PLAN COMMISSION

INTER-DEPARTMENTAL REVIEW COMMITTEE REPORT

543 E. TAYLOR ROAD (FORMER FAIRWOOD SCHOOL)

February 6, 2017

Title

PC 17-03

Property Owner

Elementary District 44
150 W. Madison Avenue
Lombard, IL 60148

Petitioner – Developer

Lombard Park District
227 W. Parkside Avenue
Lombard, IL 60148

Property Location

543 E. Taylor Road

Zoning

CR – Conservation/Recreation

Existing Land Use

Vacant (demo in progress)

Comprehensive Plan

Public and Institutional

Approval Sought

Approval of a conditional use for a public recreation facility in the CR District, and approval of companion variations for building height and open space.

Prepared By

Anna Papke, AICP
Senior Planner

LOCATION MAP

DESCRIPTION

The petitioner, the Lombard Park District, proposes to develop the subject property with a recreation center. The building will be between 33,292 and 38,100 square feet in size, and will include indoor basketball courts and fitness amenities. On-site parking will be provided.

This property was previously the site of Fairwood School. The property is currently owned by Elementary District 44. Elementary school operations ceased on the site many years ago, and it has more recently been used as a Park District recreation center and a daycare (Pioneer Daycare). The Park District has entered into a contract to purchase the property from District 44 in order to develop a new recreation center. Demolition of the school building is ongoing.

The petitioner has presented plans that include a base floor plan and an alternative floor plan. The alternative floor plan results in a slightly larger building and will be constructed if funding allows. For purposes of this report, Community Development staff has analyzed the petition assuming the larger of the possible build-outs.

EXISTING CONDITIONS

The property was previously developed with an elementary school and surface parking lot. The school building is currently under demolition.

Project Details

Parcel Size:	5.61 acres
Development Description:	Recreation center to include basketball courts and fitness facilities

Requested Actions

1. Approve a conditional use for a public recreational facility in the CR District;
2. Approve a variation to allow a building height of 36' where a maximum of 30' is permitted; and
3. Approve a variation to allow a development with less than 75% open space.

Submittals

1. Petition for public hearing, dated December 12, 2016;
2. Response to standards for a conditional use and variations, dated January 24, 2017;
3. Plat of survey, prepared by Webster, McGrath & Ahlberg Ltd., dated July 7, 2016;
4. Paving and layout plan, prepared by FGM Architects, dated December 9, 2016;
5. Water main loop and proposed utility easement site plan, prepared by FGM Architects, dated February 6, 2017;
6. Floor plans, prepared by FGM Architects, dated December 9, 2016;
7. Landscape plans, prepared by FGM Architects, dated December 9, 2016; and

APPROVAL(S) REQUIRED

1. Approve a conditional use pursuant to Section 155.404(C)(7) of the Lombard Zoning Ordinance for a public recreational facility;
2. Approve a variation from Section 155.404(G) to allow a building height of thirty-six feet (36') where a maximum of thirty feet (30') is permitted; and
3. Approve a variation from Section 155.404(H) of the Lombard Zoning Ordinance to allow a development with less than 75% open space.

INTER-DEPARTMENTAL REVIEW

Building Division:

The Building Division has no comments on this petition. Should the petition be approved, additional comments may be forthcoming during permit review.

Fire Department:

The Fire Department has the following comment on this petition. Red lines related to these comments have previously been provided to the petitioner. Should the petition be approved, additional comments may be forthcoming during permit review.

1. Water room #115 located at the southwest corner of the structure. The Fire Department connection will be located immediately outside of this room on the west exterior wall;

2. Fire Department access with equipment and manpower will be necessary to this location;

3. A clear path from the parking area to the fire department connection is required;

4. Redistribution of the accessible parking stalls will be necessary to maintain an 8 foot clear width area into the parking lot to maintain immediate FD access;

5. Protect the designated access in the paved area with bollards or similar equipment to prevent vehicle parking;

Submittals (cont.)

8. Exterior rendering, prepared by FGM Architects, dated December 9, 2016.

6. The private lane leading up to the northwest corner of the structure will be required to be engineered to support the largest fire department apparatus.

Private Engineering Services (PES):

Private Engineer Services has the following comments regarding the proposed project. These comments were previously transmitted to the petitioner during preliminary design discussions. Should the petition be approved, additional comments may be forthcoming during permit review.

1. Extend sidewalk on Taylor to the new driveway location.

2. Questions about curb depressions and how that water flow will be directed into the required detention facility.

3. The sidewalk on Wilson near the western property line should have a horizontal shift of 10:1, as shown it doesn't meet this requirement.

4. Curb returns should have a maximum of 15-ft radius, they show 20-ft and 30-ft.

5. The detention basin must meet ROW setback requirements.

6. The detention basin must meet the 4:1 maximum side slope requirement, as the property is adjacent to residential.

7. Sidewalk fronting the ADA parking stalls should be a minimum of 7-ft wide.

8. The pavement sections shown are more than required by Village code, if they would like to potentially save some money.

9. Drive aisles should be the heavy duty pavement section, not the automobile cross section.

10. Parking lot dimensions shown should be based on the face of curb. If dimensioned from the back of curb, they need to add the thickness of the curb.

11. Additional comments may be forthcoming once more detailed information is available.

Public Works:
The Department of Public Works reviewed the submitted plans and offers the following comment. Should the petition be approved, additional comments may be forthcoming during permit review.

1. The proposed location of the drop-off lanes on Sheet C-1.0.2 should be studied to determine the impact of vehicles backing up onto Wilson Avenue during peak drop off times. Parents will likely idle/park there until their kids exit en masse from games, coinciding with parents dropping off kids for the next games. At a minimum it is suggested that these lanes be posted as a "no standing" zone.

2. Trees #3 and #4 planned for removal on Sheet L 1.01 shall be replaced on a 1:1 ratio per Section 99.40 of the Lombard Municipal Code.

3. The existing driveway entrance on Wilson Avenue shall be removed and replaced with B6:12 curb & gutter and parkway grass.

4. The petitioner shall loop the dead-end water main on Taylor Street through the site to the existing 8-in water main in the north side of Wilson Avenue. The proposed water main shall be 8-in diameter per Section 154.404 of the Lombard Municipal Code.

5. The petitioner shall grant an easement through the subject property for the Village to own and maintain the required water main extension and any fire hydrant, upon completion and acceptance by the Village Board.

6. A private streetlight should be placed immediately inside the property at the east end of the Taylor Street right-of-way to illuminate the entrance.

7. It is anticipated that the proposed sanitary service to the existing 8-in sewer in the south ROW of Wilson Avenue will need to be installed inside a casing pipe in order to pass over the two water mains.

8. Regarding the proposed water main and public utility easement: The alignment looks fine to PW. The easement will just need to be bumped out for any hydrant within the site (within 75' of the Fire Department connection per Village Spec 400.13(A)(1)) and also extended at the north end to include the existing water main and sanitary sewer to the manhole in the LPD's property, east of the Taylor Road ROW.

9. Additional comments will be provided upon receipt of the grading and utilities plans for the building permit.

Planning Services Division:
The Planning Services Division notes the following:

1. *Surrounding Zoning & Land Use Compatibility*

	Zoning	Land Use
North	CRPD	Madison Meadow Park
South	R2	Single-family neighborhood (across Wilson Avenue)
East	CRPD	Madison Meadow Park
West	R2	Single-family neighborhood

The subject property is located in an established single-family residential neighborhood, adjacent to Madison Meadow Park. As previously mentioned, the subject property has historically been the site of the Fairwood Elementary School. Previous temporary uses include a recreation facility and a daycare. Redevelopment of the site into a new recreation center for the Park District is consistent with the historical use of the site, and compatible with the wider neighborhood.

Staff notes that there are currently no stormwater facilities on the subject property. At present, stormwater from the subject property is uncontrolled and runs south and east off the site toward the surrounding neighborhoods. Upon redevelopment, the site will be brought into compliance with the Village's stormwater regulations. To this end, the proposed development will include a stormwater detention facility to control the flow of water from the subject property into adjacent areas.

2. *Comprehensive Plan Compatibility*

The Comprehensive Plan designates this property as suitable for public and institutional uses. A Park District-operated recreation center is consistent with this designation.

3. *Zoning Ordinance Compatibility*

The underlying zoning of the subject property is CR, Conservation Recreation District. With the exception of the requested variations discussed in Section 5 of this report, the proposed development is consistent with the Lombard Zoning Ordinance. Staff notes the following with respect to this petition's consistency with the Zoning Ordinance:

- The proposed use, a recreation center, is a conditional use in the CR District. Staff finds the standards for a conditional use have been met. See Section 4 of this report for more discussion.

- Parking considerations:
  - The Zoning Ordinance requires four parking spaces per 1,000 square feet of gross floor area for recreation centers. The petitioner proposes to build a building with a maximum gross floor area of 38,100 square feet. The Zoning Ordinance provides that portions of

buildings devoted to storage and mechanical uses are not included in square footage for purposes of parking calculations. Removing these areas, square footage of the larger potential build-out will be 36,100 square feet, requiring 145 parking spaces.

- The site plan shows 143 parking spaces will be provided. This will be adequate to address the smaller of the two build-out options. If the petitioner elects to build the larger alternative, an additional two parking spaces will be needed. Staff notes that the petitioner could easily add these two spaces to the row of parking provided north of the proposed building. The petitioner has agreed to provide these two spaces in the event that the Park District builds the larger alternative.

- Petitioner will need to provide a parking lot lighting plan at time of permitting. Staff will review to ensure parking lot lighting meets code requirements and does not negatively impact neighboring properties. Staff notes that the parking lot for the recreation center will be set back 30 feet from the west property line, which should offer an additional buffer between the parking lot and adjacent properties (the former Fairwood School parking lot was located at the west property line).

- The landscape plan provided by the petitioner lacks foundation landscaping along the north and northeast side of the building, which can be included in an updated plan at time of permitting. Otherwise, the landscape plan meets the requirements in the Zoning Ordinance.

4. *Request for Conditional Use Approval*

A. *Pursuant to Section155.404(C)(7) of the Lombard Zoning Ordinance, approve a conditional use for a public recreational facility in the CR District.*

The petitioner proposes to construct a public recreation facility (recreation center) on the site. Public recreation facilities are conditional uses in the CR District. In analyzing the site plan and details provided regarding the intended use and programming of the recreation center, staff finds that the development will not have any injurious effect on existing or future development in the neighborhood. Staff finds the conditional use request is consistent with the standards for conditional uses in the Village Zoning Ordinance (Section 155.103(F)(8)).

5. *Requests for Variations*

A. *Pursuant to Section 155.404(G) of the Lombard Zoning Ordinance, approve a variation to allow a building height of thirty-six feet (36') where a maximum of thirty feet (30') is permitted.*

The proposed recreation center will have a total building height of 36 feet. The permitted maximum building height in the CR District is 30 feet. The petitioner states that the building and site have been designed to minimize the amount of impervious surface on the site in order to reduce drainage issues, resulting in a taller building than might otherwise have been designed. The

building has also been designed to provide adequate height and square footage for the activities the Park District plans to offer on the site, such as basketball and volleyball. These considerations have resulted in a building that exceeds the height limit.

Upon review of the architectural and site plans, staff finds that the additional height will not substantially alter the character of the development. The building will be set back 138 feet from Wilson Avenue, and over 187 feet from the west property line, where the subject property abuts single-family homes. The building will have a setback of nearly 90 feet from the adjacent Madison Meadow Park. These deep setbacks will minimize the impact that the additional six feet in building height will have upon neighboring properties or pedestrians on Wilson Avenue. The petitioner notes that the building has been designed with multiple rooflines at varying levels and situated at an angle on the site in order to minimize visual impact of the building on neighboring properties. Staff supports this variance request.

B. *Pursuant to Section 155.404(H) of the Lombard Zoning Ordinance, approve a variation to allow a development with less than 75% open space.*

Recreational centers in the CR District are required to maintain a minimum of 75% of the lot area as open space. The development as proposed will maintain 64% of the lot area in open space (including the possible addition of two extra parking spaces, as discussed above). The petitioner is attempting to optimize this site for use as a recreation facility, and points out that the development is balancing the need to provide Park District services and associated parking with an open space requirement for the CR District that varies depending on the particular use of the property.

Staff notes that the recreation center is immediately adjacent to Madison Meadow Park, a 75-plus acre park of which the majority is open space. The park and the recreation center will effectively operate as one development for the purpose of providing open space. In fact, the Zoning Ordinance permits other types of development (educational institutions and cultural facilities) in the CR District that are adjacent to a park to have a minimum of 35% lot area as open space. The proposed recreation center is functionally similar to a school or a cultural institution for purposes of maintaining open space. Staff supports this variance request.

6. *Traffic Study*

The Village retained KLOA, Inc., to conduct a traffic impact analysis on the proposed recreation center. KLOA conducted traffic counts at several intersections surrounding the subject property and projected how the new recreation center would affect traffic flow at these intersections. The KLOA traffic study concluded the following:

- Traffic generated by the proposed recreation center will be similar to the traffic that the daycare generated when it operated in the former school building.

- Intersections in the vicinity of the recreation center are currently operating at a very good level of service, and will continue to do so once the recreation center is open.

- Traffic heading to the recreation center will be able to enter the site via two proposed driveways, with minimal effect on traffic flow.

- The pick-up/drop-off lanes within the proposed parking lot will provide space for traffic to queue on-site as opposed to in Village rights-of-way. KLOA suggests several steps the Park District could take to manage vehicle queuing on the site in the event that multiple events begin or end at the same time.

Based on the KLOA report, staff finds that the proposed recreation center will have a minimal impact on traffic circulation in the vicinity of the subject property.

