

## MEMORANDUM

**Date:** April, 2010

**To:** Patty Criddle, PE, City of Redmond

**From:** Hicham Chatila, HFC, PE, PTOE, Transpo Group

**cc:** Mizan Rashid, ICOR; Robert Wagner, Wagner Architects

**Subject:** ICOR Assembly Facility Trip Generation and Parking Analysis

The purpose of this memorandum is to summarize the initial trip generation and parking demand and supply findings related to the proposed ICOR Assembly Facility (Mosque). The facility is located in the City of Redmond at 18080 NE 68<sup>th</sup> Street, Building D. ICOR would utilize the existing building to hold its activities. This memorandum includes:

- Background
- Trip Generation
- Parking Supply and Demand
- Summary and Conclusions

A summary of the project description and its anticipated traffic characteristics are provided in the following sections.

### Background

ICOR is a Redmond, WA based religious, social, and charitable organization. ICOR has been sponsoring different type of activities since 1998 and has been conducting Friday services at the Old Redmond Schoolhouse auditorium. ICOR purchased the new facility in April 2008 at 18080 NE 68<sup>th</sup> Street, Building D, Redmond, WA and has been using it for limited organizational activities and understands that a special use permit is required for offering Friday services.

At the new facility, daily prayers will attract a limited number of members. Typically, only those who are not working or those who work and live near the facility attend these services. In addition to the daily prayers, Friday assembly would be held in the new facility. This assembly is held during the off-peak hour, between 12:30 – 1:30 PM in winter and between 1:30 – 2:30 PM in summer. Friday assembly typically attracts more people. The prayer hall would accommodate total of 117 seats. The seats number were estimated based on 2'-6" x 3'-6" that is needed as the seat area for this specific type of worship place (ICOR), as coordinated with the City's staff. Appendix A includes the facility's floor plan.

The schedule of the anticipated activities at the ICOR facility is shown in Table 1.

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**Table 1. Activities for ICOR**

Event S	chedule
Morning Prayer	5:30 – 6:00 (AM)
Sisters Learning Program	11:00 AM – 12:00 Noon
Mid Day Prayer	1:00 PM – 1:30 PM
Late Afternoon Prayer and Quran Class	5:00 – 6:30 (PM)
Evening Prayer	8:00 – 8:30 (PM)
Night Prayer	10:00 – 10:30 (PM)
Friday Assembly	12:30 – 1:30 (PM) In winter 1:30 – 2:30 (PM) In summer

ICOR have occasional learning programs in the weekend evenings and afternoons. Based on our experience with the attendance in various events- a maximum of 50 to 100 people may attend those programs. These type of events happen typically couple of times in every quarter.

## Trip Generation

The *Trip Generation Manual* does not include trip generation information for the proposed land use; the ITE *Trip Generation* manual was not used. Weekday AM and PM peak hour trip generation for the proposed project was estimated using rates from counts at similar facilities. In order to come up with an average trip rate, trip generation counts were collected at three other mosques. These mosques are located in Redmond (MAPS), Bellevue (ICOE) and Kent (ICOK). Trip generation data from these facilities (mosques) are shown in appendix B.

The existing site, Building D, is currently occupied by approximately 10,500 square feet of manufacturing space with 31 parking stalls. Trip generation for the existing land use was developed based on the average trip rate from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 8th Edition.

Table 2 shows the net new trips associated with the proposed ICOR facility.

**Table 2. Net New Vehicle Trip Generation**

Land Use	In	Daily	AM Peak Hour			PM Peak Hour		
			Out	Total	In	Out	Total	
Proposed Land Use (ICOR) <sup>1</sup>	117 seats	92 <sup>2</sup> 0	0	0	17	11	28	
Existing Land Use <sup>3</sup>	10,500 sf	40	6	2	8	3	5	
<b>Total Net New Trips</b>		<b>52</b>	<b>-6</b>	<b>-2</b>	<b>-8</b>	<b>14</b>	<b>6</b>	

1. Based on average trip rates of three mosques in the region similar to the proposed facility, 0.24 trip/seat

2. Based on daily counts collected by ICOR management team at the existing ICOR mosque. Counts were collected on a typical weekday.

