

Parking on Joint Use School and Park Sites

**Joint Use Site Planning and
Facility Design Committee**

Parking Study

***Approved by the
Joint Use Agreement Steering Committee
for Recommendation to the Partners***

September, 2002

Parking Study

Joint Use Site Planning and
Facility Design Committee

CONTENTS

	Page
EXECUTIVE SUMMARY	... 1
PART I: INTRODUCTION AND BACKGROUND TO STUDY	... 5
Scope	
Process	
PART II: PARKING REGULATIONS AND RESPONSIBILITIES	... 7
Development and Design of Parking Facilities	
Zoning Bylaw Requirements	
PART III: STAKEHOLDER INPUT	...10
Schools	
Community Leagues	
Community Services Department	
Planning and Development Department	
Transportation and Streets Department	
Development Industry	
Recreation Facilities/Sport User Groups	
Local Community	
PART IV: CASE STUDIES	...15
Glengarry District Park	
Pollard Meadows School and Park Site	
Mill Woods Campus	
PART V: PLANNING PRINCIPLES, DESIGN GUIDELINES, IMPLEMENTATION	...27
APPENDIX I: School Issues	...33
APPENDIX II: City of Edmonton Zoning Bylaw No.12800: Section 54	...35

Parking Study

Joint Use Site Planning and
Facility Design Committee

Summary Report

EXECUTIVE SUMMARY

<i>The study</i>	This report was prepared for the Joint Use Site Planning and Design Committee. The parking study resulted from a 1995 review of the Joint Use Agreement, where concerns were raised through public input sessions regarding a lack of parking on joint use school and park sites. An overview of the study scope and process is contained in PART I.
<i>Joint sites</i>	Joint use school and park sites typically include one or more schools, playing fields, a community league building, tennis courts and rink, and can include major recreational facilities such as a pool, arena or stadium/track facility. Parking provisions are the responsibility of the group or agency developing the building or constructing improvements. Requirements for parking are governed by the City of Edmonton's new Zoning Bylaw No. 12800, which was implemented in 2001 and replaces Land Use Bylaw 5996. Additional regulations/requirements governing the provision of parking are outlined in PART II.
<i>Method</i>	The study consisted of data collection from user groups, and a case study analysis of three joint use sites in Edmonton.
<i>Outcomes</i>	The study outcomes are a set of planning principles to guide the design and development of parking facilities on future sites, and a list of next steps or actions needed to address problems identified on existing sites.
<i>Assumptions</i>	<p>Many sites were planned to enable users to share parking stalls and thereby reduce the total number of spaces on-site. The assumptions were:</p> <ul style="list-style-type: none">▪ All of the stalls are not required at the same time.▪ Fewer stalls increased the amount of space for park purposes.▪ Fewer stalls reduced the overall cost of providing and maintaining parking lots.

Parking Study

Joint Use Site Planning and
Facility Design Committee

Summary Report

Stakeholder Input: Problems Associated with Parking on Joint Use Sites

Information gathered from stakeholders included the following general concerns and perceptions. More detailed information on stakeholder input is provided in PART III.

- The current amount of parking provided on joint use sites is not adequate to meet the needs of users.
- The design and layout of parking facilities do not provide maximum opportunity for shared parking arrangements.
- Specific parking problems vary with respect to time of day, day of the week, and time of year.
- Problems occur at schools during student drop-off time or dismissal, in the evenings when events are scheduled simultaneously, or when school events conflict with community use of playing fields.
- Problems arise in the community where adult sport field users drive to fields located on smaller sites and create congestion on neighbourhood streets or park inappropriately on turf areas. In some cases, damage is done to turf and fields when vehicles park illegally on grass.
- Concerns were raised relating to pedestrian safety near parking lots, stemming from poor driver behavior and use of the parking lots as a passenger drop-off facility.

Case Study Analyses

Case studies of three existing sites were conducted by professional designers, including Mill Woods Campus, Glengarry District Park and Pollard Meadows neighbourhood school and park site. A summary of study findings is contained in Appendices IV.

Planning Principles and Design Guidelines for Future Sites

Based on the case study analyses and on input from stakeholders, two principles and a number of design guidelines emerged to guide planning for parking on future joint use sites.

