MEMORANDUM

TO:	Ken Laden	DDOT
	Abdoulaye Bah	DDOT
	Charles Thomas	DDOT
FROM:	Nicole White	Symmetra Design
	Lou Slade	Gorove/Slade Associates
	Dan VanPelt	Gorove/Slade Associates
DATE:	November 9, 2004	
SUBJECT:	Salvation Army Transportation Analysis Summary	

INTRODUCTION

This memorandum summarizes the results of a traffic and transportation analysis for the Salvation Army East of the River Corps Center project in Southeast Washington, D.C. The project is proposed to be located on the southeast corner of Martin Luther King Jr. Avenue, S.E. and Morris Road, S.E. (Square 5805) (See Figure 1).

The 57,701[1] square foot Salvation Army project is proposed to include the following uses:

- Administrative offices with ten employees
- Childcare (with play yard) for 50 children and eight to ten staff
- 4,100 SF of first floor retail
- Five classrooms for job training
- Chapel with 127 seats
- Wellness Center with athletic equipment

The Salvation Army will also include 34 below grade parking spaces.

The project is planned to be complete in 2006.

Scope of Study

This study includes an assessment of Existing Conditions, Future No-build Conditions, and Future Build Conditions (with the proposed Salvation Army project) for AM and PM peak hour conditions. As outlined in an October 6, 2004 scoping agreement to the

[1] The total building area is 74,624 SF which includes 16,923 SF of below-grade parking. This results in 57,701 SF of program space.

ZONING COMMISSION
District of Columbia
CASE NO.04-35
EXHIBIT NO.3E

District Department of Transportation (DDOT), the study area for this project includes the Martin Luther King, Jr. Avenue/Morris Road (signalized) and Morris Road/Mount View Place (four-way stop controlled) intersections.

EXISTING CONDITIONS

Transportation Network

The roadways included as part of the Salvation Army study area are described below:

- Martin Luther King, Jr. Avenue is a four-lane north-south minor arterial that extends from South Capitol Street to the Officer Kevin J. Welsh Memorial Bridge (providing access to the Southeast Freeway).
- Morris Road is a two-lane east-west local road that extends from Martin Luther King, Jr. Avenue to Erie Street at Fort Stanton Park.
- Mount View Place is a two-lane north-south local road that extends from Pleasant Street to Talbert Street. Mount View Place is one-way southbound from Pleasant Street to Morris Road and is two-way from Morris Road to Talbert Street. Parking is permitted on both sides of the street north of Morris Road.

In addition to the roadways described above, there is also a nine foot alleyway adjacent to the site connecting Talbert Street to Morris Road. The alley has poor pavement conditions and was not observed to be used by any vehicles.

The roadway network and intersection lane configurations are illustrated graphically in Figure 2.

The Salvation Army site is convenient to multiple modes of transportation. Bus stops are located at the southeast corner of Martin Luther King, Jr. Avenue and Morris Road, at the northwest corner of Martin Luther King, Jr. Avenue and Chicago Street, and at the northeast corner of Morris Road and Mount View Place. The following bus routes are located at one or more of these bus stops:

- 90: U Street – Garfield Line (15 minute headways)
- A42, A46, A48: Anacostia – Congress Heights Line (operating before 6AM and after midnight only)
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- P1, P2, P6: Anacostia – Eckington Line (10 minute headways)
- U2: Minnesota Avenue – Anacostia Line (25 minute headways)
- W2, W3: Southeast Community Hospital – Anacostia Line (12 minute headways)
- W6, W8: Garfield – Anacostia Line (15 minute headways)

The site is located approximately five blocks from the Anacostia Green-line Metrorail Station.

Traffic Volumes and Field Observations

Traffic data (turning movement counts) was collected on Thursday October 7, 2004 from 7:00 AM to 9:30 PM and 4:00 PM to 6:30 PM. Based on data collected during these time periods, the peak hours were determined to be 7:30 AM to 8:30 AM, and 5:00 PM to 6:00 PM. Peak hour traffic data is illustrated graphically on Figure 3.

Field observations were conducted on Thursday October 7, Wednesday October 20, and Thursday October 21. On Thursday October 7, field observations revealed traffic on Martin Luther King Jr. Avenue operated under good conditions during both the AM and PM peak periods. Traffic on Morris Road experienced delays at its intersection with Martin Luther King Jr., Avenue with long queues extending east past Mount View Place (greater than 300 feet). The queue lasted for about an hour and fifteen minutes from 7:30 to 8:45 (NOTE: There were brief times during this one hour and fifteen minute period when the queue was able to clear).

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Existing conditions Level of Service (LOS) capacity analyses were conducted for the two study area intersections using SYNCHRO 6 software. Capacity analyses results can range from LOS "A" (best) to LOS "F" (worst) based on the average delay experienced by motorists. LOS "D" is accepted by DDOT as the minimum delay threshold limit for intersections.

The results of the LOS analyses are summarized in Table 1 below:

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As Table 1 indicates, both of the study area intersections currently operate at an overall acceptable Level of Service.

FUTURE NO-BUILD CONDITIONS

Future No-build Conditions represents future traffic conditions in 2006 with the addition of currently planned projects in the area. This scenario does not include traffic associated with the Salvation Army project. The purpose of Future No-build Conditions is to determine what traffic conditions would be like in the future if the Salvation Army project were not constructed. Future No-build serves as the baseline condition for comparison with Future Build Conditions.

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In addition to the specific projects listed above, a 0.5% growth factor per year was added to the through movements on Martin Luther King, Jr. Avenue to account for general regional growth. This growth factor has been used in other traffic studies in the District of Columbia. The general growth factor accounts for other projects that are planned as part of the Anacostia Waterfront Initiative (even though AWI has a much bigger timeframe than this project).

Future No-build traffic volumes are illustrated in Figure 4.

Capacity Analysis

The traffic volumes shown in Figure 4 were analyzed using SYNCHRO 6 software. The results of the analysis are summarized in Table 2 below.

Table 2
Future No-build Conditions Level of Service

	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Martin Luther King, Jr. Avenue/Morris Road	C	24.5	B	10.9
Morris Road/Mount View Place	B	11.3	B	11.4

As Table 2 indicates, both of the study area intersections are projected to continue operating at acceptable levels of service.

FUTURE BUILD (w/Salvation Army)

Future Build conditions represents future traffic conditions with the Salvation Army project plus the other planned projects in the area (as outlined in Future No-build Conditions above).

Future Transportation Network

Vehicular access to the Salvation Army underground garage, and the day care drop-off area would be provided via an unsignalized site driveway off of Morris Road (see Architect's Site Plan). The site driveway is planned to accommodate one inbound lane and one outbound lane. The site driveway also provides access to the loading dock.

The Salvation Army project will include the construction of a sidewalk on Morris Road adjacent to the site. The new sidewalk will provide pedestrian access to the Salvation Army building and will also provided improved walking conditions for the numerous pedestrians who currently cut through the site to access the bus stop on Martin Luther King Jr. Avenue.

Washington Metropolitan Area Transit Authority (WMATA) and the District are building a three-mile demonstration light rail line between Pennsylvania Avenue and Bolling Air Force Base along the CSX branch line in Anacostia. The transit project will connect the Barry Farms, Fairlawn, and Historic Anacostia neighborhoods to the regional Metrorail system. Operation is scheduled to begin in 2006.