3. ITE *Trip Generation* 8th Edition- Land Use #140 Manufacturing

As shown in Table 2, the proposed facility is anticipated to generate approximately 52 new off-site trips per weekday, with 20 occurring during the weekday PM peak hour. The new facility is not anticipated to generate any trips during the AM peak hour. Therefore, off-site trips are anticipated to be reduced by 8 trips during the weekday AM peak hour.

As a result, the ICOR is anticipated to generate less than 30 net new AM or PM peak hour trips and no traffic study is required.



## Parking Impacts

This section describes parking impacts associated with the proposal, including an evaluation of the proposed supply compared to the anticipated demand.

### *Proposed Parking Supply*

The existing site contains 31 parking stalls which are dedicated for Building D, owned by ICOR. The surrounding commercial buildings in the same manufacturing park agreed on offering some of their dedicated parking stalls to building D (ICOR) during the Friday assembly to accommodate their parking demand when needed. The Mountain Ridge Community Church (MRCC) on the 68<sup>th</sup> Street, across ICOR property, agreed as well to dedicate all of its parking space to ICOR during the Friday peak hour. Attachment B includes letters from all the building owners and the Church giving ICOR permission to use part of their parking stalls during the Friday services.

Parking supply from ICOR along with the additional parking offered by ICOR neighbors are shown in Table 3.

<b>Properties Parking</b>	<b>Stalls</b>
Building D (ICOR)	30
Building A (Maverick Sports Medicine, Inc)	12
Building B (Aircraft Cabinet System)	15
Building C (JAACO Corporation)	12
Building E (Redmond European)	6
<u>Mountain Ridge Community Church (MRCC)</u> 30	—
<b>Total available parking stalls</b>	<b>105</b>

As shown in Table 3, a maximum of 105 parking stalls could be available during the peak parking demand for this facility which is the Friday assembly.

### *Parking Code Requirements*

The proposed project (ICOR) is required to provide a minimum number of parking stalls to meet the City of Redmond Land Use and Zoning Code. The requirements for parking are outlined in 20D.170.40.

Per the Zoning Code, one stall is required per five seats. Assuming that the prayer assembly will be 100% full during the Friday assembly the proposed project must provide a total of 25 parking stalls for the proposed land use.

### *Parking Demand*

It is anticipated that the peak hour parking demand will occur during the Friday assembly as it is the biggest event that would be held in the ICOR facility. As the Sunday is considered the biggest event for churches in a typical week, similarly Friday assembly is considered the biggest event for mosques. Per our understanding, Friday's activities in mosques are similar to the Sunday's activities that are held in churches.

It is important to note that the Institute of Transportation Engineers Handbook (Well recognized and widely used) has recognized mosques as similar use to churches and included them under



LU# 560. The major difference is the peak hour of generator being on Friday rather than on Sunday. Therefore, ITE *Parking Generation*, 3rd Edition was used to estimate the required parking demand for Friday assembly. Based on, (LU#560), the average peak period parking demand is 0.16 per seat and the 85<sup>th</sup> percentile is 0.21 per seat. As a conservative approach, the 85<sup>th</sup> percentile parking demand of 0.21 per seat is used to calculate the peak parking demand for ICOR facility.

Table 4 provides a summary of parking supply and projected demand for the proposed project (ICOR facility and office space).

<b>Parking Demand and Supply</b>			
	<b>Size</b>	<b>85<sup>th</sup> Percentile Rate</b>	<b>Parking Stalls</b>
ICOR Parking Demand	117 seats	0.21	25
<u>Existing Parking Supply</u>			<u>- 105</u>
<b>Parking Surplus</b>			<b>80</b>

As shown in Table 4, it is anticipated that the available on-site parking supply will exceed the peak parking demand, resulting in a surplus of 6 stalls.