SITE HISTORY (NON SIGN-RELATED)

PC 00-43: Conditional use for daycare and private school

FINDINGS & RECOMMENDATIONS

Based on the above findings, the Inter-Departmental Review Committee has reviewed the petition and finds that it meets the standards for a conditional use and variations, as established by the Lombard Zoning Ordinance. As such, the Inter-Departmental Review Committee recommends that the Plan Commission make the following motion recommending **approval** of this petition:

Based on the submitted petition and testimony presented, the proposed conditional use and variations **comply** with the standards required by the Village of Lombard Zoning Ordinance; and, therefore, I move that the Plan Commission accept the findings of the Inter-Departmental Review Committee Report as the findings of the Plan Commission and I recommend to the Corporate Authorities **approval** of PC 17-03, subject to the following conditions:

1. That the approvals for a conditional use permit for a recreation center, a variation to allow a building height of 36 feet, and a variation to allow a development with 64% of the lot area maintained as open space, are valid only for the subject property at 543 E. Taylor Road;

2. That the petitioner shall develop the site in accordance with the following plans submitted as part of this petition and referenced in the Inter-Departmental Review Committee Report, except as they may be changed to conform to Village Code:
    a. Paving and layout plan, prepared by FGM Architects, dated December 9, 2016;

b. Water main loop and proposed utility easement site plan, prepared by FGM Architects, dated February 6, 2017;
c. Floor plans, prepared by FGM Architects, dated December 9, 2016;
d. Landscape plans, prepared by FGM Architects, dated December 9, 2016, to be amended to address foundation landscaping as noted in this report; and
e. Exterior rendering, prepared by FGM Architects, dated December 9, 2016;

3. That the petitioner shall submit a lighting plan during permit review;

4. That the petitioner shall provide 145 parking spaces on the site if the larger alternative is constructed;

5. That the petitioner shall provide a public utility easement for the water main to be constructed on the site, subject to the approval of the Public Works Department and the Village Board;

6. That the petitioner shall satisfactorily address all comments noted within the Inter-Departmental Review Committee Report; and

7. Pursuant to the Zoning Ordinance, the project construction shall commence within one (1) year from the date of approval of the ordinance, or this approval for a conditional use and building height and open space variations shall be come null and void unless a time extension has been granted by the Village Board.

William J. Heniff, AICP
Director of Community Development

EXHIBIT
- KLOA report

c. Petitioner

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9575 West Higgins Road, Suite 400 | Rosemont, Illinois 60018
p: 847-518-9990 | f: 847-518-9987

MEMORANDUM TO: William Heniff
Village of Lombard

FROM: Luay Aboona, PE
Javier Millan

DATE: January 24, 2017

SUBJECT: Site Traffic Impact Analysis
Proposed Recreational Center
Lombard, Illinois

This memorandum summarizes the results of a site traffic impact analysis conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed redevelopment of the former Fairwood School site located on the north side of Wilson Avenue just east of Fairfield Avenue in Lombard, Illinois. The Lombard Park District is proposing to develop the site with an approximate 33,292 to 38,100 square foot recreational center. As proposed the recreational center will primarily be used for athletic and fitness programs.

This study was conducted to assess the impact that the proposed recreational center will have on traffic conditions in the area and to recommend any roadway, loading, and circulation improvements and/or modifications necessary to accommodate the site-generated traffic as well as alleviating any existing deficiencies, if any.

The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development generated traffic
- Vehicle trip generation for the proposed development
- Future traffic conditions, including access to the site
- Traffic analyses for the weekday morning, evening and Saturday midday peak hours for background and future conditions
- Recommendations with respect to site access and the adjacent roadway network

Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on a field visit conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics pf the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

As indicated previously, the site is located on the north side of Wilson Avenue approximately 250 feet east of Fairfield Avenue. Land uses in the area primarily consist of single family homes to the west and south and the Madison Meadow Park to the north and east. **Figure 1** shows an aerial of the site location.

Existing Roadway System Characteristics

The principal roadways that provide access to the area are under the jurisdiction of the Village of Lombard and are described in the following paragraphs.

Wilson Avenue is an east-west collector road that provides one lane in each direction with on-street parking prohibited on both sides of the road. No exclusive turn lanes are provided at its all-way stop control intersection with Fairfield Avenue or at its "T" intersection with Edgewood Avenue. A high visibility crosswalk is provided on the westbound approach of Wilson Avenue at its intersection with Edgewood Avenue. Wilson Avenue has a posted speed limit of 30 mph.

Fairfield Avenue is a north-south residential street that provides one lane in each direction with on-street parking allowed on both sides of the road. No exclusive turn lanes are provided at its all-way stop control intersections with Wilson Avenue and Taylor Road. Fairfield Avenue has a posted speed limit of 25 mph.

Edgewood Avenue is a north-south residential street that provides one lane in each direction with on-street parking allowed on both sides of the road. At its unsignalized intersection with Wilson Avenue, Edgewood Avenue is under stop sign control and provides a combined left/right-turn lane.

Taylor Road is an east-west residential street that dead ends on the east at the parking lot serving the Madison Meadow Park. No exclusive turn lanes are provided at its all-way stop control intersection with Fairfield Avenue. On-street parking is allowed on both sides of the road west of Fairfield Avenue. East of Fairfield Avenue, on-street parking is only allowed on the south side.

Existing Area Traffic Counts

Manual turning movement vehicle, pedestrian, and bicycle traffic counts were conducted during the weekday morning (6:30 to 8:30 A.M.) and the evening (4:00 to 6:00 P.M.) peak periods on Thursday, January 5, 2017 and on Saturday, January 7, 2017 during the midday peak period (9:00 to 11:00 A.M.) at the following intersections:

1. Wilson Avenue with Fairfield Avenue
2. Wilson Avenue with Edgewood Avenue
3. Fairfield Avenue with Taylor Road

These time periods were chosen to coincide with the peak periods of operation of the proposed recreational center.

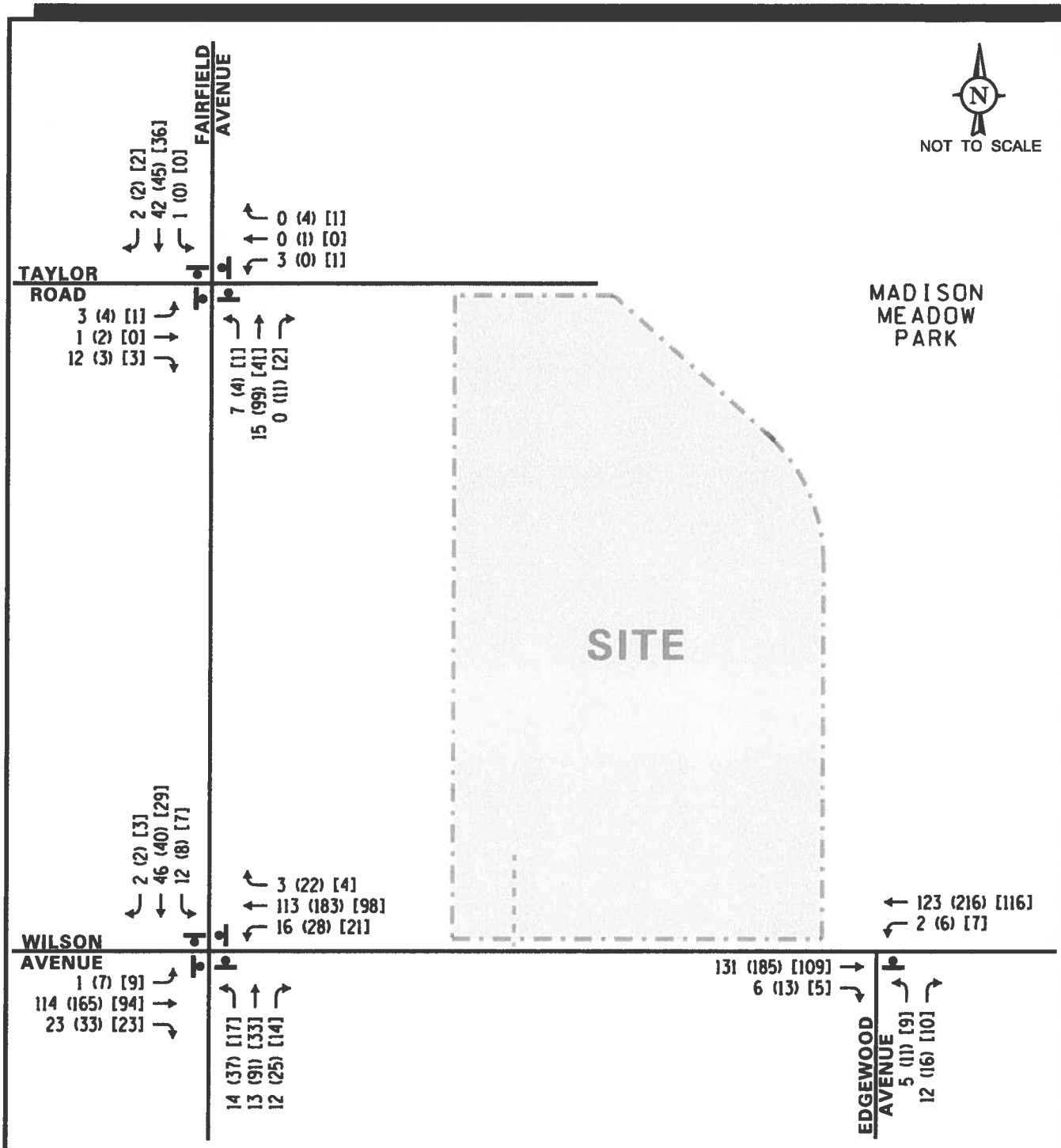
Aerial View of Site Location

Figure 1

From the manual turning movement count data, it was determined that the weekday morning peak hour generally occurs between 7:30 and 8:30 A.M., the weekday evening peak hour generally occurs between 4:30 and 5:30P.M., and the Saturday midday peak hour generally occurs between 10:00 and 11:00 A.M. These three respective peak hours will be used for the traffic capacity analyses and are presented later in this report.

The existing peak hour vehicle traffic volumes are shown in **Figure 2**.

It should be noted that all of the schools in Lombard were in session when the counts were conducted. However, winter traffic volumes adjacent to a park facility typically tend to be lower than during the spring/summer months. In order, to ascertain how much lower traffic volumes were during winter, the Village of Lombard provided KLOA, Inc. with traffic counts along Wilson Avenue in the vicinity of the site. These traffic counts were conducted in April 2015. Based on a review of the traffic counts, traffic volumes on April were approximately 10 percent higher. In order to provide for a conservative analysis, KLOA, Inc. increased the existing traffic volumes by 20 percent to reflect the traffic that could be experience in the immediate area during the spring/summer months. **Figure 3** illustrates the existing expanded traffic volumes.



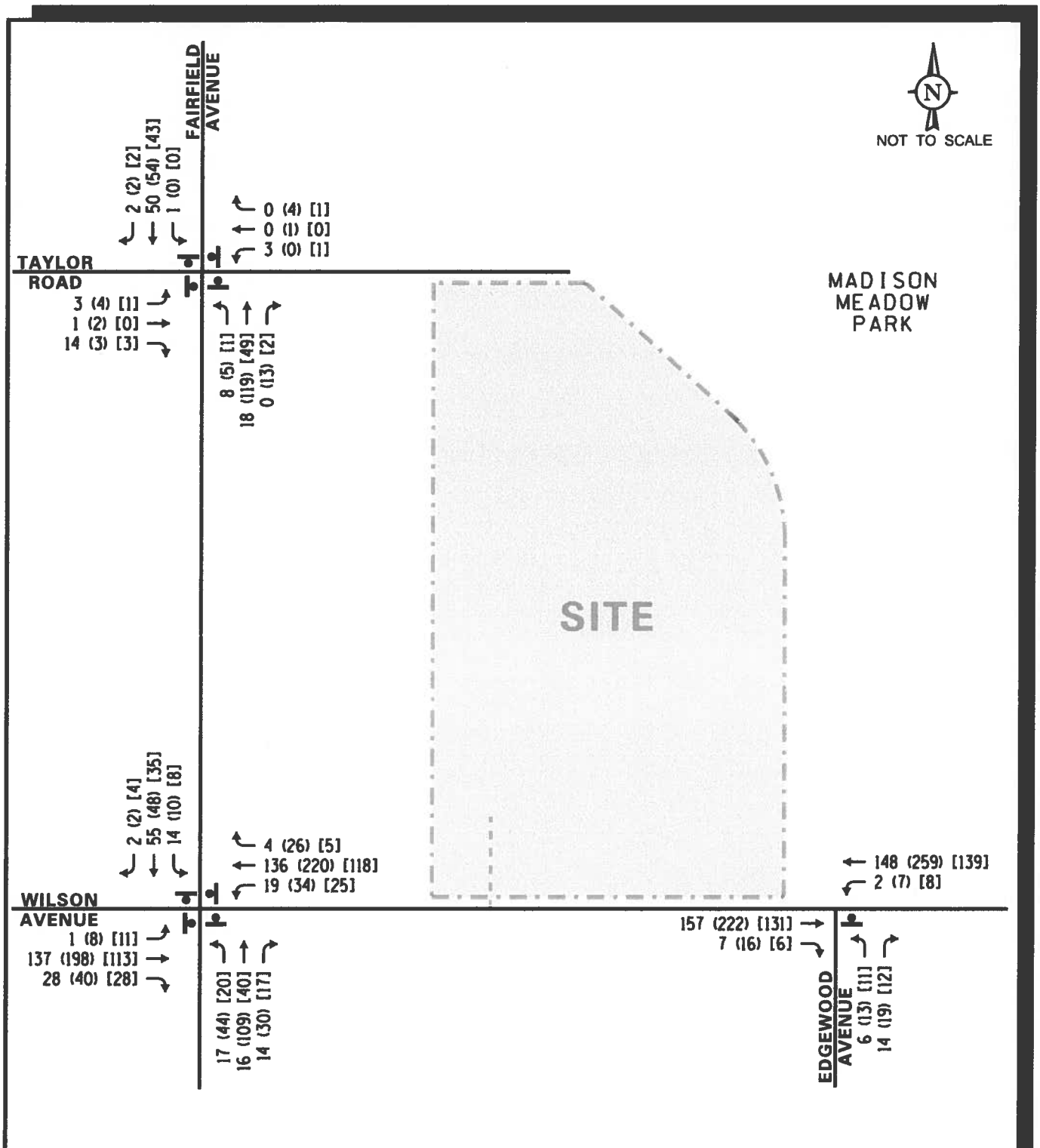
LEGEND

00 - AM PEAK HOUR (7:30-8:30 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

[00] - SATURDAY MIDDAY PEAK HOUR (10:00-11:00 AM)

PROJECT:	TITLE:	
Proposed Recreational Center Lombard, Illinois	Existing Traffic Volumes	KLOA Job No: 17-013 Figure: 2



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(00) - PM PEAK HOUR (4:30-5:30 PM)

[00] - SATURDAY MIDDAY PEAK HOUR (10:00-11:00 AM)

PROJECT:	TITLE:	KLOA
Proposed Recreational Center Lombard, Illinois	Existing Adjusted Traffic Volumes (Summer Months - 20% Growth)	Job No: 17-013
		Figure: 3

Traffic Characteristics of the Proposed Recreational Center

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

As previously indicated the proposed recreational center will be located on the site of the former Fairwood School. After the school ceased operation it was later operated as the Park District's recreation center from 1991 to 2000. After the year 2000 the school was occupied by the Pioneer Day Care Center with approximately 100 children.

