538 S. Fifth Avenue
Ann Arbor, MI 48104

April 5, 2010

Mayor John Hieftje and
City Council Members
City of Ann Arbor
100 N. Fifth Avenue
Ann Arbor, MI 48107

Subject: The Moravian PUD District and PUD Site Plan
(201, 211 and 215 East Madison Street; 554 and 558 South Fifth Avenue;
And 547, 551 and 553 South Fourth Avenue)
City File Nos. PUDZ08-036 and SP08-022)

Acoustic and Traffic Expert Reports

Dear Mayor Hieftje and Members of City Council:

As the owner of 538 S. Fifth Avenue, I will be negatively impacted by the proposed Moravian PUD zoning district, which is on the agenda for City Council's April 5, 2010 meeting this evening. Concerned about the detrimental effects of the proposed Moravian PUD on the surrounding threatened, residential neighborhood, I, and my wife, Marianne Zorza, retained both an acoustic and traffic expert to evaluate its potential impact.

With this letter, I am submitting, for your consideration, the letter reports of Kenric D. Van Wyk, PE, President of Acoustics by Design, and Michael J. Labadie, PE, Senior Project Manager of Professional Engineering Associates. The purpose of this letter is not only to submit these reports, but also to emphasize my concerns about the potential noise nuisance, traffic hazards, and parking problems the Moravian will generate.

Mr. Van Wyk's analysis suggests that the Moravian would create a nuisance with respect to the resultant "significant shift in the acoustical environment." Contrary to the Planning Commission's conclusion, the Moravian apartment building would negatively impact the adjacent residential property owners, due to significant increases in the ambient noise levels generated by residential density, allowed commercial uses, the roof top terraces, vehicular traffic noise, aggregate parking issues, parking garage ventilation systems, roof top mechanical systems, and the emergency generator.

Mr. Labadie's analysis suggests that the 2008 Traffic Impact Study, which was prepared on behalf of the developers of the Moravian project, may be flawed in:

1. erroneously assigning a 50-50% split in the traffic volumes on 4th and 5th Avenues, rather than a 73%-27% split, based on the site plan parking spaces and driveways;

2. collecting peak hour turning movements during the summer months, when the University of Michigan summer recess could significantly diminish turning volume;

3. adjusting for seasonal variation by using State of Michigan seasonal traffic volume variation data, rather than such data specific to Ann Arbor;

4. failing to estimate daily traffic volumes for all streets abutting the proposed Moravian, thereby contravening the regulatory requirements for a PUD petition.

Mr. Labadie's analysis suggests that the Planning Commission may have erred in relying on the flawed 2008 Traffic Impact Study, commissioned by the developers for their previous, Madison project, in concluding that the less dense, subsequent Moravian apartment building would generate no congestion, and provide well-defined and safe vehicular circulation. Mr. Labadie indicates that, instead, the developers should have submitted an updated Traffic Impact Study for the Moravian, consistent with the requirements in Appendix D of the Land Development Regulations. The Site Trip Generation table provided by Mr. Labadie indicates that a Traffic Impact Study would be a mandatory requirement for the Moravian PUD petition, because PM peak hour trips exceed the threshold of 50 vehicle trips per peak hour, as indicated in the aforementioned regulations. This is true whether the Moravian contains the allowed 92 or 62 units.

Mr. Labadie also addressed, in his letter report, the greater incidence of crashes on S. Fifth Avenue, compared to S. Fourth Avenue. I have attached to this letter the crash data for the relevant intersections, compiled by the state for the period between 2005-2009, and by the city for the period 2003-2007. According to the crash data compiled by the state, there were roughly four times as many accidents on S. 5th Avenue than on S. 4th Avenue, during the five-year period between 2005-2009, when the number of accidents, both at Packard and E. Madison, is combined.

It was precisely due to sight distance concerns, on this busy main artery, that the city removed most on-street parking spaces on South 5th Avenue, between Packard and E. Madison. I have attached a copy of a December 20, 2001 letter to residents from William R. Wheeler, Public Services Director, which documents the reasons for removing the on-street parking. Please take note that, as Mr. Labadie indicates, the adequacy of the sight distance for the proposed driveway on S. 5th Avenue was not evaluated for the proposed Moravian, but should be, consistent with the ordinance guidelines.

The Moravian site plan indicates a reinstatement of six on-street parking spaces as well as the creation of a loading/unloading zone on S. Fifth Avenue. Given the documented sight distance concerns on S. 5th Avenue and the greater number of accidents there compared to S. 4th Avenue, I am greatly concerned that these proposed changes would recreate an already identified hazard. Also, the loading/unloading zone may be a nuisance, with respect to noise, with frequent activity day and night, due to the lack of sufficient on-site parking for the Moravian.

I request that you include this letter, and its attachments, and the two submitted reports from Mr. Labadie and Mr. Van Wyk, as part of the record of the proceedings before City Council tonight, at its April 5, 2010 meeting.

Sincerely,

Frank Richard Jacobson

Attachments

Enclosures

Intersection Crashes

Date	Primary Street	Distance (ft)	Direction	Intersecting Street
4th and Packard				
9/12/06	4TH	60	North	PACKARD
2/6/08	FOURTH	20	South	PACKARD
11/9/08	FOURTH	5	North	PACKARD
11/22/08	PACKARD	25	West	4TH
7/10/09	PACKARD	10	South	4TH
8/7/09	PACKARD	10	East	4TH
10/11/09	4TH	50	South	PACKARD
			Total Intersection Crashes	7
5th and Packard				
1/2/05	PACKARD	10	West	5TH
7/29/05	5TH	100	South	PACKARD
8/28/05	PACKARD	100	East	FIFTH
9/2/05	5TH	20	North	PACKARD
9/26/05	PACKARD	0	Intersection	5TH
9/22/06	5TH	25	North	PACKARD
9/29/06	PACKARD	10	North	5TH
10/7/06	PACKARD	10	South	5TH
10/22/06	PACKARD	20	East	5TH
3/18/07	5TH	15	North	PACKARD
4/21/07	5TH	12	Northeast	PACKARD
6/4/07	5TH	30	South	PACKARD
7/23/07	PACKARD	0	Intersection	5TH
11/25/07	PACKARD	10	East	FIFTH
8/2/08	PACKARD	100	Southeast	5TH
8/21/08	PACKARD	0	Intersection	5TH
8/25/08	PACKARD	150	West	5TH
10/30/08	PACKARD	25	East	5TH
11/21/08	FIFTH	25	East	PACKARD
5/21/09	PACKARD	20	East	FIFTH
6/9/09	PACKARD	25	South	5TH
7/24/09	FIFTH	40	South	PACKARD
7/24/09	5TH	100	South	PACKARD
8/25/09	5TH	150	South	PACKARD
10/6/09	5TH	5	Southwest	PACKARD
11/14/09	PACKARD	25	West	5TH
11/28/09	FIFTH	25	North	PACKARD
			Total Intersection Crashes	27

