant can demonstrate a legitimate reason why this must occur. Any plans for new curb cuts need to demonstrate that they meet District standards, including sight distance. When it is determined that a new curb cut is necessary, the applicant should first consider an alley. If an alley is not available, access from a side street is the next preferable option. Proposed CTR Scope: - There are no proposed changes to the existing consistent with existing curb cuts. The applicant will not introduce any new curb cuts. - Inbound and outbound access to Parcel 1 is provided via Savannah Street. Access to Parcel 2 and 3 is provided via Savannah Street and 13th Street. The driveway to Parcels 2 and 3 from Savannah Street will support inbound access only and the driveway along 13th Street will support outbound only. The Site plan is attached. - Trash/Recycle collection for the complex occurs twice per week on Tuesdays and Thursdays. The trash dumpster servicing Parcel 1 is located in the rear of the site and accessed via Savannah Street. For Parcels 2 and 3, there is a dumpster located on the corner of Parcel 3. All loading associated with trash and reception collection occurs on-site. - A 30 foot loading berth will be provided in the northeast corner of Parcel 1. Truck maneuvering diagrams will be provided. - All reverse maneuvers would occur on-site.	- Provide truck turning movement diagrams for the loading berth serving Building No. 1. LB/PPSA - Provide a description of refuse and recycling collection. LB/PPSA

Parking

Guidelines: The parking study should include parking demand estimates and comparisons with the proposed parking supply, using data from comparable sites where possible. The Applicant, through DDOT, must conduct an analysis of impacts to residential parking and as necessary; propose a scheme to manage curbsides in light of future conditions. The analysis should take into account the parking spill-over area, including both on and off-street parking supply, and on and off-street parking utilization.

Proposed CTR Scope:

- **The On-Street Parking Study area is as follows:**
 - Alabama Ave (Between 12th St – Congress St)
 - 13th St (Between Alabama Ave – Congress St)
 - Savannah St (Between 12th St – Congress St)
 - Congress St (Between 12th St – Savannah)
- We will inventory on-street parking supply (including residential and non-residential), restrictions and occupancy. We will conduct occupancy surveys on a Weekday evening at 7:00 PM and 10:00 PM.
- A summary of the number of spaces required by zoning, future parking supply and demand and parking ratio is shown in Table 4. The parking demand was calculated using car ownership statistics provided by the property manager. Management estimates one-third of existing residents have a vehicle and park on the public Street. It is assumed that future tenants would have the same car ownership rates.

Table 4: Parking Summary

	Units	Spaces Required by Zoning	Future Supply	Projected Parking Demand ⁶	Parking Ratio
Parcel 1	60	60	32	20	0.53
Parcel 2	8	0	0	3	0
Parcel 3	42	42	44	14	1.05
Total	110	102	76	37	0.69

Streetscape/Public Realm

⁶ Based on property manager estimate of car ownership rates.

Guidelines: DDOT expects new developments to rehabilitate streetscape infrastructure between the curb and property lines. The applicant must work closely with DDOT and OP to ensure that design of the public realm meets current standards. Discussion Items: N/A	
Transportation Demand Management	
Guidelines: DDOT requires the applicant in all major development review cases to produce a TDM plan. The <i>Incorporation of Transportation Demand Management into the Development Review Process</i> document located on DDOT's website provides guidance. The proposed TDM plan should demonstrate how it will facilitate a greater split between transportation modes. Proposed Scope: We will develop a list of TDM measures the applicant will adhere to reduce vehicular and parking demand and encourage use of green travel.	
Performance Monitoring & Measurement	
Guidelines: To complement a TDM plan, DDOT requires that an Applicant compose a performance monitoring plan for any large scale development. This should consist of the establishment of benchmark goals with regard to TDM measures, along with a commitment to increase TDM efforts should the Applicant fail to reach these goals. The monitoring methodology should at least include quantifiable site performance measures and suggest regular testing intervals. Proposed Scope: N/A	

Information/Data Requests:**Proposed Schedule:**

- DDOT comments on Scoping Document: 1/31/2014 - LB
- Transportation Consultant/Applicant responses to comments:
- Phase I Completion:
- Phase II Completion:
- Submission of Report to DDOT:
- Zoning Commission Hearing:

Appendix B. DDOT 2010 Traffic Volume Map

Appendix C. WMATA Bus Route Map



Appendix D. Person-Door Counts and Travel Surveys

D 1 January 28, 2014 Count/Survey

D 2 February 4, 2014 Count/Survey

Appendix D1. January 28, 2014 Count/Survey

Congress Heights Station
Trip Generation Data Collection

1/28/2014

Location (parcel 1) Counter Jonathan

Location	Interval	Direction	Total	Mode							
				Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit
7:00 to :15	In	0									
	Out	2							2		
:15 to :30	In	2									2
	Out	4									4
:30 to :45	In	0									
	Out	2							1	1	
:45 to 8:00	In	1									1
	Out	4	1			1		1		1	
8:00 to :15	In	2									2
	Out	15		1	4	2					8
:15 to :30	In	2									2
	Out	6									6
:30 to :45	In	2									2
	Out	6									6
:45 to 9:00	In	3									3
	Out	3		1	1						1
7:00 to 8:00	In	3	0	0	0	0	0	0	0	0	3
	Out	12	1	0	0	1	0	1	3	6	
7:15 to 8:15	In	5	0	0	0	0	0	0	0	0	5
	Out	25	1	1	4	3	0	1	1	14	
7:30 to 8:30	In	5	0	0	0	0	0	0	0	0	5
	Out	27	1	1	4	3	0	1	1	16	
7:45 to 8:45	In	7	0	0	0	0	0	0	0	0	7
	Out	31	1	1	4	3	0	1	0	21	
8:00 to 9:00	In	9	0	0	0	0	0	0	0	0	9
	Out	30	0	2	5	2	0	0	0	21	

Location (parcel 2) Counter Carlos

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
7:00 to :15	In	0									
	Out	0									
:15 to :30	In	0									
	Out	0									
:30 to :45	In	0									
	Out	0									
:45 to 8:00	In	0									
	Out	0									
8:00 to :15	In	0									
	Out	1				1					
:15 to :30	In	0									
	Out	0									
:30 to :45	In	0									
	Out	2				2					
:45 to 9:00	In	0									
	Out	0									
7:00 to 8:00	In	0	0	0	0	0	0	0	0	0	
	Out	0	0	0	0	0	0	0	0	0	
7:15 to 8:15	In	0	0	0	0	0	0	0	0	0	
	Out	1	0	0	0	1	0	0	0	0	
7:30 to 8:30	In	0	0	0	0	0	0	0	0	0	
	Out	1	0	0	0	1	0	0	0	0	
7:45 to 8:45	In	0	0	0	0	0	0	0	0	0	
	Out	3	0	0	0	3	0	0	0	0	
8:00 to 9:00	In	0	0	0	0	0	0	0	0	0	
	Out	3	0	0	0	3	0	0	0	0	

Location (parcel 3) Counter Carlos

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
7:00 to :15	In	0									
	Out	0									
:15 to :30	In	1				1					
	Out	0									
:30 to :45	In	0									
	Out	1								1	
:45 to 8:00	In	0									
	Out	1				1					
8:00 to :15	In	1				1					
	Out	5		1	3	1					
:15 to :30	In	0									
	Out	3	1	1	1						
:30 to :45	In	0									
	Out	2				2					
:45 to 9:00	In	1				1					
	Out	3				3					
7:00 to 8:00	In	1	0	0	0	1	0	0	0	0	
	Out	2	0	0	0	1	0	0	0	1	
7:15 to 8:15	In	2	0	0	0	2	0	0	0	0	
	Out	7	0	1	3	2	0	0	0	1	
7:30 to 8:30	In	1	0	0	0	1	0	0	0	0	
	Out	10	1	2	4	2	0	0	0	1	
7:45 to 8:45	In	1	0	0	0	1	0	0	0	0	
	Out	11	1	2	4	4	0	0	0	0	
8:00 to 9:00	In	2	0	0	0	2	0	0	0	0	
	Out	13	1	2	4	6	0	0	0	0	

Total Parcel Count (Parcel 1, 2 and 3)

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
7:00 to :15	In	0	0	0	0	0	0	0	0	0	
	Out	2	0	0	0	0	0	0	2	0	
:15 to :30	In	3	0	0	0	1	0	0	0	2	
	Out	4	0	0	0	0	0	0	0	4	
:30 to :45	In	0	0	0	0	0	0	0	0	0	
	Out	3	0	0	0	0	0	0	1	2	
:45 to 8:00	In	1	0	0	0	0	0	0	0	1	
	Out	5	1	0	0	2	0	1	0	1	
8:00 to :15	In	3	0	0	0	1	0	0	0	2	
	Out	21	0	2	7	4	0	0	0	8	
:15 to :30	In	2	0	0	0	0	0	0	0	2	
	Out	9	1	1	1	0	0	0	0	6	
:30 to :45	In	2	0	0	0	0	0	0	0	2	
	Out	10	0	0	0	4	0	0	0	6	
:45 to 9:00	In	4	0	0	0	1	0	0	0	3	
	Out	6	0	1	1	3	0	0	0	1	
7:00 to 8:00	In	4	0	0	0	1	0	0	0	3	
	Out	14	1	0	0	2	0	1	3	7	
7:15 to 8:15	In	7	0	0	0	2	0	0	0	5	
	Out	33	1	2	7	6	0	1	1	15	
7:30 to 8:30	In	6	0	0	0	1	0	0	0	5	
	Out	38	2	3	8	6	0	1	1	17	
7:45 to 8:45	In	8	0	0	0	1	0	0	0	7	
	Out	45	2	3	8	10	0	1	0	21	
8:00 to 9:00	In	11	0	0	0	2	0	0	0	9	
	Out	46	1	4	9	11	0	0	0	21	

