

MEMORANDUM

OHR AVNER SYNAGOGUE PARKING STUDY

ROXANN HAYES CONSULTING, LLC

TO: WAYNE ANDERSON, AIA

FROM: ROXANN HAYES, P.E.
JANUARY 13, 2023

SUBJECT: OHR AVNER SYNAGOGUE
1199 S KINGSTON ST, AURORA, CO 80012
PARKING STUDY AND PARKING NEEDS ANALYSIS

Roxann Hayes Consulting, LLC is pleased to provide the following Parking Study and Parking Needs Analysis to Wayne Anderson for a proposed Synagogue at 1199 S. Kingston St. in Aurora, Colorado ("Project").

CONCLUSIONS

The following are the findings and conclusions for the Project. These items are discussed in more detail in later sections of this memorandum:

- This study assesses the expected parking demand based on proxy surveys collected at similar land uses in accordance with the City of Aurora Municipal code to identify whether the proposed parking will satisfy the expected parking demand.
- City code requires the site include 49 vehicular parking spaces with a 21,490 square foot gross floor area (parking variance requested).
 - The site is currently showing a total of 33 parking spaces on-site, and 104 parking spaces off-site. There is an existing lot located off-site at 11100 E. Mississippi that can be utilized.
 - Additionally, four bike parking spaces are provided on-site.
- Based on market analysis, and actual site requirements, it is recommended that the developer provide a minimum of 30 parking spaces; support for this number follows.
- This parking study requests a reduction to the required parking, with documentation of reduced parking demand.
- This study demonstrates that the reduction will not create significant adverse impacts on surrounding properties.
- The development team may want to consider implementing a few other best practices including provided spaces for car share or bike share programs as a site amenity.

