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MEMORANDUM TO: George Crandall
Donald Arambula
Crandall Arambula, PC

FROM: Donald M. O'Hara
Principal

DATE: February 16, 2005

SUBJECT: Limited Preliminary Transportation Evaluation
Greater Downtown Master Plan
Village of Oak Park

Introduction

As requested, Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) conducted a limited evaluation of the transportation system for the Greater Downtown Master Plan. KLOA, Inc. was provided one master plan option with several alternatives. The area identified as the study option is bounded by Ontario Avenue to the north, North Boulevard to the south, Harlem Avenue to the west and Forest Avenue to the east.

The option provided for evaluation of opening Marion Street to vehicular traffic from Lake Street south to the existing parking lot access at North Boulevard. Westgate Street would be extended east to intersect with Marion Avenue and the possible addition of a new north/south road called Station Street. Station Street would extend south from Lake Street. At issue are the multi modal impacts of the option of opening Marion Street to vehicular traffic, extending Westgate Street east to Marion Street and adding Station Street. Several alternatives were identified and are as follows.

1. Should Marion Street be one-way or two-way?
2. Should Westgate Street be one-way east or westbound?
3. Should new Station Street be one-way or two-way?
4. How will the proposed alternatives interact with public transportation?

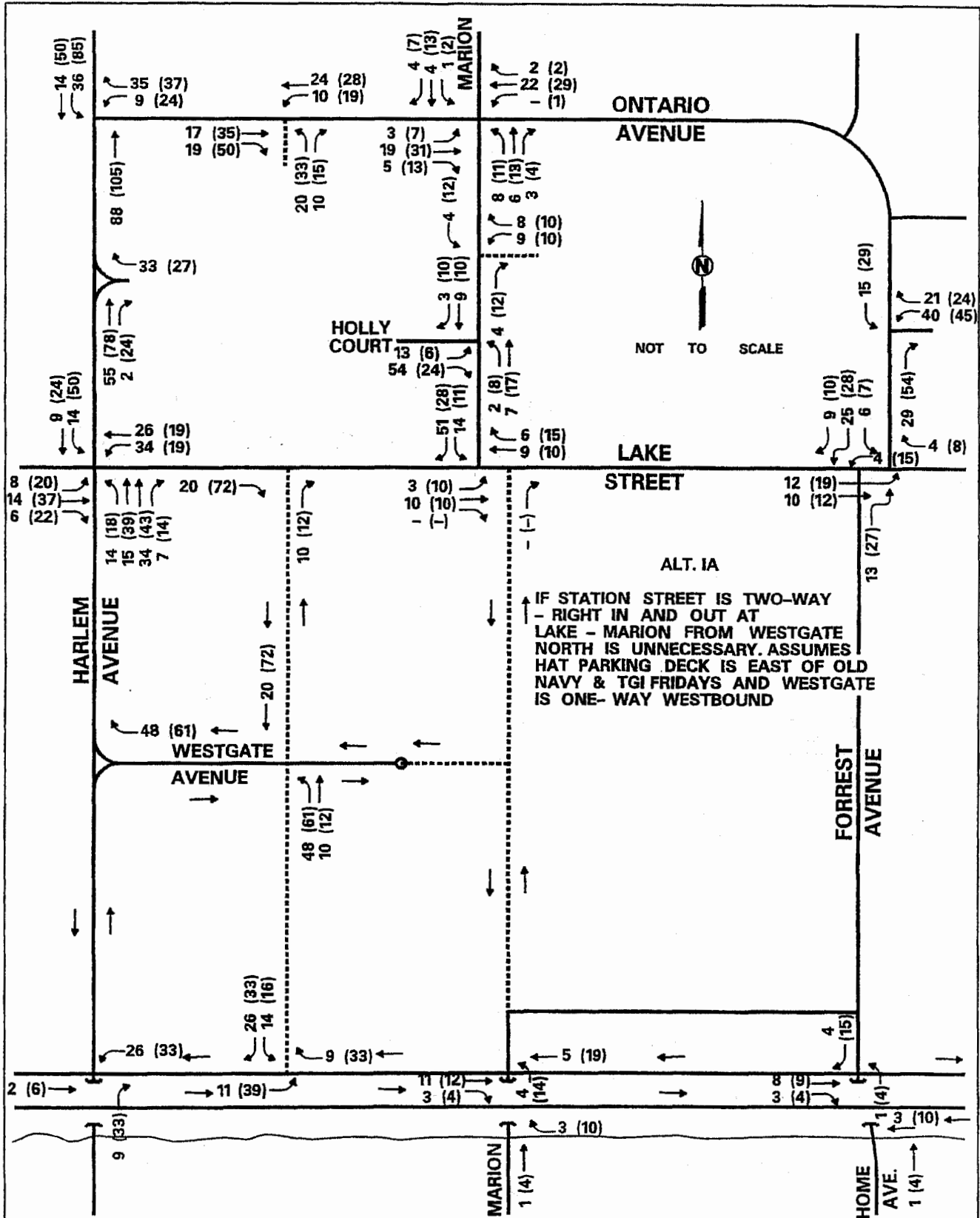
The subject study area is in the primary hub of multi-modal activity in the village and, from a transportation standpoint, highly congested during peak driving periods. Vehicular traffic, auto, bus and trucks are at or near capacity during several hours of each day on Harlem Avenue and Lake Street. Harlem Avenue is, at times, based on volume (number of vehicles) at capacity while Lake Street traffic volume is heavy but not at capacity. Lake Street traffic flow is impacted by several related issues such as pedestrians, on-street parking, bus stops, lack of separate left-turn lanes, inadequate left-turn storage, off-set intersections, many traffic signals, and lack of traffic signal progression which collectively are the primary reason for existing congestion along Lake Street.