The proposed plans call for an approximate 33,292 to 38,100 square foot recreational center building with one full ingress/egress access drive off Wilson Avenue and on Taylor Road via an existing connection. The access drive off Wilson Avenue will provide one inbound lane and two outbound lanes striped for an exclusive left-turn lane and an exclusive right-turn lane. Outbound movements will be under stop sign control.

Based on discussions with the Lombard Park District, below is a summary of their proposed operation.

- The proposed facility will be primarily used for athletic programs and fitness.
- Given it is an indoor recreational facility it will complement the existing outdoor park facilities allowing residents to play sports and/or exercise when there is inclement weather
- Typical operating hours are from 5:30 A.M. to 10:00 P.M. Monday through Friday and from 6:00 A.M. to 7:00 P.M. on weekends
- Peak periods of operation are typically from 6:30 to 8:00 A.M. and from 4:00 to 6:00 P.M. on weekdays and on weekends from 9:00 to 11:00 A.M.
- The first floor gymnasium will provide one large court and one small court (or one large additional court).
- The courts could be used for basketball, volleyball, pickleball, etc.
- Two multipurpose rooms will be located on the first floor that will be used for fitness classes.
- These classes could accommodate up to 20 people in each room.
- Average class size is 10 to 12 people.
- A daycare area will be provided on the first floor for residents that are utilizing the facility.
- The anticipated hours for the daycare area will be Monday through Friday from 9:00 A.M. to 12:00 P.M. and from 5:00 to 8:00 P.M. and on Saturdays from 9:00 A.M. to 12:00 P.M.
- The second floor will provide a three lane walking/running track and a fitness center area with cardiovascular and weight lifting equipment

It should be noted that although the gymnasium courts will be used year round, it is anticipated that it would be most heavily used from January to March for the youth basketball season.

Directional Distribution of Site Development Traffic

The directional distribution of how traffic will approach and depart the site was estimated based on a combination of the location, or areas, of nearby residential neighborhoods and the general travel patterns through the study area derived from the peak hour traffic volumes. Given the main entrance will be located on Wilson Avenue, it was estimated that the majority of the traffic would travel along Wilson Avenue with the remaining traffic spread out throughout the other adjacent roadways. **Figure 4** shows the estimated directional distribution.

Site Traffic Generation

The volume of traffic generated by a development is based on the type of land use and the size of the development. The number of new peak hour vehicle trips estimated to be generated by the proposed recreational center was based on vehicle trip generation rates contained in *Trip Generation Manual*, 9th Edition, published by the Institute of Transportation Engineers (ITE). In order to provide for a conservative analysis, it was assumed that the recreational center would be 38,100 square feet in size. **Table 1** shows the estimated number of new peak hour trips to be generated by the proposed development.

Table 1
PROJECTED SITE-GENERATED TRAFFIC VOLUMES

ITE Land- Use Code	Land Use	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
		In	Out	In	Out	In	Out
495	Recreational Community Center (38,100 s.f.)	51	27	51	53	22	19

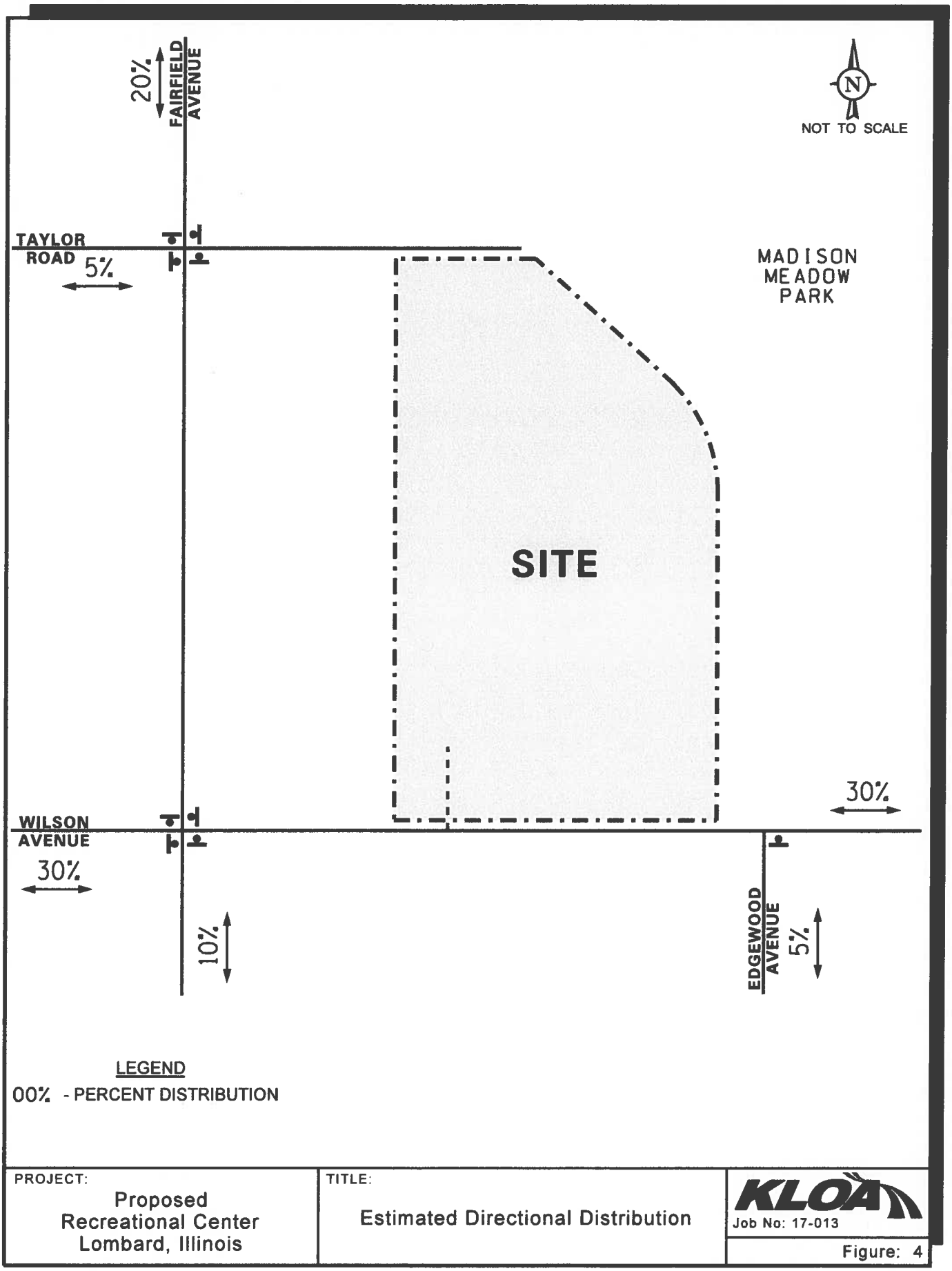
Trip Generation Comparison

It is important to note that this site was not a vacant piece of land but rather it was occupied at one time by a school and then later on by a day care center. As previously mentioned, the site was last used by the Pioneer Day Care Center with approximately 100 children. **Table 2** shows the estimated number of trips generated by the site when it was utilized as a day care center.

Table 2
DAY CARE CENTER GENERATED TRAFFIC VOLUMES

ITE Land- Use Code	Land Use	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
		In	Out	In	Out	In	Out
565	Day Care Center (100 students)	42	38	38	43	7	4

As can be seen, the number of trips to be generated by the proposed recreational center will be very similar to what the site generated when it utilized as a day care center. As such, the traffic conditions in the area will be very similar to what they used to be.



LEGEND

00% - PERCENT DISTRIBUTION

PROJECT:	TITLE:	
Proposed Recreational Center Lombard, Illinois	Estimated Directional Distribution	KLOA Job No: 17-013 Figure: 4

Development Traffic Assignment

The estimated weekday morning, evening and Saturday midday peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 4). **Figure 5** illustrates the vehicular traffic assignment.

Madison Meadow Park Background Traffic

As previously indicated, the Madison Meadow Park borders the site to the north and to the east. Furthermore, the park has a parking lot on the north side of the site that serves fields 17, 18 and 19. In order to take into account the traffic that can be generated by these three fields during the summer months, the ITE Trip Generation Manual, 9th Edition was referenced. **Table 3** shows the estimated number of trips the three adjacent fields would generate during the summer months.

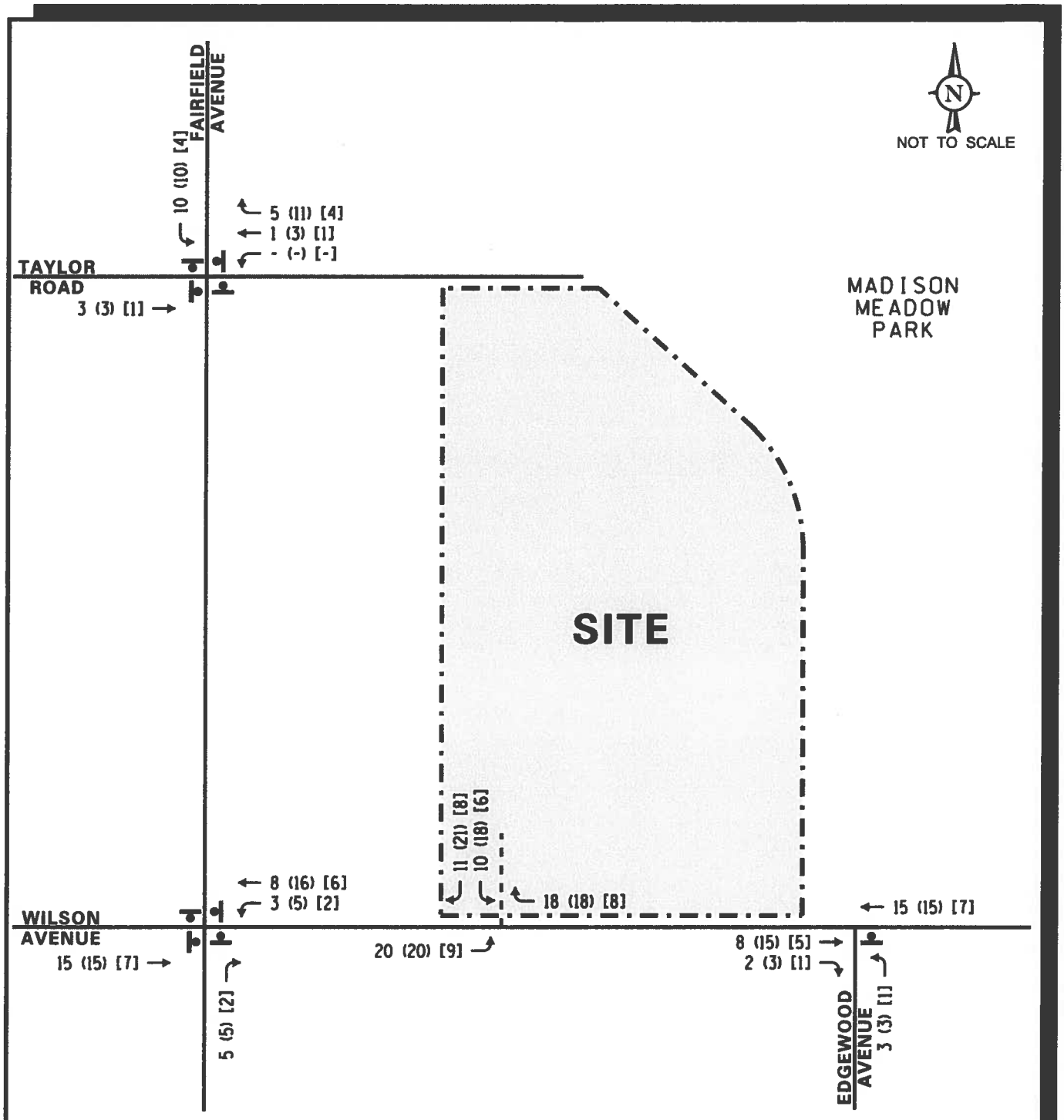
Table 3
MADISON MEADOW PARK (FIELDS 17 – 19) GENERATED TRAFFIC VOLUMES

ITE Land- Use Code	Land Use	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
		In	Out	In	Out	In	Out
411	Three Fields (±12.5 acres)	--	--	25	19	28	28

The Madison Meadow Park fields 17, 18 and 19 traffic assignment is shown on **Figure 6**.

