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TECHNICAL MEMORANDUM

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Date:	February 5, 2016	
Subject:	1315 Clifton Street NW Alley Operation Study	

INTRODUCTION

This memorandum contains an analysis of the 1315 Clifton Street NW project as it relates to the operations of the alley that will serve the project and the surrounding existing properties that have access to the alley. This memorandum follows a preliminary analysis of the alley done in May 2015 and is supplemental to Comprehensive Transportation Analysis that was submitted in November 2015.

The site is located approximately midway between 13th Street and 14th Street and roughly halfway between the Columbia Heights and U Street neighborhoods of Northwest Washington, DC. A study of the alley was prepared in order to better understand the existing operations and the potential impacts that the 1315 Clifton Street NW development might have on the alley's future operations. Figure 2 identifies the site location within the District. The PUD will expand upon an existing structure to provide 159 residential units. Forty five (45) parking spaces will be provided on-site in a below-grade parking garage (including Electric Vehicle charging stations) and one 30 foot loading berth is planned to be accessible from the alley.

The following conclusions have been made regarding the alley that serves 1315 Clifton Street NW:

- Two-way encounters and alley blockages are infrequent given the low volume of traffic operating through the alley. In fact, the alley is empty most of the time.
- The prevailing operations of the alley are aligned with residential commuting patterns which include primarily outbound trips in the morning and primarily inbound trips in the evening. The residential nature of the 1315 Clifton Street project conforms to these operations and the additional trips added to the alley by the proposed development will not significantly increase the incidence of two-way traffic encounters.
- The Applicant will implement a thorough loading management plan that will ensure minimal impacts to existing alley operations.
- The Applicant will work with the community, the ANC, and DDOT to coordinate solutions for infrequent blockages, two-way conflicts, and operational issues that exist in the alley.

ALLEY OPERATION STUDY

In addition to the typical traffic study elements outlined in DDOT's CTR standards, this memorandum includes a study of alley operations. The Applicant has chosen to undertake this effort in order to ensure that the development's garage and loading will function effectively given current traffic conditions in the public alley that the garage abuts, as well as to address concerns expressed by neighbors of the project who use the public alley, particularly to access alley parking areas.

Data Collection

Data was collected relating to alley activity from 7:00AM to 7:00PM on Wednesday, December 16th, 2015 and from 7:00AM to 7:00PM on Thursday, December 17th, 2015. The study covered the narrow section of public alley that lies to the west of the site, beginning at Clifton Street NW, runs north for 240 feet and then turns 90-degrees to the east and continues for 325 feet. The alley has only one access point, which is on Clifton Street NW. The approximate extent of the alley study area is shown in yellow on Figure 3.

The data collection process involved collecting video spanning the two study periods, totaling 24 total hours (12 hours per day over a two day period). This video data was used to determine the level of vehicle activity within the alley study area. Each vehicle entering, maneuvering within, or departing the alley study area was recorded and categorized by vehicle type and direction of travel. Timestamps denoting the start and end times of each maneuver were also recorded, from which the dwell time could be determined, which is defined as the amount of time a vehicle took to traverse the alley study area. Raw tabulated data is included as a technical attachment.

Alley Traffic Characteristics

In general, traffic volumes within the alley study area were relatively low. The busiest hour of alley activity occurred from 7:30AM to 8:30AM on the second day of data collection and saw a total of 27 vehicles enter or exit the alley adjacent to the proposed development (or approximately one vehicle every 133 seconds on average). Of the 27 vehicles, 7 were inbound vehicles and 20 were outbound vehicles.

The incidence of truck traffic during the 24 hours of count data was relatively low. On both days, the alley was accessed by two garbage trucks servicing buildings adjacent to the alley.