Congress Heights Station
Trip Generation Data Collection

1/28/2014

Location	(parcel 1)	Counter	Dieudonne								
Interval	Direction	Mode									
		Total	Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
4:00 to :15	In	8	2	1	3					2	
	Out	6	1		5						
:15 to :30	In	8			6	2					
	Out	7		1	2	1				3	
:30 to :45	In	3			1	2					
	Out	5		1	3	1					
:45 to 5:00	In	6		1	3					2	
	Out	1				1					
5:00 to :15	In	9	1	1	3	2				2	
	Out	2				1				1	
:15 to :30	In	5		1	1	2				1	
	Out	6		1	1	1				3	
:30 to :45	In	5		2	2	1					
	Out	2		2							
:45 to 6:00	In	12		2	3	5				2	
	Out	1								1	
4:00 to 5:00	In	25	2	2	13	4	0	0	0	4	
	Out	19	1	2	10	3	0	0	0	3	
4:15 to 5:15	In	26	1	2	13	6	0	0	0	4	
	Out	15	0	2	5	4	0	0	0	4	
4:30 to 5:30	In	23	1	3	8	6	0	0	0	5	
	Out	14	0	2	4	4	0	0	0	4	
4:45 to 5:45	In	25	1	5	9	5	0	0	0	5	
	Out	11	0	3	1	3	0	0	0	4	
5:00 to 6:00	In	31	1	6	9	10	0	0	0	5	
	Out	11	0	3	1	2	0	0	0	5	

Location (parcel 2) Counter Carlos

Interval	Direction	Mode									
		Total	Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
4:00 to :15	In	0									
	Out	0									
:15 to :30	In	1				1					
	Out	0									
:30 to :45	In	0									
	Out	0									
:45 to 5:00	In	0									
	Out	1				1					
5:00 to :15	In	0									
	Out	0									
:15 to :30	In	0									
	Out	0									
:30 to :45	In	0									
	Out	1				1					
:45 to 6:00	In	0									
	Out	0									
4:00 to 5:00	In	1	0	0	0	1	0	0	0	0	
	Out	1	0	0	0	1	0	0	0	0	
4:15 to 5:15	In	1	0	0	0	1	0	0	0	0	
	Out	1	0	0	0	1	0	0	0	0	
4:30 to 5:30	In	0	0	0	0	0	0	0	0	0	
	Out	1	0	0	0	1	0	0	0	0	
4:45 to 5:45	In	0	0	0	0	0	0	0	0	0	
	Out	2	0	0	0	2	0	0	0	0	
5:00 to 6:00	In	0	0	0	0	0	0	0	0	0	
	Out	1	0	0	0	1	0	0	0	0	

Location (parcel 3) Counter Carlos

Interval	Direction	Mode										
		Total	Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School bus	Transit		
4:00 to :15	In	0										
	Out	0										
:15 to :30	In	2				1				1		
	Out	0										
:30 to :45	In	4			4							
	Out	1			1							
:45 to 5:00	In	2				1				1		
	Out	0										
5:00 to :15	In	5		1	2		1			1		
	Out	0										
:15 to :30	In	0										
	Out	0										
:30 to :45	In	4			3	1						
	Out	0										
:45 to 6:00	In	2	1			1						
	Out	2	1			1						
4:00 to 5:00	In	8	0	0	4	2	0	0	0	2		
	Out	1	0	0	1	0	0	0	0	0		
4:15 to 5:15	In	13	0	1	5	2	1	0	0	2		
	Out	1	0	0	1	0	0	0	0	0		
4:30 to 5:30	In	11	0	1	6	1	1	0	0	2		
	Out	1	0	0	1	0	0	0	0	0		
4:45 to 5:45	In	11	0	1	5	2	1	0	0	2		
	Out	0	0	0	0	0	0	0	0	0		
5:00 to 6:00	In	11	1	1	3	2	1	0	0	1		
	Out	2	1	0	0	1	0	0	0	0		

Total Parcel Count (Parcel 1, 2 and 3)

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
4:00 to :15	In	8	2	1	3	0	0	0	0	2	
	Out	6	1	0	5	0	0	0	0	0	
:15 to :30	In	11	0	0	6	4	0	0	0	1	
	Out	7	0	1	2	1	0	0	0	3	
:30 to :45	In	7	0	0	5	2	0	0	0	0	
	Out	6	0	1	4	1	0	0	0	0	
:45 to 5:00	In	8	0	1	3	1	0	0	0	3	
	Out	2	0	0	0	2	0	0	0	0	
5:00 to :15	In	14	1	2	5	2	1	0	0	3	
	Out	2	0	0	0	1	0	0	0	1	
:15 to :30	In	5	0	1	1	2	0	0	0	1	
	Out	6	0	1	1	1	0	0	0	3	
:30 to :45	In	9	0	2	5	2	0	0	0	0	
	Out	3	0	2	0	1	0	0	0	0	
:45 to 6:00	In	14	1	2	3	6	0	0	0	2	
	Out	3	1	0	0	1	0	0	0	1	
4:00 to 5:00	In	34	2	2	17	7	0	0	0	6	
	Out	21	1	2	11	4	0	0	0	3	
4:15 to 5:15	In	40	1	3	19	9	1	0	0	7	
	Out	17	0	2	6	5	0	0	0	4	
4:30 to 5:30	In	34	1	4	14	7	1	0	0	7	
	Out	16	0	2	5	5	0	0	0	4	
4:45 to 5:45	In	36	1	6	14	7	1	0	0	7	
	Out	13	0	3	1	5	0	0	0	4	
5:00 to 6:00	In	42	2	7	14	12	1	0	0	6	
	Out	14	1	3	1	4	0	0	0	5	

Appendix D2. February 4, 2014 Count/Survey

Congress Heights Station
Trip Generation Data Collection

2/4/2014

Location (parcel 1) Counter Dieudonne

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
7:00 to :15	In	1		1							
	Out	5		1		1			2	1	
:15 to :30	In	1		1							
	Out	7	2	1	1	2				1	
:30 to :45	In	1				1					
	Out	6				3			2	1	
:45 to 8:00	In	1				1					
	Out	13	1	1		4			6	1	
8:00 to :15	In	1				1					
	Out	21	1	2	3	11				4	
:15 to :30	In	1								1	
	Out	2								2	
:30 to :45	In	3				2				1	
	Out	4	1	1	1	1					
:45 to 9:00	In	3	1			2					
	Out	4	1			1				2	
7:00 to 8:00	In	4	0	2	0	2	0	0	0	0	
	Out	31	3	3	1	10	0	0	10	4	
7:15 to 8:15	In	4	0	1	0	3	0	0	0	0	
	Out	47	4	4	4	20	0	0	8	7	
7:30 to 8:30	In	4	0	0	0	3	0	0	0	1	
	Out	42	2	3	3	18	0	0	8	8	
7:45 to 8:45	In	6	0	0	0	4	0	0	0	2	
	Out	40	3	4	4	16	0	0	6	7	
8:00 to 9:00	In	8	1	0	0	5	0	0	0	2	
	Out	31	3	3	4	13	0	0	0	8	

Location (parcel 2) Counter Eric

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
7:00 to :15	In	0									
	Out	0									
:15 to :30	In	1								1	
	Out	0									
:30 to :45	In	0									
	Out	0									
:45 to 8:00	In	0									
	Out	1								1	
8:00 to :15	In	0									
	Out	1								1	
:15 to :30	In	1				1					
	Out	0									
:30 to :45	In	0									
	Out	1	1								
:45 to 9:00	In	0									
	Out	0									
7:00 to 8:00	In	1	0	0	0	0	0	0	0	1	
	Out	1	0	0	0	0	0	0	0	1	
7:15 to 8:15	In	1	0	0	0	0	0	0	0	1	
	Out	2	0	0	0	0	0	0	0	2	
7:30 to 8:30	In	1	0	0	0	1	0	0	0	0	
	Out	2	0	0	0	0	0	0	0	2	
7:45 to 8:45	In	1	0	0	0	1	0	0	0	0	
	Out	3	1	0	0	0	0	0	0	2	
8:00 to 9:00	In	1	0	0	0	1	0	0	0	0	
	Out	2	1	0	0	0	0	0	0	1	