## Summary and Conclusions

- The proposed facility (ICOR) is anticipated to generate approximately 52 new off-site trips per weekday, with 20 occurring during the weekday PM peak hour. ICOR facility is not anticipated to generate any trips during the AM peak hour. Therefore, off-site trips are anticipated to be reduced by 8 trips during the weekday AM peak hour.
- The proposed facility is anticipated to generate the peak parking demand during Friday afternoon; during the ICOR assembly.
- The proposed facility (ICOR) is required to provide a minimum of 25 parking stalls to meet the parking code requirements for the City of Redmond. Since the provided on-site parking stalls are 103 considering the available parking from the neighbors and 31 dedicated stalls for Building D, the proposed facility (ICOR) meets the parking code requirements for the City of Redmond.
- Peak parking demand is calculated based on the 85<sup>th</sup> percentile rate for ICOR facility.
- Peak parking demand for the proposed project would total 25 parking stalls, occurring during the Friday assembly (12:30 PM – 1:30 PM). With 31 parking stalls provided on-site from ICOR and 72 parking stalls provided from the surrounding buildings, the peak parking demand is less than the parking supply, resulting in a surplus of 80 stalls.
- Based on the parking analysis, the existing parking supply (31) would be sufficient to meet peak weekday parking demand (25).

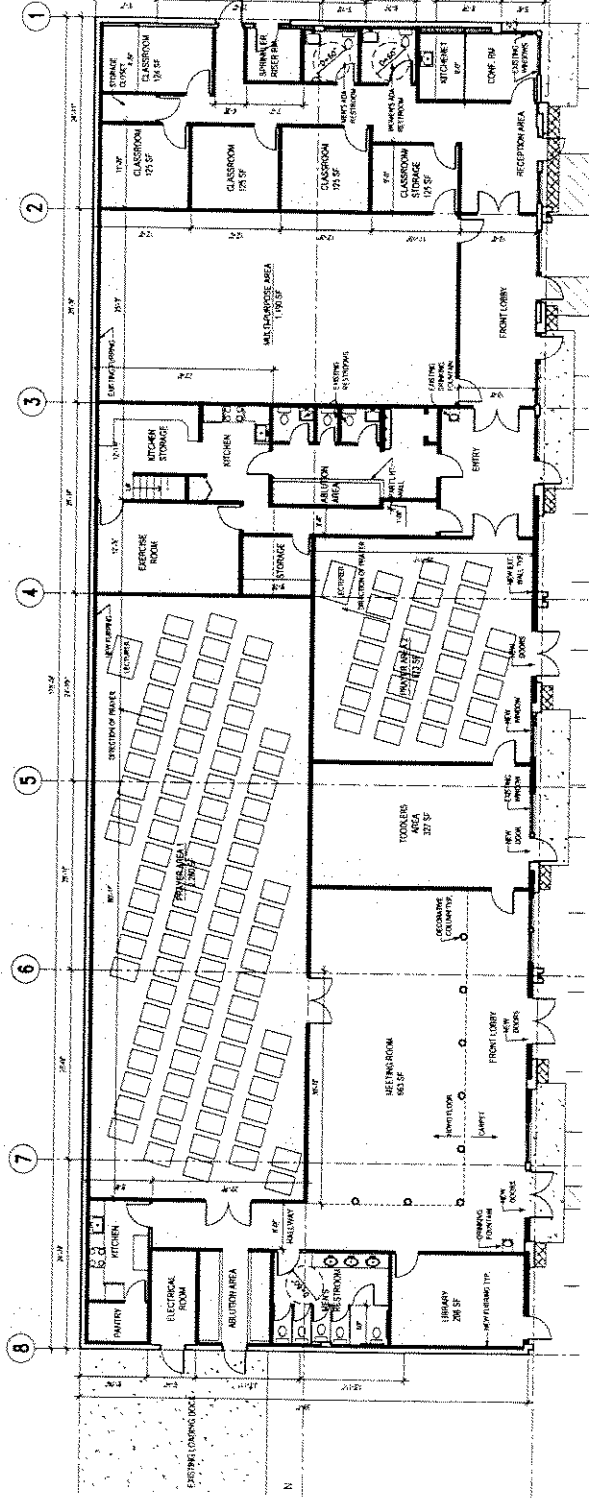




## Appendix A: ICOR Floor plan



# ISLAMIC CENTER OF REDMOND



SEATING LAYOUT FOR PROPOSED LONG TERM DEVELOPMENT





## Appendix B: Tip Counts



Survey Site:

Address:

Wednesday 1/14/2010

Kent Mosque / Islamic Center of Kent  
20857 108 Ave SE, Kent, WA 98001

Time Start	IN	Out
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	13	0
6:00 PM	1	10
<b>Total</b>	<b>14</b>	<b>10</b>