Total Projected Traffic Volumes

The existing expanded traffic volumes (Figure 3) were combined with the site generated peak hour traffic volumes (Figure 5) and the traffic to be generated by the Madison Meadow Park fields 17 – 19 (Figure 6) to determine the total projected traffic volumes that are shown in **Figure 7**. It should be noted that the projected traffic volumes shown in Figure 6 also include an increase in pedestrian traffic at all the intersections to reflect the utilization of the Madison Meadow Park during the summer months.



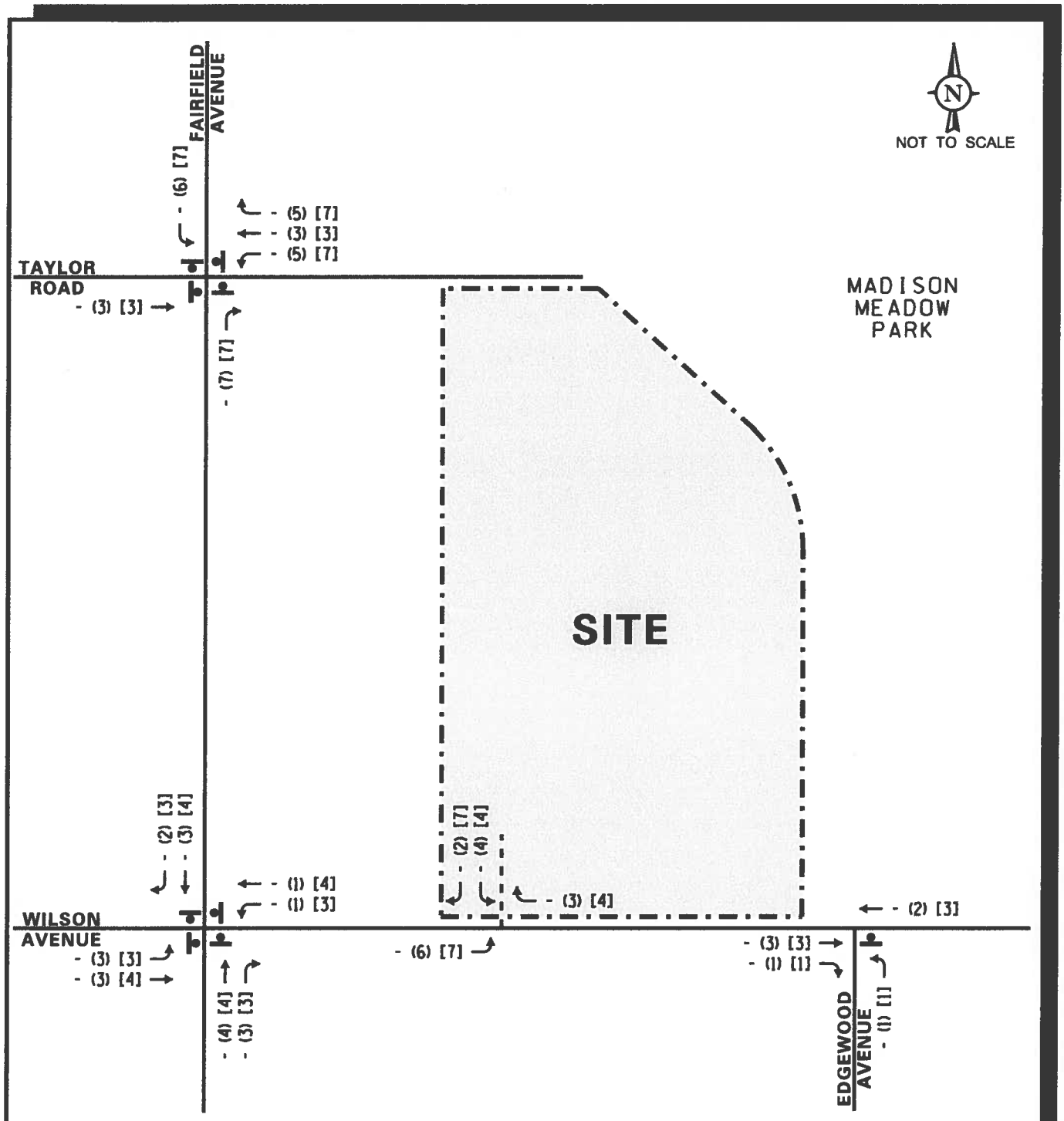
LEGEND

00 - AM PEAK HOUR (7:30-8:30 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

[00] - SATURDAY MIDDAY PEAK HOUR (10:00-11:00 AM)

PROJECT:	TITLE:	
Proposed Recreational Center Lombard, Illinois	Estimated Site Traffic Assignment	KLOA Job No: 17-013
		Figure: 5



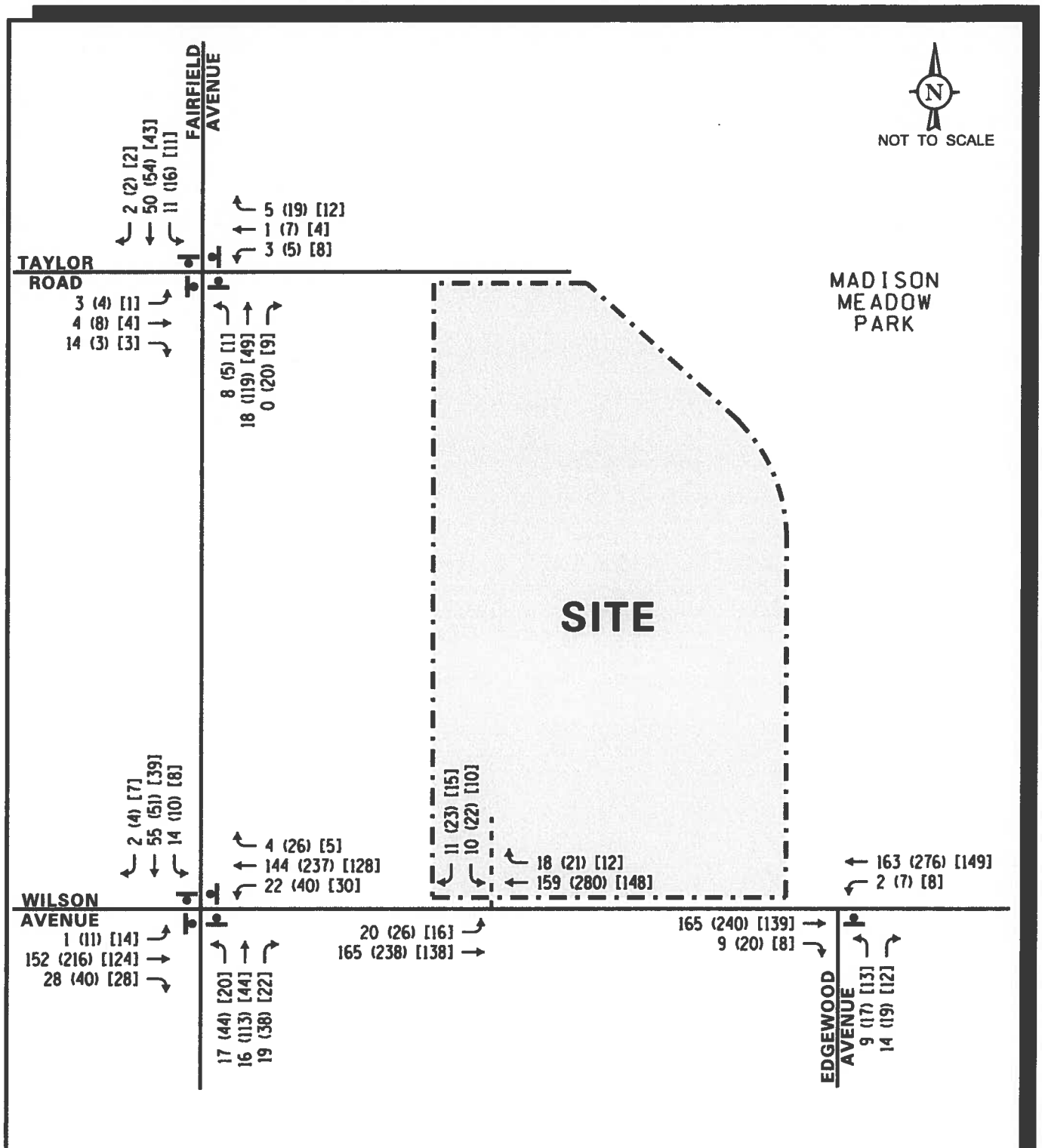
LEGEND

00 - AM PEAK HOUR (7:30-8:30 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

[00] - SATURDAY MIDDAY PEAK HOUR (10:00-11:00 AM)

PROJECT:	TITLE:	KLOA
Proposed Recreational Center Lombard, Illinois	Southwest Parking Lot (Fields 17, 18, and 19) Projected Traffic Assignment	Job No: 17-013 Figure: 6



LEGEND

00 - AM PEAK HOUR (7:30-8:30 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

[00] - SATURDAY MIDDAY PEAK HOUR (10:00-11:00 AM)

PROJECT:	TITLE:	
Proposed Recreational Center Lombard, Illinois	Total Traffic Assignment	KLOA Job No: 17-013 Figure: 7

Evaluation and Recommendations

Traffic analyses were performed for the intersections within the study area to determine the operation of the existing roadway system, evaluate the impact of the proposed development, and determine the ability of the existing roadway system to accommodate projected traffic demands. Analyses were performed for the weekday morning and evening peak hours and the Saturday midday peak hour for the existing traffic volumes and the projected traffic volumes.

The traffic analyses were performed using Synchro 9.0 computer software. The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter grade from A to F based on the average control delay experienced by vehicles passing through the intersection. Control delay is that portion of the total delay attributed to the traffic signal or stop sign control operation and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Level of Service A is the highest grade (best traffic flow and least delay), Level of Service E represents saturated or at-capacity conditions, and Level of Service F is the lowest grade (oversaturated conditions, extensive delays). For two-way stop controlled (TWSC) intersections, levels of service are only calculated for the approaches controlled by a stop sign (not for the intersection as a whole).

The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized and unsignalized intersections are shown in the Appendix. The results of the capacity analysis are summarized in **Table 4** for the existing expanded traffic volumes and **Table 5** for the projected traffic volumes.

Table 4
CAPACITY ANALYSIS RESULTS—EXISTING TRAFFIC CONDITIONS

Intersection	Weekday A.M. Peak Hour LOS	Weekday A.M. Peak Hour Delay	Weekday P.M. Peak Hour LOS	Weekday P.M. Peak Hour Delay	Saturday Midday Peak Hour LOS	Saturday Midday Peak Hour Delay
Fairfield Avenue with Wilson Avenue[1]	A	8.7	B	11.5	A	8.6
Fairfield Avenue with Taylor Road[1]	A	7.2	A	7.6	A	7.2
Wilson Avenue with Edgewood Avenue[2]						
• Northbound Approach	A	9.7	B	11.3	B	10.1

LOS - Level of Service
Delay - Measured in seconds.
[1] All Way Stop Control Intersection
[2]Represents operation of the approach under stop sign control.

Table 5
CAPACITY ANALYSIS RESULTS—PROJECTED TRAFFIC CONDITIONS

Intersection	Weekday A.M. Peak Hour LOS	Weekday A.M. Peak Hour Delay	Weekday P.M. Peak Hour LOS	Weekday P.M. Peak Hour Delay	Saturday Midday Peak Hour LOS	Saturday Midday Peak Hour Delay
Fairfield Avenue with Wilson Avenue[1]	A	8.9	B	12.3	A	8.9
Fairfield Avenue with Taylor Road[1]	A	7.3	A	7.7	A	7.3
Wilson Avenue with Edgewood Avenue[2]						
• Northbound Approach	B	10.2	B	11.9	B	10.3
Wilson Avenue with Access Drive[2]						
• Southbound Approach	B	10.2	B	12.0	B	10.0

LOS - Level of Service
Delay - Measured in seconds.
[1] All Way Stop Control Intersection
[2]Represents operation of the approach under stop sign control.

The results of the capacity analyses show that the subject intersections are currently operating at a very good level of service and will continue to do so in the future with minimal increases in the delay experienced at each intersection. Furthermore, based on a review of the projected traffic volumes and the results of the capacity analyses, no widening of Wilson Avenue at its intersection with the proposed access drive will be necessary to accommodate future traffic volumes. Therefore, the roadway system has sufficient reserve capacity to accommodate the additional traffic that will be generated by the recreational center as well as the traffic that is generated by the Madison Meadow Park parking area north of the site.

Given the type of proposed facility and its location adjacent to the Madison Meadow Park, the Village of Lombard should consider evaluating at a later date when the facility is fully operational whether high visibility crosswalks similar to the one provided on the westbound approach of Wilson Avenue at its intersection with Edgewood Avenue be provided at the intersections of Fairfield Avenue with Wilson Avenue and Taylor Road.

Potential Drop Off/Pick Up Activity

The recreational center is proposing a one-way counterclockwise pick-up/drop-off lane on the southwest side of the building approximately 70 feet north of Wilson Road. Based on a review of the site plan, the pick-up/drop-off lane will accommodate approximately six to eight vehicles before reaching the access drive off Wilson Avenue. Furthermore, the pick-up/drop-off lane will be approximately 24 feet wide therefore providing a passing lane when vehicles are standing to pick-up/drop-off passengers. In order to ensure that traffic does not back up to Wilson Avenue, the following is recommended:

1. Signs indicating "No Parking or Standing" and "Pick-Up/Drop-Off Only" should be placed along the pick-up/drop-off lane.

2. A traffic aide might be necessary during days in which the park district might be holding various basketball games/practices at the same time to ensure that vehicles do not stand or park in the lane and traffic continues to flow efficiently.