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The Institute of Transportation Engineers' Trip Generation Manual was used to develop the vehicular trips to be generated by the Salvation Army project. Recreational Community Center most closely resembles the characteristics of the proposed Salvation Army. Recreational Community Center is defined in ITE as follows:

Recreational community centers are stand-alone public facilities similar to and including YMCAs. These facilities often include classes and clubs for adults and children; a day care or nursery school; meeting rooms; swimming pools and whirlpools; saunas; tennis, racquetball, handball, basketball and volleyball courts; outdoor athletic fields/courts; exercise classes; weightlifting and gymnastics equipment; locker rooms; and a restaurant or snack bar. Typically public access is allowed, but a fee may be charged.

A 60% transit reduction was applied to the trip generation to account for the expected heavy usage of bus and Metrorail (the site is approximately four blocks away from the Anacostia Metrorail station and in close proximity to many bus routes). Salvation Army expects that 65% to 70% of those coming to the building would use public transportation. However, in order to develop conservatively high traffic estimates a 60% transit reduction was used instead of 65% to 70%.

Table 3
Salvation Army Trip Generation

ITE Land Use	Code	Square Feet	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Recreational Community Center	495	53,601	53	34	87	25	63	88
Apparel Store	870	4,100	2	2	4	6	6	12
Total		57,701	55	36	91	31	69	100
W/60% Transit Reduction								
Salvation Army w/Transit Reduction		**57,701**	**22**	**14**	**36**	**12**	**28**	**40**

The vehicle trips summarized in Table 3 were distributed throughout the roadway network using the directional distribution illustrated in Figure 5. The percentages shown in Figure 5 indicate how motorists approaching the Salvation Army are expected to access the site. It is expected that many of the patrons visiting the Salvation Army would live in the immediate and surrounding neighborhoods. The Salvation Army also expects to serve patrons from further distances in Wards 7 and 8. Existing traffic patterns were used as a guide to help determine the future direction of approach.

Salvation Army site traffic was added onto Future No-build traffic volumes (Figure 4) to produce Future Build traffic. Future Build traffic volumes are shown in Figure 6.

Capacity Analysis

Future Build traffic volumes shown in Figure 6 were analyzed using SYNCHRO 6 software. The results of the Level of Service analysis are summarized in Table 4 below:

Table 4
Future Build Conditions Level of Service

	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Martin Luther King, Jr. Avenue/Morris Road	C	25.1	B	16.8*
Morris Road/Salvation Army Site Driveway	A	0.5	A	0.9
Morris Road/Mount View Place	B	11.3	B	11.6

**The allocation of green time to Morris Road was increased to optimize the signal operations. The total cycle length was maintained at 100 seconds as it is in existing conditions.*

As Table 4 indicates, all of the intersections in the study area are projected to operate at acceptable Levels of Service with the addition of the Salvation Army project. Future conditions analyses assumes a recommended adjustment to the Martin Luther King, Jr. Avenue/Morris Road intersection signal timings during the PM Peak hour to give slightly more green light time to motorists on Morris Road.

Parking

The Salvation Army project includes 34 below-grade parking spaces plus 200 overflow parking spaces at the Union Temple Baptist Church. Union Temple Baptist Church is located at the corner of Mount View Place and Pleasant Street (two blocks from the Salvation Army).

The 234 parking spaces exceed the zoning requirement for the various land-uses (see Table 5 below).

Table 5
Parking Requirements

Land-use	Zoning Requirement	Parking Provided
Chapel (127 seats)	1:10 seats	13
Retail (4,100 SF)	1:300 SF (above 3,000 SF)	14
Office/Classroom/Health/Other (50,694)	1:600 SF	84
Total		**111**

Loading Operations

The Salvation Army project will include the addition of an off-street loading facility. The dock will be accessed via a shared driveway located on Morris Road. Loading

activities for single unit trucks (17 feet to 35 feet) will be accommodated in the loading dock. In the event that larger trucks, such as tractor trailers, are needed, deliveries will take place on Martin Luther King, Jr. Avenue during off-peak hours.

CONCLUSIONS

The primary conclusions reported in this memorandum are summarized below:

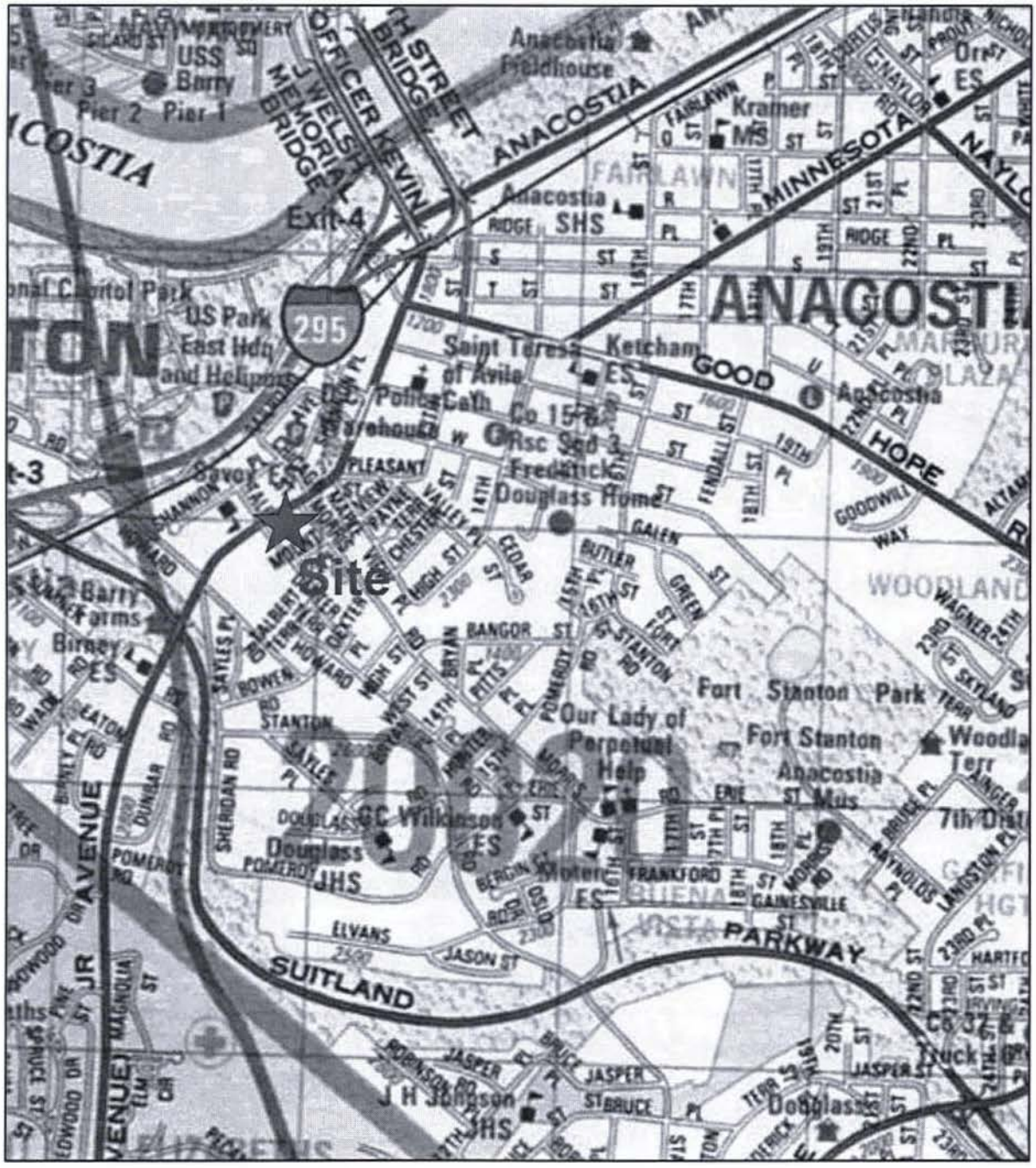
- Both of the intersections in the study area currently operate at acceptable LOS during the AM and PM peak periods. However, it should be noted that westbound Morris Road motorists approaching the Martin Luther King, Jr. Avenue intersection during the AM peak hour experienced delays during one of the field observation days. Traffic on Morris Road queued back from the Martin Luther King, Jr. Avenue intersection past Mount View Road. The other two days of field observations indicated that traffic on Morris Road did not experience notable delays.