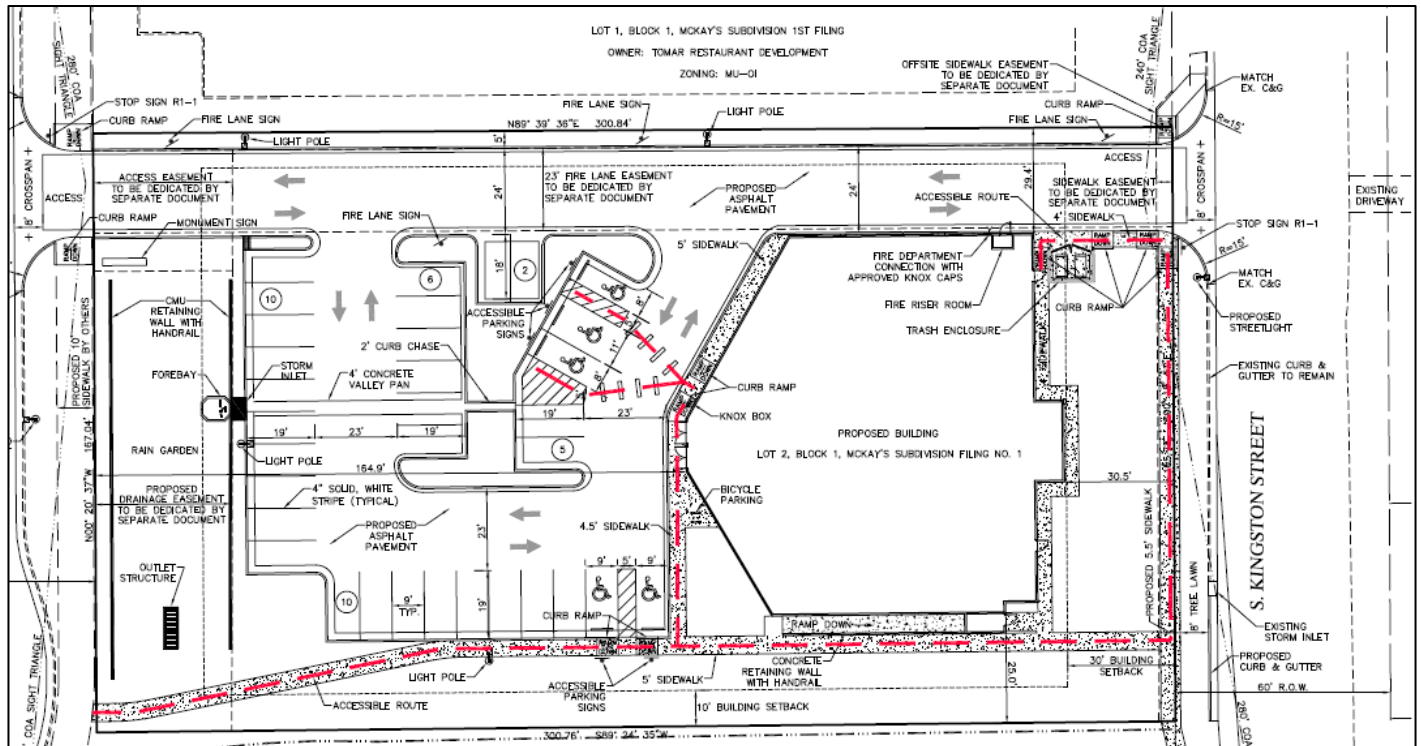
PROJECT DESCRIPTION

The Project is a new Synagogue building in Aurora, CO. The Project will access S. Kingston St. south of E. Mississippi Ave. The building will be a 2 story with a walkout basement steel framed structure. Per the concept plans, parking for the project will be provided at the front of the building, adjacent to S. Kingston Way.

A “preschool” was mentioned by City Staff. There is no separate preschool, only a “kids room” for younger children during synagogue services.

Figure 1 shows the current site plan.

Figure 1 : 1199 S. Kingston St.



CITY CORRIDOR PLACETYPE

Staff notes this area is designated as a City Corridor Placetype by the Aurora Places Comprehensive Plan. City Corridors are centered along the city's major roadways, home to a wide range of uses, including commercial, retail, institutional, service and some residential. Recommended practices for City Corridors include accommodating pedestrians and promoting shared parking opportunities.

PARKING REDUCTION

Per Section 4.6.4. PARKING ALTERNATIVES of the Aurora Municipal Code (<https://aurora.municipal.codes/UDO/146-4.6.3>):

“A reduction to the required parking may be granted by complying with any one or combination of the parking alternatives listed in this Section provided that the total reduction is not greater than 25 percent below the parking requirements in Section 146-4.6.3.C (Minimum Required Parking), and that the applicant provides a parking analysis and the Planning Director determines that the analysis provides adequate documentation of reduced parking demand and demonstrates that the reduction will not create significant adverse impacts on surrounding properties.”

Non-residential parking reductions of up to 10% may be approved, if the approving authority finds the parking needs will be adequately served. The use proposed will meet the following criteria:

1. The character of the use lowers the anticipated need for off-street parking. Data is provided from similar uses that establishes there is not a present need for parking.
2. Shared parking is proposed.

CHARACTER OF THE USE

The site is a planned Jewish Orthodox Synagogue.

The use of internal combustion engines is prohibited on Sabbath, as well as other large events throughout the year (such as Yom Kippur and Rosh Hashana). Orthodox Jews have to be within walking distance of a synagogue - they can't drive. This creates a geographic sense of community that is very different than what typical American suburbia developed.

During non-Sabbath days, the use of the synagogue is greatly reduced and the 33 parking spaces is more than adequate for their needs.

As shown in the list (1) above, the character of this use lowers the anticipated need for parking on the site.

COMPARABLE SITES

Three Jewish Orthodox Synagogues were used for comparison with the proposed site.

- East Denver Orthodox Synagogue
- Chabad Bais Menachem
- Congregation Zera Abraham

Only one of the sites provided any off-street parking in a properly striped parking lot (ten spaces at Chabad Bais Menachem). The others only had limited street parking. See Figures 2 through 4 for satellite imagery of the three sites.

East Denver Orthodox Synagogue
198 S Holly St, Denver, CO 80246
No off-street parking. Limited street parking in front of building (10-12 spaces).

Figure 2 : East Denver Orthodox Synagogue



Chabad Bais Menachem
400 S Holly St, Denver, CO 80246
10 off-street spaces, 9 off-street parking spaces available.

Figure 3 : Chabad Bais Menachem



Congregation Zera Abraham
1560 Winona Ct, Denver, CO 80204
Limited on-site parking (four or five vehicles). Up to 5 off-street parking spaces available.

Figure 4 : Congregation Zera Abraham



PARKING STUDY – EXISTING SYNAGOGUE SITE

In addition to the comparison of other Orthodox Synagogues, the existing building (proxy) of Ohr Avner (at 11100 E. Mississippi) was utilized for a parking demand survey.

The on-site uses, GFA, and parking supply for the subject site and the proxy site is summarized in Table 1.