Location (parcel 3) Counter Carlos

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
7:00 to 7:15	In	0									
	Out	2				1				1	
7:15 to 7:30	In	1	1								
	Out	2	1							1	
7:30 to 7:45	In	0									
	Out	2		1	1						
7:45 to 8:00	In	0									
	Out	4				2				2	
8:00 to 8:15	In	0									
	Out	12	1			7				4	
8:15 to 8:30	In	0									
	Out	0									
8:30 to 8:45	In	0									
	Out	3		1	1	1					
8:45 to 9:00	In	0									
	Out	3								3	
7:00 to 8:00	In	1	1	0	0	0	0	0	0	0	
	Out	10	1	1	1	3	0	0	0	4	
7:15 to 8:15	In	1	1	0	0	0	0	0	0	0	
	Out	20	2	1	1	9	0	0	0	7	
7:30 to 8:30	In	0	0	0	0	0	0	0	0	0	
	Out	18	1	1	1	9	0	0	0	6	
7:45 to 8:45	In	0	0	0	0	0	0	0	0	0	
	Out	19	1	1	1	10	0	0	0	6	
8:00 to 9:00	In	0	0	0	0	0	0	0	0	0	
	Out	18	1	1	1	8	0	0	0	7	

Total Parcel Count (Parcel 1, 2 and 3)

Interval	Direction	Total	Mode							
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit
7:00 to :15	In	1	0	1	0	0	0	0	0	0
	Out	7	0	1	0	2	0	0	2	2
:15 to :30	In	3	1	1	0	0	0	0	0	1
	Out	9	3	1	1	2	0	0	0	2
:30 to :45	In	1	0	0	0	1	0	0	0	0
	Out	8	0	1	1	3	0	0	2	1
:45 to 8:00	In	1	0	0	0	1	0	0	0	0
	Out	18	1	1	0	6	0	0	6	4
8:00 to :15	In	1	0	0	0	1	0	0	0	0
	Out	34	2	2	3	18	0	0	0	9
:15 to :30	In	2	0	0	0	1	0	0	0	1
	Out	2	0	0	0	0	0	0	0	2
:30 to :45	In	3	0	0	0	2	0	0	0	1
	Out	8	2	2	2	2	0	0	0	0
:45 to 9:00	In	3	1	0	0	2	0	0	0	0
	Out	7	1	0	0	1	0	0	0	5
7:00 to 8:00	In	6	1	2	0	2	0	0	0	1
	Out	42	4	4	2	13	0	0	10	9
7:15 to 8:15	In	6	1	1	0	3	0	0	0	1
	Out	69	6	5	5	29	0	0	8	16
7:30 to 8:30	In	5	0	0	0	4	0	0	0	1
	Out	62	3	4	4	27	0	0	8	16
7:45 to 8:45	In	7	0	0	0	5	0	0	0	2
	Out	62	5	5	5	26	0	0	6	15
8:00 to 9:00	In	9	1	0	0	6	0	0	0	2
	Out	51	5	4	5	21	0	0	0	16

Congress Heights Station
Trip Generation Data Collection

2/4/2014

Location	(parcel 1)	Counter	Jamel	Mode							
Interval	Direction	Total	Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
4:00 to :15	In	9	2		5				2	0	
	Out	7		1	5	1				0	
:15 to :30	In	6		1	3					2	
	Out	2	1			1					
:30 to :45	In	4			1	1			1	1	
	Out	5		1	3	1					
:45 to 5:00	In	10	1			3			1	5	
	Out	5				5					
5:00 to :15	In	7	1		5	1					
	Out	1				1					
:15 to :30	In	1								1	
	Out	0									
:30 to :45	In	3	1		1	1					
	Out	2	1			1					
:45 to 6:00	In	6				1				5	
	Out	2	1			1					
4:00 to 5:00	In	29	3	1	4	9	0	0	4	8	
	Out	19	1	2	8	8	0	0	0	0	
4:15 to 5:15	In	27	2	1	9	5	0	0	2	8	
	Out	13	1	1	3	8	0	0	0	0	
4:30 to 5:30	In	22	2	0	6	5	0	0	2	7	
	Out	11	0	1	3	7	0	0	0	0	
4:45 to 5:45	In	21	2	0	6	5	0	0	1	6	
	Out	8	1	0	0	7	0	0	0	0	
5:00 to 6:00	In	17	2	0	6	3	0	0	0	6	
	Out	5	2	0	0	3	0	0	0	0	

Location		(parcel 2)	Counter	Carlos	Mode							
Interval	Direction	Total	Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit		
4:00 to :15	In	1				1						
	Out	0										
:15 to :30	In	3				3						
	Out	0										
:30 to :45	In	1				1						
	Out	1								1		
:45 to 5:00	In	0										
	Out	0										
5:00 to :15	In	0										
	Out	1	1									
:15 to :30	In	1			1							
	Out	5			2	3						
:30 to :45	In	0										
	Out	0										
:45 to 6:00	In	1				1						
	Out	1				1						
4:00 to 5:00	In	5	0	0	0	5	0	0	0	0		
	Out	1	0	0	0	0	0	0	0	1		
4:15 to 5:15	In	4	0	0	0	4	0	0	0	0		
	Out	2	1	0	0	0	0	0	0	1		
4:30 to 5:30	In	2	0	0	1	1	0	0	0	0		
	Out	7	1	0	2	3	0	0	0	1		
4:45 to 5:45	In	1	0	0	1	0	0	0	0	0		
	Out	6	1	0	2	3	0	0	0	0		
5:00 to 6:00	In	2	0	0	1	1	0	0	0	0		
	Out	7	1	0	2	4	0	0	0	0		

Location (parcel 3) Counter Carlos

Interval	Direction	Mode									
		Total	Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
4:00 to :15	In	0									
	Out	2				1				1	
:15 to :30	In	0									
	Out	2				1				1	
:30 to :45	In	2			1					1	
	Out	4		1	2	1					
:45 to 5:00	In	1				1					
	Out	0									
5:00 to :15	In	5		1	4						
	Out	4				1				3	
:15 to :30	In	4			2	1				1	
	Out	5		1	1	3					
:30 to :45	In	3				3					
	Out	1		1							
:45 to 6:00	In	2		1		1					
	Out	1				1					
4:00 to 5:00	In	3	0	0	1	1	0	0	0	1	
	Out	8	0	1	2	3	0	0	0	2	
4:15 to 5:15	In	8	0	1	5	1	0	0	0	1	
	Out	10	0	1	2	3	0	0	0	4	
4:30 to 5:30	In	12	0	1	7	2	0	0	0	2	
	Out	13	0	2	3	5	0	0	0	3	
4:45 to 5:45	In	13	0	1	6	5	0	0	0	1	
	Out	10	1	1	1	4	0	0	0	3	
5:00 to 6:00	In	14	1	1	6	5	0	0	0	1	
	Out	11	1	1	1	5	0	0	0	3	

Total Parcel Count (Parcel 1, 2 and 3)

Interval	Direction	Total	Mode								
			Drive alone	HOV driver	HOV pax	Walk	Shared vehicle	Bike	School Bus	Transit	
4:00 to :15	In	10	2	0	0	6	0	0	2	0	
	Out	9	0	1	5	2	0	0	0	1	
:15 to :30	In	9	0	1	3	3	0	0	0	2	
	Out	4	1	0	0	2	0	0	0	1	
:30 to :45	In	7	0	0	2	2	0	0	1	2	
	Out	10	0	2	5	2	0	0	0	1	
:45 to 5:00	In	11	1	0	0	4	0	0	1	5	
	Out	5	0	0	0	5	0	0	0	0	
5:00 to :15	In	12	1	1	9	1	0	0	0	0	
	Out	6	1	0	0	2	0	0	0	3	
:15 to :30	In	6	0	0	3	1	0	0	0	2	
	Out	10	0	1	3	6	0	0	0	0	
:30 to :45	In	6	1	0	1	4	0	0	0	0	
	Out	3	2	0	0	1	0	0	0	0	
:45 to 6:00	In	9	1	0	0	3	0	0	0	5	
	Out	4	1	0	0	3	0	0	0	0	
4:00 to 5:00	In	37	3	1	5	15	0	0	4	9	
	Out	28	1	3	10	11	0	0	0	3	
4:15 to 5:15	In	39	2	2	14	10	0	0	2	9	
	Out	25	2	2	5	11	0	0	0	5	
4:30 to 5:30	In	36	2	1	14	8	0	0	2	9	
	Out	31	1	3	8	15	0	0	0	4	
4:45 to 5:45	In	35	3	1	13	10	0	0	1	7	
	Out	24	3	1	3	14	0	0	0	3	
5:00 to 6:00	In	33	3	1	13	9	0	0	0	7	
	Out	23	4	1	3	12	0	0	0	3	

Appendix E. Existing and Future Person and Vehicular Site Trip Calculation (based on counts and surveys)

E 1 January 28, 2014 Count/Survey

E.2 February 4, 2014 Count/Survey

Appendix E1. Existing and Projected Person and Vehicular Trip Generation Summary (based on January 28th data)