- Both of the study area intersections are projected to continue operating at acceptable Levels of Service during Future No-build Conditions. Future No-build Conditions include traffic associated with the planned Anacostia Economic Development Center and DDOT Government Center at the corner of Martin Luther King, Jr. Avenue and Good Hope Road.

- Both of the study area intersections are projected to continue operating at acceptable Levels of Service during Future Build Conditions (with the addition of the proposed Salvation Army project). The signal timings at the Martin Luther King Jr. Avenue/Morris Road intersection should be adjusted during the PM peak hour to give more green light time to Morris Road.

- The Salvation Army will provide 34 below-grade parking spaces plus 200 overflow parking spaces at Union Temple Baptist Church. The 234 parking spaces exceed the 111 space zoning requirement.

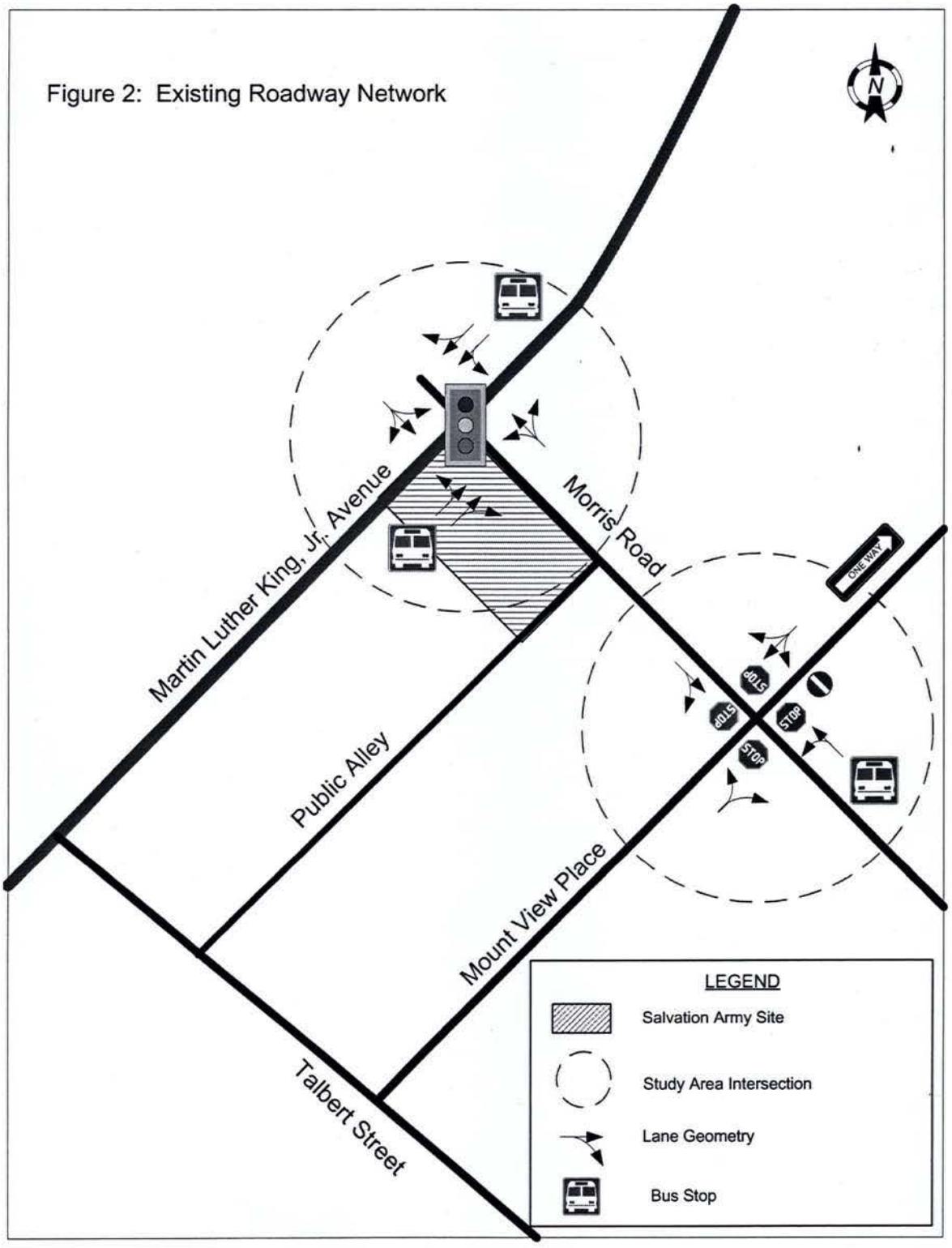
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Map Source: ADC