The village limits are set with most construction consisting of redevelopment of existing parcels. The study area is currently experiencing several such redevelopments (Whiteco, RPC, etc.) that are increasing the downtown density. The Downtown Master Plan is attempting to identify areas of opportunity for multi-use redevelopment. The redevelopment of the study area will impact the transportation system. At issue will be the weight of planning an active pedestrian component which draws population to the area or reacting to redevelopment as the demand presents itself parcel by parcel.

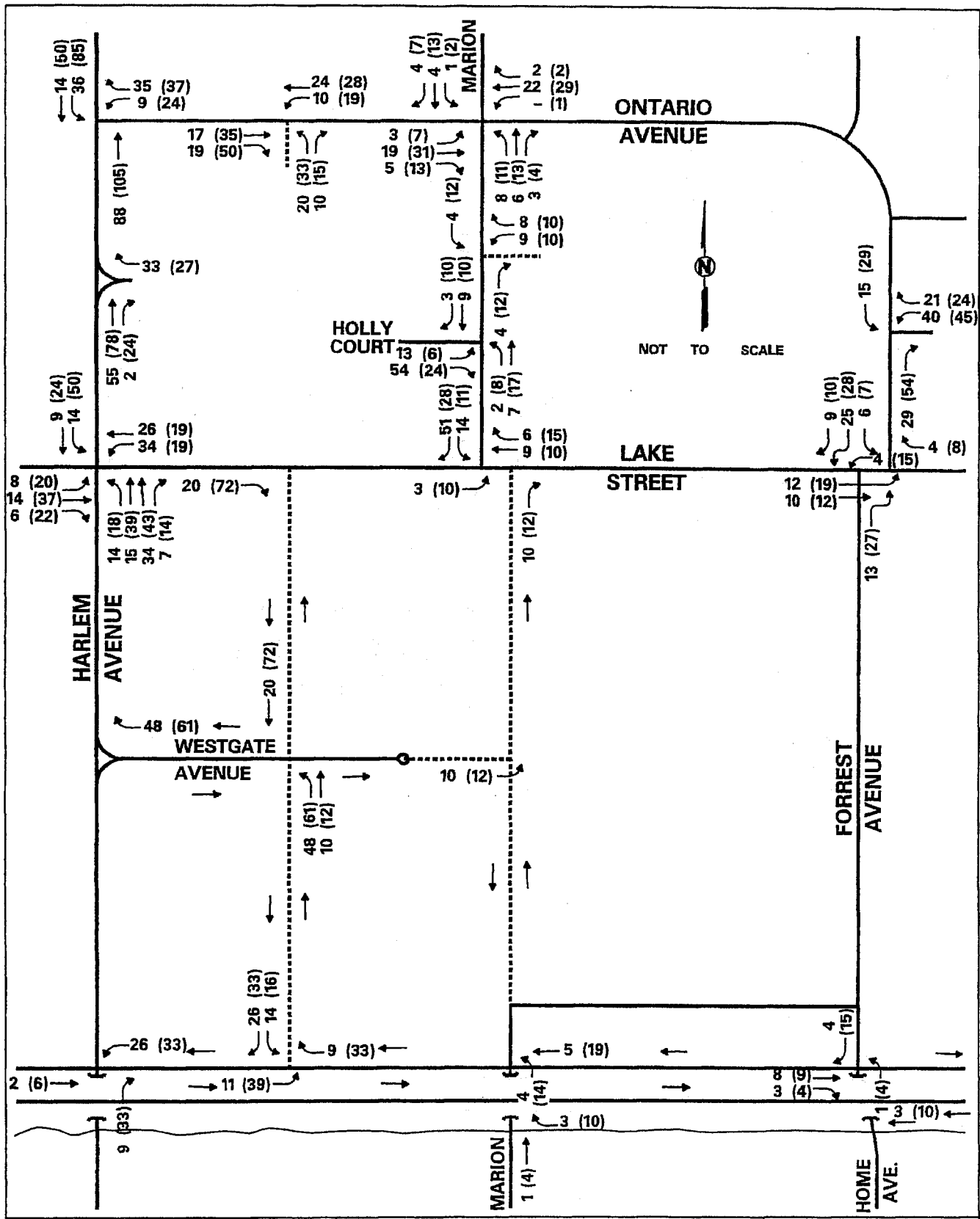
The proposed option and various alternatives were evaluated based on the Crandall Arambula plan. The plan when completed will increase conflicts and vehicular delay. Most successful downtown redevelopments do experience increased traffic. A key component is to provide easy accessibility, a good understandable circulation system and sufficient parking located in close proximity to the major activity generators.