Date	Primary Street	Distance (ft)	Direction	Intersecting Street
5th and Madison				
2/20/05	5TH	50	North	MADISON
2/25/05	5TH	150	South	MADISON
4/27/05	5TH	0	Intersection	MADISON
7/30/05	5TH	0	Intersection	MADISON
8/29/05	FIFTH	75	North	MADISON
9/20/05	MADISON	110	West	5TH
11/20/05	5TH	15	South	MADISON
12/5/05	5TH	0	Intersection	MADISON
7/25/06	5TH	15	Southwest	MADISON
8/29/07	5TH	50	South	MADISON
10/17/07	5TH	75	North	MADISON
11/1/07	5TH	20	North	MADISON
1/22/08	5TH	10	North	MADISON
11/30/08	5TH	60	South	MADISON
1/18/09	MADISON	75	East	FIFTH
11/12/09	FIFTH	0	Intersection	MADISON
			Total Intersection Crashes	16
4th and Madison				
3/15/05	FOURTH	5	North	MADISON
2/10/06	MADISON	10	West	4TH
2/17/08	4TH	200	North	MADISON
5/6/09	4TH	15	North	MADISON
			Total Intersection Crashes	4
			Grand Total	54

Standard Crash Report - Intersection

Ann Arbor

Report Module: Safety Management Analysis

Today's Date: Thursday, March 19, 2009

Dates: 1/1/2003 to 12/31/2007

Intersection: MP: 0.166 - S 5th Ave & E Madison St

Radius: 0.03 miles

Sort Order: PR No., Milepoint, Date of Crash

Physical Road(s) comprising intersection: MP: 0.166 - S 5th Ave & E Madison St

PR Number	Road Name	Milepoint
1430701	E Madison St	0.617
1430303	N 5th Ave	0.166
1430303	S 5th Ave	0.166
1430701	W Madison St	0.617

Standard Crash Report - Intersection

MilePoint	UD10 #	UD10 City/Township	UD-10 Crash Location	UD-10 Crossroad Reference	Crash Type	Crash Severity	Date	Hour of Occurence	Number of: Veh.	Occup.	Inj.	Weekday	Environmental Condition: Weather	Lighting	Surface	Relationship On Road
PR Number: 1430303			**Road Name: S 5th Ave**													
0.138	7337392	Ann Arbor	150' S	MADISON	Side-Swipe Same	PDO	2/25/2005	07AM-08AM	2	2	0	Friday	Snow	Daylight	Snowy	On Road
0.157	8973539	Ann Arbor	50' S	MADISON	Backing	PDO	8/29/2007	02PM-03PM	2	1	0	Wednesday	Clear	Daylight	Dry	On Road
0.161	4079838	Ann Arbor	25' S	MADISON	Rear-End Drive	PDO	1/15/2004	04PM-05PM	3	1	0	Thursday	Cloudy	Daylight	Snowy	On Road
0.162	4033048	Ann Arbor	20' S	MADISON	Angle Straight	PDO	1/8/2004	Unknown	2	1	0	Thursday	Cloudy	Dawn	Icy	On Road
0.163	6902209	Ann Arbor	15' SW	NADISON	Angle Straight	PDO	8/14/2004	03PM-04PM	2	2	0	Saturday	Cloudy	Daylight	Dry	On Road
0.163	8351293	Ann Arbor	15' S	MADISON	Angle Straight	Injury	11/20/2005	Unknown	3	2	1	Sunday	Cloudy	Dark,Lighted	Dry	On Road
0.163	7337000	Ann Arbor	15' SW	MADISON	Angle Turn	PDO	7/25/2006	08AM-09AM	2	2	0	Tuesday	Clear	Daylight	Dry	On Road
0.166	4690178	Ann Arbor	0' X	MADISON	Angle Straight	PDO	5/30/2003	Unknown	2	1	0	Friday	Rain	Daylight	Wet	On Road
0.166	4078568	Ann Arbor	20' S	MADISON	Hit Parked Vehicle	Injury	6/19/2003	11PM-MDNT	3	1	1	Thursday	Clear	Dark,Lighted	Dry	On Road
0.166	5202100	Ann Arbor	20' W	MADISON	Angle Straight	PDO	6/20/2003	NOON-01PM	2	2	0	Friday	Clear	Daylight	Dry	On Road
0.166	5202230	Ann Arbor	0'	MADISON	Misc. Multiple Vehicle	Injury	9/22/2003	Unknown	2	2	2	Monday	Rain	Daylight	Wet	On Road
0.166	4079819	Ann Arbor	0' X	MADISON	Angle Turn	PDO	10/25/2003	06PM-07PM	2	3	0	Saturday	Cloudy	Dark,Lighted	Wet	On Road
0.166	4077397	Ann Arbor	0'	MADISON	Angle Straight	PDO	1/30/2004	11AM-NOON	2	3	0	Friday	Cloudy	Daylight	Dry	On Road
0.166	6902330	Ann Arbor	10' W	MADISON	Angle Straight	PDO	10/29/2004	07PM-08PM	2	3	0	Friday	Cloudy	Dark	Wet	On Road
0.166	6993255	Ann Arbor	0' X	MADISON	Misc. Multiple Vehicle	Injury	4/27/2005	07PM-08PM	2	6	3	Wednesday	Cloudy	Daylight	Dry	On Road
0.166	7339647	Ann Arbor	0' X	MADISON	Angle Straight	PDO	7/30/2005	NOON-01PM	2	1	0	Saturday	Clear	Daylight	Dry	On Road
0.166	8351703	Ann Arbor	0' X	MADISON	Head-On Left-Turn	PDO	12/5/2005	07AM-08AM	2	3	0	Monday	Cloudy	Dawn	Dry	On Road
0.170	8971568	Ann Arbor	20' N	MADISON	Fixed Object	Injury	11/1/2007	02PM-03PM	1	1	1	Thursday	Clear	Daylight	Dry	Out Shou/Curb
0.175	6901502	Ann Arbor	50' N	MADISON	Rear-End Straight	PDO	7/27/2004	NOON-01PM	2	2	0	Tuesday	Clear	Daylight	Wet	On Road
0.175	7336563	Ann Arbor	50' N	MADISON	Side-Swipe Same	PDO	2/20/2005	05PM-06PM	2	3	0	Sunday	Snow	Daylight	Snowy	On Road
0.180	7339592	Ann Arbor	75' N	MADISON	Fixed Object	PDO	8/29/2005	08AM-09AM	1	1	0	Monday	Clear	Daylight	Dry	Out Shou/Curb
0.180	8973769	Ann Arbor	75' N	MADISON	Fixed Object	PDO	10/17/2007	08AM-09AM	1	1	0	Wednesday	Cloudy	Daylight	Wet	Out Shou/Curb

Total crashes for PR 1430303--S 5th Ave: 22 **Total Fatal Crashes: 0 Total Injury Crashes: 5 Total PDO Crashes: 17**