Table 1 : Subject and Proxy Site Statistics

Name	Site Address	Land Use	GFA (ft^2)	On-Site Parking	Street Parking
Existing Ohr Avner	11100 E. Mississippi	Orthodox Synagogue	6,048	20	10
New Ohr Avner	1199 S. Kingston St.	Orthodox Synagogue	21,490	34	0
East Denver Orthodox Synagogue	198 S. Holly St.	Orthodox Synagogue	8,004	0	12
Chabad Bais Menachem	400 S. Holly St.	Orthodox Synagogue	8,674	10	10
Congregation Zera Abraham	1560 N. Winona Ct.	Orthodox Synagogue	5,425	4	10

Over the course of a week, the existing synagogue site was visited and parking was inventoried. The inventory was conducted several times during the day, including during Sabbath (Saturday) and during the week.

The parking demand survey was conducted in 30 to 60 minute increments at the proxy location on Saturday, May 7th, 2022 and on Tuesday, May 10th, 2022. Data was collected between 9:30am to 3:15pm on Saturday, and 7:10am to 5:30pm on Tuesday. The existing site holds Shabbat services from 8 to 11:30am. See the Appendix for more information on services.

PARKING SURVEY RESULTS

A detailed summary of the parking survey results is shown below, which includes the following data by time interval:

- Days of the surveys
- Total on-site parking spaces (parking supply)
- Total GFA
- Observed parking
- Percentage of total parking capacity
- Observed parking demand ratio per 1000 sf of occupied GFA

For both days that surveys were conducted, peak parking occurs in the morning during services, usually between 8 to 9am. The total number of parking (even including off-site on-street parking) never exceeded half of the existing lot capacity.

The observed parking survey data is attached in the Appendix for reference.

Figure 5 : Existing Site Survey

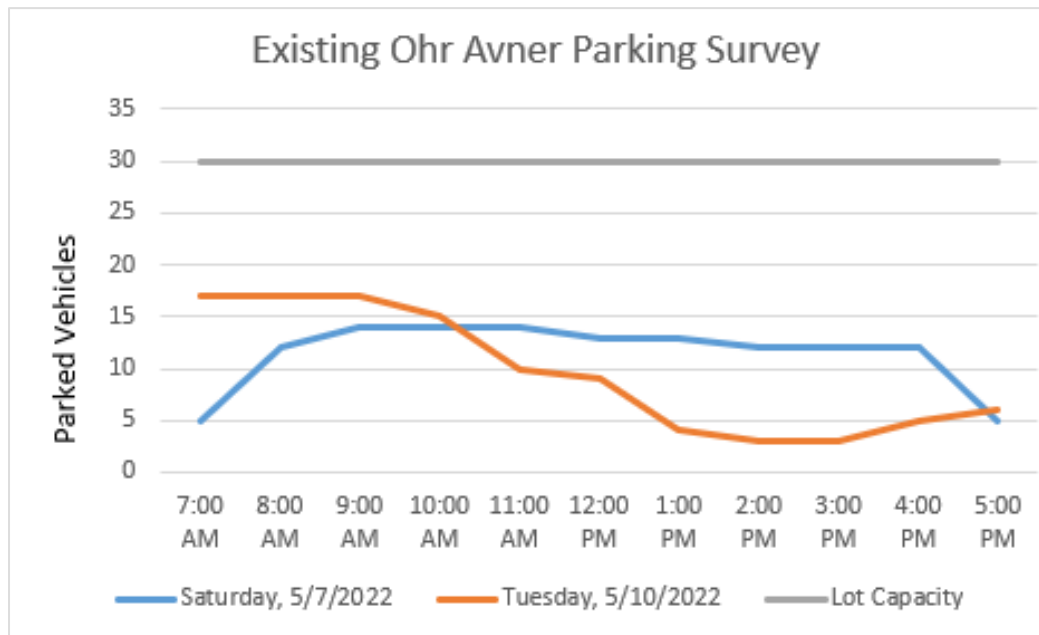


Table 2 : Parking Survey Results Peak Utilization (8am to 9am)

Site Location	Date	Total Cars Parked	Capacity Utilized	Ratio (spaces / 1000 ft ²)
Existing Ohr Avner	Saturday, 5/7/2022	14	47%	2.31
	Tuesday, 5/10/2022	17	57%	2.81

The maximum number of cars parked on the site, including the surrounding streets, were 17 vehicles. This included vehicles that were parked from neighboring businesses as well.

Saturday is a Sabbath Day, and Tuesday is a non-Sabbath Day. These two days were chosen to provide a random sampling of the parking needs at the current building.