Parking Study

Joint Use Site Planning and
Facility Design Committee

Summary Report

1. **Balance competing needs.** *In determining the total amount of parking to be provided on future joint use sites, planners must weigh the relative merits of convenience versus cost. Following are some of the factors to consider:*
 - *the desire among site users to have dedicated, convenient parking with direct access to facilities,*
 - *the need to ensure the safety of all site users,*
 - *the need to protect open space and the environment,*
 - *community impacts,*
 - *the availability of resources to build and operate parking facilities.*
2. **Alternative options.** *Seek to provide safe, viable alternatives to on-site parking through encouraging other means of transportation or accessing off-site parking arrangements.*

The case studies and stakeholder input pointed to following design guidelines that could mitigate problems for future sites.

- Reduce standards for parking lot surface treatments so that lots can be developed (e.g. gravel lots) prior to construction of schools, community or recreation facilities. These could be cost-effective solutions for providing parking on an interim basis for playing fields. However, City maintenance staff caution that the reduced standard can be more costly to operate and maintain in the long term.
- Consider multi-level parking structures to reduce land area impacts.
- On small sites, continue to develop consolidated parking areas to support shared parking. On large sites, create consolidated parking areas spaced evenly across the site.
- Identify off-site parking on roadways where acceptable to the Transportation and Streets Department; identify potential arrangements with future adjacent land-uses (e.g. joint use sites next to church sites).

Parking Study

Joint Use Site Planning and
Facility Design Committee

Summary Report

- Provide on-site parking for sport field users where shared use opportunities are not possible.
- Design all parking facilities with safety in mind, having regard for long-term use changes and pedestrian circulation patterns.
- Address safety and convenience issues through education and promotional materials.
- Shared-parking arrangements should be formalized within written agreements. A template should be developed to assist in these efforts.

Next Steps and Further Study

For future joint use sites to work effectively, the above principles and guidelines need to be considered at the earliest stages of plan preparation and neighbourhood development. This will require cooperative planning among city staff, school district staff and developers. Support may be required from the Planning and Development if the Zoning Bylaw requires amendment in relation to temporary parking lot facilities and surface treatments. A number of implementation actions are outlined in PART V.

Stakeholders raised a number of additional concerns that will require further study for resolution. These relate specific problems encountered on existing sites, such as traffic congestion and illegal parking on turf. The responsible parties will address these on a case-by-case basis.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART I:
Introduction and Background

PART I: INTRODUCTION AND BACKGROUND TO STUDY

Concerns about the lack of parking on school and park sites were raised in 1995 during public input sessions held during a review of the ***Joint Use Agreement***. The agreement created a Joint Use Site Planning and Facility Design Committee to address issues related to the design and operation of school and park sites. The committee created a working group to look specifically at the adequacy of parking on school and park sites.

The working group consisted of representatives from:

- City of Edmonton Community Services Department
- City of Edmonton Planning and Development Department
- City of Edmonton Transportation and Streets Department
- Edmonton Catholic Schools
- Edmonton Federation of Community Leagues
- Edmonton Public Schools
- Urban Development Institute

Scope

The study scope was limited to the consideration of three elements:

1) Parking Requirements for Future Sites in New Neighbourhoods

The study examines parking requirements for future school and park sites only and does not make recommendations to address parking needs as they relate to existing sites. Although existing sites are analyzed as a means to determine the adequacy of existing processes and practices, recommendations focus on future sites only. Future sites are lands identified or reserved within an approved plan area for construction of school/park sites.

2) Addresses On-Site Demand Only

The study focuses on parking requirements generated from on-site uses. On-street parking issues are addressed only along roadways on the perimeter of the school and park sites.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART I: **Introduction and Background**

3) Broader Neighbourhood Design Issues Not Addressed

This report looks at roadway configurations directly impacting school and park site design, and appropriateness of land uses adjacent to school and park sites. Issues relating to the neighbourhood roadway design, location of school and park sites, and land use are addressed in a companion study entitled "Second Curve Thinking".

Process

The Working Group developed a terms of reference which established the scope of the project. Group members were asked to contact their constituents to determine specific sites with parking problems and to identify the types of problems. Responses were received from the Public and Catholic schools, Edmonton Federation of Community Leagues, and the City of Edmonton Community Services and Planning and Development Departments. Consultants were directed to review three existing joint use sites to analyze the parking provision and to identify problems and recommend design changes. Stakeholders and the Working Group have reviewed this report and their comments have been incorporated in this report. The report will be submitted to the Joint Use Site Planning and Facility Committee for consideration.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART II: **Regulations and Responsibilities**

PART II: PARKING REGULATIONS AND RESPONSIBILITIES

The Joint Use Agreement, Community Service's minimum level of development standards and the Zoning Bylaw govern the provision of parking on joint use sites.