Conclusion

Based on the preceding site traffic analysis for the proposed recreational center, the following conclusions and recommendations are made.

- The traffic to be generated by the proposed recreational center will be very similar to the traffic that used to be generated by the site when it was occupied by the Pioneer Day Care Center.

- The new site traffic generated volumes will be able to enter and exit the site via two locations with minimal impact on vehicular traffic movements.

- The results of the capacity analyses show that all of the intersections in the study area are currently operating at a very good level of service and will continue to do so under future conditions.

- The access drive off Wilson Avenue should provide, as shown on the plan, one inbound lane and two outbound lanes striped for an exclusive left-turn lane and an exclusive right-turn lane with outbound movements under stop sign control.

- The following recommendations were developed to ensure efficient use of the proposed drop off/pick-up lane.

    - Signs indicating "No Parking or Standing" and "Pick-Up/Drop-Off Only" should be placed along the pick-up/drop-off lane.

    - A traffic aide might be necessary during days in which the park district might be holding various basketball games/practices at the same time to ensure that vehicles do not stand or park in the lane and traffic continues to flow efficiently.

Appendix

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Average Total Delay (SEC/VEH)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Source: *Highway Capacity Manual*, 2010.

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	1	137	28	0	19	136	4	0	17	16	14
Future Vol, veh/h	0	1	137	28	0	19	136	4	0	17	16	14
Peak Hour Factor	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	157	32	0	22	156	5	0	20	18	16
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.7	8.8	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	1%	12%	20%
Vol Thru, %	34%	83%	86%	77%
Vol Right, %	30%	17%	3%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	166	159	71
LT Vol	17	1	19	14
Through Vol	16	137	136	55
RT Vol	14	28	4	2
Lane Flow Rate	54	191	183	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.072	0.232	0.227	0.11
Departure Headway (Hd)	4.774	4.369	4.481	4.864
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	822	800	736
Service Time	2.809	2.394	2.508	2.898
HCM Lane V/C Ratio	0.072	0.232	0.229	0.111
HCM Control Delay	8.2	8.7	8.8	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.9	0.9	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	14	55	2
Future Vol, veh/h	0	14	55	2
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	63	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.5
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	3	1	14	0	3	0	0	0	8	18	0
Future Vol, veh/h	0	3	1	14	0	3	0	0	0	8	18	0
Peak Hour Factor	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	1	18	0	4	0	0	0	10	23	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.8	7.4	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	100%	2%
Vol Thru, %	69%	6%	0%	94%
Vol Right, %	0%	78%	0%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	18	3	53
LT Vol	8	3	3	1
Through Vol	18	1	0	50
RT Vol	0	14	0	2
Lane Flow Rate	32	22	4	66
Geometry Grp	1	1	1	1
Degree of Util (X)	0.037	0.023	0.005	0.073
Departure Headway (Hd)	4.09	3.674	4.323	3.985
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	876	969	824	901
Service Time	2.112	1.718	2.369	2.001
HCM Lane V/C Ratio	0.037	0.023	0.005	0.073
HCM Control Delay	7.3	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	1	50	2
Future Vol, veh/h	0	1	50	2
Peak Hour Factor	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	63	3
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.3
HCM LOS	A

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	157	7	2	148	6	14
Future Vol, veh/h	157	7	2	148	6	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	178	8	2	168	7	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	186	0	355	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1388	-	643	861
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	857	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1388	-	642	861
Mov Cap-2 Maneuver	-	-	-	-	642	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	855	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	781	-	-	1388	-
HCM Lane V/C Ratio	0.029	-	-	0.002	-
HCM Control Delay (s)	9.7	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	8	198	40	0	34	220	26	0	44	109	30
Future Vol, veh/h	0	8	198	40	0	34	220	26	0	44	109	30
Peak Hour Factor	0.92	0.89	0.89	0.89	0.92	0.89	0.89	0.89	0.92	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	9	222	45	0	38	247	29	0	49	122	34
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	11.4	12.2	11.1
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	3%	12%	17%
Vol Thru, %	60%	80%	79%	80%
Vol Right, %	16%	16%	9%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	246	280	60
LT Vol	44	8	34	10
Through Vol	109	198	220	48
RT Vol	30	40	26	2
Lane Flow Rate	206	276	315	67
Geometry Grp	1	1	1	1
Degree of Util (X)	0.315	0.391	0.445	0.11
Departure Headway (Hd)	5.516	5.089	5.093	5.852
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	652	708	708	611
Service Time	3.552	3.119	3.123	3.896
HCM Lane V/C Ratio	0.316	0.39	0.445	0.11
HCM Control Delay	11.1	11.4	12.2	9.6
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	1.3	1.9	2.3	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	10	48	2
Future Vol, veh/h	0	10	48	2
Peak Hour Factor	0.92	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	11	54	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.6
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	4	2	3	0	0	1	4	0	5	119	13
Future Vol, veh/h	0	4	2	3	0	0	1	4	0	5	119	13
Peak Hour Factor	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	2	3	0	0	1	4	0	5	125	14
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	6.9	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	44%	0%	0%
Vol Thru, %	87%	22%	20%	96%
Vol Right, %	9%	33%	80%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	9	5	56
LT Vol	5	4	0	0
Through Vol	119	2	1	54
RT Vol	13	3	4	2
Lane Flow Rate	144	9	5	59
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.011	0.006	0.066
Departure Headway (Hd)	3.953	4.175	3.808	4.045
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	909	845	925	884
Service Time	1.973	2.26	1.894	2.079
HCM Lane V/C Ratio	0.158	0.011	0.005	0.067
HCM Control Delay	7.7	7.3	6.9	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0	0	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	0	54	2
Future Vol, veh/h	0	0	54	2
Peak Hour Factor	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	57	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	222	16	7	259	13	19
Future Vol, veh/h	222	16	7	259	13	19
Conflicting Peds, #/hr	0	0	0	0	0	25
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	18	8	291	15	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	267	0	565	283
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	307	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1297	-	486	756
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	746	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1266	-	482	738
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	740	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	607	-	-	1266	-
HCM Lane V/C Ratio	0.059	-	-	0.006	-
HCM Control Delay (s)	11.3	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	11	113	28	0	25	118	5	0	20	40	17
Future Vol, veh/h	0	11	113	28	0	25	118	5	0	20	40	17
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	13	133	33	0	29	139	6	0	24	47	20
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.6	8.8	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	7%	17%	17%
Vol Thru, %	52%	74%	80%	74%
Vol Right, %	22%	18%	3%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	152	148	47
LT Vol	20	11	25	8
Through Vol	40	113	118	35
RT Vol	17	28	5	4
Lane Flow Rate	91	179	174	55
Geometry Grp	1	1	1	1
Degree of Util (X)	0.119	0.218	0.217	0.074
Departure Headway (Hd)	4.721	4.386	4.496	4.829
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	759	819	799	741
Service Time	2.752	2.411	2.522	2.864
HCM Lane V/C Ratio	0.12	0.219	0.218	0.074
HCM Control Delay	8.4	8.6	8.8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.8	0.8	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	8	35	4
Future Vol, veh/h	0	8	35	4
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	9	41	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	1	0	3	0	1	0	1	0	1	49	2
Future Vol, veh/h	0	1	0	3	0	1	0	1	0	1	49	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	0	3	0	1	0	1	0	1	53	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.8	7	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	25%	50%	0%
Vol Thru, %	94%	0%	0%	96%
Vol Right, %	4%	75%	50%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	4	2	45
LT Vol	1	1	1	0
Through Vol	49	0	0	43
RT Vol	2	3	1	2
Lane Flow Rate	57	4	2	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.062	0.004	0.002	0.054
Departure Headway (Hd)	3.962	3.716	3.918	3.961
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	907	958	909	907
Service Time	1.972	1.76	1.962	1.971
HCM Lane V/C Ratio	0.063	0.004	0.002	0.054
HCM Control Delay	7.2	6.8	7	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	0	43	2
Future Vol, veh/h	0	0	43	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	47	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.2
HCM LOS	A

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	131	6	8	139	11	12
Future Vol, veh/h	131	6	8	139	11	12
Conflicting Peds, #/hr	0	0	0	0	0	25
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	7	10	170	13	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	167	0	352	188
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1411	-	646	854
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1377	-	641	834
Mov Cap-2 Maneuver	-	-	-	-	641	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	729	-	-	1377	-
HCM Lane V/C Ratio	0.038	-	-	0.007	-
HCM Control Delay (s)	10.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	1	152	28	0	22	144	4	0	17	16	19
Future Vol, veh/h	0	1	152	28	0	22	144	4	0	17	16	19
Peak Hour Factor	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	175	32	0	25	166	5	0	20	18	22
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9	9	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	1%	13%	20%
Vol Thru, %	31%	84%	85%	77%
Vol Right, %	37%	15%	2%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	181	170	71
LT Vol	17	1	22	14
Through Vol	16	152	144	55
RT Vol	19	28	4	2
Lane Flow Rate	60	208	195	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.08	0.255	0.245	0.112
Departure Headway (Hd)	4.798	4.408	4.52	4.942
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	745	813	793	724
Service Time	2.84	2.439	2.552	2.983
HCM Lane V/C Ratio	0.081	0.256	0.246	0.113
HCM Control Delay	8.3	9	9	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	1	1	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	14	55	2
Future Vol, veh/h	0	14	55	2
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	63	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.6
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	3	4	14	0	3	1	5	0	8	18	0
Future Vol, veh/h	0	3	4	14	0	3	1	5	0	8	18	0
Peak Hour Factor	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	5	18	0	4	1	6	0	10	23	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.9	7	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	14%	33%	17%
Vol Thru, %	69%	19%	11%	79%
Vol Right, %	0%	67%	56%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	21	9	63
LT Vol	8	3	3	11
Through Vol	18	4	1	50
RT Vol	0	14	5	2
Lane Flow Rate	32	26	11	79
Geometry Grp	1	1	1	1
Degree of Util (X)	0.037	0.027	0.012	0.088
Departure Headway (Hd)	4.119	3.763	3.88	4.039
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	869	944	915	888
Service Time	2.147	1.815	1.934	2.058
HCM Lane V/C Ratio	0.037	0.028	0.012	0.089
HCM Control Delay	7.3	6.9	7	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	11	50	2
Future Vol, veh/h	0	11	50	2
Peak Hour Factor	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	14	63	3
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	165	9	2	163	9	14
Future Vol, veh/h	165	9	2	163	9	14
Conflicting Peds, #/hr	0	0	0	0	0	25
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	188	10	2	185	10	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	198	0	383	218
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1375	-	620	822
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1342	-	619	802
Mov Cap-2 Maneuver	-	-	-	-	619	-
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	840	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	719	-	-	1342	-
HCM Lane V/C Ratio	0.036	-	-	0.002	-
HCM Control Delay (s)	10.2	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↗
Traffic Vol, veh/h	20	165	159	18	10	11
Future Vol, veh/h	20	165	159	18	10	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	179	173	20	11	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	192	0	-	0	406	183
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	223	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1381	-	-	-	601	859
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1381	-	-	-	590	859
Mov Cap-2 Maneuver	-	-	-	-	590	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1381	-	-	-	590	859
HCM Lane V/C Ratio	0.016	-	-	-	0.018	0.014
HCM Control Delay (s)	7.6	0	-	-	11.2	9.3
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	11	216	40	0	40	237	26	0	44	113	38
Future Vol, veh/h	0	11	216	40	0	40	237	26	0	44	113	38
Peak Hour Factor	0.92	0.89	0.89	0.89	0.92	0.89	0.89	0.89	0.92	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	243	45	0	45	266	29	0	49	127	43
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	12.3	13.3	11.7
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	4%	13%	15%
Vol Thru, %	58%	81%	78%	78%
Vol Right, %	19%	15%	9%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	195	267	303	65
LT Vol	44	11	40	10
Through Vol	113	216	237	51
RT Vol	38	40	26	4
Lane Flow Rate	219	300	340	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.345	0.436	0.494	0.123
Departure Headway (Hd)	5.666	5.229	5.225	6.04
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	633	687	688	591
Service Time	3.713	3.272	3.267	4.101
HCM Lane V/C Ratio	0.346	0.437	0.494	0.124
HCM Control Delay	11.7	12.3	13.3	10
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	1.5	2.2	2.8	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	10	51	4
Future Vol, veh/h	0	10	51	4
Peak Hour Factor	0.92	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	11	57	4
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	4	8	3	0	5	7	19	0	5	119	20
Future Vol, veh/h	0	4	8	3	0	5	7	19	0	5	119	20
Peak Hour Factor	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	8	3	0	5	7	20	0	5	125	21
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.5	7.3	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	27%	16%	22%
Vol Thru, %	83%	53%	23%	75%
Vol Right, %	14%	20%	61%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	15	31	72
LT Vol	5	4	5	16
Through Vol	119	8	7	54
RT Vol	20	3	19	2
Lane Flow Rate	152	16	33	76
Geometry Grp	1	1	1	1
Degree of Util (X)	0.168	0.019	0.037	0.088
Departure Headway (Hd)	3.999	4.393	4.107	4.161
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	893	819	877	855
Service Time	2.042	2.394	2.107	2.215
HCM Lane V/C Ratio	0.17	0.02	0.038	0.089
HCM Control Delay	7.9	7.5	7.3	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.1	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	16	54	2
Future Vol, veh/h	0	16	54	2
Peak Hour Factor	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	57	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.6
HCM LOS	A