Congress Heights Station

Existing and Future Peak Hour Person Site Trips

Existing				Future		
Time Period	In	Out	Total	In	Out	Total
Daily	285	285	570	480	480	960
AM Peak Hour (8:00-9:00)	11	46	57	19	78	96
PM Peak Hour (4:15-5:15)	40	17	57	68	29	96

Mode Share	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Vehicle (Drive Alone and HOV Driver)	0%	11%	21%	29%
Carpool Passengers and Shared Vehicle	0%	20%	36%	7%
Transit	82%	46%	14%	36%
Bike	0%	0%	0%	0%
Walking	18%	24%	29%	29%
Total	100%	100%	100%	100%

Vehicle Trip Generation

Existing				Future		
Time Period	In	Out	Total	In	Out	Total
Daily	65	65	130	110	110	220
AM Peak Hour	0	5	5	0	8	8
PM Peak Hour	9	4	13	15	7	22

Appendix E2. Existing and Projected Person and Vehicular Trip Generation Summary (based on February 4th data)

Congress Heights Station

Existing and Future Peak Hour Person Site Trips

Existing				Future		
Time Period	In	Out	Total	In	Out	Total
Daily	375	375	750	750	751	1500
AM Peak Hour (7:15-8:15)	6	69	75	12	138	150
PM Peak Hour (4:30-5:30)	36	31	67	72	62	134

Mode Share	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Vehicle (Drive Alone and HOV Driver)	33%	16%	8%	13%
Carpool Passengers and Shared Vehicle	0%	7%	39%	26%
Transit	17%	23%	25%	13%
Bike	0%	0%	0%	0%
Walking	50%	42%	22%	48%
School Bus	0%	12%	6%	0%
Total	100%	100%	100%	100%

Vehicle Trip Generation

Existing				Future		
Time Period	In	Out	Total	In	Out	Total
Daily	65	65	130	130	130	260
AM Peak Hour (7:15-8:15)	2	11	13	4	22	26
PM Peak Hour (5:00-6:00)	3	3	6	6	6	12

Appendix F. ITE Land Use Code 223-Apartment Trip Equations

Mid-Rise Apartment (223)

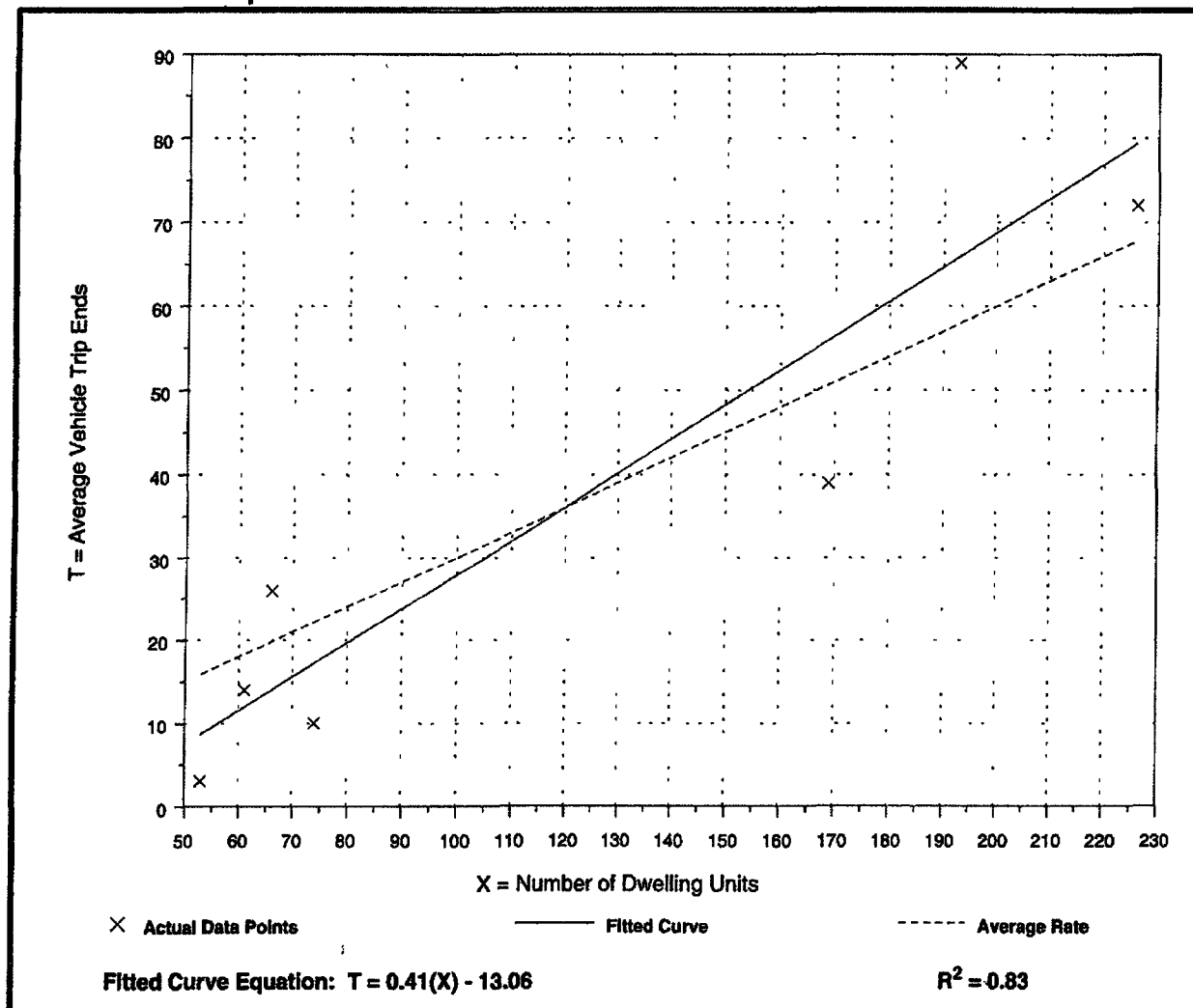
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 7
 Avg. Number of Dwelling Units: 120
 Directional Distribution: 31% entering, 69% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.30	0.06 - 0.46	0.56

Data Plot and Equation



Mid-Rise Apartment (223)

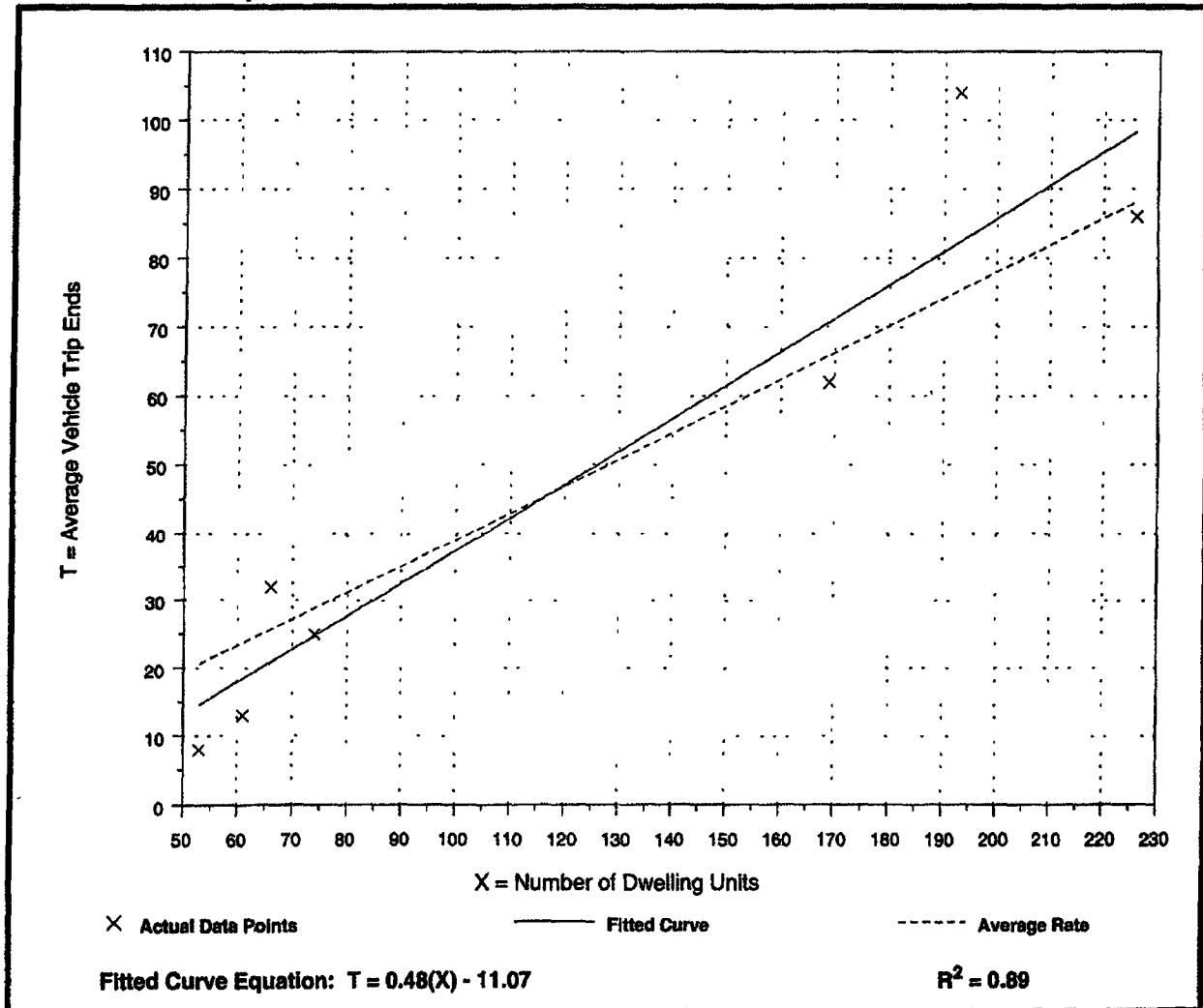
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 7
 Avg. Number of Dwelling Units: 120
 Directional Distribution: 58% entering, 42% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.15 - 0.54	0.63