Table 1: Alley Traffic Summary Statistics

Statistic	Day 1 Wed Dec 16 2015 7:00 AM-7:00 PM	Day 2 Thu Dec 17 2015 7:00 AM-7:00 PM
Total Vehicles	**150**	**158**
Automobiles	*147*	*156*
Trash/Service Trucks	*2*	*2*
Other	*1*	*0*
Peak Hour	**07:45 AM - 08:45 AM**	**07:30 AM - 08:30 AM**
Total Hourly Vehicles	*22*	*27*
Inbound	*6*	*7*
Outbound	*16*	*20*

Figure 1 and shows the average inbound and outbound hourly alley counts over the two day study period. As can be seen, there is a low volume with standard commuting patterns of outbound vehicles in the morning and inbound vehicles in the evening. Of note, over both days of the study period inbound vehicles in the morning and outbound vehicles in the afternoon might indicate that parking in the alley is being used as commercial daytime parking by employees in the area. This is further enforced by video captured in the alley showing a noticeable turnover of vehicles that occupy certain parking areas in the alley during work hours that are not present during non-work hours in the parking lot serving 1316 Euclid Street. Since this form of traffic runs opposite to standard commuting patterns, it increases the chances of two-way vehicle encounters within the alley.

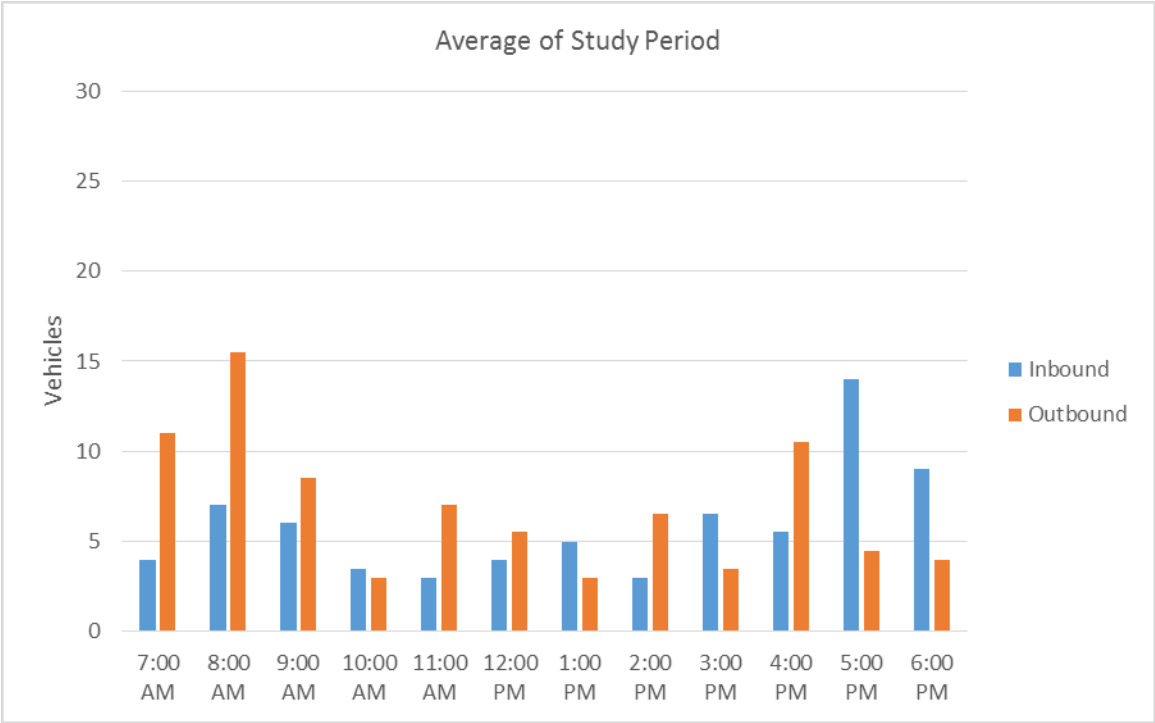

Figure 1: 1315 Clifton Alley Counts (Average of 12/16/2015 & 12/17/2015 Data)

Alley Blockages

The incidence of alley blockages observed during the study period, as identified by vehicles being unable to exit or enter the alley, was lower than anticipated. No prolonged loading activity was observed within the alley study area. Two instances of alley blockages were observed in the 24 hour study period. On the first day, at 7:46:53 AM, a southbound garbage truck was delayed in exiting the alley until a school bus loading on Clifton Street NW adjacent to the alley completed loading in an overall period of for 2 minutes and 51 seconds. The second alley blockage occurred at 5:49:06 PM on the second day, when a vehicle parked in the entrance to alley on Clifton Street NW to allow for its passengers to unload groceries into the multifamily residential complexes on the south side of Clifton Street NW and ultimately blocking the alley for 7 minutes and 29 seconds. Interestingly, both of these incidents occurred as a result of activity occurring outside of the alley.