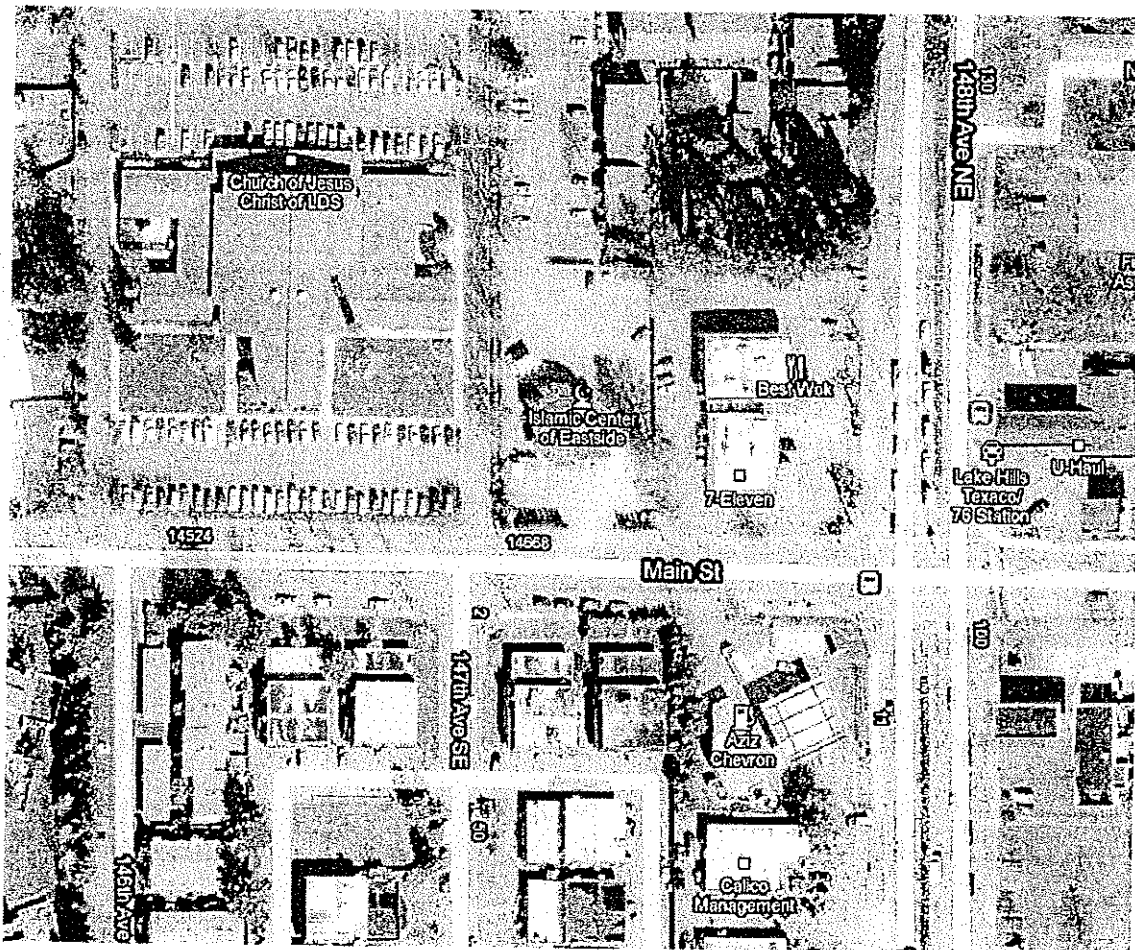




Survey Site:  
Tuesday 4/13/2010

Eastside Mosque/ICOE

Time Start	IN	Out
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	3	0
6:00 PM	25	0
Total	28	0