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	20	7	276	17	19
Future Vol, veh/h	240	20	7	276	17	19
Conflicting Peds, #/hr	0	0	0	0	0	25
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	270	22	8	310	19	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	292	0	607	306
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1270	-	460	734
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1240	-	456	717
Mov Cap-2 Maneuver	-	-	-	-	456	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	725	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	564	-	-	1240	-
HCM Lane V/C Ratio	0.072	-	-	0.006	-
HCM Control Delay (s)	11.9	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Vol, veh/h	26	238	280	21	22	23
Future Vol, veh/h	26	238	280	21	22	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	259	304	23	24	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	327	0	-	0	631	316
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	315	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1233	-	-	-	445	724
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	740	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1233	-	-	-	433	724
Mov Cap-2 Maneuver	-	-	-	-	433	-
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	720	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1233	-	-	-	433	724
HCM Lane V/C Ratio	0.023	-	-	-	0.055	0.035
HCM Control Delay (s)	8	0	-	-	13.8	10.2
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.1

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	14	124	28	0	30	128	5	0	20	44	22
Future Vol, veh/h	0	14	124	28	0	30	128	5	0	20	44	22
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	16	146	33	0	35	151	6	0	24	52	26
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.9	9.1	8.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	8%	18%	15%
Vol Thru, %	51%	75%	79%	72%
Vol Right, %	26%	17%	3%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	166	163	54
LT Vol	20	14	30	8
Through Vol	44	124	128	39
RT Vol	22	28	5	7
Lane Flow Rate	101	195	192	64
Geometry Grp	1	1	1	1
Degree of Util (X)	0.135	0.243	0.244	0.086
Departure Headway (Hd)	4.791	4.472	4.574	4.901
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	746	803	784	729
Service Time	2.835	2.504	2.606	2.948
HCM Lane V/C Ratio	0.135	0.243	0.245	0.088
HCM Control Delay	8.6	8.9	9.1	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	1	1	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	8	39	7
Future Vol, veh/h	0	8	39	7
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	9	46	8
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.4
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	1	4	3	0	8	4	12	0	1	49	9
Future Vol, veh/h	0	1	4	3	0	8	4	12	0	1	49	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	4	3	0	9	4	13	0	1	53	10
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.1	7.1	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	12%	33%	20%
Vol Thru, %	83%	50%	17%	77%
Vol Right, %	15%	38%	50%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	59	8	24	56
LT Vol	1	1	8	11
Through Vol	49	4	4	43
RT Vol	9	3	12	2
Lane Flow Rate	64	9	26	61
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.01	0.028	0.069
Departure Headway (Hd)	3.952	3.969	3.923	4.061
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	906	894	905	882
Service Time	1.979	2.028	1.978	2.086
HCM Lane V/C Ratio	0.071	0.01	0.029	0.069
HCM Control Delay	7.3	7.1	7.1	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.1	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	11	43	2
Future Vol, veh/h	0	11	43	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	47	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	139	8	8	149	13	12
Future Vol, veh/h	139	8	8	149	13	12
Conflicting Peds, #/hr	0	0	0	0	0	25
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	170	10	10	182	16	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	179	0	375	199
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	201	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1397	-	626	842
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	833	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1364	-	621	822
Mov Cap-2 Maneuver	-	-	-	-	621	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	826	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	704	-	-	1364	-
HCM Lane V/C Ratio	0.043	-	-	0.007	-
HCM Control Delay (s)	10.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Vol, veh/h	16	138	148	12	10	15
Future Vol, veh/h	16	138	148	12	10	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	150	161	13	11	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	174	0	-	0	352	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1403	-	-	-	603	877
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1403	-	-	-	597	877
Mov Cap-2 Maneuver	-	-	-	-	597	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1403	-	-	-	597	877
HCM Lane V/C Ratio	0.012	-	-	-	0.018	0.019
HCM Control Delay (s)	7.6	0	-	-	11.1	9.2
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

FGM ARCHITECTS

January 24, 2017

Mr. William Heniff
Department of Community Development
Village of Lombard
255 E. Wilson Ave.
Lombard, IL 60148

Re: Lombard Park District – New Recreation Center
FGM #16-2167.01

Dear Mr. Heniff:

The Lombard Park District would like to propose the following zoning variations for the new recreation center project:

- Conditional Use of a Public Recreation Facility within the CR district.
- Relief of 30' maximum height restriction to provide 36' tall proposed structure.
- Relief of 75% open space requirement to proposed 64%.

The Park District is seeking these variances and have provided the below responses to Standards for Variations.

Please contact us with any questions, or if you require any additional information.

Sincerely,

John C. Dzarnowski, AIA
Director, Municipal and Recreation
FGM Architects
Cc: Paul Friedrichs, LPD
Daniel Purpura, AIA, FGM
File 3.1

1211 W. 22nd Street, Suite 700
Oak Brook, Illinois 60523-2109
630.574.8300 PHONE 630.574.9292 FAX

VII Standards for Conditional Use

1. The recreation facility proposed by the Lombard Park District has been planned to provide a needed community facility for Lombard residents while providing safe programs. Through the design and use of durable and safe materials, the facility will be 100% accessible, safe, and comfortable for all occupants.

2. The proposed site is located within Madison Meadow park to provide additional program space to compliment the park. The site design of the facility also considered the adjacent residential property. The parking lot has been located 30' further from property line (approximately 40' total) and a 3' planted berm has been provided to ensure adjacent residences will not affected by headlights.

3. The proposed site is currently surrounded by developed properties. Site circulation is designed not to hinder the neighbors. The existing curb cut location to the north have been reused and improved, while the southern curb cut has been relocated further to the east, away from the property line (to align with the drive aisle) and widened to prevent traffic congestion.

4. The facility is replacing a current school building and will not exceed the current utility demands. Every effort has been made to design a facility that reduces energy use via LED lighting, window shades to prevent heat gain, and efficient mechanical systems. Storm drainage in the area will also be improved by providing a large storm water basin. The overall topography of the site is to remain as is to further reduce any impact on adjacent neighborhoods.

5. A traffic study has been completed which indicates that the development will cause minimal increases in delay at the adjacent intersections. Several traffic control considerations that have been implemented in the plan are: one exclusive left-turn and one exclusive right turn egress lanes, inbound entrance has been located to avoid congestion at Edgewood Ave and Fairfield Ave and the parking lot has also been connected to Taylor Road to provide a secondary entrance/exit.

6. The current comprehensive plan indicates this property as Public and Institutional. As a community facility, the proposed project is in compliance with the comprehensive plan.

7. The site and building will conform to all zoning and building regulations with the proposed exceptions below.

XI Standards for Variations- Building Height

1. The property adjacent to Madison Meadow Park posed multiple design challenges. Due to the topography and current drainage concerns the new building footprint had to be kept to a minimum. This prevented creating additional impervious surface and further drainage concerns. To provide the much-needed square footage and the proper heights for gymnasium programs (basketball, volleyball, etc.) the facility height was set at 36'. To overcome the larger gymnasium mass, the remainder of the two-story facility was limited at 31'.

2. The property is zoned CR which provides public parks and open-space uses for the citizens of the Village of Lombard. The proposed conditional use of a recreation for this site is unique since it is adjacent to Madison Meadow Park. The facility will provide complimentary facilities to the park and will also provide support services to the existing programs.

3. The height variation has been proposed in order to limit the amount of impervious surfaces being added as well as providing a gymnasium facility that can provide additional program space for the Lombard Park District.

4. The hardship of this property is due to the zoning ordinance and bulk standards.

5. The additional height does not pose any safety concerns. The facility is in compliance with the International Building Code and maximum 75' height restrictions for the construction type.

6. To limit the height of the building and aesthetic concerns the building has been designed to have multiple roof heights and has been sited further from the existing residential neighborhoods. The facility has also been angled on the site to eliminate direct perpendicular views from the street for each of the facility elevations.

7. To eliminate concerns of impairing light and air to adjacent properties, the building has been sited further from property lines. The setbacks of the proposed facility are 187' from the adjacent residential lots to the west and

138' from Wilson Road. These setbacks greatly exceed the 50' required setbacks.

XI Standards for Variations- Lot Open Space

1. One of the design challenges at the property adjacent to Madison Meadow Park is amount of open space compared to parking and traffic requirements. The building has been optimized to provide needed program space while minimizing the overall footprint. The parking lot has also been provided to provide the required parking and a drop off aisle to further reduce traffic concerns.

2. The conditions of this property are unique since the location is adjacent to Madison Meadow Park. Other conditional uses of the property (i.e. school/ cultural center) allow for 50% open space due to the amount of parking and site circulation required. The proposed design far exceeds these requirements.

3. The purpose of this variation is to provide much needed parking for the facility and limit traffic concerns for the surrounding residents.

4. The hardship for this property is due to zoning ordinance regulations considering the single property and not the adjacent property also owned by the Park District.

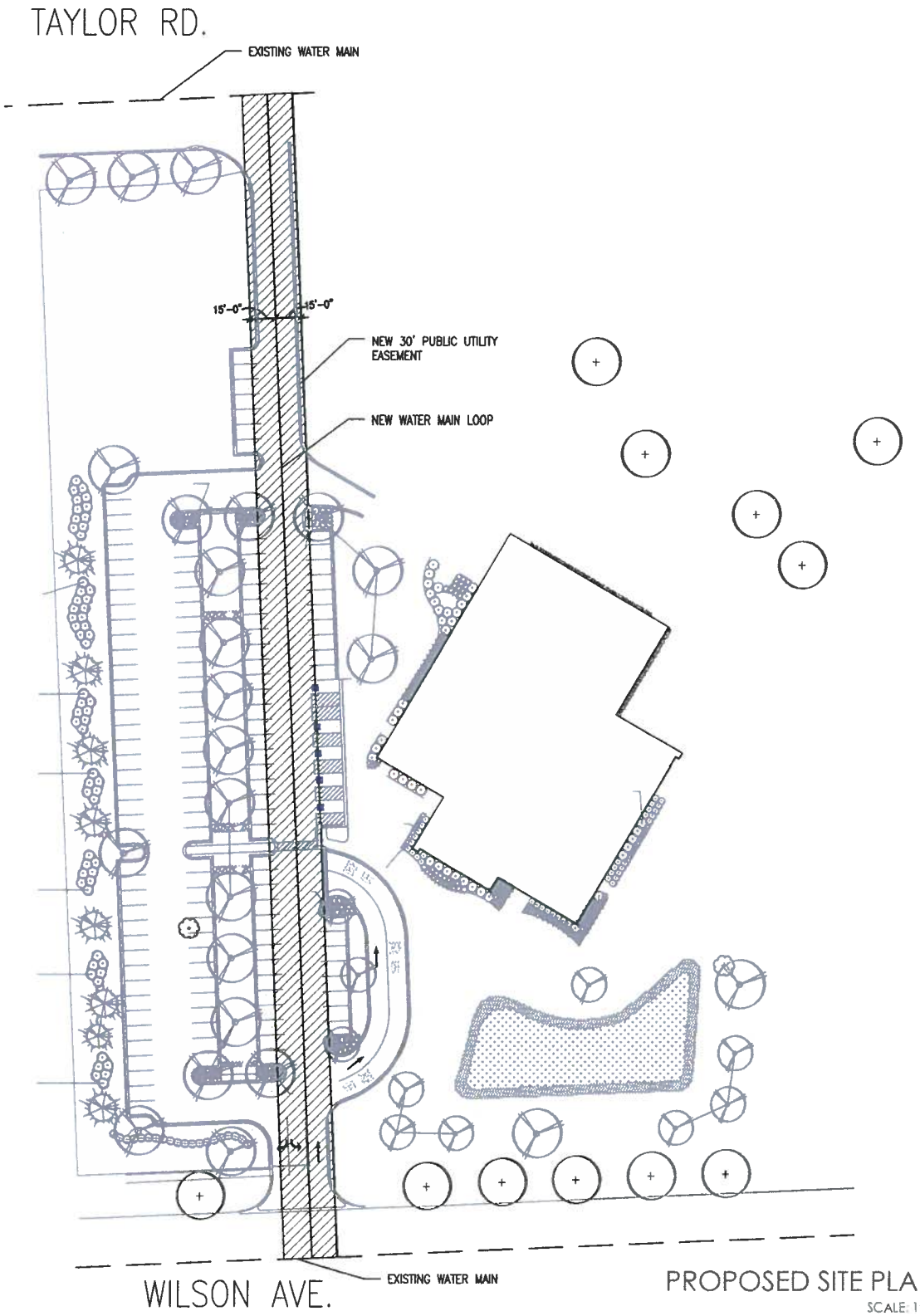
5. This variation will not have a detrimental impact on adjacent properties or the neighborhood. The storm water detention has been designed for additional impervious surfaces and site circulation has been planned to eliminate any impact on current walking paths and use of the adjacent park.

6. The facility will not affect the character of the neighborhood and will provide additional state of the art program space for all Lombard residents. The proposed design also incorporates an extensive landscape plan that will soften the site.

7. Reducing existing drainage issues and improving public safety are the top goals of the site design. Every effort has been made to provide a safe circulation path for all building occupants. Accessible pathways and drive

aisles have been located to reduce congestion and allow for safe access to the building.