PR Number: 1430701			**Road Name: W Madison St**													
0.596	7339596	Ann Arbor	110' W	5TH	Side-Swipe Same	PDO	9/20/2005	11AM-NOON	2	2	0	Tuesday	Clear	Daylight	Dry	On Road
0.617	4068396	Ann Arbor	0' X	5TH	Side-Swipe Opposite	PDO	2/11/2003	NOON-01PM	2	2	0	Tuesday	Clear	Daylight	Dry	On Road
0.617	4033192	Ann Arbor	0'	FIFTH	Angle Straight	Injury	1/19/2004	05PM-06PM	2	2	1	Monday	Cloudy	Dusk	Wet	On Road

Total crashes for PR 1430701--W Madison St: 3 **Total Fatal Crashes: 0 Total Injury Crashes: 1 Total PDO Crashes: 2**

Total crashes for Intersection 81010651: 25 **Total Fatal Crashes: 0 Total Injury Crashes: 6 Total PDO Crashes: 19**

Standard Crash Report - Milepoints

Ann Arbor

Report Module: Safety Management Analysis
Today's Date: Wednesday, March 18, 2009
Dates: 1/1/2003 to 12/31/2007
PR/RoadName: 1430303: S 5th Ave
Milepoints: From 0.000 To 1.144
Sort Order: Road Name, Milepoint, Date of Crash

Milepoint	Intersection Name
0.000	S 5th Ave & Hill St
0.267	Packard St & S 5th Ave
0.538	S 5th Ave & E Liberty St
0.729	E Ann St & N 5th Ave
0.905	N 5th Ave & E Kingsley St

Milepoint	Intersection Name
0.094	S 5th Ave & John St
0.312	E Jefferson St & S 5th Ave
0.601	E Washington St & S 5th Ave
0.791	N 5th Ave & Catherine St
0.987	Beakes St & N 5th Ave

Milepoint	Intersection Name
0.166	S 5th Ave & E Madison St
0.425	S 5th Ave & E William St
0.665	S 5th Ave & N 5th Ave & E Huron St
0.859	Detroit St & N 5th Ave
1.106	E Summit St & N 5th Ave

Standard Crash Report - Milepoints

MilePoint	UD10 #	UD10 City/Township	UD-10 Crash Location	UD-10 Crossroad Reference	Crash Type	Crash Severity	Date	Hour of Occurence	Number of: Veh.	Occup.	Inj.	Weekday	Environmental Condition: Weather	Lighting	Surface	Relationship On Road
PR Number: 1430303			**Road Name: S 5th Ave**													
0.000	4067818	Ann Arbor	0' X	HIL	Backing	PDO	4/25/2003	11AM-NOON	2	3	0	Friday	Clear	Daylight	Dry	On Road
0.000	4076169	Ann Arbor	0'	HILL	Angle Turn	PDO	12/2/2003	07PM-08PM	2	2	0	Tuesday	Clear	Dark	Dry	On Road
0.000	8014044	Ann Arbor	5' E	HILL	Angle Straight	PDO	6/21/2005	05PM-06PM	2	3	0	Tuesday	Cloudy	Daylight	Dry	On Road
0.000	8268308	Ann Arbor	5' S	HILL	Angle Straight	Injury	4/17/2006	01PM-02PM	2	2	1	Monday	Clear	Daylight	Dry	On Road
0.006	8351141	Ann Arbor	30' N	HILL	Rear-End Straight	PDO	11/23/2005	01PM-02PM	2	3	0	Wednesday	Snow	Dark,Lighted	Snowy	On Road
0.009	8974323	Ann Arbor	50' N	HILL	Rear-End Straight	PDO	12/17/2007	05PM-06PM	2	2	0	Monday	Clear	Dark,Lighted	Wet	On Road
0.083	7240295	Ann Arbor	60' S	JOHN	Angle Straight	PDO	10/18/2004	03PM-04PM	2	3	0	Monday	Rain	Daylight	Dry	On Road
0.094	5203187	Ann Arbor	0' X	JOHN	Angle Turn	PDO	2/13/2004	02PM-03PM	2	2	0	Friday	Clear	Daylight	Dry	On Road
0.103	4079400	Ann Arbor	50' N	JOHN	Backing	PDO	10/13/2003	10AM-11AM	2	1	0	Monday	Clear	Daylight	Dry	On Road
0.138	7337392	Ann Arbor	150' S	MADISON	Side-Swipe Same	PDO	2/25/2005	07AM-08AM	2	2	0	Friday	Snow	Daylight	Snowy	On Road
0.157	8973539	Ann Arbor	50' S	MADISON	Backing	PDO	8/29/2007	02PM-03PM	2	1	0	Wednesday	Clear	Daylight	Dry	On Road
0.161	4079838	Ann Arbor	25' S	MADISON	Rear-End Drive	PDO	1/15/2004	04PM-05PM	3	1	0	Thursday	Cloudy	Daylight	Snowy	On Road
0.162	4033048	Ann Arbor	20' S	MADISON	Angle Straight	PDO	1/8/2004	Unknown	2	1	0	Thursday	Cloudy	Dawn	Icy	On Road
0.163	6902209	Ann Arbor	15' SW	NADISON	Angle Straight	PDO	8/14/2004	03PM-04PM	2	2	0	Saturday	Cloudy	Daylight	Dry	On Road
0.163	8351293	Ann Arbor	15' S	MADISON	Angle Straight	Injury	11/20/2005	Unknown	3	2	1	Sunday	Cloudy	Dark,Lighted	Dry	On Road
0.163	7337000	Ann Arbor	15' SW	MADISON	Angle Turn	PDO	7/25/2006	08AM-09AM	2	2	0	Tuesday	Clear	Daylight	Dry	On Road
0.166	4690178	Ann Arbor	0' X	MADISON	Angle Straight	PDO	5/30/2003	Unknown	2	1	0	Friday	Rain	Daylight	Wet	On Road
0.166	4078568	Ann Arbor	20' S	MADISON	Hit Parked Vehicle	Injury	6/19/2003	11PM-MDNT	3	1	1	Thursday	Clear	Dark,Lighted	Dry	On Road
0.166	5202100	Ann Arbor	20' W	MADISON	Angle Straight	PDO	6/20/2003	NOON-01PM	2	2	0	Friday	Clear	Daylight	Dry	On Road
0.166	5202230	Ann Arbor	0'	MADISON	Misc. Multiple Vehicle	Injury	9/22/2003	Unknown	2	2	2	Monday	Rain	Daylight	Wet	On Road
0.166	4079819	Ann Arbor	0' X	MADISON	Angle Turn	PDO	10/25/2003	06PM-07PM	2	3	0	Saturday	Cloudy	Dark,Lighted	Wet	On Road
0.166	4077397	Ann Arbor	0'	MADISON	Angle Straight	PDO	1/30/2004	11AM-NOON	2	3	0	Friday	Cloudy	Daylight	Dry	On Road
0.166	6902330	Ann Arbor	10' W	MADISON	Angle Straight	PDO	10/29/2004	07PM-08PM	2	3	0	Friday	Cloudy	Dark	Wet	On Road
0.166	6903255	Ann Arbor	0' X	MADISON	Misc. Multiple Vehicle	Injury	4/27/2005	07PM-08PM	2	6	3	Wednesday	Cloudy	Daylight	Dry	On Road
0.166	7339647	Ann Arbor	0' X	MADISON	Angle Straight	PDO	7/30/2005	NOON-01PM	2	1	0	Saturday	Clear	Daylight	Dry	On Road
0.166	8351703	Ann Arbor	0' X	MADISON	Head-On Left-Turn	PDO	12/5/2005	07AM-08AM	2	3	0	Monday	Cloudy	Dawn	Dry	On Road
0.170	8971568	Ann Arbor	20' N	MADISON	Fixed Object	Injury	11/1/2007	02PM-03PM	1	1	1	Thursday	Clear	Daylight	Dry	Out Shou/Curb
0.175	6901502	Ann Arbor	50' N	MADISON	Rear-End Straight	PDO	7/27/2004	NOON-01PM	2	2	0	Tuesday	Clear	Daylight	Wet	On Road
0.175	7336563	Ann Arbor	50' N	MADISON	Side-Swipe Same	PDO	2/20/2005	05PM-06PM	2	3	0	Sunday	Snow	Daylight	Snowy	On Road
0.180	7339592	Ann Arbor	75' N	MADISON	Fixed Object	PDO	8/29/2005	08AM-09AM	1	1	0	Monday	Clear	Daylight	Dry	Out Shou/Curb
0.180	8973769	Ann Arbor	75' N	MADISON	Fixed Object	PDO	10/17/2007	08AM-09AM	1	1	0	Wednesday	Cloudy	Daylight	Wet	Out Shou/Curb
0.248	7338558	Ann Arbor	100' S	PACKARD	Angle Straight	PDO	7/29/2005	04PM-05PM	2	1	0	Friday	Clear	Daylight	Dry	On Road
0.261	8970769	Ann Arbor	30' S	PACKARD	Other Object	PDO	6/4/2007	06PM-07PM	1	0	0	Monday	Rain	Daylight	Wet	On Road
0.265	4689414	Ann Arbor	10' S	PACKARD	Angle Straight	PDO	8/10/2003	11PM-MDNT	2	4	0	Sunday	Cloudy	Dark,Lighted	Dry	On Road