Two-Way Vehicle Encounters

An analysis of the tabulated alley activity data shows that the alley study area is empty most of the time, as shown in Table 2. More than one vehicle was present in the alley for only 21 minutes and 45 seconds out of the 24 hours of study (1.51%). In total there were 28 instances over 24 hours where multiple vehicles were present in the alley, and of those only eight (8) instances involved a vehicle which needed to wait or reverse in order to allow another vehicle to proceed. The eight (8) instances in which a vehicle needed to wait or reverse in order to allow another vehicle to proceed is summarized in Table 3.

Table 2: Summary of Vehicle Encounters in the Alley Study Area

Number of Vehicles in Study Area	Day 1 Wed Dec 16 2015 7:00 AM-7:00 PM			Day 2 Thu Dec 17 2015 7:00 AM-7:00 PM		
0 vehicles	612 min	16 sec	*(85.0%)*	619 min	36 sec	*(86.1%)*
1 vehicles	96 min	55 sec	*(13.5%)*	89 min	30 sec	*(12.4%)*
2 vehicles	7 min	54 sec	*(1.1%)*	9 min	10 sec	*(1.3%)*
3 vehicles	0 min	48 sec	*(0.1%)*	1 min	45 sec	*(0.2%)*
4+ vehicles	2 min	08 sec	*(0.3%)*	0 min	00 sec	*(0.0%)*

Table 3: Summary of Two-Way Vehicle Encounters

Day	Beginning of Encounter	End of Encounter	Elapsed Time	Number of Vehicles Involved	Resolution
1	1:33:14 PM	1:33:38 PM	14 sec	2	Vehicle dwelling in alley moves into parking lot and allows exiting vehicle to pass.
2	7:55:15 AM	7:55:28 AM	13 sec	2	Southbound vehicle attempting to exit alley enters parking lot adjacent to alley to allow northbound vehicle to pass.
2	8:20:04 AM	8:20:28 AM	24 sec	2	Southbound vehicle proceeds to exit alley while northbound vehicle waits at entrance to alley on Clifton Street NW.
2	8:24:24 AM	8:26:09 AM	1 min 45 sec	4	Northbound vehicle waits at entrance to alley on Clifton Street NW while three southbound vehicles attempt to exit the alley.
2	8:48:13 AM	8:48:47 AM	34 sec	2	Southbound vehicle enters alley and notices the northbound vehicle. Southbound vehicle reverses to allow the northbound vehicle to pass at bend.
2	9:31:33 AM	9:31:42 AM	9 sec	2	Vehicle attempting to access the alley is delayed by a vehicle attempting to turn left onto Clifton Street NW from alley.
2	5:39:44 PM	5:40:10 PM	26 sec	2	Northbound vehicle waits at entrance to alley on Clifton Street NW while the southbound vehicle exits the alley.
2	5:56:45 PM	5:57:51 PM	55 sec	3	Two northbound vehicles wait at entrance to alley on Clifton Street NW to allow southbound vehicle to exit. This encounter is a result of a vehicle blocking the entrance to alley for 7 minutes and 29 seconds (as discussed above).

Truck Operations

Four garbage trucks were observed accessing the alley over the course of the two-day study period, with two garbage trucks accessing the alley each day. No other trucks were noted operating in the alley on either day of observation. On the first day, a 24 foot garbage truck entered the alley at 7:36:58 AM, turned around in the alley, and exited the alley at 7:49:53 AM after 13 minutes and 6 seconds present in the alley (time is extended due to alley blockage discussed above). A second garbage truck, measuring approximately 30 foot entered the alley at 7:55:49 AM, did not turn around in the alley, and

exited the alley in reverse all the way to Clifton Street at 8:05:00 AM after 9 minutes and 11 seconds present in the alley. On the second day, a 24 foot garbage truck entered the alley at 8:47:04 AM, turned around in the alley, and exited the alley at 8:51:34 AM after 4 minutes and 30 seconds present in the alley. A second garbage truck, measuring 24 feet entered the alley at 10:08:09 AM, turned around in the alley, and exited the alley at 10:16:14 AM after 8 minutes and 5 seconds present in the alley.