Figure 1: Site Location Map

Figure 2: Existing Roadway Network



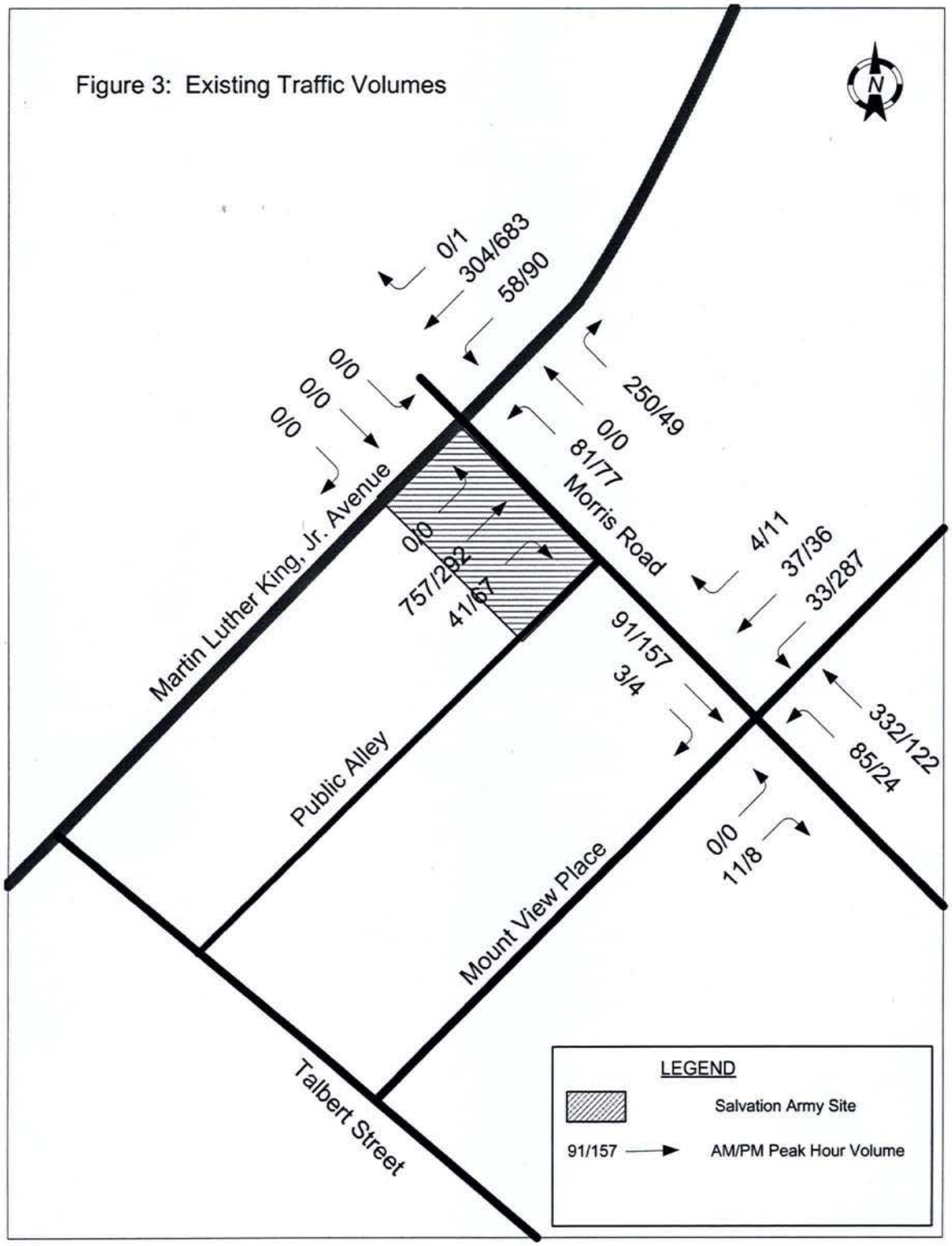

Figure 3: Existing Traffic Volumes
N
0/1
304/683
58/90
0/0
0/0
0/0
250/49
0/0
81/77
Martin Luther King, Jr. Avenue
Morris Road
0/0
757/292
41/67
4/11
37/36
33/287
91/157
3/4
332/122
85/24
Public Alley
0/0
11/8
Mount View Place
Talbert Street
LEGEND
Salvation Army Site
91/157
AM/PM Peak Hour Volume