Joint Use Agreement

The Joint Use Agreement between the City of Edmonton, Edmonton Catholic Schools and Edmonton Public Schools makes school facilities available to community groups after school hours, and municipal arenas, pools and other city facilities available to school children during school hours. The Agreement also clarifies how these three partners work together to design, build and maintain school and park sites. A series of joint recommendations approved by the three parties establish basic principles and goals. With respect to parking issues these recommendations state:

1. That public transportation and roadways be factored into all neighbourhood school/park sites. There is a need for efficient planning of public transportation and roadways to help alleviate parking problems at school/park/playing field sites.
2. That when selecting a school/park site in a neighbourhood plan, consideration should be given to locating near properties where a parking benefit from shared use would be possible (i.e., churches, businesses, community leagues etc.).
3. That the joint design and development of additional parking areas at a variety of areas on the school/park site be pursued in consultation with stakeholders.
4. That Joint Use Agreement users not be charged parking fees for use of school/park/playing fields sites parking areas during the Joint Use Agreement use.

The Joint Use partners have designed sites to share sport fields and parking in order to preserve open space, avoid duplication and to reduce costs.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART II: **Regulations and Responsibilities**

Development and Design of Parking Facilities

Major land uses including joint use sites are identified in Area Structure Plans and Neighbourhood Structure Plans. More detail as to the location and size of the site is identified in the Neighbourhood Structure Plan.

For school and park sites, Community Services prepares a generalized site concept plan that identifies building envelopes, parking areas, playgrounds and sports field locations. Playing fields and playgrounds are often established early in neighbourhood development, while schools and community league buildings are often delayed until the supporting neighbourhood population is established.

Community Services uses minimum level of development standards to develop the concept plan for joint use sites. The minimum level of development for a neighbourhood site is to grade, level and seed to approved field standards, sports fixtures as per field standards, trees, and signage. Parking is required for community league and school buildings on these sites through the Zoning Bylaw. District level sites, which serve more than one neighbourhood generally, include public and/or Catholic senior high school building envelopes, and may have community league buildings, and special leisure facilities. Playing fields are provided both for school athletic requirements and for broader community use. Under the new Zoning Bylaw, parking can now be required for active and passive recreation areas on sites where there are no other facilities built as yet.

Zoning Bylaw Requirements

Parking standards are established in the Edmonton Zoning Bylaw No 12800 and are outlined in detail in APPENDIX II. Both on-site and drop-off parking is required for schools and other land uses. As Bylaw requirements are triggered through the development permit process, only those uses that require a development permit are subject to the requirements. Schools, community league buildings and other structures that require development permits have specified on-site parking requirements. The new Edmonton Zoning Bylaw now requires parking to be provided for playing fields on sites where other facilities and associated parking have not been constructed.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART II: **Regulations and Responsibilities**

There is discretion for the Development Officer to consider a reduction of the total number of parking spaces provided on joint use sites as not all uses occur at the same time and there is an opportunity to share parking.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART III:
Stakeholder Input

PART III: STAKEHOLDER-IDENTIFIED PROBLEM AREAS

Stakeholder groups were contacted and requested to provide their opinion on the suitability of, or problems with, parking at joint school/park sites.

Schools

The schools are experiencing problems with the increased dependence on the automobile. More and more parents drive their children to school, more staff and senior high students drive, and other users rely on the automobile to access the recreation and community services on-site. Schools have indicated some problems with a lack of parking spaces for staff. The deficit relates to the additional staff that provides services to schools such as aides, volunteers and consultants. At the senior school level, a student-parking deficit has been identified which reflects the greater student access to automobiles. These parking deficiencies can impact local residents if parking is transferred to on-street locations.

Many elementary and junior high schools identified a drop-off problem that causes safety concerns for children and localized roadway congestion. There is general satisfaction with the shared use of spaces with after hours park users but some conflicts occur when school functions and other site activities are scheduled at the same time (refer to summary Appendix I).

It should be noted that the problems raised by the older schools relate to sites that often do not meet the current Zoning Bylaw parking standards. Therefore, these problems do not necessarily provide evidence that additional parking for schools above that specified in the Zoning Bylaw is required. However, schools constructed recently have provided more parking than the Zoning Bylaw requirement to meet the demand.