LOMBARD PARK DISTRICT



PROPOSED SITE PLAN

SCALE: 1:60

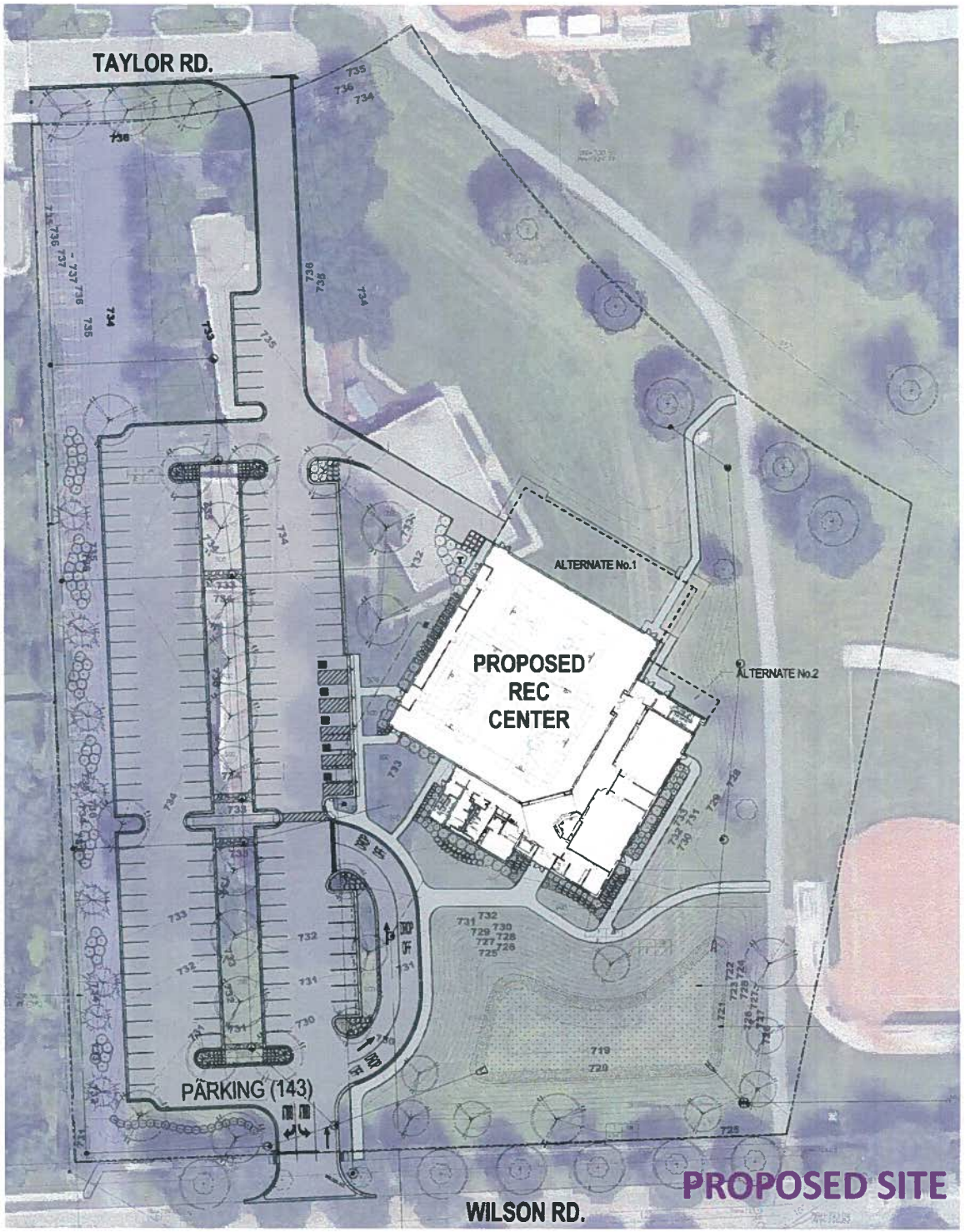
2/6/2017

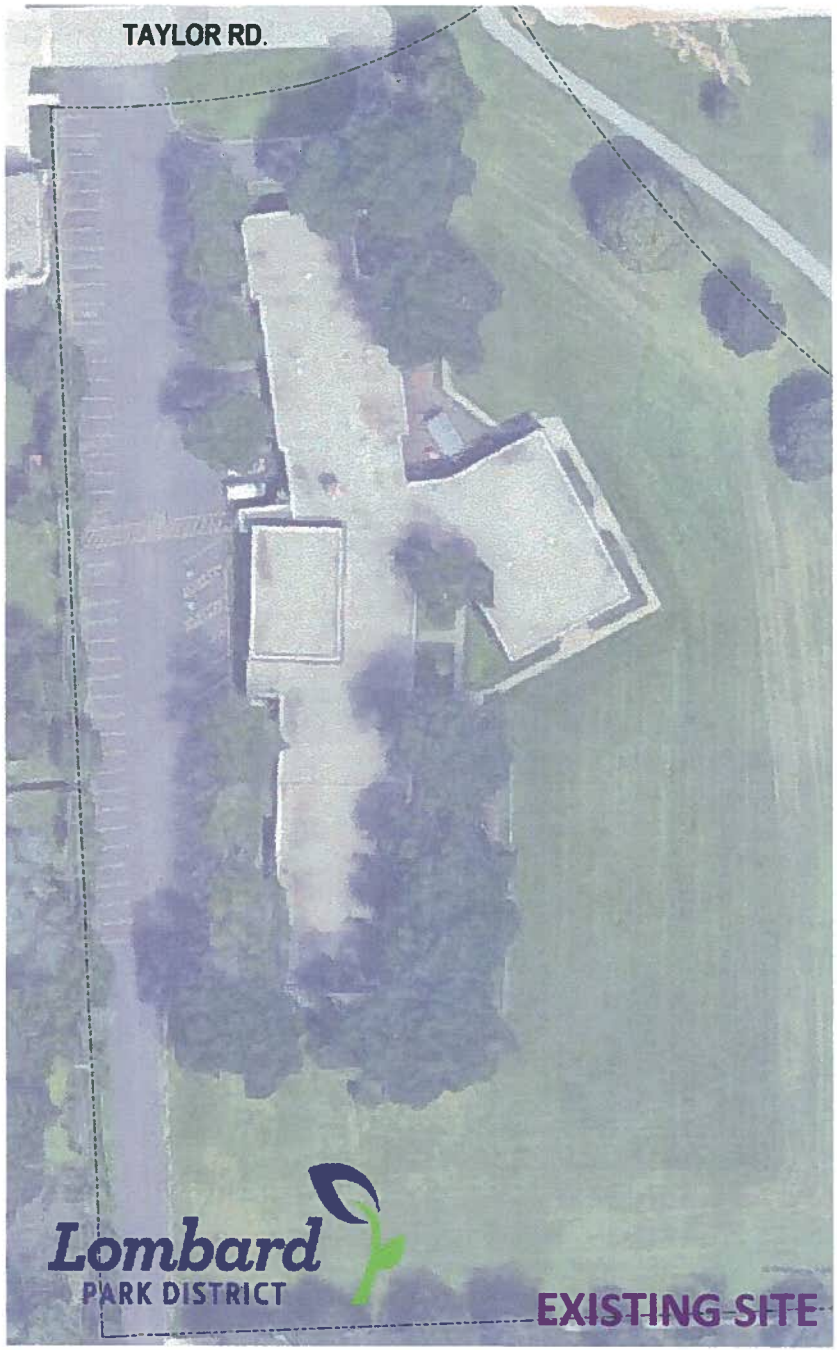
JOB XXX.XXX.XX

FGM ARCHITECTS

SITE PLAN

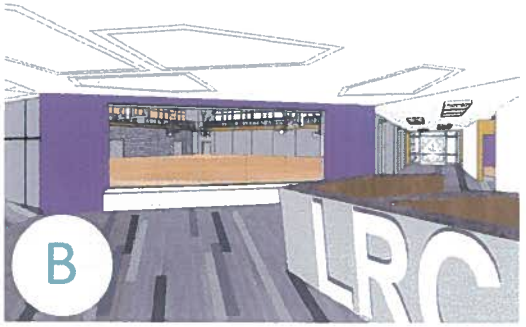
FGM ARCHITECTS

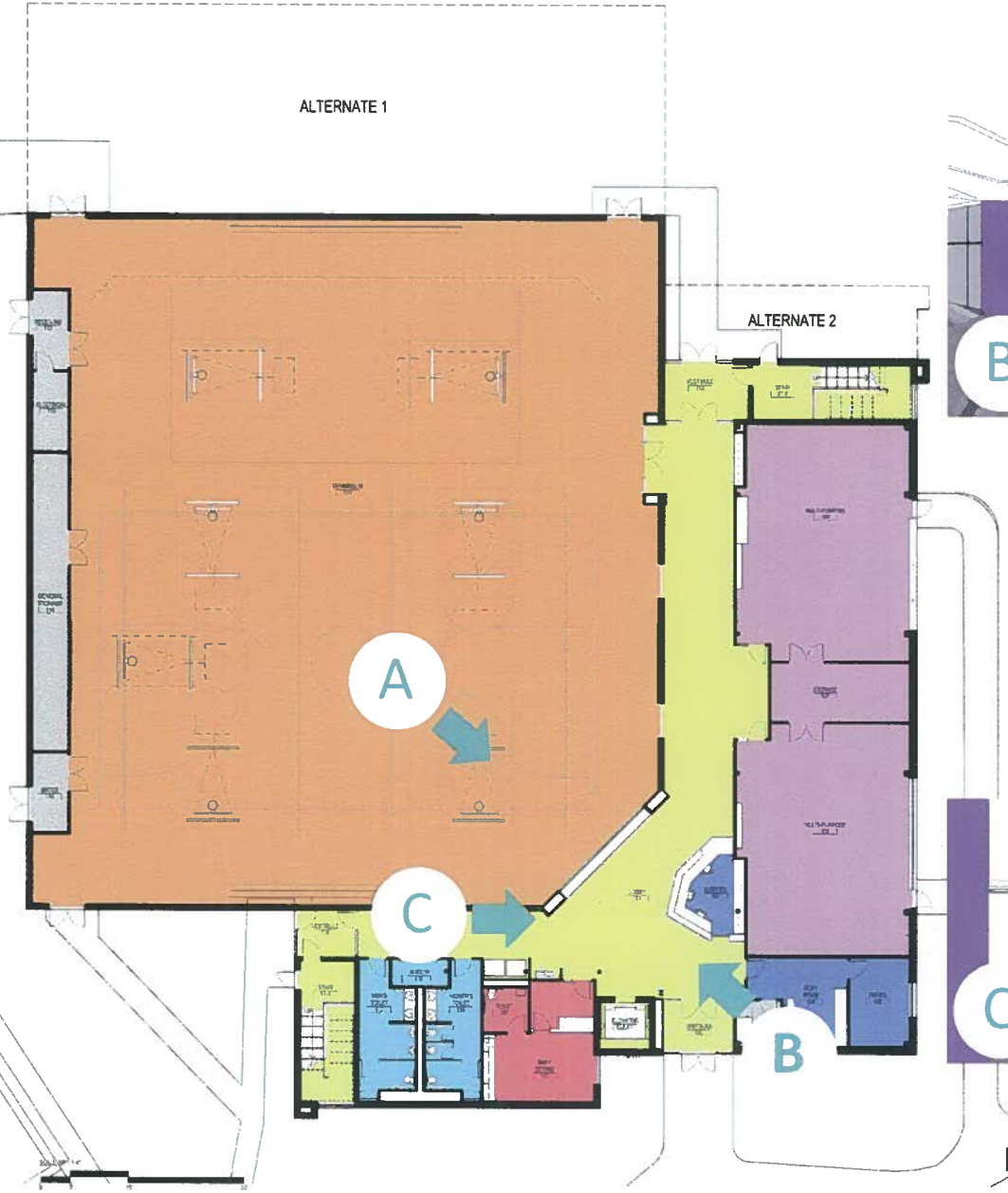


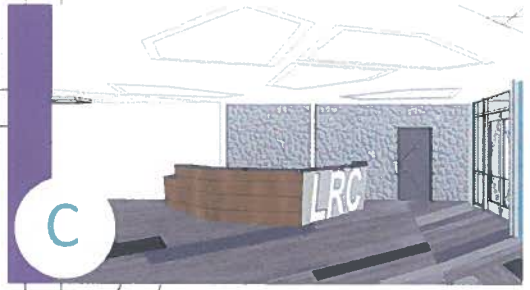


FGM ARCHITECTS

LANDSCAPE PLAN





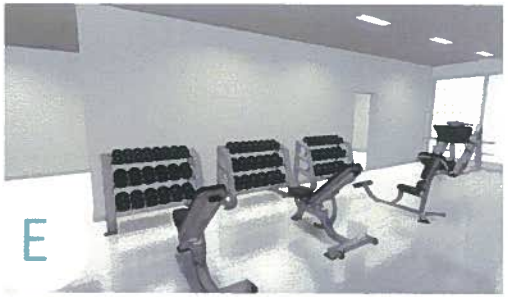


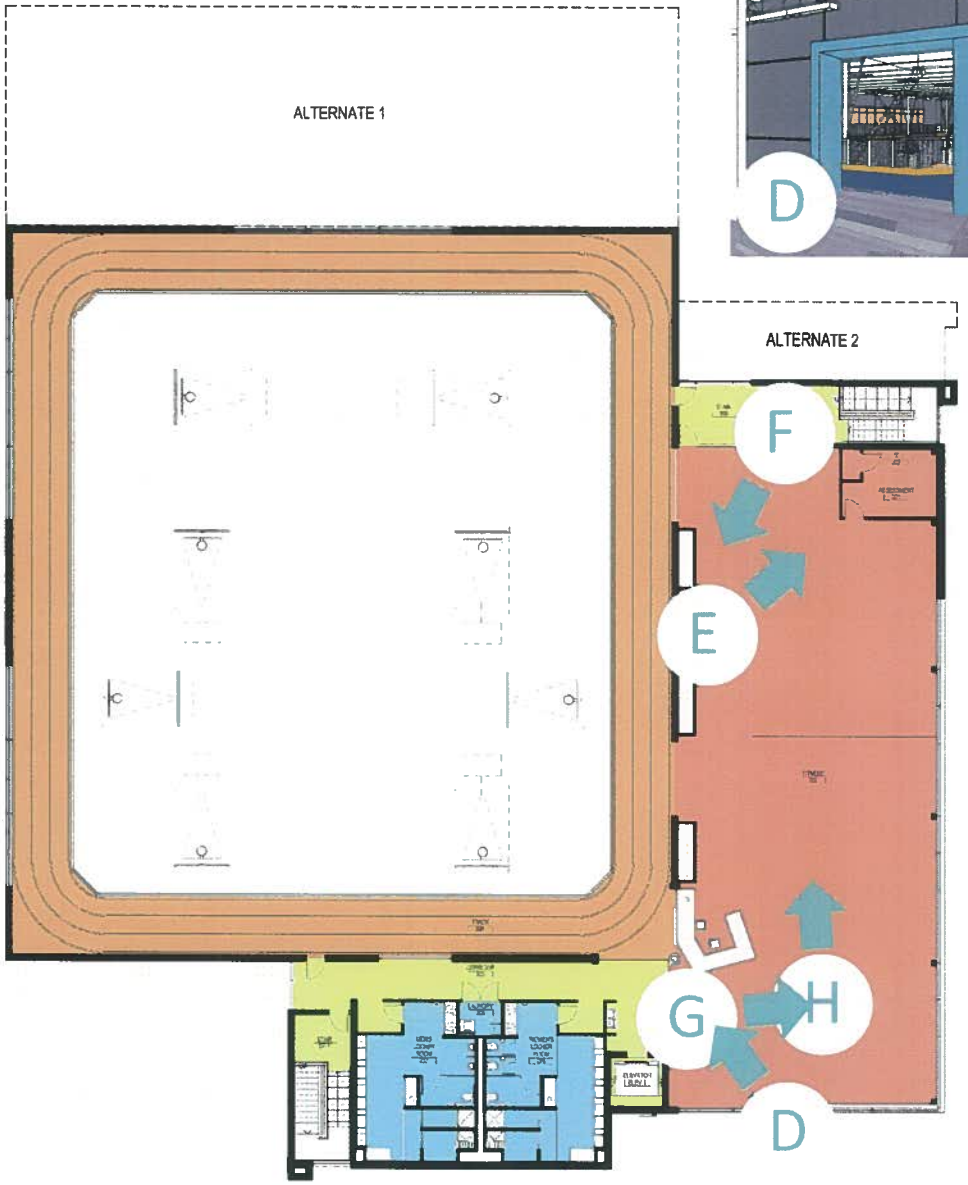
Lombard PARK DISTRICT

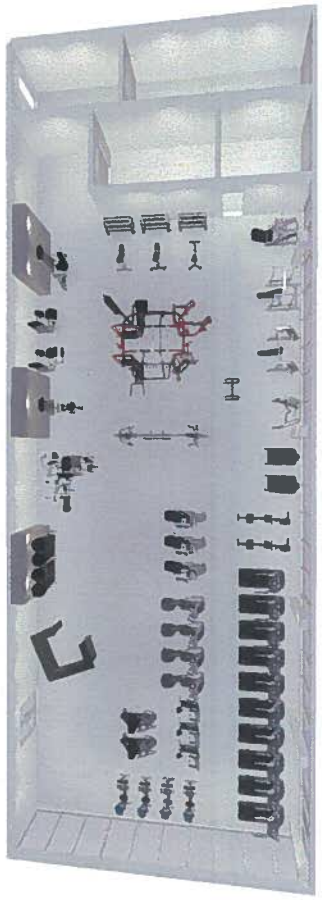
FGM ARCHITECTS

FIRST FLOOR PLAN

16-2167.01





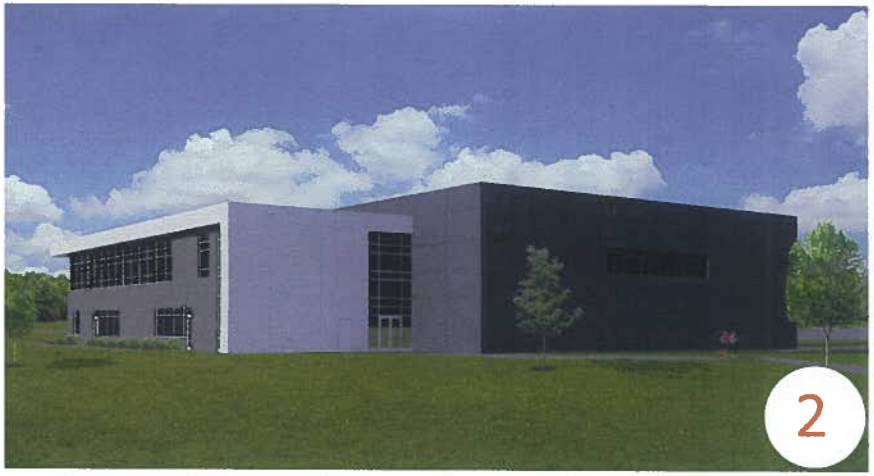


SECOND FLOOR PLAN

16-2167.01

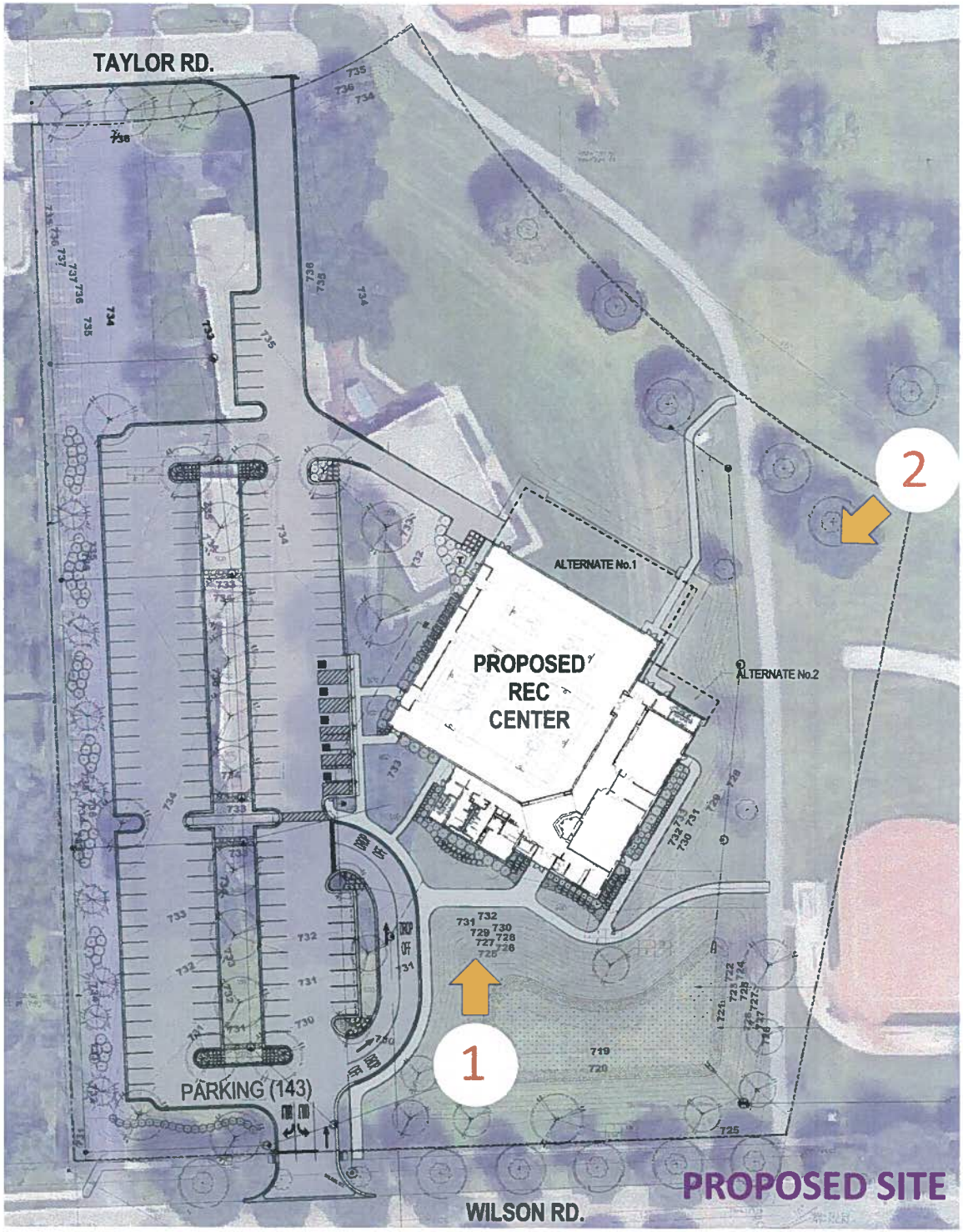
Lombard PARK DISTRICT

FGM ARCHITECTS