ANALYSIS

With a conservative approach applying the highest parking demand ratio from the existing Ohr Avner site at 2.81 spaces per 1000 sf, the proposed new Ohr Avner site (total GFA of 20,490 sf) would require 58 spaces. However, only the first floor will be utilized for synagogue operations (GFA of 9,625 sf), reducing the total number of required spaces to 27 spaces. The other floor is primarily storage.

The City of Aurora mandates that 49 parking spaces be provided for the proposed use (per the proposed variance). The site is currently showing a total of 34 spaces.

Data from the Institute of Transportation Engineers (ITE) *Parking Generation Manual*, 5th Edition does not have a separate Synagogue category. The closest category would be LU 560 Church, resulting in a demand of 90 parking spaces using GFA as an independent variable. However, this does not take into consideration the Orthodox Synagogue characteristics, as previously discussed.

The Ohr Avner Synagogue is not a typical suburban development. Minimum parking standards have been built to account for an assumed demand for parking generated by the buildings' use. This use defies these minimum parking standards, as vehicles are not permitted to be driven during large events to/from the synagogue or on the Sabbath.

Based on the assumptions and comparisons made above, a minimum of thirty spaces is more than adequate for proposed site.

APPENDIX

- 1 East side of Kingston
- 2 West side of Kingston
- 3 North Building #1 Parking Area
- 4 South Building #1 Parking Area
- 5 North Building #2 Parking Area
- 6 South Building #2 Parking Area
- 7 East Building #2 Parking Area
- Other (Note Location)



Synagogue Services

Shacharit:

Sunday	8:00 - 9:15 AM
Monday - Friday	6:30 - 7:45 AM
Shabbat	8:00 - 11:30 AM

Mincha every day starts 15 minutes before sunset*, followed by Arvit. Call Rabbi to confirm time.

*Mincha on Shabbat, 30 min before sunset.

Seudah Shelishit: A nice Shabbat afternoon meal every Saturday afternoon at Ohr Avner, enfolded with stories and Torah thoughts. Please join us!

*Sponsored by Markiel & Shlomo Bachayev for the merit of their families. Call Rabbi before Shabbat to confirm time.

Men's Class: Thoughts from the Torah as viewed by Kabbalah, taught by Rabbi David Araiev. Every Tuesday, 8:30pm at Ohr Avner.

Women's Class: *Torah & Tea Time* with nechami Araiev. Every Wednesday, 8:30pm at Ohr Avner.

Parking Study						1 East side of Kingston			
11100 E Mississippi Ave, Aurora, CO 80012						2 West side of Kingston			
						3 North Building #1 Parking Area			
						4 South Building #1 Parking Area			
Date	Time	Car License #	Location	Same Lo	Same Lo	5 North Building #2 Parking Area			
						6 South Building #2 Parking Area			
7-May-22	9:48 AM	U91-670	2			7 East Building #2 Parking Area			
7-May-22	9:52 AM	UF9-742	2			8 Other (Note Location)			
7-May-22	9:54 AM	ABS-G50	2						
7-May-22	10:00 AM	412-0061	1						
7-May-22	10:00 AM	969-TVS	1						
7-May-22	10:02 AM	OFD-675	1						
7-May-22	10:04 AM	BRK-AB2	4						
7-May-22	10:24 AM	AGM-N61	3						
7-May-22	10:25 AM	X0W-870	3						
7-May-22	10:25 AM	BMU-011	3						
7-May-22	10:25 AM	BXI-K11	3						
7-May-22	10:25 AM	420-4722	3						
7-May-22	10:25 AM	ALL-X75	3						
7-May-22	10:25 AM	AGU-N56	3						
7-May-22	1:21 PM	AGM-N61	3 Y						
7-May-22	1:21 PM	X0W-870	3 Y						
7-May-22	1:23 PM	BMU-011	3 Y						
7-May-22	1:24 PM	BXI-K11	3 Y						
7-May-22	1:26 PM	420-4722	3 Y						
7-May-22	1:26 PM	ALL-X75	3 Y						
7-May-22	1:30 PM	AGU-N56	3 Y						
7-May-22	1:34 PM	CNH-179	6						
7-May-22	1:35 PM	BXD-755	6						
7-May-22	1:35 PM	OFD-675	1 Y						
7-May-22	1:35 PM	413-00061	1 Y						
7-May-22	1:35 PM	V91-670	2						
7-May-22	1:35 PM	ABS-G50	2 Y						
7-May-22	3:15 PM	AGM-N61	1	Y					
7-May-22	3:15 PM	X0W-870	1	Y					
7-May-22	3:15 PM	BMU-011	1	Y					
7-May-22	3:15 PM	BXI-K11	1	Y					
7-May-22	3:15 PM	420-4722	1	Y					
7-May-22	3:15 PM	ALL-X75	1	Y					
7-May-22	3:15 PM	AGU-N56	3	Y					
7-May-22	3:15 PM	OFD-675	1	Y					
7-May-22	3:15 PM	413-00061	1	Y					
7-May-22	3:15 PM	V91-670	2	Y					
7-May-22	3:15 PM	CNH-179	6	Y					
7-May-22	3:15 PM	ABS-G50	2	Y					