Standard Crash Report - Milepoints

MilePoint	UD10 #	UD10 City/Township	UD-10 Crash Location	UD-10 Crossroad Reference	Crash Type	Crash Severity	Date	Hour of Occurence	Number of: Veh.	Occup.	Inj.	Weekday	Environmental Condition: Weather	Lighting	Surface	Relationship On Road
0.267	4079269	Ann Arbor	0'	PACKARD	Pedestrian	Injury	12/10/2003	06PM-07PM	2	1	1	Wednesday	Rain	Dusk	Wet	On Road
0.267	6901924	Ann Arbor	0' X	PACKARD	Angle Straight	PDO	6/25/2004	04PM-05PM	2	1	0	Friday	Clear	Daylight	Dry	On Road
0.269	8971079	Ann Arbor	12' NE	PACKARD	Side-Swipe Same	PDO	4/21/2007	02PM-03PM	2	1	0	Saturday	Clear	Daylight	Dry	On Road
0.270	8015797	Ann Arbor	15' N	PACKARD	Angle Straight	PDO	3/18/2007	03AM-04AM	2	3	0	Sunday	Clear	Dark,Lighted	Dry	On Road
0.271	8014119	Ann Arbor	20' N	PACKARD	Backing	PDO	9/2/2006	NOON-01PM	2	3	0	Friday	Clear	Daylight	Dry	On Road
0.272	8015972	Ann Arbor	25' N	PACKARD	Rear-End Straight	PDO	9/22/2006	02PM-03PM	2	3	0	Friday	Cloudy	Daylight	Dry	On Road
0.309	8351050	Ann Arbor	15' S	JEFFERSON	Angle Turn	PDO	6/28/2007	NOON-01PM	2	2	0	Thursday	Clear	Daylight	Dry	On Road
0.310	6201779	Ann Arbor	0' X	JEFFERSON	Angle Turn	Injury	7/5/2003	11AM-NOON	2	2	1	Saturday	Cloudy	Daylight	Dry	On Road
0.312	5202889	Ann Arbor	0'	JEFFERSON	Angle Straight	PDO	10/23/2003	02PM-03PM	2	5	0	Thursday	Clear	Daylight	Dry	On Road
0.312	8349469	Ann Arbor	10' W	JEFFERSON	Angle Straight	Injury	2/27/2007	01PM-02PM	2	4	2	Tuesday	Cloudy	Daylight	Wet	On Road
0.312	8972608	Ann Arbor	0' X	JEFFERSON	Pedestrian	Injury	11/20/2007	06PM-07PM	2	1	1	Tuesday	Rain	Daylight	Wet	On Road
0.313	8015399	Ann Arbor	5' N	JEFFERSON	Angle Turn	PDO	7/12/2006	03PM-04PM	2	2	0	Wednesday	Clear	Daylight	Dry	On Road
0.314	8017015	Ann Arbor	10' N	JEFFERSON	Side-Swipe Same	PDO	4/27/2007	03PM-04PM	2	2	0	Friday	Cloudy	Daylight	Dry	On Road
0.397	6887110	Ann Arbor	150' S	WILLIAM	Rear End Left Turn	PDO	3/11/2005	07AM-08AM	2	2	0	Friday	Cloudy	Daylight	Snowy	On Road
0.416	4689806	Ann Arbor	50' SW	WILLIAM	Angle Straight	PDO	10/4/2003	01AM-02AM	2	5	0	Saturday	Cloudy	Dark,Lighted	Wet	On Road
0.416	8014726	Ann Arbor	50' S	WILLIAM	Angle Drive	PDO	5/25/2006	07PM-08PM	2	4	0	Thursday	Rain	Daylight	Wet	On Road
0.419	4033085	Ann Arbor	20' S	WILLIAM	Misc. Multiple Vehicle	PDO	4/18/2003	01PM-02PM	2	2	0	Friday	Cloudy	Daylight	Dry	On Road
0.419	7338783	Ann Arbor	30' S	WILLIAM	Side-Swipe Same	PDO	4/28/2005	09PM-10PM	2	4	0	Thursday	Clear	Dark,Lighted	Dry	On Road
0.420	8351481	Ann Arbor	25' SE	WILLIAM	Angle Turn	PDO	10/10/2005	01PM-02PM	2	3	0	Monday	Cloudy	Daylight	Dry	On Road
0.420	8973493	Ann Arbor	25' S	WILLIAM	Angle Straight	PDO	12/4/2007	03PM-04PM	2	2	0	Tuesday	Cloudy	Daylight	Dry	On Road
0.421	6888190	Ann Arbor	20' S	WILLIAM	Angle Straight	PDO	6/1/2004	11AM-NOON	2	3	0	Tuesday	Cloudy	Daylight	Dry	On Road
0.421	8351477	Ann Arbor	20' S	WILLIAM	Angle Straight	Injury	10/7/2005	01AM-02AM	2	3	1	Friday	Clear	Dark	Dry	On Road
0.422	4070185	Ann Arbor	15' S	WILLIAM	Side-Swipe Same	PDO	4/9/2004	09PM-10PM	2	3	0	Friday	Clear	Dark,Lighted	Dry	On Road
0.422	6902752	Ann Arbor	15' S	WILLIAM	Angle Turn	PDO	9/25/2004	08PM-09PM	2	3	0	Saturday	Cloudy	Dark,Lighted	Dry	On Road
0.422	7336541	Ann Arbor	15' S	WILLIAM	Side-Swipe Same	PDO	2/13/2005	NOON-01PM	2	2	0	Sunday	Cloudy	Daylight	Dry	On Road
0.424	6902478	Ann Arbor	5' S	WILLIAM	Angle Turn	PDO	11/5/2004	02AM-03AM	2	3	0	Friday	Clear	Dark,Lighted	Dry	On Road
0.424	6902814	Ann Arbor	5' S	WILLIAM	Angle Turn	PDO	11/14/2005	07PM-08PM	2	3	0	Monday	Cloudy	Dark,Lighted	Dry	On Road
0.425	4690572	Ann Arbor	2' S	WILLIAM	Angle Straight	PDO	8/17/2003	MDNT-01AM	2	3	0	Sunday	Clear	Dark,Lighted	Dry	On Road
0.425	5202162	Ann Arbor	0'	WILLIAM	Side-Swipe Same	PDO	8/30/2003	08PM-09PM	2	2	0	Saturday	Clear	Dusk	Dry	On Road
0.425	5202117	Ann Arbor	20' E	WILLIAM	Angle Straight	Injury	10/25/2003	08AM-09AM	2	4	1	Saturday	Rain	Daylight	Wet	On Road
0.425	4077260	Ann Arbor	5' E	WILLIAM	Angle Turn	PDO	5/2/2004	07PM-08PM	2	4	0	Sunday	Clear	Daylight	Dry	On Road
0.425	6901851	Ann Arbor	0' X	WILLIAM	Side-Swipe Same	PDO	6/20/2004	11AM-NOON	2	3	0	Sunday	Clear	Daylight	Dry	On Road
0.425	6886671	Ann Arbor	0' X	WILLIAM	Bicycle	Injury	6/25/2004	04PM-05PM	2	1	1	Friday	Clear	Daylight	Dry	On Road
0.425	6902329	Ann Arbor	0' X	WILLIAM	Side-Swipe Same	PDO	8/4/2004	03PM-04PM	2	4	0	Wednesday	Rain	Daylight	Wet	On Road
0.425	6887901	Ann Arbor	0' X	WILLIAM	Angle Straight	PDO	9/4/2004	08PM-09PM	2	4	0	Saturday	Clear	Dark,Lighted	Dry	On Road