The shorter 24 foot garbage trucks were able to clear the corner of the alley without multiple maneuvers; however the larger 30 foot garbage truck was noted to have to perform a backing maneuver while navigating the corner to successfully turn. After clearing the narrow portion of the alley, all garbage trucks were able to operate in the alley while allowing other vehicles to maneuver around them without causing blockages. All garbage trucks servicing the alley were noted to be private garbage services and not District based garbage collection.

Loading Management Plan and Recommendations

No incidences of alley blockages or two-way encounters were observed over the two-day 24 hour study period due to the presence and operations of trucks in the alley. However, the Applicant will implement a loading management plan, the conditions of which are:

- Tenants will be required to coordinate and schedule deliveries and a loading coordinator will be on duty during delivery hours.
- Trucks accessing the on-site loading space will be limited to a maximum of 24 feet in length. Any truck larger than 24 feet in length will be required to obtain temporary parking restrictions along Clifton Street and load from the curb.
- All tenants will be required to schedule any loading operation conducted using a truck greater than 24 feet in length.
- Deliveries will be scheduled such that the loading space's capacity is not exceeded. In the event that an unscheduled delivery vehicle arrives while the loading space is full, that driver will be directed to return at a later time when the loading space will be available so as to not impede the alley that passes adjacent to the loading space.
- Inbound and outbound truck maneuvers will be monitored to ensure that trucks accessing the loading space do not block vehicular traffic along the alley except during those times when a truck is actively entering or exiting the loading space and alley.
- Trucks using the loading space will not be allowed to idle and must follow all District guidelines for heavy vehicle operation including but not limited to DCMR 20 – Chapter 9, Section 900 (Engine Idling), the regulations set forth in DDOT's Freight Management and Commercial Vehicle Operations document, and the primary access routes listed in the DDOT Truck and Bus Route System.
- The loading space operation will be limited to daytime hours of operation, with signage indicating these hours posted prominently at the loading space with notification also given to tenants. The loading space will be open seven days a week from 9:00 AM to 5:00 PM so as not to conflict with commuter traffic entering and exiting the alley.

In addition, other alley improvements are noted below in order to improve alley operations:

- General observations noted that the gravel area adjacent to the Sherwin-Williams in the alley is utilized for overnight parking for taxis and other vehicles as well as utilized for some pick-up truck delivery and/or pick-up activity. A reduction in overnight parking from any unauthorized vehicles adjacent to the alley would lessen the potential for conflict. In addition, vehicles park in the driveway of the Sherwin-Williams once the gate to the parking lot is closed after hours, many times extending into public space. It is recommended that the Applicant coordinate with the District to increase enforcement of vehicles potentially parking in public space within the Sherwin-Williams driveway and along the alley that may impede the maneuvering capabilities of vehicles into and out of the adjacent alley.
- The vehicle that utilized the alley entrance to park and drop-off groceries for the building across Clifton Street NW from the alley suggests a need for a loading zone along Clifton Street NW. It is recommended that the Applicant coordinate with DDOT and the community to designate a loading zone along Clifton Street NW. A possible additional solution would be the addition of signs near the entrance to the alley on Clifton Street NW stating that the alley should not be blocked and placed near the adjacent 1343 Clifton Street NW building.

Conclusions

At present, congestion in the alley is minimal and the number of two-way vehicle encounters is infrequent. The prevailing operations of the alley are aligned with residential commuting patterns which include primarily outbound trips in the morning and primarily inbound trips in the evening. The proposed 1315 Clifton Street NW project and its associated below-grade garage will add approximately 20 additional vehicles to the alley during its highest hours of trip generation, namely outbound during the morning peak hour, based on the data collected as part of this alley study. This increase translates to an average of one additional vehicle every 3 minutes and will not cause a noticeable increase in the incidence of two-way traffic encounters.