Under existing and future traffic conditions there are roadways with limiting capacity carrying characteristics that have few if any potential for increasing the capacity. Harlem Avenue is such a road in the downtown area. This roadway will likely remain with two lanes in each direction with separate left-turn lanes where possible. This roadway is at capacity from Ontario Street south through South Boulevard. Lake Street experiences capacity issues due to on-street parking, double parking, lack of separate left-turn lanes, and insufficient storage at various intersections where separate left-turn lanes are provided. In addition, Westgate Street will be extended east to intersect with Marion Street and a new Station Street would be constructed west of Marion Street. The following represents our preliminary evaluation of the plan.

- **Open Marion Street to vehicular traffic.** Three scenarios were evaluated: (1) two-way; (2) one-way northbound; and (3) one-way southbound. Vehicular traffic traveling north on Marion Street will find it difficult to turn onto Lake Street at most times throughout the day and next to impossible during the peak driving periods. Currently Marion Street intersects Lake Street from the north as a "T" intersection that is under traffic signal control. Proposed Marion Street is slightly offset to the east and would be under stop sign control. Due to the traffic signal, vehicles are queued during the red ball indication waiting for the green ball. While eastbound Lake Street traffic has the green ball indication, a right turn out of the proposed Marion Street will be difficult when the traffic light turns green for southbound Marion Street which is a left (west) or right (east) turn again making a turn out from proposed Marion Street difficult. With all traffic planned to exit the Holly Street garage to Marion Street, higher volumes can be expected at its intersection with Lake Street. We therefore recommend Marion Street, if opened to traffic, to prohibit northbound flow. As such, if Marion Street is opened to vehicular traffic, it should be one-way southbound. The Village will need to decide whether or not to allow left turns from Lake Street onto proposed Marion Street. Due to on-street parking and pedestrian crossings, there is one lane in each direction. There is appropriate roadway width available but would require modification and possible loss of on-street parking. Our recommendation is to limit Marion Street, if opened to traffic, to right turns only (east to south) from Lake Street. South of Westgate Street, we recommend that Marion Street be two-way (see Figures 1A, 1B and 1C)



PROJECT:	TITLE:	PROJECT NO: 05-030
ALTERNATE 1A - NEW STATION STREET AND MARION OPEN TO TRAFFIC (TWO-WAY)		KLOA INC.
		FIGURE NO: 1A