CITY OF ANN ARBOR, MICHIGAN

100 North Fifth Avenue, P.O. Box 8647, Ann Arbor, Michigan 48107-8647
http://www.ci.ann-arbor.mi.us

Engineering Division	(734) 994-2744	Fax (734) 994-1744
Fleet Services Division	(734) 994-2815	Fax (734) 994-2701
Transportation Division	(734) 994-2818	Fax (734) 994-1765

Public Services Department

December 20, 200[illegible]

Orig. Fifth Ave st file

S. Fifth Avenue Residents
500 Block of S. Fifth Avenue
Ann Arbor, MI 48104

Re: Parking on S. Fifth Avenue

Dear Fifth Avenue Resident:

The City of Ann Arbor has been approached by some of your neighbors with safety concerns created by vehicles parking in the 500 block of S. Fifth Avenue, and the speed of traffic through the neighborhood. The combination of parking and vehicular speed makes it difficult for residents to safely enter and exit their driveways.

In an attempt to address this safety issue, the City will remove parking on both sides of the 500 block of South Fifth Avenue according to the attached diagram. This will enable residents to have a clear line of site while exiting their driveways.

Staff will monitor this situation and we encourage feedback from residents to determine the effectiveness of the parking restriction.

Very truly yours,

William R. Wheeler

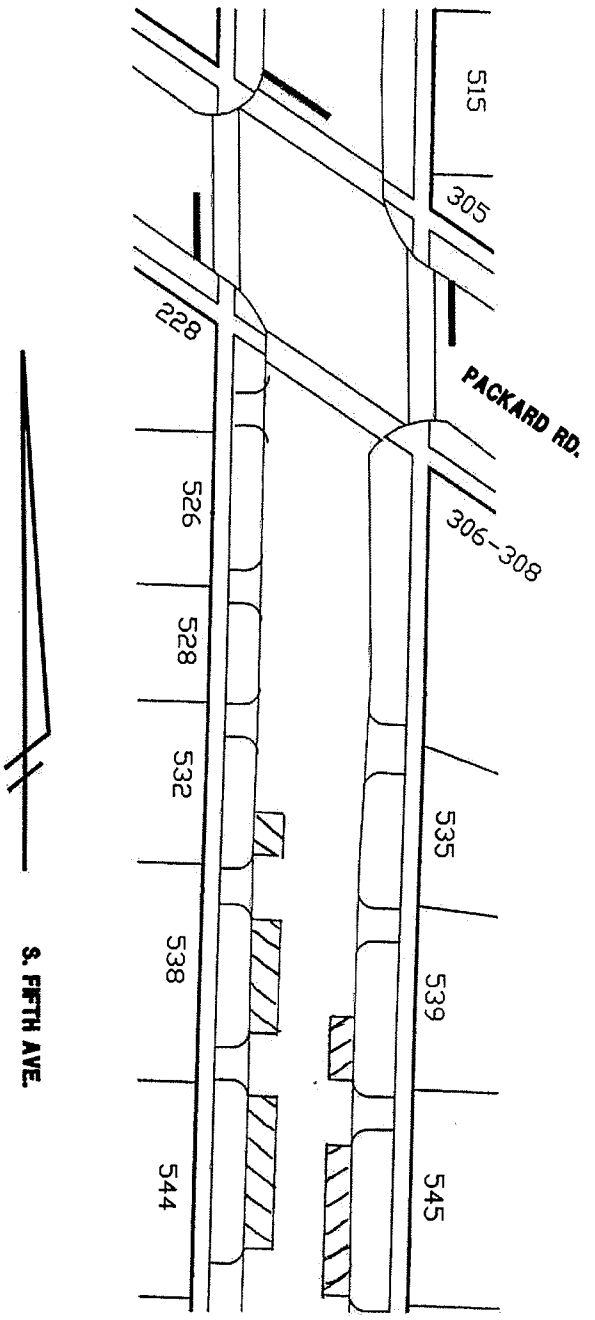
William R. Wheeler, P.E.
Public Services Director