Data Plot and Equation



Appendix G. Excerpts from 2005 WMATA Transit Ridership Survey

Table C-36
Linear Regression Equation Inputs for Residential Sites by Street Density

Mode	Slope ¹	Y-Intercept	R-Square
All Sites			
Metrorail	0.85	21.72	0.16
Transit	1.27	15.47	0.31
Auto	-2.38	96.88	0.53
Sensitivity Test: Without Gallery Place-Chinatown Station Sites			
Metrorail	0.70	24.14	0.12
Transit	1.10	18.26	0.28
Auto	-2.01	90.66	0.49

Notes: ¹ Percentage point for every one mile of additional density per acre.

For distance equations, the strongest correlation was produced for Metrorail use (see Table C-33). Sensitivity testing increased this R-squared value from 0.41 to 0.62. The equation for this regression is graphically depicted in Figure C-10, and shown in a tabular format in Table C-37. The correlation indicates that about 54 percent of trips from a residential site would be on Metrorail if the site is located directly at the station exit/entrance. This percentage would decrease by 0.87 percent for every 100 feet increase in the distance a residential site is located from the station exit/entrance.

Table C-37
Regression Equation Summary for Residential Trips

Distance (feet)	Mode		
	Metrorail	All Transit	Auto
0	54%	55%	29%
250	52%	53%	31%
500	50%	51%	33%
750	48%	49%	36%
1000	45%	48%	38%
1500	41%	44%	43%
2000	37%	41%	48%
2500	32%	37%	53%
3000	28%	33%	58%

For housing density equations, moderate correlations were produced for the auto and transit modes (see Table C-35). A weaker correlation was produced for the Metrorail mode. The sensitivity testing increased the R-squared value for the auto mode from 0.43 to 0.72. The equation for the housing density/auto regression is graphically depicted in Figure C-11. The correlation indicates that an increase of one residential unit per acre within 3/4 mile of the station would decrease the percentage of trips made from residential sites by auto by 2.54 percent. Despite the weakness in the housing density/Metrorail correlation, the overall

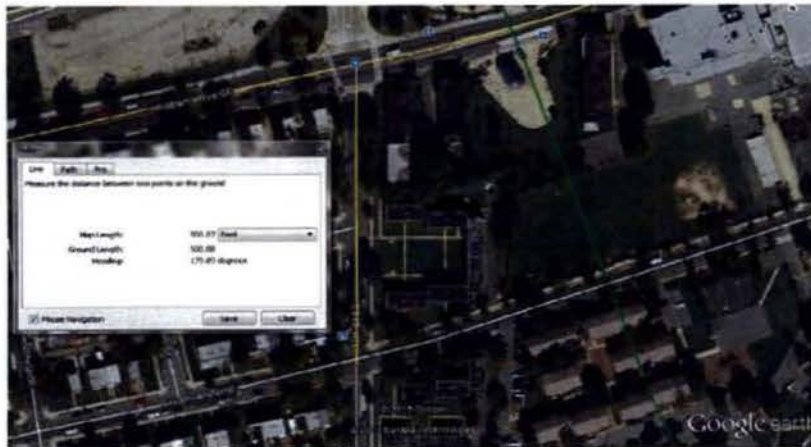
Appendix H. Trip Generation Calculation (ITE with WMATA transit reductions)

Residential							
	Units	IN	OUT	TOTAL	IN	OUT	TOTAL
Mid-Rise Apartments	110	10	22	32	24	18	42
Metrolink, Metrolink and Other Transit Reduction		5	11	16	12	9	21
Walk/Bike		2	3	5	4	3	7
Total		17	36	53	40	30	70

Land use code: 223 pg. 381

2001 Development-Related Ridership Survey pg. C-76 Table C-37

Metrolink	50%
Metrolink	1%
Auto	33%
Walk/Bike	16%
Total	1.00



Use	Radius to Metro (ft)	% Reduction
residential	500	50%

Appendix I. DDOT TARAS Accident Reports

List of Query Results

Created by Victorine Gwei

1/27/2014 1:55:03 PM

Complaint Number	Accident Date	Time	Week Day	Accident Occured On	Side Street	Quad	Type of Collision	On Street	Off Street	# of Inj	# of Ped	# of Veh	Road Surface	Lighting Condition
11065196	5/11/2011	1519	Wed	ALABAMA AVE	THIRTEENTH ST	SE	Left Turn Hit Veh.	Not at Inter	N/A	0	0	2	Asphalt	Daylight
11069652	5/19/2011	1730	Thu	THIRTEENTH ST	ALABAMA AVE	SE	Rear End	Within 100ft	Public	0	0	2	Asphalt	Daylight
11075971	5/30/2011	1743	Mon	THIRTEENTH ST	ALABAMA AVE	SE	Rear End	Within 100ft	Public	0	0	2	Concrete	Daylight
11125365	8/27/2011	1200	Sat	ALABAMA AVE	THIRTEENTH ST	SE	Side Swiped	Within 100ft	N/A	0	0	2	Asphalt	Daylight
11139397	9/22/2011	1930	Thu	ALABAMA AVE	THIRTEENTH ST	SE	Rear End	Within 100ft	N/A	0	0	2	Concrete	Dark (Lighted)
11170929	11/20/2011	1849	Sun	ALABAMA AVE	THIRTEENTH ST	SE	Side Swiped	Within 100ft	N/A	0	0	2	Asphalt	Dark (Lighted)
12033613	3/10/2012	0904	Sat	THIRTEENTH ST	ALABAMA AVE	SE	Rear End	At Intersect	N/A	0	0	2	Asphalt	Daylight
12038692	3/20/2012	1800	Tue	THIRTEENTH ST	ALABAMA AVE	SE	Side Swiped	At Intersect	N/A	0	0	2	Asphalt	Daylight
12050849	4/14/2012	1705	Sat	THIRTEENTH ST	ALABAMA AVE	SE	Rear End	At Intersect	N/A	0	0	2	Asphalt	Daylight
12068412	5/18/2012	2340	Fri	THIRTEENTH ST	ALABAMA AVE	SE	Other	At Intersect	N/A	1	0	2	Asphalt	Dark (Lighted)
12122205	8/29/2012	1537	Wed	ALABAMA AVE	THIRTEENTH ST	SE	Rear End	Within 100ft	Public	2	0	3	Asphalt	Daylight
12148477	10/20/2012	2047	Sat	ALABAMA AVE	THIRTEENTH ST	SE	Rear End	Within 100ft	N/A	0	0	2	Asphalt	Dark (Lighted)
13031845	3/11/2013	2050	Mon	ALABAMA AVE	THIRTEENTH ST	SE	Rear End	Within 100ft	Public	1	0	2	Asphalt	Dark (Lighted)
13048796	4/15/2013	0745	Mon	ALABAMA AVE	THIRTEENTH ST	SE	Rear End	Not at Inter	Public	1	0	3	Asphalt	Daylight
13079349	6/11/2013	1830	Tue	THIRTEENTH ST	ALABAMA AVE	SE	Side Swiped	Within 100ft	Public	0	0	2	Asphalt	Daylight
13118081	8/20/2013	0007	Tue	THIRTEENTH ST	ALABAMA AVE	SE	Rear End	At Intersect	N/A	0	0	2	Concrete	Dark (Lighted)
13138863	9/27/2013	0930	Fri	ALABAMA AVE	THIRTEENTH ST	SE	Rear End	Within 100ft	Public	0	0	2	Asphalt	Dark (Lighted)
13151589	10/21/2013	1737	Mon	ALABAMA AVE	THIRTEENTH ST	SE	Rear End	Within 100ft	Public	2	0	2	Asphalt	Daylight

18 accidents(11 not approved) listed in this query result.