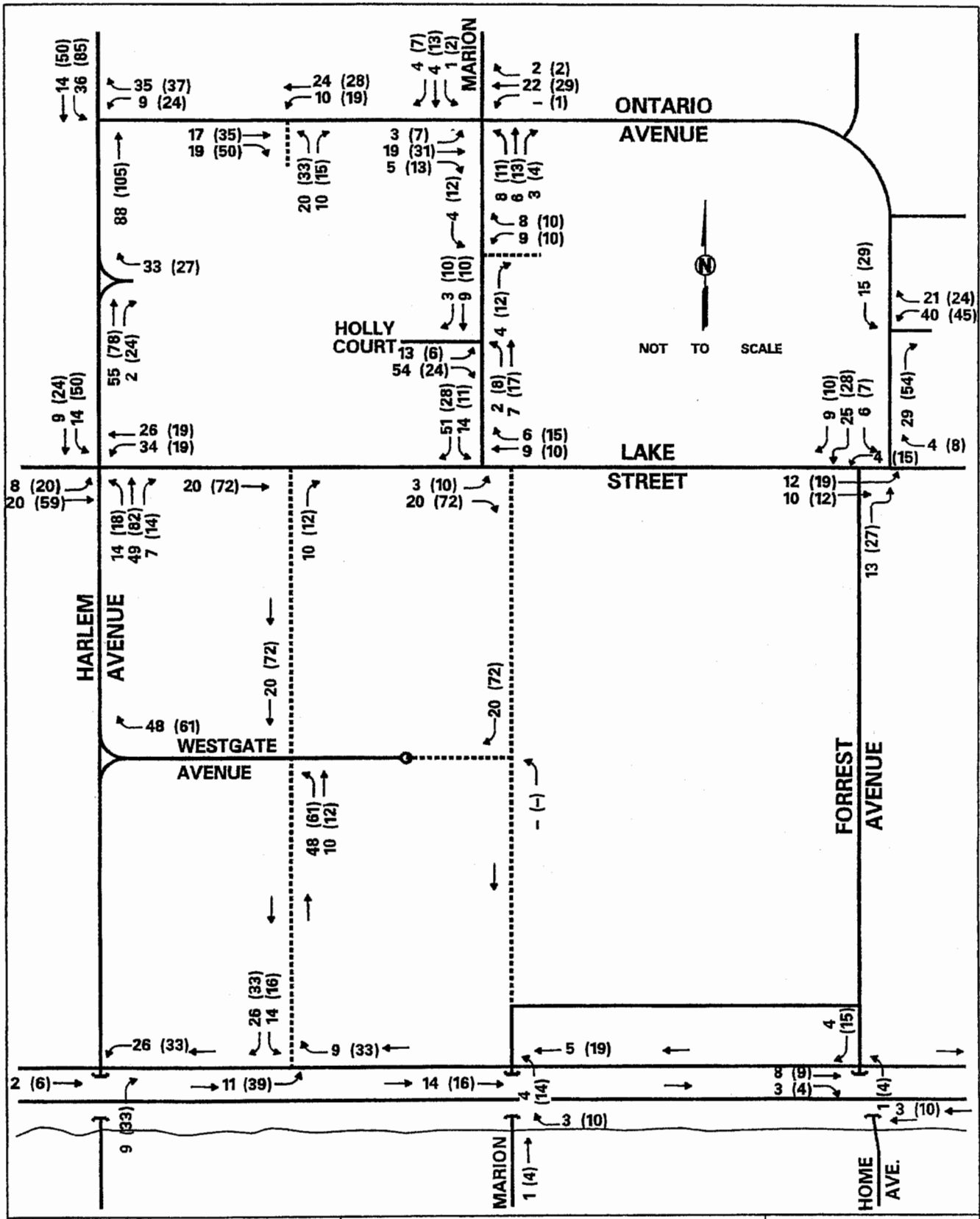
PROJECT:

TITLE:
 STATION AND MARION ONE-WAY
 PAIR (WESTGATE ONE-WAY EB)

PROJECT NO: 05-030

KLOA INC.

FIGURE NO: 18



PROJECT:

TITLE:
 STATION AND MARION ONE-WAY
 PAIR (WESTGATE ONE-WAY WB)

PROJECT NO: 05-030

KLOA INC.