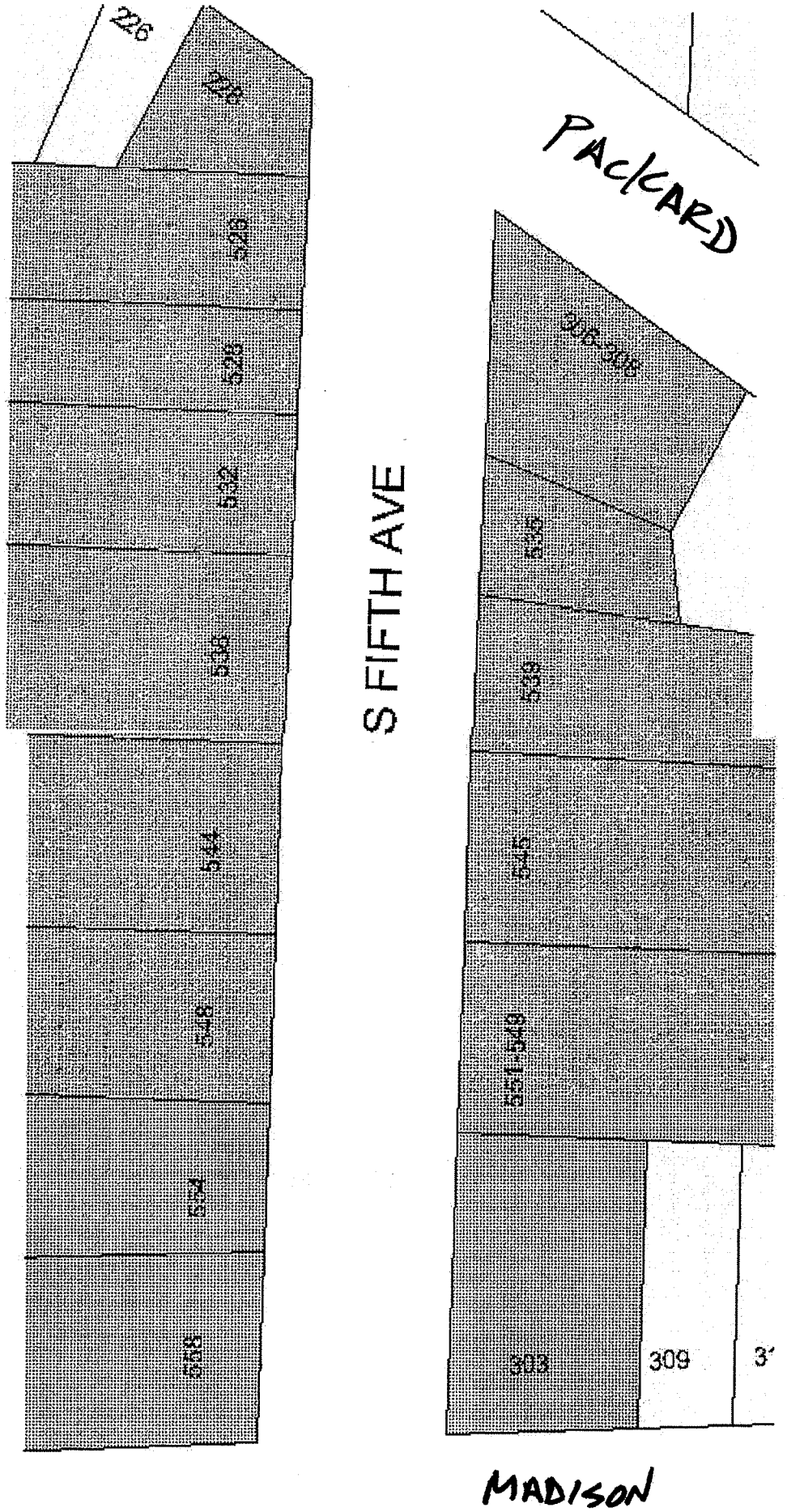
Prepared by: Michael A. Scott, Parking & Street Maintenance Manager
Donald W. Todd, Project Manager

C: John Hieftje, Mayor
Christopher S. Easthope, Ward 5 Councillor
Wendy A. Woods, Ward 5 Councillor
Ronald A. Olson, Interim City Administrator
Susan Pollay, Associate City Administrator
Homayoon Pirooz, P.E., Deputy Director, Chief Engineer

CITY OF ANN ARBOR MICHIGAN

Public Services Department




226
528
526
524
522
518
544
548
554
558
S FIFTH AVE
PACKARD
306-308
535
539
545
549
303
309
MADISON
N

ACOUSTICS BY DESIGN

March 31, 2010

Frank Richard Jacobson
Marianne Zorza
538 S. Fifth Avenue
Ann Arbor, MI 48104

Re: The Moravian PUD
201, 211, and 215 East Madison Street; 554 and 558 South Fifth Avenue; and 547, 551, and 553 South Fourth Avenue | Ann Arbor, Michigan
Acoustical Review Report

REPORT:

Executive Summary

Acoustics By Design, Inc. has undertaken an acoustical review of the proposed Moravian PUD referred to above. The proposed development significantly increases the density of the residential and commercial use of the property and results in the potential for significant increases in the ambient noise levels for the adjacent residential property owners. In particular, it appears that this proposed development would result in a significant shift in the acoustical environment of the nearby residents due to, but not limited to, the following multi-family/commercial issues: residential density increase, allowed commercial uses, vehicular volume increases (both on property and the adjacent residential streets), aggregate parking issues, emergency generator, mechanical ventilation, and the location of the proposed outdoor amenity spaces.

Of particular note for potential noise issues are the top floor open terraces that will be magnets for parties and amplified music. We recommend that these terraces be relocated or redesigned to minimize the impact on the adjacent residential neighbors, and that no amplified music be allowed.

The City of Ann Arbor has an enforceable Noise Ordinance that addresses many of these potential noise issues. However, the current project plans do not indicate that any special considerations have been incorporated to address potential noise issues. We recommend that acoustical screening be included in the building plans.

Introduction

As requested, Acoustics By Design, Inc. has undertaken an acoustical review of the proposed Moravian PUD referenced above. We have reviewed numerous documents, including drawings, the Ann Arbor Noise Ordinance, and Planning and Development Services Staff Report. Based on our review, it appears that this proposed development would result in a significant shift in the acoustical environment of the nearby residents due to, but not limited to, the following multi-family/commercial issues: residential density increase, allowed commercial uses, vehicular volume increases (both on property and the adjacent residential streets), aggregate parking issues, emergency generator, mechanical ventilation, and the location of the proposed outdoor amenity spaces.

Ann Arbor Noise Ordinance

It is important to note that the City of Ann Arbor has a noise ordinance **(Chapter 119 NOISE)** that governs the generation of noise from a site as it impacts on adjacent properties. Relevant sections include, but are not limited to:

Section 9:362. General prohibition.