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-7)

Intersection: 13TH ST and ALABAMA AVE, SE

Time Period Covered: From 01/01/2011 To 12/31/2013

Prepared By: Victorine Gwei

Prepared Date: 1/27/2014

Total Number of Accident	18	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities	0	Right Angle	0	0 0%	Fixed Object	0	0 0%
Total Number of Injures	7	Left Turn	1	5 6%	Ran Off Road	0	0 0%
Total Number of Disabling Injures	0	Right Turn	0	0 0%	Ped Involved	0	0 0%
Total Number of NonDisabling Injures	1	Rear End	12	66 7%	Backing	0	0 0%
Total Number of Pedestrians Involved	0	Side Swiped	4	22 2%	Non Collision	0	0 0%
Total Number of Bicycles Involved	0	Head On	0	0 0%	Under/Over Ride	0	0 0%
Total Number of Motorcycles Involved	0	Parked	0	0 0%	Unspecified	1	5 6%

Time of Day	#ACC	%	Day o fweek	#ACC	%
07 30 ~ 09 30	2	11 1%	Sunday	1	5 6%
09 30 ~ 11 30	1	5 6%	Monday	4	22 2%
11 30 ~ 13 30	1	5 6%	Tuesday	3	16 7%
13 30 ~ 16 00	2	11 1%	Wednesday	2	11 1%
16 00 ~ 18 30	5	27 8%	Thursday	2	11 1%
18 30 ~ 07 30	7	38 9%	Friday	2	11 1%
Unspecified	0	0 0%	Saturday	4	22 2%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear	15	83 3%	Dry	16	88 9%
Rain	2	11 1%	Wet	2	11 1%
Snow	0	0 0%	Snow/Ice	0	0 0%
Sleet/Hail	0	0 0%	Slush	0	0 0%
Fog/Mist	0	0 0%	Water/Sand	0	0 0%
Crosswind/Blowing Sand	0	0 0%	Repairing	0	0 0%
Unspecified	1	5 6%	Unspecified	0	0 0%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car	28	73 7%	Fatal Collision	0	0 0%
Bus	2	5 3%	Injury Collision	5	27 8%
Truck	0	0 0%	PDO Collision	13	72 2%
Taxi	1	2 6%	Light Condition	#ACC	%
Minivan	0	0 0%	Daylight	11	61 1%
Police/Emergency Vehicle	5	13 2%	Dawn/Dusk	0	0 0%
Motorcycle/Moped	0	0 0%	Dark(Lighted)	7	38 9%
Bicycle	0	0 0%	Dark(Not Lighted)	0	0 0%
Fixed Object	0	0 0%	Dark(Unknown Lighting)	0	0 0%
Unspecified	2	5 3%	Unspecified	0	0 0%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver Speed	0	0 0%	In Crosswalk with Signal	0	0 0%
Driver Alcohol/Drug	0	0 0%	In Crosswalk against Signal	0	0 0%
Driver Electronic Device	0	0 0%	In Crosswalk no Signal	0	0 0%
Driver Others	10	26 3%	In Unmarked Crosswalk	0	0 0%
Vehicle	1	2 6%	Not in Crosswalk	0	0 0%
Roadway	0	0 0%	From Between Parked Cars	0	0 0%
Unspecified	27	71 1%	Unspecified	0	0 0%

Year	Accidents	Fatalities	Injuries	Disabling Injuries	Pedestrians	Bicycles	Motorcycles
2011	6	0	0	0	0	0	0
2012	6	0	3	1	0	0	0
2013	6	0	4	0	0	0	0

11 Records are not approved as of 1/27/2014 1 46 01 PM

List of Query Results

Complaint Number	Accident Date	Time	Week Day	Accident Occured On	Side Street	Quad	Type of Collision	On Street	Off Street	# of Inj	# of Ped	# of Veh	Road Surface	Lighting Condition
11046207	3/31/2011	0830	Thu	THIRTEENTH ST	CONGRESS ST	SE	Back Hit Parked Veh.	Not at Inter	N/A	0	0	1	Asphalt	Daylight
11056044	4/24/2011	0100	Sun	CONGRESS ST	THIRTEENTH ST	SE	Back Hit Parked Veh.	N/A	N/A	0	0	2	Asphalt	Unknown
11156778	10/25/2011	0930	Tue	THIRTEENTH ST	CONGRESS ST	SE	Side Swiped	Within 100ft	N/A	0	0	2	Asphalt	Daylight
12020881	2/10/2012	2000	Fri	THIRTEENTH ST	CONGRESS ST	SE	Side Swiped	Within 100ft	Public	0	0	2	Asphalt	Unknown
12094896	7/7/2012	1910	Sat	CONGRESS ST	THIRTEENTH ST	SE	Side Swiped	Within 100ft	Public	0	0	2	Asphalt	Daylight
13071843	5/28/2013	1650	Tue	CONGRESS ST	THIRTEENTH ST	SE	Side Swiped	Within 100ft	N/A	0	0	2	Asphalt	Daylight
13110691	8/6/2013	1207	Tue	THIRTEENTH ST	CONGRESS ST	SE	Left Turn Hit Veh.	At Intersect	N/A	1	0	2	Asphalt	

7 accidents(6 not approved) listed in this query result.

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-7)

Intersection 13TH ST and CONGRESS ST, SE
Time Period Covered From 01/01/2011 To 12/31/2013 **Prepared By** Victorine Gwei **Prepared Date** 1/27/2014

Total Number of Accident	7	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities	0	Right Angle	0	0 0%	Fixed Object	0	0 0%
Total Number of Injures	1	Left Turn	1	14 3%	Ran Off Road	0	0 0%
Total Number of Disabling Injures	0	Right Turn	0	0 0%	Ped Involved	0	0 0%
Total Number of NonDisabling Injures	0	Rear End	0	0 0%	Backing	2	28 6%
Total Number of Pedestrians Involved	0	Side Swiped	4	57 1%	Non Collision	0	0 0%
Total Number of Bicycles Involved	0	Head On	0	0 0%	Under/Over Ride	0	0 0%
Total Number of Motorcycles Involved	0	Parked	0	0 0%	Unspecified	0	0 0%

Time of Day	#ACC	%	Day of week	#ACC	%
07 30 ~ 09 30	1	14 3%	Sunday	1	14 3%
09 30 ~ 11 30	1	14 3%	Monday	0	0 0%
11 30 ~ 13 30	1	14 3%	Tuesday	3	42 9%
13 30 ~ 16 00	0	0 0%	Wednesday	0	0 0%
16 00 ~ 18 30	1	14 3%	Thursday	1	14 3%
18 30 ~ 07 30	3	42 9%	Friday	1	14 3%
Unspecified	0	0 0%	Saturday	1	14 3%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear	7	100 0%	Dry	6	85 7%
Rain	0	0 0%	Wet	0	0 0%
Snow	0	0 0%	Snow/Ice	0	0 0%
Sleet/Hail	0	0 0%	Slush	0	0 0%
Fog/Mist	0	0 0%	Water/Sand	0	0 0%
Crosswind/Blowing Sand	0	0 0%	Repairing	0	0 0%
Unspecified	0	0 0%	Unspecified	1	14 3%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car	9	69 2%	Fatal Collision	0	0 0%
Bus	0	0 0%	Injury Collision	1	14 3%
Truck	0	0 0%	PDO Collision	6	85 7%
Taxi	0	0 0%	Light Condition	#ACC	%
Minivan	0	0 0%	Daylight	4	57 1%
Police/Emergency Vehicle	0	0 0%	Dawn/Dusk	0	0 0%
Motorcycle/Moped	0	0 0%	Dark(Lighted)	0	0 0%
Bicycle	0	0 0%	Dark(Not Lighted)	0	0 0%
Fixed Object	0	0 0%	Dark(Unknown Lighting)	0	0 0%
Unspecified	4	30 8%	Unspecified	3	42 9%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver Speed	1	7 7%	In Crosswalk with Signal	0	0 0%
Driver Alcohol/Drug	0	0 0%	In Crosswalk against Signal	0	0 0%
Driver Electronic Device	0	0 0%	In Crosswalk no Signal	0	0 0%
Driver Others	2	15 4%	In Unmarked Crosswalk	0	0 0%
Vehicle	0	0 0%	Not in Crosswalk	0	0 0%
Roadway	0	0 0%	From Between Parked Cars	0	0 0%
Unspecified	10	76 9%	Unspecified	0	0 0%

Year	Accidents	Fatalities	Injuries	Disabling Injures	Pedestrians	Bicycles	Motorcycles
2011	3	0	0	0	0	0	0
2012	2	0	0	0	0	0	0
2013	2	0	1	0	0	0	0

List of Query Results

Complaint Number	Accident Date	Time	Week Day	Accident Occured On	Side Street	Quad	Type of Collision	On Street	Off Street	# of Inj	# of Ped	# of Veh	Road Surface	Lighting Condition
11182162	12/12/2011	2349	Tue	MISSISSIPPI AVE	THIRTEENTH ST	SE	Ran Off Roadway	Not at Inter	Public	1	0	1	Asphalt	Dark (Lighted)
13055026	4/27/2013	0054	Sat	MISSISSIPPI AVE	THIRTEENTH ST	SE	Fixed Object	Not at Inter	N/A	2	0	2	Asphalt	Dark (Lighted)
13058143	5/2/2013	2245	Thu	MISSISSIPPI AVE	THIRTEENTH ST	SE	Fixed Object	Not at Inter	Public	0	0	1	Asphalt	Dark (Lighted)
13111945	8/8/2013	1725	Thu	THIRTEENTH ST	MISSISSIPPI AVE	SE	Fixed Object	At Intersect	N/A	1	0	1	Asphalt	Daylight
13118085	8/20/2013	0054	Tue	MISSISSIPPI AVE	THIRTEENTH ST	SE	Other	Not at Inter	N/A	0	0	1	Asphalt	Dark (Lighted)
13119735	8/23/2013	0700	Fri	MISSISSIPPI AVE	THIRTEENTH ST	SE	Right Angle	Within 100ft	Public	1	0	1	Asphalt	Daylight
13149696	10/18/2013	0230	Fri	MISSISSIPPI AVE	THIRTEENTH ST	SE	Ran Off Roadway	Not at Inter	N/A	1	0	1	Asphalt	Dark (Lighted)

7 accidents(1 not approved) listed in this query result.