Parking Study						1 East side of Kingston	
11100 E Mississippi Ave, Aurora, CO 80012						2 West side of Kingston	
						3 North Building #1 Parking Area	
						4 South Building #1 Parking Area	
						5 North Building #2 Parking Area	
						6 South Building #2 Parking Area	
						7 East Building #2 Parking Area	
						8 Other (Note Location)	
Date	Time	Car License #	Location	Location			
5/10/2022	10:07 AM	CO 626-QPO	West side of Kingston	2			
5/10/2022	10:07 AM	CO AAX-A42	South Building #1 Parking Area	4			
5/10/2022	10:07 AM	CO 761-QKO	South Building #1 Parking Area	4			
5/10/2022	10:07 AM	CO AAP-I62	South Building #1 Parking Area	4			
5/10/2022	10:07 AM	CO 4204722 (Temp plate	North Building #2 Parking Area	5			
5/10/2022	10:07 AM	CO 3885425 (Temp plate	North Building #2 Parking Area	5			
5/10/2022	10:07 AM	CO AGJ-Q90	North Building #2 Parking Area	5			
5/10/2022	10:07 AM	CO 899-EXM	Not in parking space, parked on the west side of	8			
5/10/2022	10:07 AM	CO 678-EZB	Not in parking space, parked on the west side of	8			
5/10/2022	2:10 PM	CO 626-QPO	West side of Kingston	2			
5/10/2022	2:10 PM	CO BRP-P03	West side of Kingston	2			
5/10/2022	2:10 PM	CO 761-QKO	South Building #1 Parking Area	4			
5/10/2022	5:30 PM	CO ALH-P3O	West side of Kingston	2			
5/10/2022	5:30 PM	CO 626-QPO	West side of Kingston	2			
5/10/2022	5:30 PM	CO BRP-P03	West side of Kingston	2			
5/10/2022	5:30 PM	CO 4204722 (Temp plate	South Building #1 Parking Area	4			
5/10/2022	5:30 PM	CO 3885425 (Temp plate	South Building #1 Parking Area	4			
5/10/2022	5:30 PM	CO 731-SWT	South Building #1 Parking Area	4			

Parking Study						1	East side of Kingston	
11100 E Mississippi Ave, Aurora, CO 80012						2	West side of Kingston	
						3	North Building #1 Parking Area	
						4	South Building #1 Parking Area	
Date	Time	Car License #	Location	Note		5	North Building #2 Parking Area	
5/10/2022	7:10	AZK065	2			6	South Building #2 Parking Area	
5/10/2022	7:10	673EZB	8	Between 1 and 11150		7	East Building #2 Parking Area	
5/10/2022	7:10	CGSK15	8	Between 1 and 11150		8	Other (Note Location)	
5/10/2022	7:10	VQI670	7					
5/10/2022	7:10	ALGN41	4					
5/10/2022	7:10	830IVT	5					
5/10/2022	7:10	4130061	5					
5/10/2022	7:10	BXH578	4					
5/10/2022	7:10	761OKO	4					
5/10/2022	7:10	AAP162	4					
5/10/2022	7:10	4204722	5					
5/10/2022	7:10	WOY546	5					
5/10/2022	7:10	KDQ469	4					
5/10/2022	7:10	3884895	5					
5/10/2022	7:10	not visible	5					
5/10/2022	7:10	not visible	4					
5/10/2022	7:10	8EOB964	5					
5/10/2022	11:58	AZK065	2					
		625OPU	2					
		CPI177	6					
		not visible	8	Between 1 and 11150				
		830IVT	5					
		AAXA42	4					
		761OKO	4					
		not visible	4					
		not visible	4					
5/10/2022	2:55	761OKO	4					
		VQI670	4					
		not visible	4					