Community Leagues

Community leagues own, operate and maintain parking lots. These lots are used during the day and evening, on weekdays and weekends virtually year round. Few leagues can rely on the shared use of school spaces, however, the provision of shared parking on-site can reduce the number of stalls leagues are required to provide. There have been reported instances where schools or churches,

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART III: **Stakeholder Input**

without agreement, use league parking lots for either drop-off sites or overflow visitor or meeting parking and inconvenience league users. As well, some leagues experience conflicts when field users access their lots and facility users have to park on the street. Leagues are concerned that The Suburban Neighbourhood Design Principles suggests that higher density residential development be placed around parkland. This may result in league parking lots being used as overflow visitor parking.

Many community leagues share lots with schools, churches or other institutions with only verbal or no maintenance agreements. There is a concern over the responsibilities of the partners over the maintenance of the lots. While the Tri-partite license agreement specifies league responsibility in a joint use situation, any maintenance agreement that alters those terms may supersede the license and therefore must be in a form that can be appended to the document.

Some community leagues have been asked to provide parking for playing fields on proposed league development sites prior to building their own facilities. The Edmonton Federation of Community Leagues does not agree that community leagues should be asked or expected to provide parking until they are developing their facility. This does not preclude leagues offering to do so, after completing the appropriate needs assessment.

Community Services Department

Community Services does not generally provide parking for sports fields – in fact, parking is only provided at district level sites. Site area limitations and funding are the primary reasons more parking is not provided. Providing parking can reduce the amount of green space on-site and the funds to provide other facilities.

The timing of and responsibility for parking development are problematic as sports fields are usually developed before either a school or community league facility. Parking is only available on the street and this can create a concern for area residents.

Parking associated with the school and/or community league facility may not be conveniently placed for sports field users. In the case of the leagues it is only reasonable to ask that any parking they develop be done so in a manner that is adjacent to their proposed facility building envelope and not necessarily oriented for the convenience of

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART III:
Stakeholder Input

the sports field users. Community Services tries to develop the parking envelopes to meet user needs without building excessive access roads deep into the sites. On large sites it can mean that sport field users may face a long walk from the on-street or off-street parking areas. This has resulted in some problems with users driving over curbs to park near the fields.

Frequent plan amendments that affect future school/park sites make it difficult to design sites. Community Services is generally forced to design fields and facilities to fit a site rather than design a site to fit the facilities. More definitive standards on school/park site layout and size would help to resolve this problem.

The Suburban Neighbourhood Design Principles propose that new school sites be located in inter-neighbourhood focal points towards the edge of the neighbourhoods near collector and arterial roads. While this allows for site access it can make parking more of a concern, as parking is not permitted on arterial roads. As well, subdivision design that has the school/park site adjacent to residential or commercial development rather than road frontage can reduce the on-street parking potential and can make access to playing fields difficult.

The Department has not had much experience with the drop-off areas for new schools but has found that redevelopment of existing school sites with drop-off areas does not necessarily resolve the parking problems.

Planning and Development Department

The Department's concerns focus on the impacts of school/park sites on adjacent development. These sites are generally located on a collector road, with adjacent residential or commercial uses. Convenient on-street parking is available along the collector road and may impact the uses across the road. Front drive residential development opposite the school can reduce the amount of parking on the road. As well, commercial on-site parking lots near the schools can be used for overflow parking.

Joint school/park sites appear to have less of an impact on abutting land uses, as more parking is available. As well, sites that front onto more roadways have additional on-street parking available. However, the development industry does not favor this design

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART III:
Stakeholder Input

because the road costs cannot be recovered through the sale of lots on one side of the road.

Transportation Department

Parking requirements in the Zoning Bylaw relate to on-site spaces. There is no requirement for on-street parking for schools or other land uses. Parking is not permitted on arterial roads but may be permitted on collector or local roads.

The Suburban Neighbourhood Design Principles support the design of arterial and collector roads along a grid pattern peripheral to neighbourhoods with local roadways distributing neighbourhood traffic from/to the grid. This can result in joint use sites being located on narrower local roads. While parking is permitted on local roads with the reduced width there may be a greater impact from the congestion related to school and park use.

There have been suggestions that additional parking could be provided if on-street angle parking was allowed. The Transportation Department does not support angle parking on arterial roads but may consider it on collector and local roads depending upon-site specific conditions.