Figure 4: Future No-build Traffic Volumes

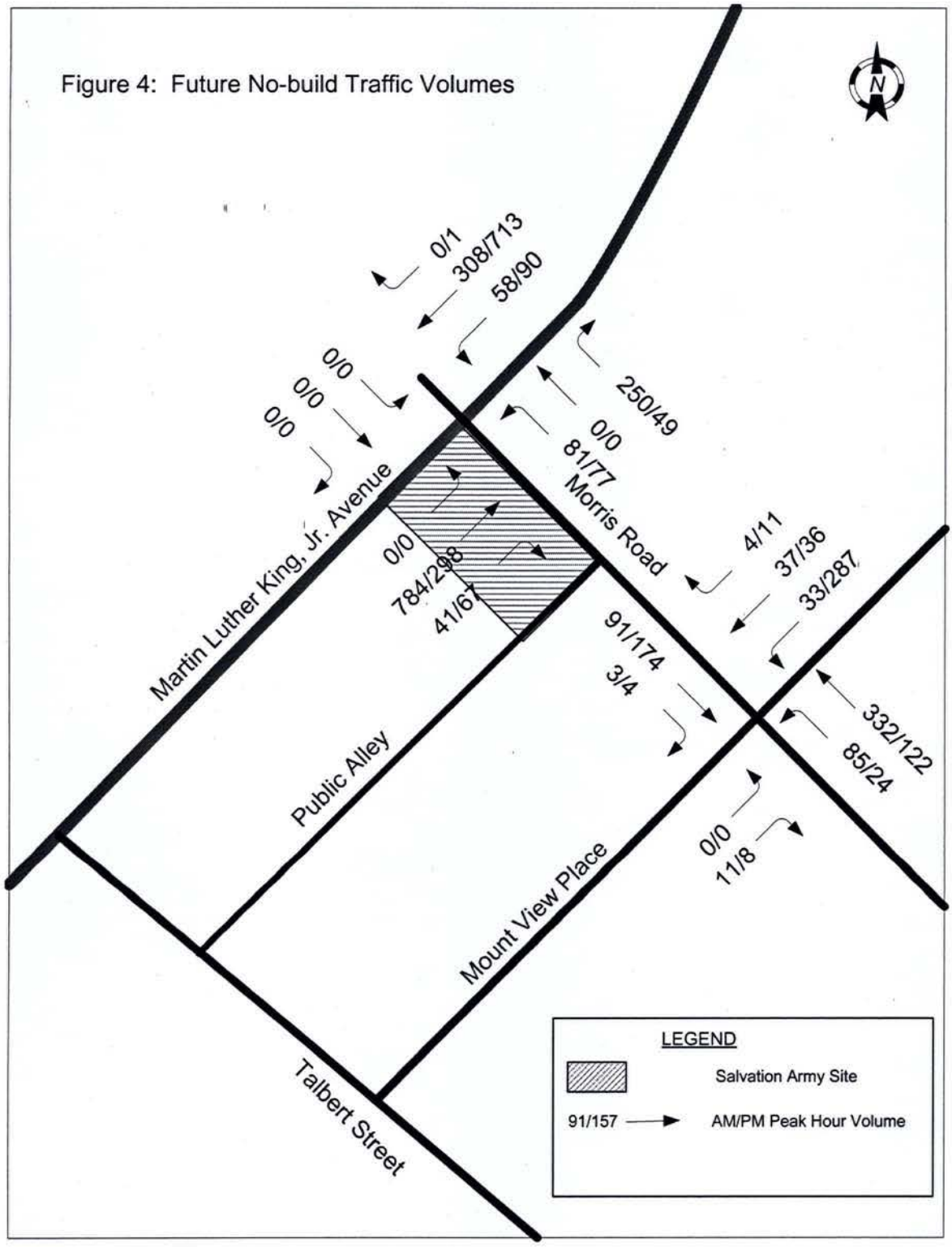


Figure 5: Directional Distribution

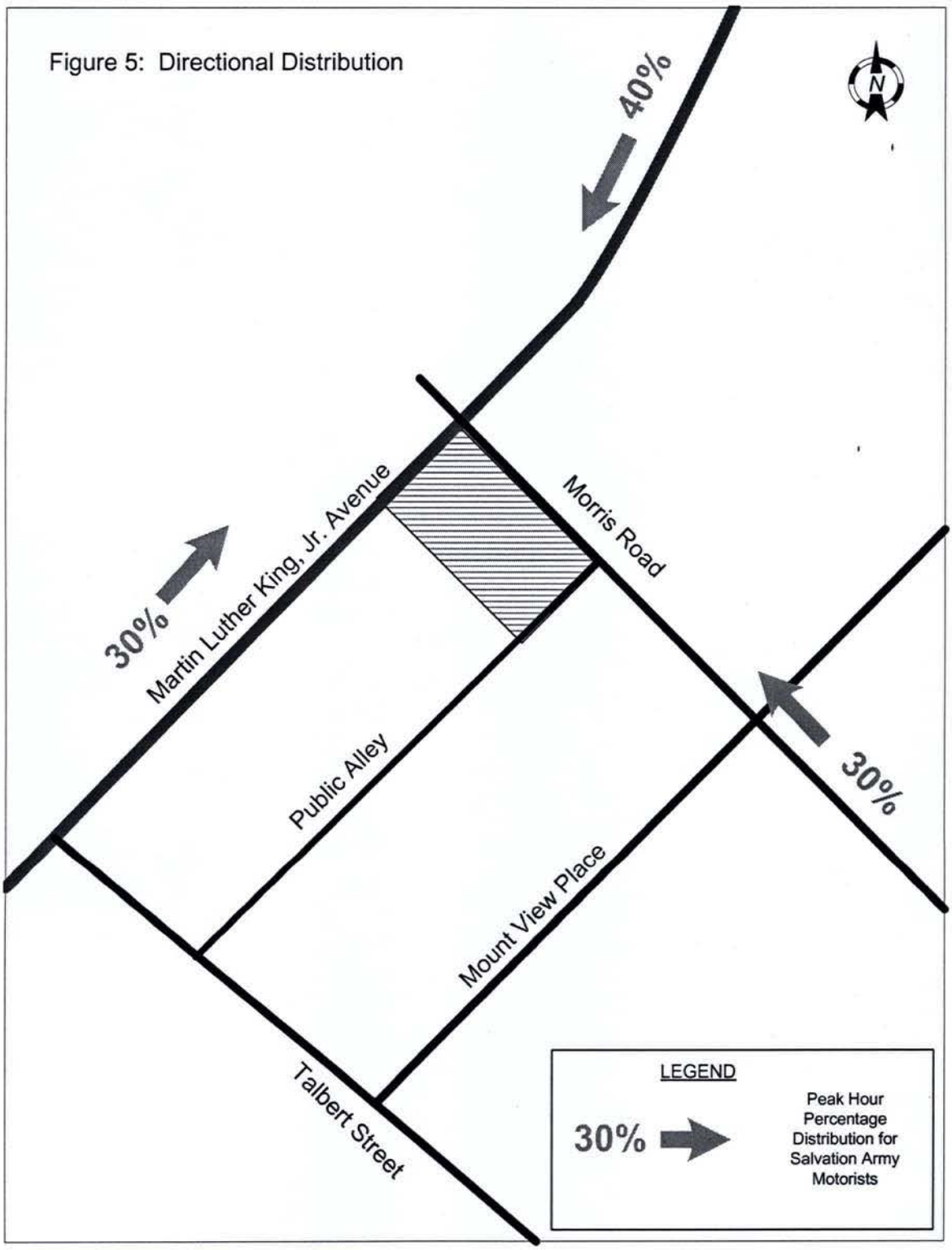
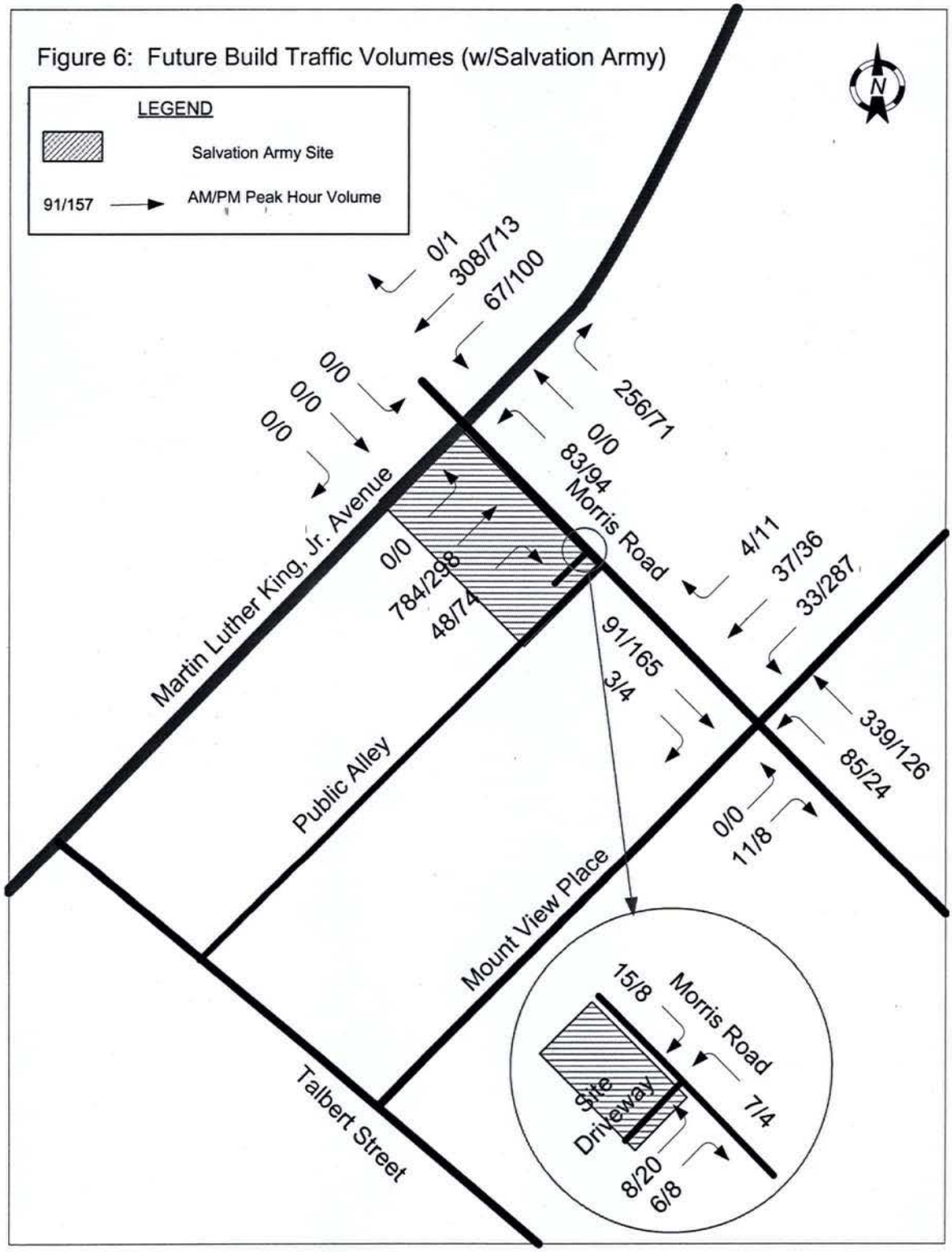