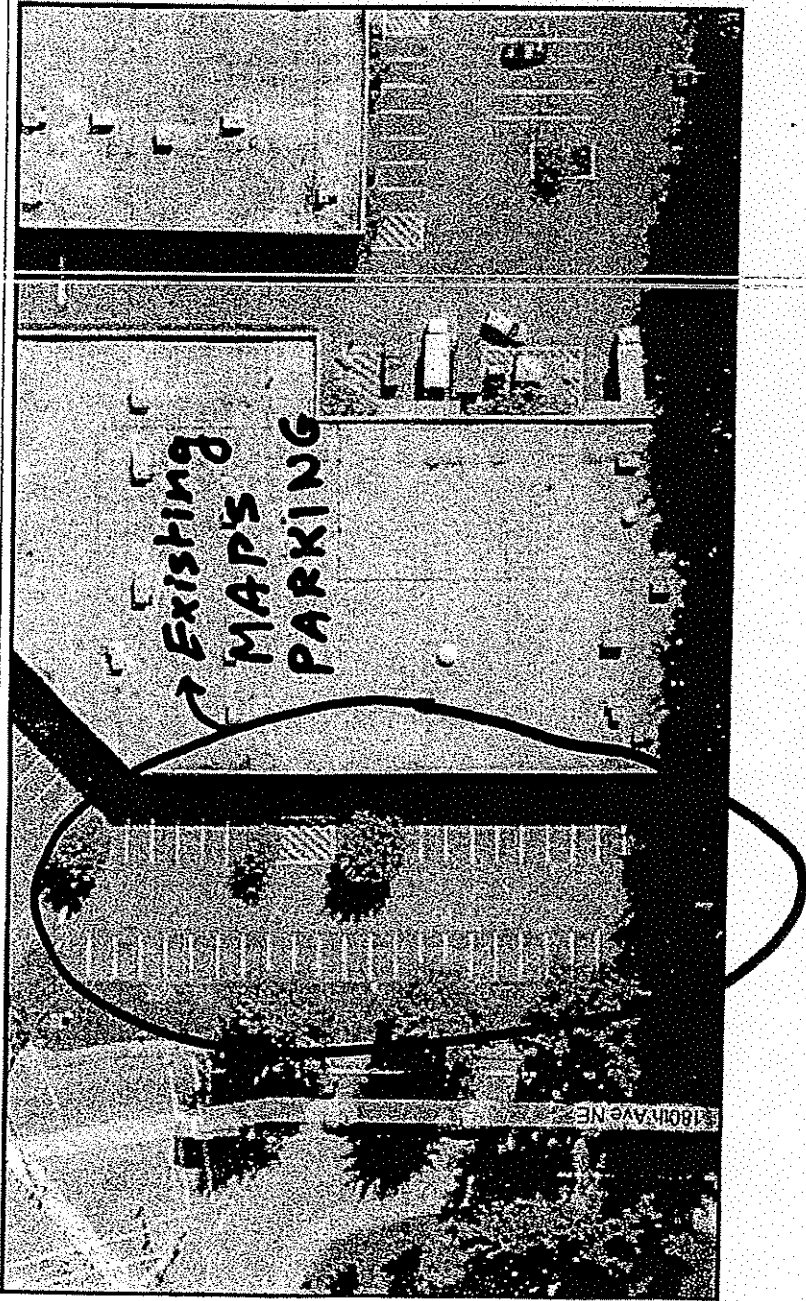




Evening 15 Minute Peak Hour Existing Count for MAPS Center

Time	Date	Prayer Time	Inbound	Outbound
4:30	1/18/2010	5:00 PM	0	0
4:45	1/18/2010	5:00 PM	5	2
5:00	1/18/2010	5:00 PM	9	7
5:15	1/18/2010	5:00 PM	0	0
5:30	1/18/2010	5:00 PM	0	0
Total	23		14	9
4:30	1/27/2010	5:10 PM	0	0
4:45	1/27/2010	5:10 PM	1	0
5:00	1/27/2010	5:10 PM	6	2
5:15	1/27/2010	5:10 PM	10	8
5:30	1/27/2010	5:10 PM	0	1
Total	28		17	11
4:30	1/28/2010	5:10 PM	0	0
4:45	1/28/2010	5:10 PM	0	0
5:00	1/28/2010	5:10 PM	6	2
5:15	1/28/2010	5:10 PM	9	8
5:30	1/28/2010	5:10 PM	0	0
Total	25		15	10