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-7)

Intersection 13TH ST and MISSISSIPPI AVE, SE
Time Period Covered From 01/01/2011 To 12/31/2013 **Prepared By** Victorine Gwei **Prepared Date** 1/27/2014

Total Number of Accident	7	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities	0	Right Angle	1	14.3%	Fixed Object	3	42.9%
Total Number of Injures	6	Left Turn	0	0.0%	Ran Off Road	2	28.6%
Total Number of Disabling Injures	2	Right Turn	0	0.0%	Ped Involved	0	0.0%
Total Number of NonDisabling Injures	2	Rear End	0	0.0%	Backing	0	0.0%
Total Number of Pedestrians Involved	0	Side Swiped	0	0.0%	Non Collision	0	0.0%
Total Number of Bicycles Involved	0	Head On	0	0.0%	Under/Over Ride	0	0.0%
Total Number of Motorcycles Involved	0	Parked	0	0.0%	Unspecified	1	14.3%

Time of Day	#ACC	%	Day of week	#ACC	%
07:30 ~ 09:30	0	0.0%	Sunday	0	0.0%
09:30 ~ 11:30	0	0.0%	Monday	1	14.3%
11:30 ~ 13:30	0	0.0%	Tuesday	1	14.3%
13:30 ~ 16:00	0	0.0%	Wednesday	0	0.0%
16:00 ~ 18:30	1	14.3%	Thursday	2	28.6%
18:30 ~ 07:30	6	85.7%	Friday	2	28.6%
Unspecified	0	0.0%	Saturday	1	14.3%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear	7	100.0%	Dry	7	100.0%
Rain	0	0.0%	Wet	0	0.0%
Snow	0	0.0%	Snow/Ice	0	0.0%
Sleet/Hail	0	0.0%	Slush	0	0.0%
Fog/Mist	0	0.0%	Water/Sand	0	0.0%
Crosswind/Blowing Sand	0	0.0%	Repairing	0	0.0%
Unspecified	0	0.0%	Unspecified	0	0.0%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car	6	75.0%	Fatal Collision	0	0.0%
Bus	0	0.0%	Injury Collision	5	71.4%
Truck	0	0.0%	PDO Collision	2	28.6%
Taxi	0	0.0%	Light Condition	#ACC	%
Minivan	0	0.0%	Daylight	2	28.6%
Police/Emergency Vehicle	0	0.0%	Dawn/Dusk	0	0.0%
Motorcycle/Moped	0	0.0%	Dark(Lighted)	5	71.4%
Bicycle	0	0.0%	Dark(Not Lighted)	0	0.0%
Fixed Object	0	0.0%	Dark(Unknown Lighting)	0	0.0%
Unspecified	2	25.0%	Unspecified	0	0.0%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver Speed	1	12.5%	In Crosswalk with Signal	0	0.0%
Driver Alcohol/Drug	0	0.0%	In Crosswalk against Signal	0	0.0%
Driver Electronic Device	0	0.0%	In Crosswalk no Signal	0	0.0%
Driver Others	1	12.5%	In Unmarked Crosswalk	0	0.0%
Vehicle	0	0.0%	Not in Crosswalk	0	0.0%
Roadway	0	0.0%	From Between Parked Cars	0	0.0%
Unspecified	6	75.0%	Unspecified	0	0.0%

Year	Accidents	Fatalities	Injuries	Disabling Injuries	Pedestrians	Bicycles	Motorcycles
2011	1	0	1	0	0	0	0
2013	6	0	5	2	0	0	0

1 Records are not approved as of 1/27/2014 1:50:48 PM

List of Query Results

Complaint Number	Accident Date	Time	Week Day	Accident Occured On	Side Street	Quad	Type of Collision	On Street	Off Street	# of Inj	# of Ped	# of Veh	Road Surface	Lighting Condition
11090148	6/23/2011	1855	Thu	THIRTEENTH ST	SAVANNAH ST	SE	Side Swiped	Not at Inter	N/A	2	0	2	Asphalt	Daylight
12171928	12/8/2012	2023	Sat	THIRTEENTH ST	SAVANNAH ST	SE	Parked Vehicle	Within 100ft	Public	0	0	2	Asphalt	Dark (Lighted)
13058541	5/3/2013	1800	Fri	SAVANNAH ST	THIRTEENTH ST	SE	Parked Vehicle	Not at Inter	Public	0	0	2	Concrete	Daylight

Accident Summary Report (R-7)**Intersection** 13TH ST and SAVANNAH ST, SE**Time Period Covered** From 01/01/2011 To 12/31/2013**Prepared By** Victorine Gwei**Prepared Date** 1/27/2014

Total Number of Accident	3	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities	0	Right Angle	0	0 0%	Fixed Object	0	0 0%
Total Number of Injures	2	Left Turn	0	0 0%	Ran Off Road	0	0 0%
Total Number of Disabling Injures	0	Right Turn	0	0 0%	Ped Involved	0	0 0%
Total Number of NonDisabling Injures	0	Rear End	0	0 0%	Backing	0	0 0%
Total Number of Pedestrians Involved	0	Side Swiped	1	33 3%	Non Collision	0	0 0%
Total Number of Bicycles Involved	0	Head On	0	0 0%	Under/Over Ride	0	0 0%
Total Number of Motorcycles Involved	0	Parked	2	66 7%	Unspecified	0	0 0%

Time of Day	#ACC	%	Day of week	#ACC	%
07 30 ~ 09 30	0	0 0%	Sunday	0	0 0%
09 30 ~ 11 30	0	0 0%	Monday	0	0 0%
11 30 ~ 13 30	0	0 0%	Tuesday	0	0 0%
13 30 ~ 16 00	0	0 0%	Wednesday	0	0 0%
16 00 ~ 18 30	1	33 3%	Thursday	1	33 3%
18 30 ~ 07 30	2	66 7%	Friday	1	33 3%
Unspecified	0	0 0%	Saturday	1	33 3%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear	3	100 0%	Dry	3	100 0%
Rain	0	0 0%	Wet	0	0 0%
Snow	0	0 0%	Snow/Ice	0	0 0%
Sleet/Hail	0	0 0%	Slush	0	0 0%
Fog/Mist	0	0 0%	Water/Sand	0	0 0%
Crosswind/Blowing Sand	0	0 0%	Repairing	0	0 0%
Unspecified	0	0 0%	Unspecified	0	0 0%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car	4	66 7%	Fatal Collision	0	0 0%
Bus	0	0 0%	Injury Collision	1	33 3%
Truck	0	0 0%	PDO Collision	2	66 7%
Taxi	0	0 0%	Light Condition	#ACC	%
Minivan	0	0 0%	Daylight	2	66 7%
Police/Emergency Vehicle	0	0 0%	Dawn/Dusk	0	0 0%
Motorcycle/Moped	0	0 0%	Dark(Lighted)	1	33 3%
Bicycle	0	0 0%	Dark(Not Lighted)	0	0 0%
Fixed Object	0	0 0%	Dark(Unknown Lighting)	0	0 0%
Unspecified	2	33 3%	Unspecified	0	0 0%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver Speed	1	16 7%	In Crosswalk with Signal	0	0 0%
Driver Alcohol/Drug	0	0 0%	In Crosswalk against Signal	0	0 0%
Driver Electronic Device	0	0 0%	In Crosswalk no Signal	0	0 0%
Driver Others	1	16 7%	In Unmarked Crosswalk	0	0 0%
Vehicle	0	0 0%	Not in Crosswalk	0	0 0%
Roadway	0	0 0%	From Between Parked Cars	0	0 0%
Unspecified	4	66 7%	Unspecified	0	0 0%

Year	Accidents	Fatalities	Injures	Disabling Injuries	Pedestrians	Bicycles	Motorcycles
2011	1	0	2	0	0	0	0
2012	1	0	0	0	0	0	0
2013	1	0	0	0	0	0	0