Figure 6: Future Build Traffic Volumes (w/Salvation Army)



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The primary conclusions reported in this memorandum are summarized below:

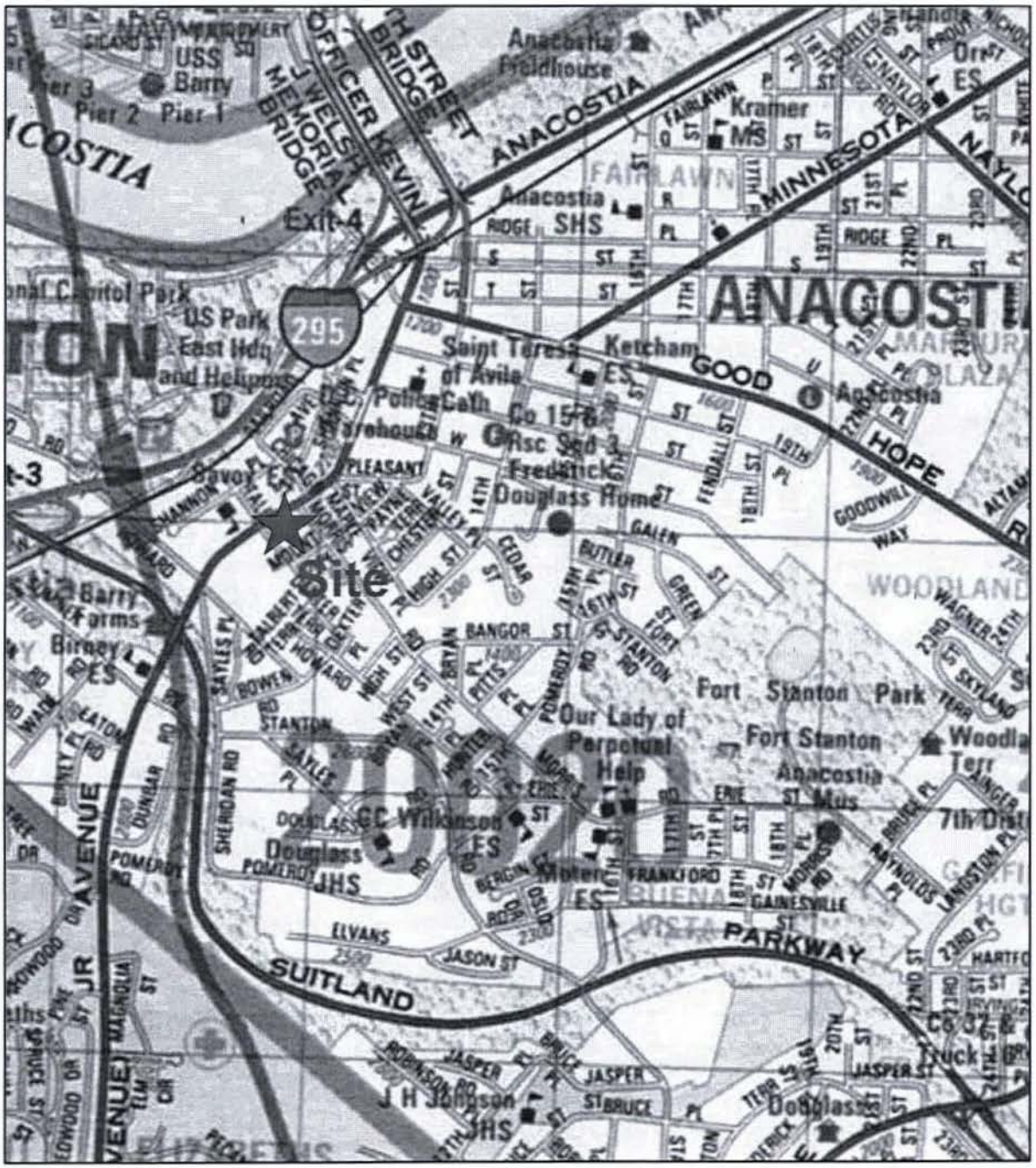
- Both of the intersections in the study area currently operate at acceptable LOS during the AM and PM peak periods. However, it should be noted that westbound Morris Road motorists approaching the Martin Luther King, Jr. Avenue intersection during the AM peak hour experienced delays during one of the field observation days. Traffic on Morris Road queued back from the Martin Luther King, Jr. Avenue intersection past Mount View Road. The other two days of field observations indicated that traffic on Morris Road did not experience notable delays.

- Both of the study area intersections are projected to continue operating at acceptable Levels of Service during Future No-build Conditions. Future No-build Conditions include traffic associated with the planned Anacostia Economic Development Center and DDOT Government Center at the corner of Martin Luther King, Jr. Avenue and Good Hope Road.

- Both of the study area intersections are projected to continue operating at acceptable Levels of Service during Future Build Conditions (with the addition of the proposed Salvation Army project). The signal timings at the Martin Luther King Jr. Avenue/Morris Road intersection should be adjusted during the PM peak hour to give more green light time to Morris Road.

- The Salvation Army will provide 34 below-grade parking spaces plus 200 overflow parking spaces at Union Temple Baptist Church. The 234 parking spaces exceed the 111 space zoning requirement.