Another suggestion to provide additional parking is the establishment of gravel parking areas on these sites. Section 54.6 of the Zoning Bylaw requires parking spaces be paved, however, the Department may consider temporary parking lots with a gravel surface.

Development Industry

Under Section 666 of the ***Municipal Government Act*** the subdivision authority may require the owner of a parcel of land subject to a proposed subdivision to provide part of the parcel for municipal reserve, school reserve or municipal and school reserve or to provide money in lieu. The total amount of land required for these purposes may not exceed 10% of the parcel.

Through the planning process the location and size of these sites are refined. A balance must be achieved between urban design goals, the need to optimize land efficiency for residential development and the provision of useable public space. The school and park sites are a community amenity. However, as budgets become tighter a combination of land and money in lieu is required to provide the open

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART III:
Stakeholder Input

spaces and a base level of improvements for these sites. This requires the efficient use of the public space.

Recreation Facilities/Sport Users Groups

Pools and leisure centres require dedicated parking areas for patrons. Some of these facilities have problems with students and parents accessing adjacent schools, using facility's spaces and reducing those available for patrons. However, in the evening, these sites benefit from the shared use of the school parking areas.

Arena users must bring their equipment to the site and would prefer a short distance between the parking area and the arena. Covered arenas are required to have parking spaces under the Zoning Bylaw; however, these facilities can share parking as their peak usage is outside school hours. Outdoor rinks are not required to provide parking spaces, however outdoor rinks are a community league program and have full use of the league parking lot. Usually there is a league before there are rinks. Many schools enjoy the benefits of having these rinks for their students during the day.

Playing field users have expressed some concern over the availability and location of parking on-site. Many of the user groups must supply equipment for the activities and would appreciate being able to park near the fields to reduce the distance to carry equipment. Many of these fields are located behind schools in the centre of the joint use sites. Parking is generally located near the buildings on-site that can be at some distance from the fields. On-street parking can provide access to fields located near the edges of the site.

Local Community

Schools have received complaints from adjacent residents concerning on-street parking, traffic congestion and poor driver behavior. Residents do not support the use of local residential roads as long term parking as it negatively affects streetscape, reduces parking options for residents and their guests, and raises a concern regarding pedestrian safety. Many of the issues of concern to schools regarding congestion at school commencement, noon and at dismissal time are shared by local residents. The congestion affects their mobility and raises concern over pedestrian safety. Poor driver behavior and limited resources for traffic enforcement exacerbate these problems.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: Case Studies

PART IV CASE STUDIES

The Parking Working Group arranged to have consultants review the parking situation at three existing joint use sites: Glengarry, Pollard Meadows and Mill Woods.

The Glengarry site was identified as one where parking problems persist while Pollard Meadows and Mill Woods were identified as sites where the parking worked well. The intent was to determine the factors contributing to positive parking design and to identify the conditions that contributed to problems with the site parking.

The findings indicate that some schools on joint use sites may have a modest shortage of staff parking spaces however some older high schools have a parking deficit for students. This reflects the parking standards at the time not current Zoning Bylaw standards. Schools are faced with increased demand for parking as more staff is in the schools, more parents drive their children to school, more senior high students have access to vehicles, and the buildings are increasingly used for other activities.

Community league buildings and Community Service buildings do not appear to have a parking problem if provided with designated stalls. Both require designated parking weekdays and cannot rely on shared parking.

Special recreation facilities such as pools and leisure centres can have parking problems if their parking areas are close to schools. Parents and students tend to use the designated patron parking. The location of the parking with respect to the entrance of the facility is important.

The most significant parking problems on joint use sites appear to be the location and availability of parking for sportsfield use. Although the new Zoning Bylaw now can require parking for playing fields on sites where no other facilities have been built as yet, there has been limited provision specifically for sport fields in the past. Sport field users often have teams of small children and equipment that must be taken some distance from existing parking areas to fields. In some locations it is not clear how best to access the field from the parking areas. On-street parking may serve dispersed playing fields while parking lots may or may not depending upon the location of the lots

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: **Case Studies**

with respect to the fields. Signs indicating field locations, distance and travel times may assist users.

As the amount of activity on a joint use site increases so does the demand for parking. It is likely that these sites will be unable to meet the demand for parking resulting from this use. It is inevitable that some parking must occur on-street. Joint use sites with adjacent road frontage which permit on-street parking could provide more dispersed parking but may impact the neighbourhood. Reduced road frontage and the narrower width of roads limit on-street parking opportunities.