It shall be unlawful for any person to create, assist in creating, permit, continue or permit the continuance of any unreasonably loud, disturbing, unusual or unnecessary noise which annoys, disturbs, injures, or endangers the comfort, repose, health, peace or safety of others within the limits of the City of Ann Arbor.

9:363. Specific prohibitions.

The following activities are prohibited if they produce clearly audible sound beyond the property line of the property on which they are conducted:
(1) The operation, between 10:00 p.m. and 7:00 a.m., of power tools or equipment.
(4) The operation or playing between 10:00 p.m. and 7:00 a.m. of any radio, television, phonograph, drum or musical instrument.
(6) The operation or use between 10:00 p.m. and 7:00 a.m. of any loudspeaker, sound amplifier, public address system or similar device used to amplify sounds.
(7) The creation of a loud, unnecessary noise in connection with the loading or unloading of any vehicle or the opening and closing or destruction of bales, boxes, crates, or other containers.

The prohibitions of this section apply even if the sound level produced by a prohibited activity does not exceed the applicable level specified in section 9:364.

9:364. Maximum permissible sound levels.

No person shall conduct or permit any activity that produces a dB(A) beyond his property line exceeding the levels specified in Table I.

For the purposes of this report, Table I is summarized as 61 dBA from 7:00 a.m. to 10:00 p.m., and 55 dBA from 10:00 p.m. to 7:00 a.m.

It is important to note that the Ann Arbor Noise Ordinance includes several provisions to protect the rights of adjacent property owners. First, there is a general nuisance portion of the ordinance that is very broad. Secondly, there are quantitative limits on the maximum allowable noise levels. Finally, even if these noise levels are not exceeded, 9:363 explicitly states that no amplified noise may be audible at the receiving property line between 10pm and 7am.

Sound Level Basics

When dealing with sound, there is the physical quantity which is expressed as sound level and the perceived level which is expressed as loudness. Sound level is measured in units called decibels (abbreviated dB). Decibels are power ratios and are logarithmic quantities. Audible sound occurs over a wide frequency range, from approximately 20 Hertz (Hz) to 20,000 Hz. Human hearing does not respond equally to sounds at different frequencies (or pitch). Lower frequency sounds that are equally as "loud" have a much higher decibel level than high frequency sounds. To accommodate this variation in frequency sensitivity of human hearing, a frequency weighting can be applied to sound level measurements. When the weighting is applied, the resulting sound level measurements are said to be "A-weighted" and the decibel level is abbreviated dBA.

When the sound energy doubles, the decibel value increases by 3 dB. Human hearing is also logarithmic and when the perceived loudness of a sound is "doubled", the corresponding sound level increases by approximately 10 dBA. In fact, a qualified listener cannot detect a change in sound level of 1 dBA. The average listener starts to detect a change in level at 3 dBA to 4 dBA, and a clearly noticeable change occurs at 5 dBA.

The following table lists some commonly encountered noises, their A-weighted level, and associated subjective evaluations:

Table 1: Typical Noise Levels and Subjective Evaluation

Level (dBA)	Noise Source	Subjective Evaluation
130	Threshold of Pain	-
120	Jet Engines	DEAFENING
110	Loud Rock Band	-
100	Loud Horn	-
90	8 hour Industrial Noise Exposure Limit	VERY LOUD
80	Street Corner in Metropolitan Downtown	-
70	25 feet from Freeway	LOUD
60	100 feet from Freeway	-
55	200 feet from Freeway	-
50	Average Open Office	MODERATE
40	Soft Background Music	-
30	Average Residence - No Activity	QUIET
20	Whisper	-
10	Human Breathing	VERY QUIET
0	Threshold of Audibility	-

While the decibel or A-weighted decibel are the basic units used for noise measurement, other indices are also used. One index known as the equivalent sound level, abbreviated as Leq, is commonly used to indicate the average sound level over a period of time. Leq represents the steady level of sound which would contain the same amount of sound energy as does the actual time varying sound level. Although it is an average, it is strongly influenced by the loudest events occurring during the time period because these loudest events contain most of the sound energy.

Potential Noise Issues

For this particular development, we note several potential noise issues that could significantly negatively impact adjacent residential property owners and should be addressed:

1. Most obviously, the overall density of this proposed PUD significantly changes the existing residential environment. According to the February 12, 2010, Supplemental Regulations planning staff report, the PUD would allow for up to 92 units. This represent a significant increase over the 19 units currently dispersed among 8 buildings.
2. The mechanical system for the building will likely result in rooftop units. With new buildings, the code requirements for fresh air ventilation means that fans will run at any time of day or night. Of course, these units would need to be designed to meet the Noise Ordinance. However, due to their elevated location, it is possible for them to impact a greater number of adjacent residential properties. The Supplemental Regulations (noted above) refer to visual screening. However, acoustical screening should also be considered.
3. Parking ventilation systems often result in fans that are very noisy at adjacent property lines. These mechanical units must be designed to meet the Noise Ordinance. The Supplemental Regulations refer to visual screening; acoustical screening should also be considered.
4. The roof top terraces face the adjacent residential neighbors and are, of course, magnets for nighttime parties and loud amplified music. The current design shows no accommodation for noise control efforts. Of course, any parties would need to meet the Ann Arbor Noise Ordinance. However, due to their elevated location, it is possible for the human activity noise and amplified music to impact a greater number of adjacent residential properties. Acoustical screening should be considered, and no amplified music should be allowed on these terraces or in the pocket park areas.
5. The street level parking garage results in a significant increase in vehicular traffic noise. The operation of the vehicles must be designed to meet the Noise Ordinance. Specifically, Section 9:363:1 states that no vehicle equipment noise should be audible at the adjacent property line during nighttime hours. We note that the west entry to parking garage is very close to the adjacent residential property line. The Supplemental Regulations refer to visual screening; acoustical screening should also be considered.
6. The current plans show that there is an emergency generator on the north side of the property. Although emergency use of the generator may be declared an "emergency" situation, the regular monthly testing of the generator is not. It is common to test generators early in the morning. The testing of the generator set must be designed to meet the Noise Ordinance. Specifically, Section 9:363:1 states that no mechanical noise should be audible at the adjacent property line during nighttime hours. In addition, the generator testing should not exceed a level of 61 dBA during daytime hours.
7. The service drive on the northwest corner of the property must also be designed to meet the Noise Ordinance. Specifically, Section 9:363:7 states that the creation of loud, unnecessary noise in connection with the loading or unloading of any vehicle or the opening and closing or destruction of bales, boxes, crates, or other containers is prohibited at any time of day or night. Acoustical mitigation should be considered at this location.

Corporate Qualifications

Acoustics By Design is an engineering consulting firm providing acoustical consulting, audiovisual systems design, and theatrical lighting design services. The market segments served include residential, worship, institutional, primary, secondary, and higher educational facilities, research, medical, government and industrial facilities.