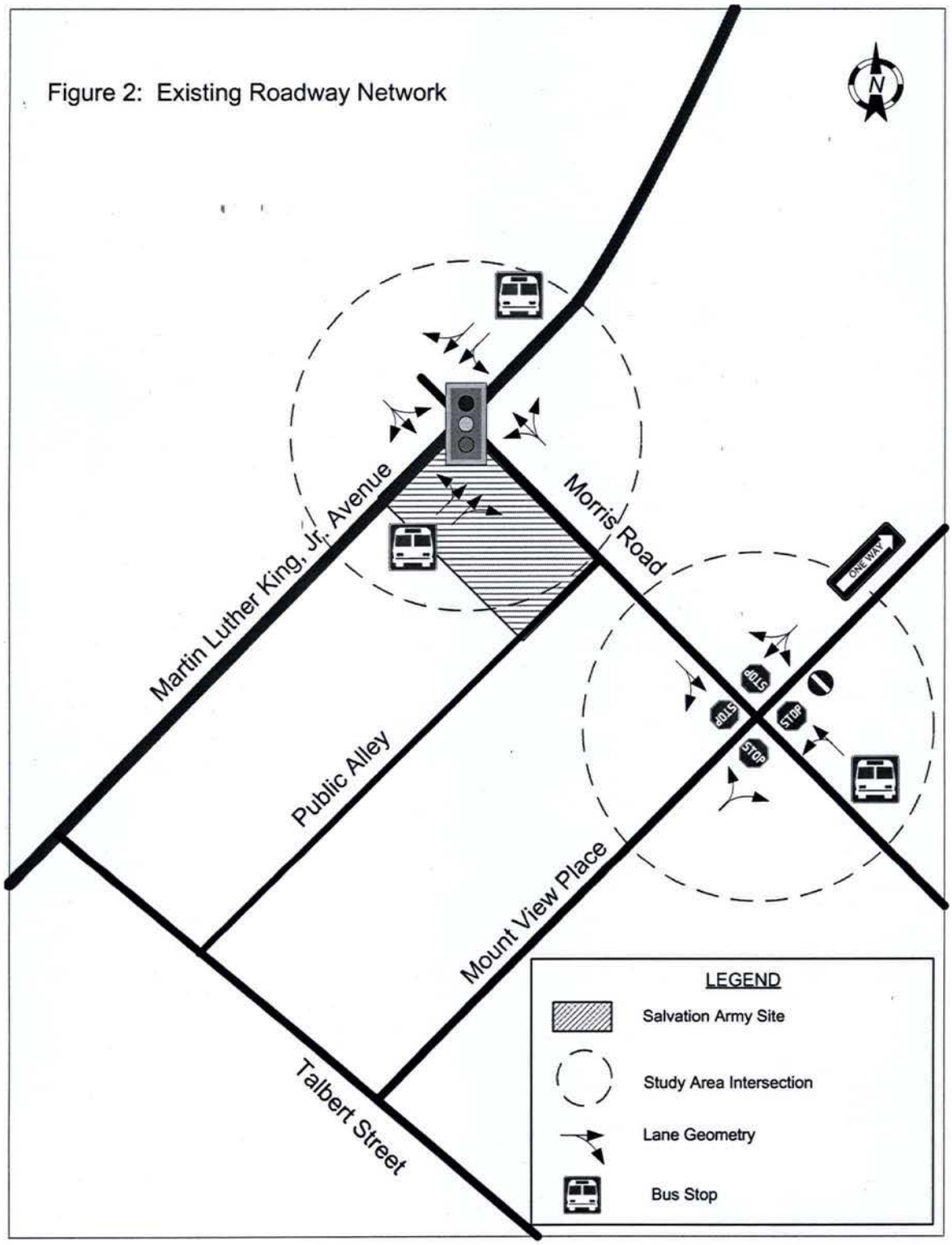
- Loading activities for single unit trucks (17 feet to 35 feet) will be accommodated in an off-street loading dock. In the event that larger trucks, such as tractor trailers, are needed, deliveries will take place on Martin Luther King, Jr. Avenue during off-peak hours.



Map Source: ADC

Figure 1: Site Location Map

Figure 2: Existing Roadway Network



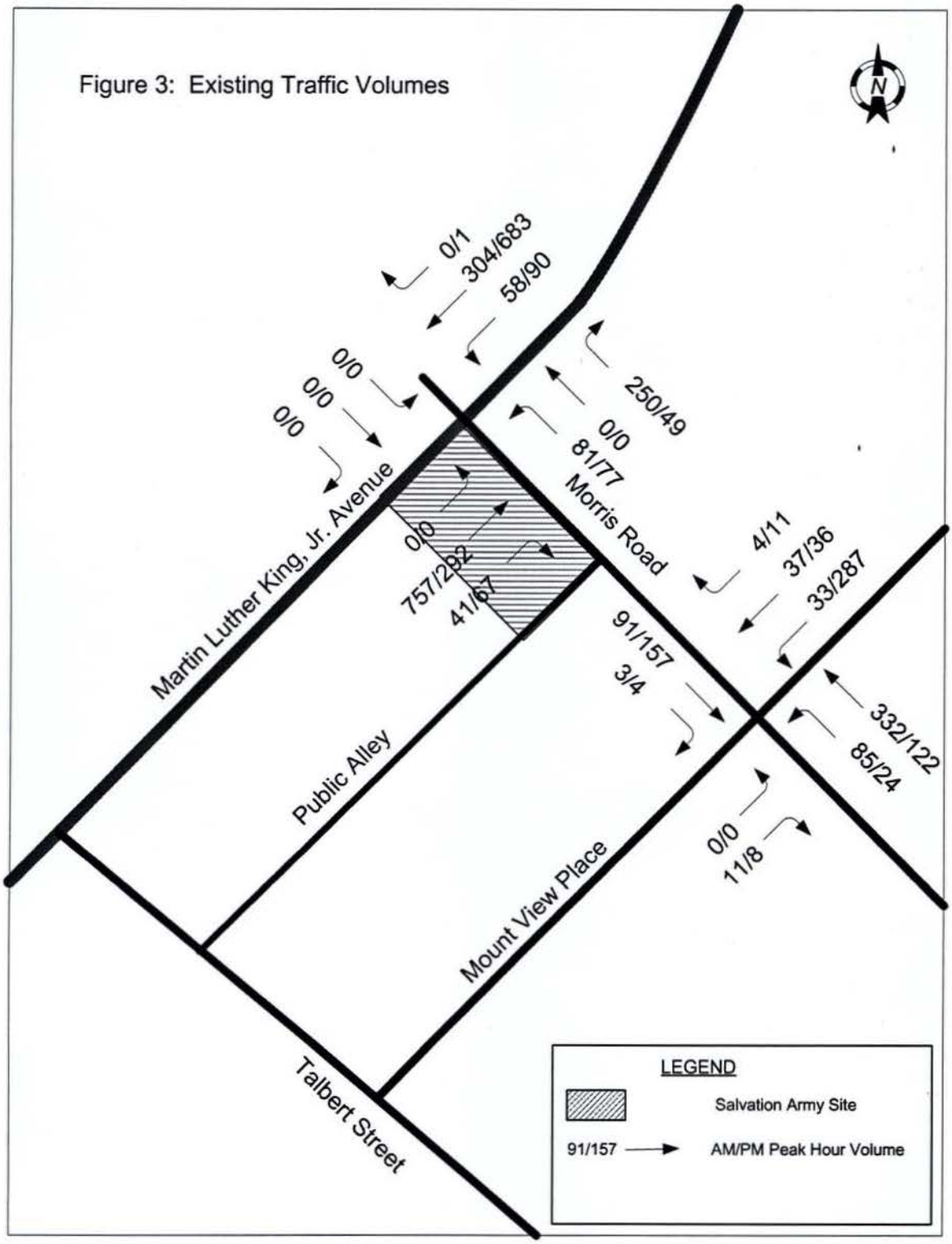

Figure 3: Existing Traffic Volumes
N
0/1
304/683
58/90
0/0
0/0
0/0
250/49
0/0
81/77
Martin Luther King, Jr. Avenue
Morris Road
0/0
757/292
41/67
4/11
37/36
33/287
91/157
3/4
332/122
85/24
Public Alley
Mount View Place
0/0
11/8
Talbert Street
LEGEND
Salvation Army Site
91/157
AM/PM Peak Hour Volume