Lombard PARK DISTRICT

FGM ARCHITECTS



Lombard
PARK DISTRICT

FGM ARCHITECTS

LANDSCAPE PLAN

GYM PROGRAMMING

- Basketball
- Volleyball
- Pickleball
- Futsal (indoor soccer)
- Youth Instructional Classes
- Youth Sports Leagues
- Adult Sports Leagues
- Open Gym

FIRST FLOOR PLAN
16-2167.01

FITNESS STUDIOS
(Group Exercise Classes)

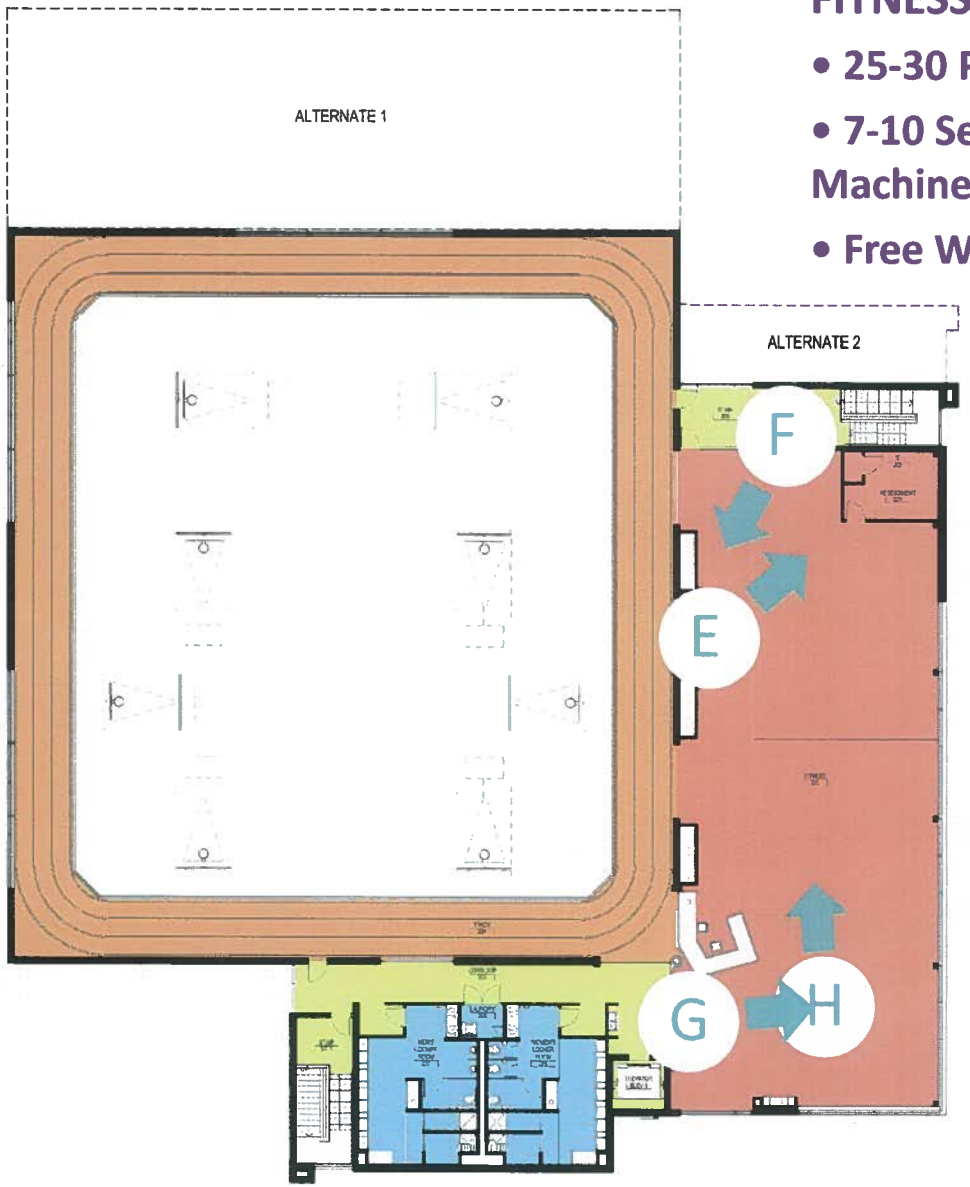
- Cardio Classes
- Weight Training
- Boot Camp
- Yoga
- Pilates
- Zumba
- Senior Exercise
- Personal Training

Lombard PARK DISTRICT

FGM ARCHITECTS

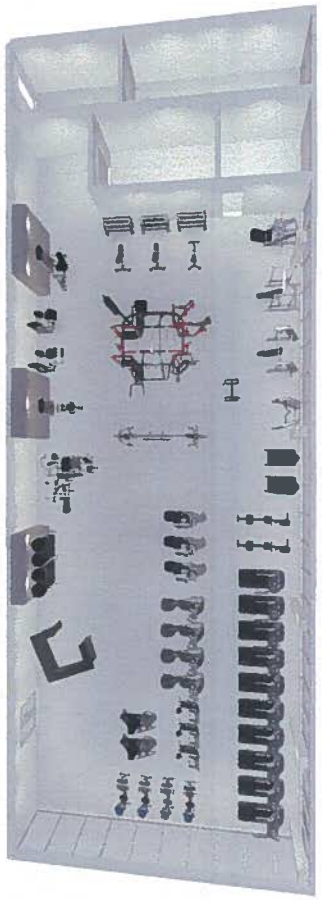
Lombard PARK DISTRICT

FGM ARCHITECTS



FITNESS CENTER

- 25-30 Pieces of Cardio
- 7-10 Selectorized Weight Machines
- Free Weight Area



SECOND FLOOR PLAN

16-2167.01