Qualifications of the Engineer

Professional Memberships:

- State of Michigan, Professional Engineer, License #6201048874
- Association of Professional Engineers of British Columbia, Professional Engineer
- Acoustical Society of America, Member
- Institute of Noise Control Engineering, Board Certified Member
- Institute of Noise Control Engineering, Building Acoustics Technical Chair
- Transportation Research Board A1F04, Friend
- American Society of Heating, Refrigeration and Air-Conditioning Engineers, Member
- National Council of Acoustical Consultants, Member and Board of Directors

Education:

- Master of Science in Engineering (Mechanical Engineering, Acoustics), Purdue University, West Lafayette, Indiana, 1991
- Bachelor of Science in Engineering with Honors (Mechanical Engineering), Calvin College, Grand Rapids, Michigan, 1989

If you have any questions, please call.

Sincerely,

ACOUSTICS BY DESIGN, INC.
Per:

Kenric D. Van Wyk, PE, LEED AP, INCE.Bd.Cert.
President

PROFESSIONAL ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS / LAND SURVEYORS / LANDSCAPE ARCHITECTS
2430 Rochester Court, Suite 100, Troy, MI 48083-1872
P : (248) 689-9090 www.peainc.com F : (248) 689-1044

James P. Butler, PE
President
David E. Cole, PS
Vice President
Wendy E. Graham, PE
Vice President
John A. Harvey, PE, LEED AP
Vice President
David N. Hunter, PE, PS, LEED AP
Vice President

April 1, 2010

Mr. Frank Richard Jacobson
Ms. Marianne Zorza
538 S. 5th Avenue
Ann Arbor, Michigan 48104

RE: Proposed Moravian Apartments
Traffic Impact Study Review

Dear Mr. Jacobson and Ms. Zorza:

Professional Engineering Associates, Inc. (PEA) has reviewed the materials you provided with regard to the proposed Moravian Apartment Complex. The subject site is located on the north side of Madison Street between 4th Avenue and 5th Avenue in Ann Arbor, Michigan. Currently the site is occupied by 19 dwelling units with access to Madison Street, 4th Avenue, and 5th Avenue. The Draft Regulations for the Moravian PUD indicate a maximum allowable density of 92 dwelling units for the site, and the currently proposed development plans include 62 dwelling units. The proposed development would have access via one driveway to 4th Avenue and one driveway to 5th Avenue.

The purpose of this review was to evaluate the Traffic Impact Study (TIS) completed in July, 2008 by Midwestern Consulting, LLC, the site plans completed by Midwestern and Neumann Smith, proposed site access, and other traffic-related impacts of the proposed development. PEA offers the following comments as a result of our review:

1. Currently, there are no daily traffic volumes available for the streets which the site is proposed to have access to. Accepted engineering practice indicates that daily traffic volume can be approximated as 10 times the PM peak hour volume. Therefore, PEA estimated the number of vehicles per day (vpd) on 4th Avenue and 5th Avenue based on the existing PM peak hour traffic volumes cited in the 2008 TIS, as follows:

   4th Avenue – 1,740 vpd
   5th Avenue – 4,700 vpd

2. The daily traffic volumes were estimated based on turning movement counts collected in July, 2008. During the summer months, it is possible that peak hour turning movement volumes would be significantly less than during the months in which the University of Michigan is in full session. For this reason, the TIS should have used seasonal traffic

volume variation data specific to Ann Arbor, not the state of Michigan; however, the City traffic engineer has indicated that the daily traffic volumes indicated above seem reasonable despite seasonal variations.

3. Based on the historical crash data that was provided, 5th Avenue has experienced an average of 3.8 crashes per year, from 2003 to 2007. Fourth (4th) Avenue has experienced an average of 2.0 crashes per year, from 2005 to 2009. The difference in average crashes per year is likely due to one-way versus two-way operation and the difference in average daily traffic volumes. The crash data referenced include crashes at the adjacent roadway links and intersections.

4. The number of trips that would be generated by the proposed development as compared to the existing number of units and the maximum density allowed in the draft PUD regulations was calculated based on the rates and equations published by the Institute of Transportation Engineers (ITE) in *Trip Generation, 8th Edition.* The trip generation forecasts are summarized in the attached Table 1. The trip generation forecast indicates that a TIS would be required for the proposed development, as the number of PM peak hour trips (52) exceeds the Ordinance threshold to require a TIS (50 vehicle trips per peak hour).

5. The trip generation forecasts were based on the number of dwelling units for each scenario. Although the ITE does not specify the number of bedrooms for each data point, the dataset is used to estimate the number of trips that would be generated for apartment uses with various sizes, price ranges, and locations. It is important to note that the trip generation forecast is an estimate, not an exact solution. The actual number of trips generated by a development may vary as compared to the forecast, but standard practice indicates the use of forecast volumes to be acceptable to engineer site access and off-site traffic improvements.

6. The proposed and allowable unit densities are not unusual or outside of the range of data published by ITE and used for the purpose of calculating site trip generation. Therefore, even with some change in the number of bedrooms per unit, the methods used for estimating trip generation would not change for this site.

7. The 2008 TIS assigned the site-generated traffic volumes to the driveways on 4th and 5th Avenues based on a 50-50% split. The current site plan indicates that the driveway to 4th Avenue would provide access to 66 parking spaces, and the driveway to 5th Avenue provides access to 24 parking spaces. The proposed access to available parking for a residential use would therefore indicate 73% of site-generated traffic should be assigned to 4th Avenue, and 27% to 5th Avenue.

8. PEA understands that on-street parking used to be permitted on 5th Avenue adjacent to the site, but has been removed due to sight distance concerns. The adequacy of sight distance for the proposed driveway to 5th Avenue was not evaluated (but should be) for this project. This evaluation should be completed consistent with the guidelines published in the City Ordinance.

Specific to the 2008 TIS, PEA offers the following comments:

1. The TIS should be properly scoped with engineers from the City of Ann Arbor. This will ensure that existing concerns are evaluated, analyses are completed in accordance with accepted practice, and all study assumptions are agreed upon. Additionally, this will ensure that all Ordinance requirements for a TIS are addressed. This process was not followed.

2. An updated TIS should have been completed consistent with the proposed development and associated site plans.

We hope that this review addresses your concerns and current needs regarding this proposed project. If you have any questions, please feel free to contact our office.

Sincerely,

Michael J. Labadie, P.E.
Senior Project Manager

Attached: Table 1. Site Trip Generation

TJL:mjl

L:\2010Proj\Transportation\2010-060-00T Maravian TIS Review\Admin\Letters\The Moravian TIS Review Comments FINAL 4.5.10.doc

Table 1
Site Trip Generation [1]

Land Use	ITE Code	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Traffic
Existing Apartments	220	19	Dwellings	2	8	10	8	4	12	126
Maximum Allowable Apartments [2]	220	92	Dwellings	10	39	49	44	24	68	681
Currently Proposed Apartments	220	62	Dwellings	7	27	34	34	18	52	499

1. Trip generation based on the Institute of Transportation Engineers' Trip Generation, 8th Edition and Trip Generation Handbook, 2nd Edition
2. Per the Moravian PUD Supplemental Regulations, Draft dated February 12, 2010.