FIGURE NO: 1C

- Open Westgate Street to Marion Street.** There is a short stretch of Westgate Street that is currently closed to traffic. The desire is to open Westgate Street to vehicular traffic from Marion Street west to Harlem Avenue. This roadway, due to the right-of-way constraints, will need to be one-way. The issue is whether east or westbound. Based on our evaluation, either direction will work. However, if eastbound Marion Street would be one-way southbound from Lake Street to the access driveway to the public parking lot at North Boulevard, we believe if Westgate Street is one-way westbound, accessibility to a larger supply of off-street parking spaces will be provided without going onto North Boulevard. The Village should consider providing access to their parking lot on Forest Avenue. The access should be limited to right turns in and out only. This recommendation will eliminate the existing dead end public parking lot and reduce traffic demand at the Forest Avenue/North Boulevard intersection.
- New Station Street.** A new street is planned west of Marion Street that is in the master plan called Station Street. We evaluated this street as two-way, one-way southbound and one-way northbound. This new roadway will be located approximately between Harlem Avenue and Marion Street and will extend from Lake Street south to North Boulevard. As one-way southbound, this new street would be redundant to Marion Street as a one-way southbound route. Usually one-way streets are paired with opposing directions. As Marion Street is proposed to be one-way southbound, new Station Street would complete the pair as a one-way northbound street. As such, one-way southbound was eliminated as an option. Lastly, we evaluated Station Street as a two-way facility. The evaluation indicated that if the new parking structure at North Boulevard is in place and access is provided on both the north and south sides of the parking garage, Station Street should be two-way to allow for ingress and egress from Lake Street. If only access to the parking structure is provided from North Boulevard, congestion will occur on North Boulevard at Harlem Avenue, Marion Street, and Forest Avenue. However, with access to/from the north side of the garage, Westgate Street and Station Street provide additional exiting relief for North Boulevard. As such, we believe the best option would be Station Street as a two-way facility.
- With one-way streets, on-street parking can be provided along Marion Street and Station Street.** Curb parking might be an option if Station Street were two-way.
- Public Transportation.** The study area is served by rail service located between North and South Boulevard. This transportation hub is served by bus service via Routes 305, 307, 318 and 757 which stop on Harlem Avenue at South Boulevard. Routes 309, 313 and the Oak Park Shuttle use Lake Street and move along North and/or South Boulevards. We were asked to look at the possibility of providing bus access to/from Lake Street via either Marion Street or new Station Street. A separate left-turn lane cannot be placed on Lake Street without removing on-street parking and as such the Village will determine whether or not the desire is to use Marion Street or Station Street as part of the bus routes that serve the heavy rail system. The best option is as we understand in the use of preemption. The traffic signals on Lake Street and Harlem Avenue could be set to accommodate secondary (bus) preemption which can move the

buses along their routes faster in the congested areas of Harlem Avenue and Lake Street. The important area for bus routing will be their turning movements. There are intersections such as Harlem Avenue and North Boulevard where right turns by buses are difficult especially when a vehicle is queued on North Boulevard waiting for the green ball to begin the right turn maneuver.

- **Trip Generation.** The number of trips generated during the A.M. and P.M. peak hour was determined based on the existing distribution on the street system adjacent to the study area. The number of peak hour trips were factored based on 2000 census data on means of transportation. Based on the census data there are 29,484 workers over the age of 16 and of that number 6,417 use public transportation. The number equates to 21.8 percent Village wide. As such, we reduced the residential trip rate factor by 20 percent to account for public transportation usage. For retail the factor was reduced by 40 percent to account for patrons already using the retail facilities in the study area. Table 1 lists the actual and effective peak hour trips generated by the study area. The reduction equates during the A.M. peak hour to 53 fewer inbound trips and 63 outbound trips. During the P.M. peak hour there are 130 fewer inbound trips and 115 outbound trips. The estimated A.M. peak hour traffic generation is 110 inbound and 233 outbound trips. The estimated P.M. peak hour traffic generation is 308 inbound and 251 outbound trips.
- **Traffic Assignments.** Based on the area and block of the Master Plan, the A.M. and P.M. peak hour traffic volume was assigned to the various intersections. Option 1 of the Crandall Arambula Master Plan includes Area 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I, 5A and 5B. The A.M. and P.M. peak hour traffic assignments were combined with the existing traffic volume data base at the various intersections within the study area. This data was used for evaluation purposes.
- **Capacity Analyses.** Capacity analyses were conducted at the critical intersections in the study area to determine the traffic impact. Table 2 lists the results of the capacity analyses for the critical intersections under existing and future conditions. The important component of the analyses of intersections near, at or over capacity is the level of congestion today and after the plan has been developed. The easiest comparison is the average vehicle delay in seconds. For example, the intersection of Harlem Avenue and Ontario Street under existing conditions during the P.M. peak hour is at capacity with an average vehicle delay of 66.1 seconds. After the Master Plan is constructed and occupied the average vehicle delay increases to 70.4 seconds or approximately six percent. Table 2 indicates the existing and future level of service and the average vehicle delay (in seconds) for the critical intersections in the study area with the exception of Harlem Avenue and Lake Street which fails under existing and future conditions. We believe that people familiar with Oak Park's road system will find an alternate route to/from their trip end which will reduce the vehicular delay on Harlem Avenue and Lake Street.