Figure 4: Future No-build Traffic Volumes

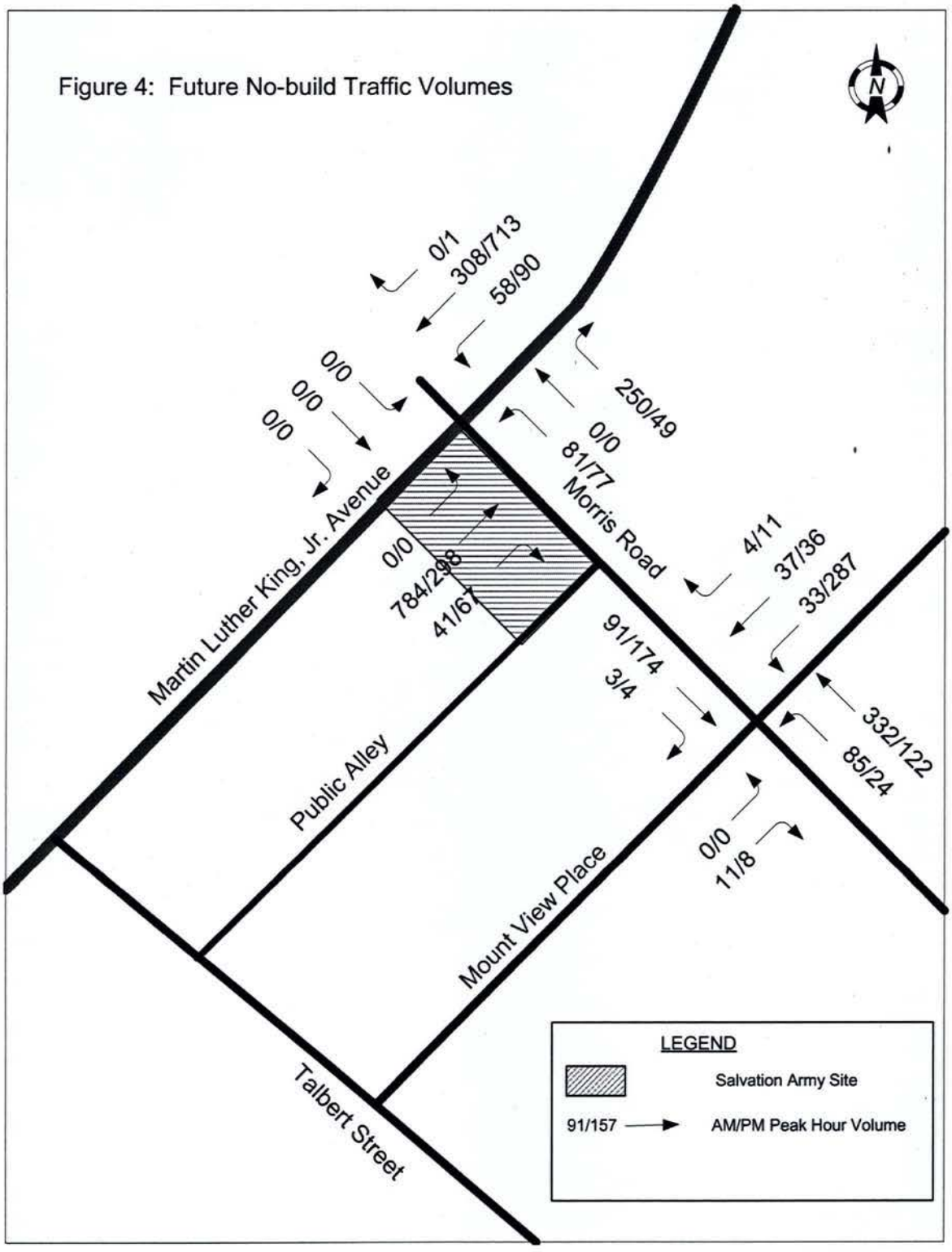


Figure 5: Directional Distribution

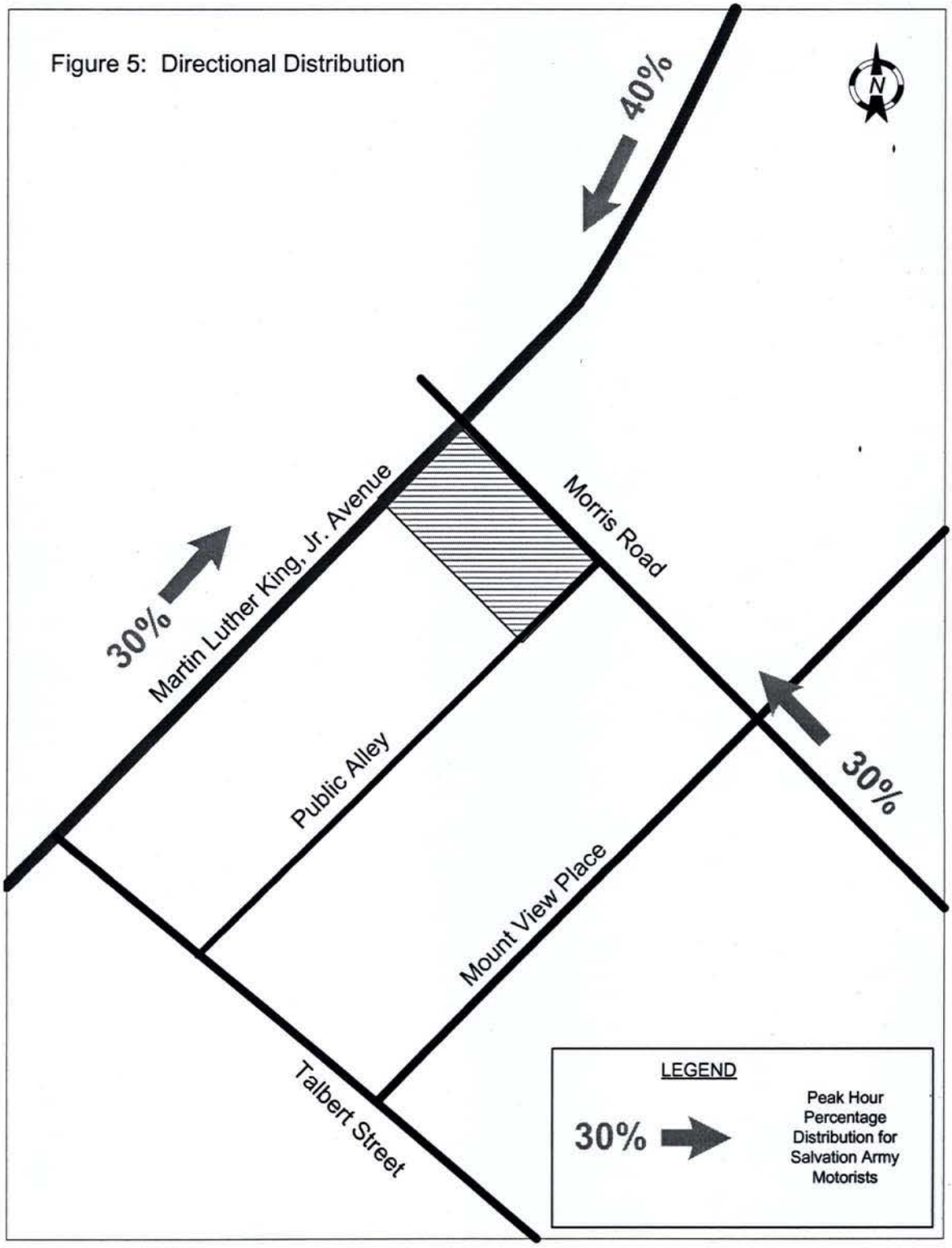


Figure 6: Future Build Traffic Volumes (w/Salvation Army)