Appendix J. Crash Rate Calculation

Congress Heights Station

Crash Rate Calculation for 13th St and Alabama Ave

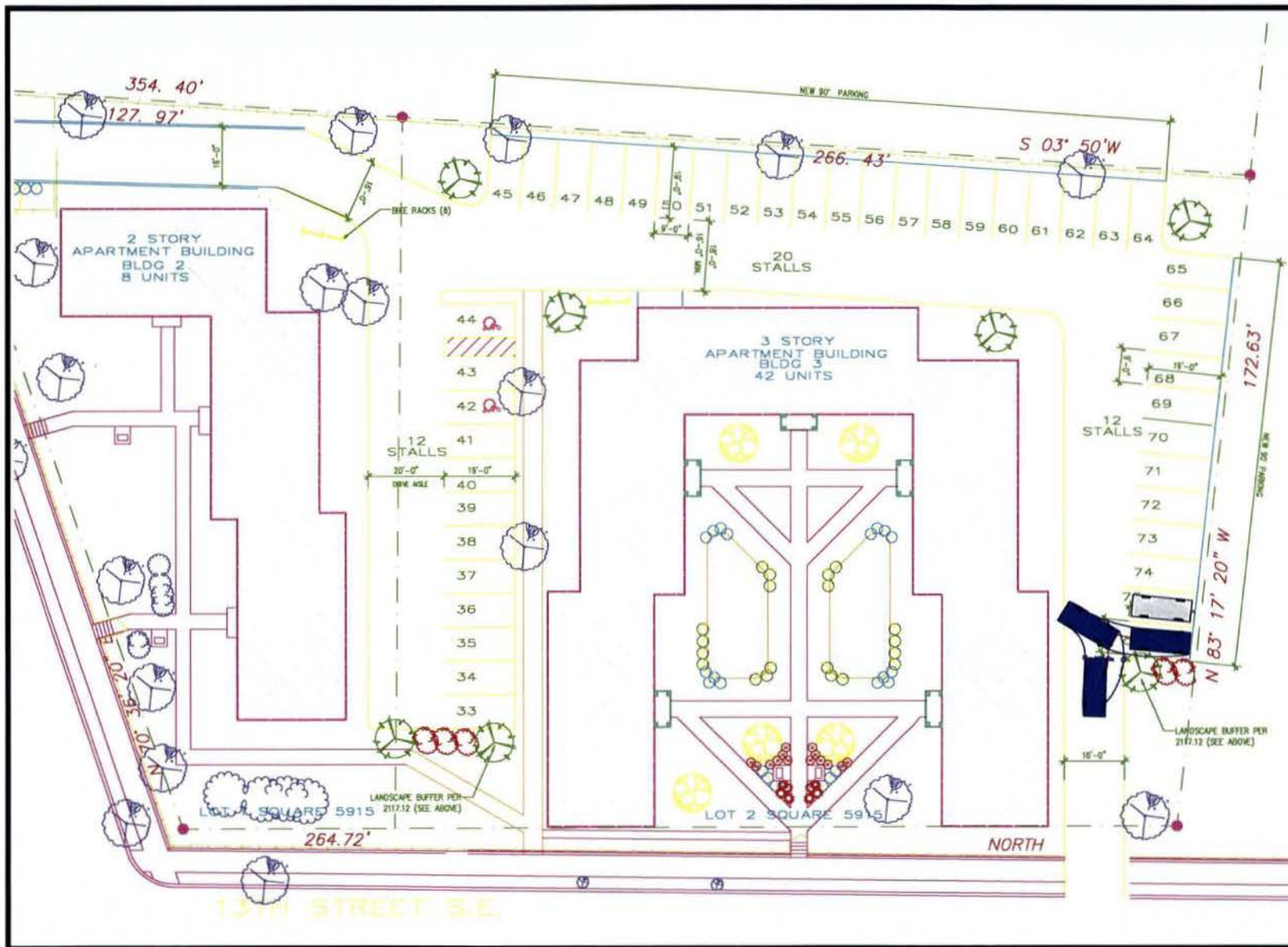
Intersection	C	N	V	Rspot
	# of Reported Crashes	Time Period of Analysis	Annual Average Daily Traffic Volume	Crash Rate for Intersection
13th St and Alabama Ave	18	3	12,950	1.26937

$$Rspot = (C * 10^6) / (365 * NV)$$

ADT data was estimated based on 2009 peak hour turning movement counts from the Department of Homeland Security Headquarters at St. Elizabeths EIS TIA Transportation Technical Report.

ADT was estimated by multiplying the peak hour trips by 10. The American Association of State Highway and Transportation Officials Geometric Design of Highways and Streets states two-way design hourly volume may be determined by applying a representative percentage (usually 8 to 12 percent in urban areas) to the ADT.

Appendix K. Loading Maneuvering Diagrams



symmetra design

727 15TH STREET, NW
WASHINGTON, DC 20005
202-370-8000

13TH ST. AND SAVANNAH
APARTMENT RENOVATION/ADDITION
WASHINGTON, DC

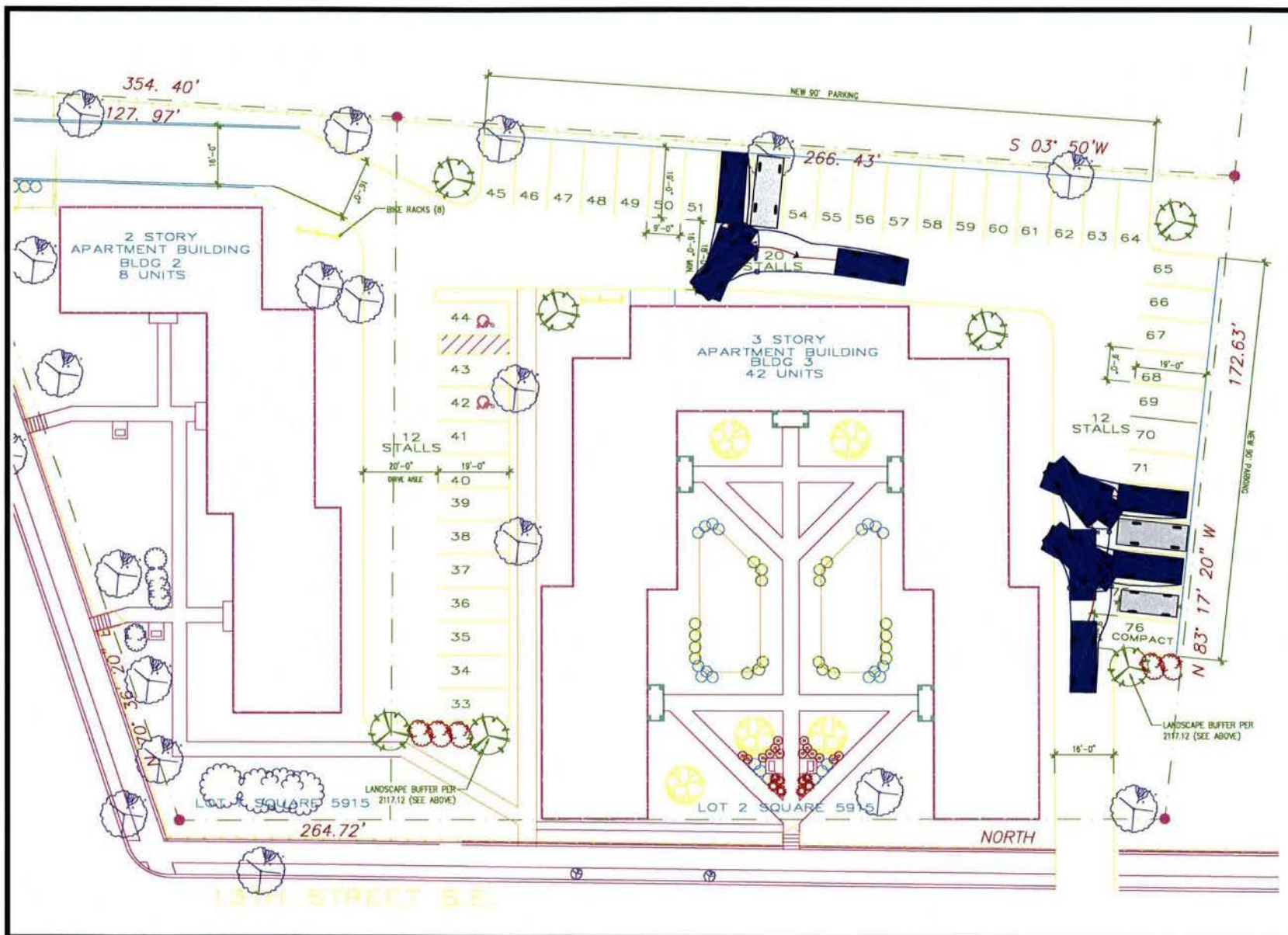
COMPACT CAR PARKING
BUILDING 2 & 3

REVISIONS

SCALE: 1"=25'-0"

DATE: 02-21-14

SHEET



symmetra design

727 15TH STREET, NW
WASHINGTON, DC 20005
202-370-6000

13TH ST. AND SAVANNAH
APARTMENT RENOVATION/ADDITION
WASHINGTON, DC

PASSENGER CAR PARKING
BUILDING 2 & 3

REVISIONS

SCALE: 1"=25'-0"

DATE: 02-21-14

SHEET