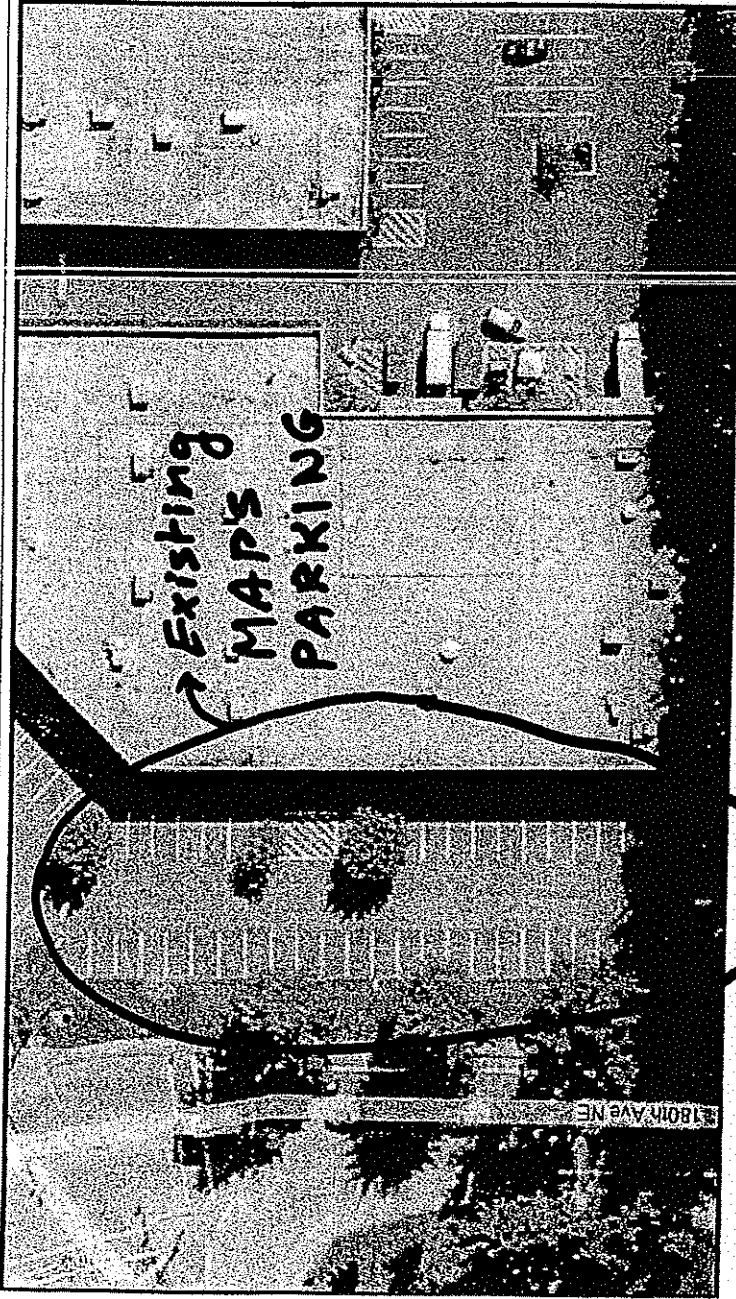




Count All Traffic  
in Parking Lot  
destined to/from  
Mosque

<u>Count Date</u>	<u>Prayer time</u>	<u>Survey Time (start)</u>	<u>Inbound</u>	<u>Outbound</u>
1/18/2010	5:00 PM	4:30 PM	φ	φ
		4:45 PM	+++	//
		5:00 PM	+++	++++
		5:15 PM	φ	φ
		5:30 PM	φ	φ