Table 1
ESTIMATED TRIP GENERATION—OPTION 1

Area	Block	Land Use	A.M. Peak Hour		Effective Percentage		Estimated A.M. Peak Hour		P.M. Peak Hour		Effective Percentage		P.M. Peak Hour	
			In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
1	B	Residential (44 Units)	3	12	8	8	2	10	10	6	8	8	8	5
1	C	Retail (2,000 s f)	1	1	6	6	1	1	4	4	6	6	3	3
1	C	Cinema (30,000 s f)	N/A	N/A	10	10	N/A	N/A	16	10	4	4	6	4
1	D	Retail (25,000 s f)	16	10	6	6	10	6	45	49	6	6	27	29
1	D	Housing (182 Units)	12	50	8	8	10	40	43	26	8	8	34	21
1	D	Hotel (70 New Rooms)	24	15	10	10	24	15	22	19	0	0	22	19
1	E	Retail (16,000 s f)	10	6	.6	.6	6	4	29	31	6	6	17	19
1	E	Housing (90 Units)	6	25	8	8	5	20	21	13	8	8	17	10
1	F	Retail (7,500 s f)	5	3	6	6	3	2	14	15	6	6	8	9
1	F	Housing (45 Units)	3	12	8	8	2	10	11	7	8	8	9	6
1	G	Retail (13,000 s f)	8	5	6	6	5	3	23	25	6	6	14	15
1	G	Housing (44 Units)	3	12	8	8	2	10	10	6	8	8	8	5
1	H	Retail (12,000 s f)	8	5	.6	.6	5	3	22	23	6	6	13	14
1	H	Housing (138 Units)	9	38	8	8	7	30	33	20	8	8	26	16
1	I	Retail (8,000 s f)	5	3	6	6	3	2	14	16	6	6	8	10
1	I	Housing (54 Units)	3	15	.8	.8	2	12	13	8	8	8	10	6
5	A	Retail (15,000 s f)	9	6	6	6	5	4	27	29	6	6	16	17
5	A	Housing (200 Units)	27	55	8	8	10	44	47	29	8	8	38	23
5	B	Retail (13,500 s f)	6	4	6	6	4	2	18	20	6	6	11	12
5	B	Housing (70 Units)	5	19	8	8	4	15	16	10	8	8	13	8
			163	296			110	233	438	366			308	251

Table 2
EXISTING AND FUTURE INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY

Intersection	Existing Conditions				Future Conditions			
	A.M.		P.M.		A.M.		P.M.	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Harlem/Ontario ¹	B	109	E	66.1	C	23.7	E	70.4
Lake/Marion ¹	B	12.9	B	11.8	B	15.3	C	24.3
Harlem/North Boulevard ¹	C	29.9	C	34.1	E	75.6	E	71.5
Lake/Forest ¹	A	9.3	A	7.0	A	9.4	A	7.4
Ontario/Marion ²	A	7.7	A	7.7	A	8.7	A	8.4
Ontario/Harlem Court ²	A	4.5	A	5.0	A	1.4	A	8.5
North Boulevard/Marion ²	A	7.9	A	8.5	A	8.1	A	8.9
North Boulevard/Forest ²	A	7.2	A	8.7	A	8.3	A	8.8
Lake/Station ²	--	--	--	--	A	0.1	A	0.2
Station/Westgate ²	--	--	--	--	A	7.5	A	7.7

¹Signalized Intersection

²Unsignalized Intersection

LOS - Level of Service

Delay is measured in seconds

In summary, the plan, from a transportation standpoint, will have an impact on the major intersections along Harlem Avenue and Lake Street. The internal roadways have capacity to spare. Internally, the key component will be vehicular circulation and easy access to an adequate parking supply. The access system to the study area from the major streets should be developed with maximum flexibility while minimizing conflict points. The preliminary plan can provide good internal access, circulation and parking if as it goes forward each new component is addressed regarding access, internal vehicular circulation and parking space location. Bus service to the transit area should consider secondary traffic signal preemption along both Harlem Avenue and Lake Street.

Table 3
AVERAGE DAILY TRAFFIC

Street	Existing	Future
Station	-0-	1,000
Marion	-0-	1,000
Harlem	36,200	38,000
Lake	12,600	13,100
North Boulevard	7,000	8,000
Westgate	1,500	2,000