Blockages of the alley, due to activity unrelated to alley operations on Clifton Street NW, resulted in delays and two-way encounters for vehicles attempting to enter or exit the alley. Educating neighbors in the vicinity of the alley to not use the entrance of the alley as a loading zone could help alleviate such issues. Specifically, the following recommendations would improve operations along the alley:

- Implement a loading management plan to ensure limited impacts on the alley due to truck traffic destined for the 1315 Clifton Street building.
- Coordinate with the District to increase enforcement of vehicles potentially parking in public space and along the alley that may impede the maneuvering capabilities of vehicles into and out of the alley.
- Do not provide any daytime parking for nearby businesses within the 1315 Clifton Street building so as to reduce the potential for additional conflicting vehicles that may be entering when most alley vehicles leave in the morning or exiting when most alley vehicles return in the afternoon.
- Coordinate with DDOT and the community to designate a loading zone along Clifton Street NW and add signage near the entrance to the alley on Clifton Street NW stating that the alley should not be blocked.

The Applicant is committed to working with the community, DDOT, and others nearby to ensure minimal impacts to existing alley operations.

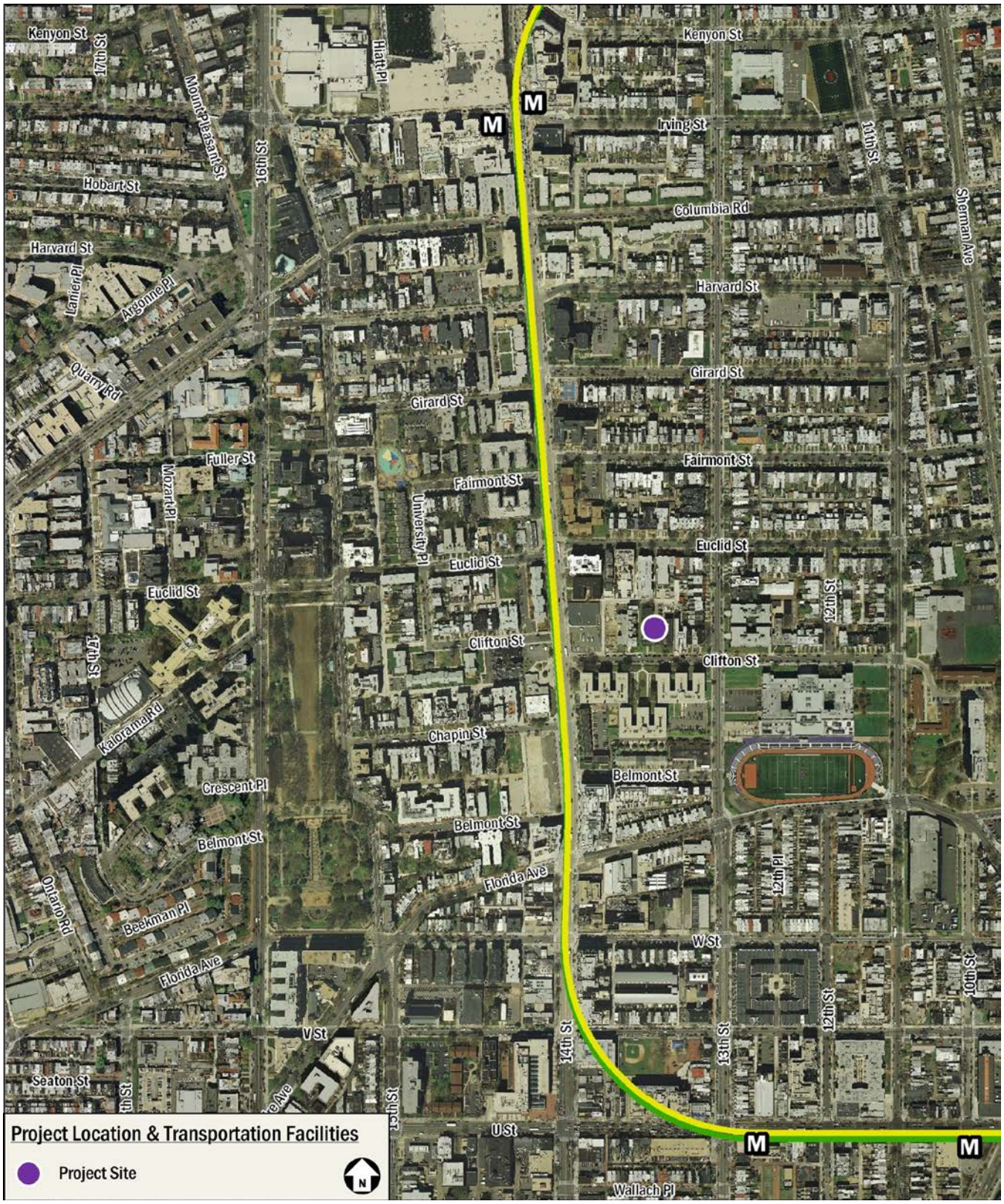

Figure 2: Site Location

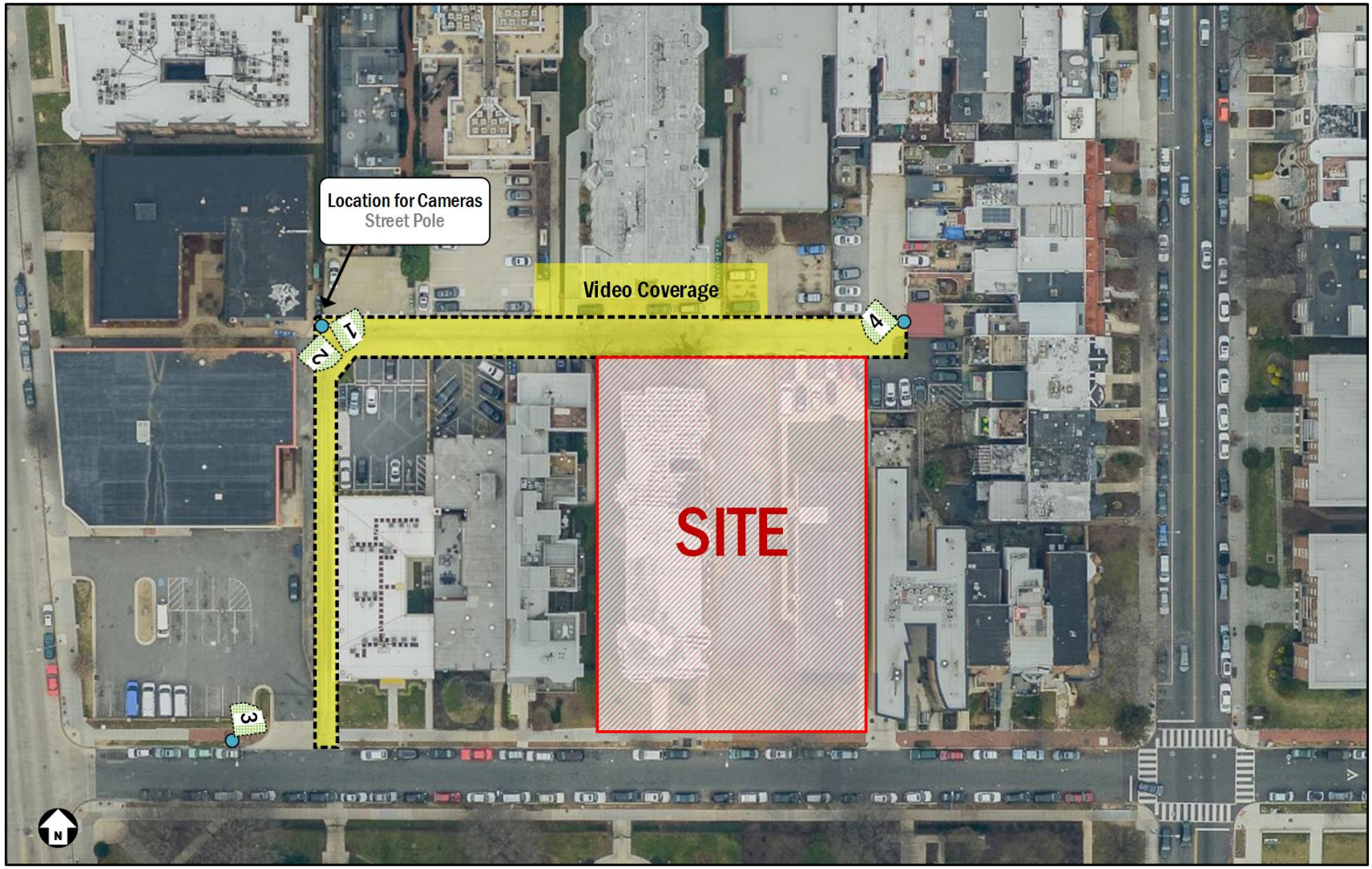

Figure 3: Alley Study Area