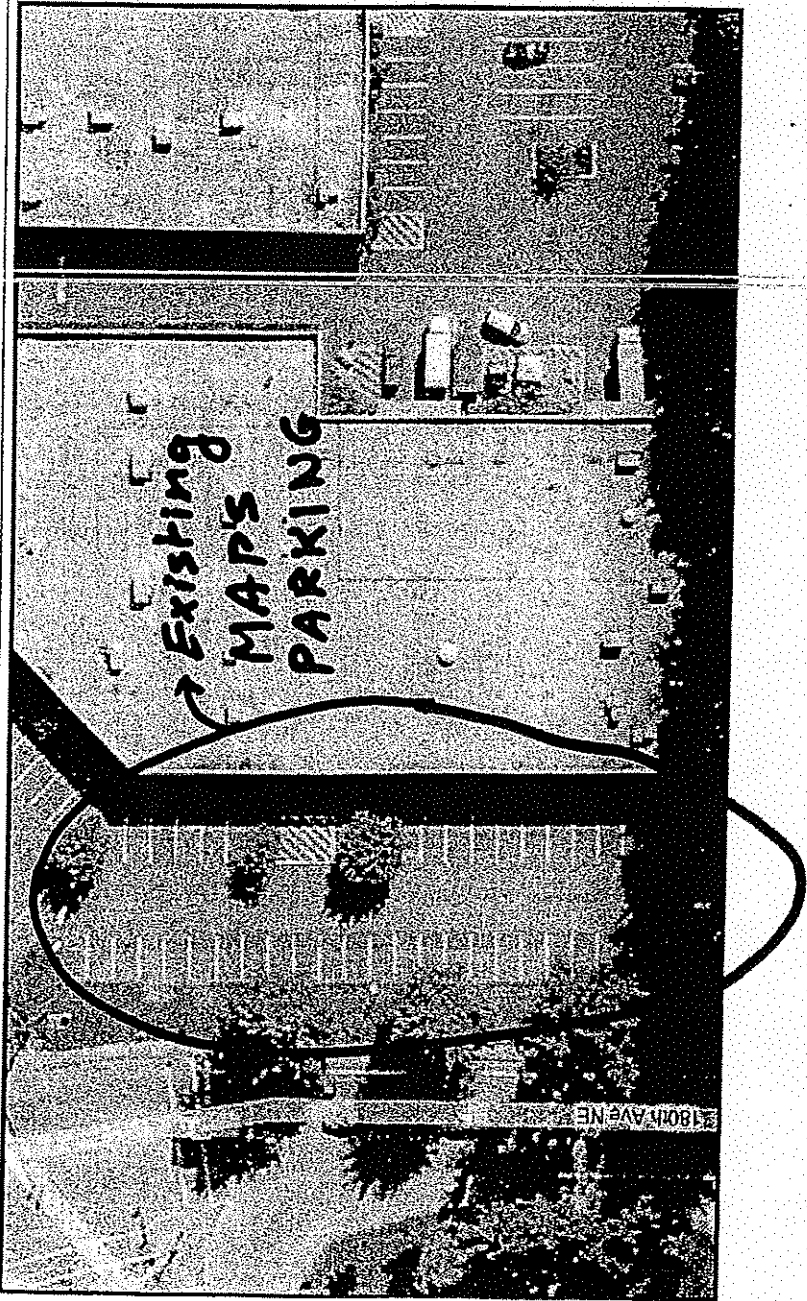
Count All Traffic  
in Parking Lot  
destined to/from  
Mosque

Count Date      Prayer time      Survey Time (Start)      Inbound      Outbound

1/27/2010	5:10 PM	4:30 PM	0	0
		4:45 PM	1	0
		5:00 PM	+++ /	//
		5:15 PM	+++ +++	+++ ///
		5:30 PM	0	1







Count ALL Traffic  
in Parking Lot  
destined to/from  
Mosque

Count Date      Prayer time      Survey Time (start)      Inbound      Outbound

		4:30 PM	φ	φ
		4:45 PM	φ	φ
	5:10 PM	5:00 PM	+++ 1	//
1/20/2010		5:15 PM	+++ 1111	+++ 1111
		5:30 PM	φ	φ



### ICOR Assembly Facility Gross Trip Generation Estimate

ICOR Gross Trip Generation Estimate For a Typical Day		Trip Generation			
Time	Activity	Number of People(Arrival/Departure)	Entering	Exiting	Total
5:00AM	Morning Prayer	5	3		3
5:30 AM	End Morning Prayer	5		3	3
1:30 PM	Mid Day Prayer	5	3		3
1:30 PM	End Mid Day Prayer	5		3	3
5:30 PM	Quran Class	15	10	6	16
5:30 PM	Late Afternoon Prayer	12	7		7
5:45 PM	End Late Afternoon Prayer	6		5	5
6:30PM	End Quran Class	10	4	10	14
8:30 PM	Evening Prayer	25	12		12
8:30 PM	End Evening Prayer	25		12	12
10:00 PM	Night Prayer	15	7		7
10:30 PM	End Night Prayer	15		7	7
	<b>Total Trips</b>		<b>46</b>	<b>46</b>	<b>92</b>

No AM peak hour Traffic

PM peak hour traffic (4-6 PM) - 27 trips