Case Study Analyses

The Parking Working Group arranged to have consultants review the parking situation at three existing joint use sites: Glengarry, Pollard Meadows and Mill Woods. D. Zoerb from UMA Engineering reviewed the Glengarry site, C. Chopko Beck from IBI Group reviewed the Mill Woods site, and B. Charanduk from Stantec reviewed the Pollard Meadows site.

The Glengarry site was identified as one where parking problems persist while Pollard Meadows and Mill Woods were identified as sites where the parking worked well. The intent was to determine the factors contributing to positive parking design and to identify the conditions that contributed to problems with the site parking.

Glengarry District Park

This site is located in north Edmonton on 132 Avenue at 89 Street and the facilities include:

- Archbishop O'Leary Catholic High School,
- St. Cecilia Catholic Junior High School,
- O'Leary Pool,
- Glengarry Community League,
- Glengarry Community and Family Services and daycare,
- Glengarry Arena,

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: **Case Studies**

- eight playing fields (single purpose and combination fields),
- four tennis courts,
- three outdoor rinks, and
- a playground and spray pool.

A generalized site map is included as Figure 1.

Existing Parking Supply

There are four parking areas on the site to serve the facilities with a total of 362 spaces. One lot in the northeast corner of the site has 32 spaces that serve Glengarry Arena, two playing fields, and the tennis courts. There is a lot in front of the Pool that contains 93 spaces for use of patrons and staff. A parking lot located behind O'Leary High School has 97 spaces and is allocated to staff. There are several linked parking areas located behind St. Cecilia and the Pool off 133 Avenue and 89 Street. This lot has 60 spaces used by St. Cecilia staff, 29 spaces for O'Leary High School students, and 51 spaces used by the Community League and Community and Family Services and the daycare. These spaces provide parking for the fields to the west of St. Cecilia, behind O'Leary School, and the outdoor rinks.

There are 35 on-street drop-off spaces provided in a lay-by in front of O'Leary High School.

The site fronts onto 132, 133, 134, and 135 Avenues, and 85 and 89 Streets. All of these roadways are local roads except for 132 and 135 Avenues, which are collector roads. Parking is generally permitted on local and collector roads unless signed differently.

Parking Assessment

Facility managers were contacted to determine their perception of on-site parking.

The amount of parking for O'Leary Pool is perceived as adequate, however, there is an ongoing problem with high school students using the lot and parents dropping students off which reduces the availability for pool patrons.

The parking available for the Community League, Glengarry Arena and Community and Family Services is generally good.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: Case Studies

St. Cecilia has surplus on-site spaces but it is deficient in drop-off spaces. Under the current Zoning Bylaw standards O'Leary should have 218 stalls but has only 126. There is a surplus of staff stalls but a severe deficit in student parking stalls i.e., 102 stalls.

While specific parking spaces are not allocated to the playing fields and the rinks, the 269 available on-site spaces can accommodate these uses. However, the location of many of the spaces is not close or convenient to some of the fields.

The most significant parking problem on-site is the student parking deficiency for the high school.

The table below provides a comparison between the number of parking spaces required under the Zoning Bylaw and existing spaces on-site.

Glengarry Site	Required off-street spaces	Existing off-street spaces	Required drop-off spaces	Existing drop-off spaces
St. Cecilia Junior High School	48	60	28	2
Archbishop O'Leary High School	218	126	34	35
O'Leary Pool	?	93		
Glengarry Arena*	30	32		
Community & Family Services	16	42**		
Glengarry Community League	?	9		
8 Playing Fields	0	0		
4 Tennis Court	0	0		
3 Outdoor Rinks*	0	0		

* Winter use only ** 42 spaces are shared with Glengarry Community League

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV:
Case Studies



Glengarry District Park Site

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: **Case Studies**

Pollard Meadows Neighbourhood Park

This site is located in Mill Woods and fronts onto 48 Street and Mill Woods Road East. This site contains:

- Pollard Meadows Elementary School,
- T.D. Baker Junior High School,
- Holy Family Catholic School,
- the Southwood Community League building envelope,
- 13 playing fields,
- a playground, and
- an outdoor rink.

A generalized site map is included as Figure 2.

Existing Parking Supply

There are a total of 103 spaces on the site allocated as follows: 23 at Pollard Meadows School accessed off 48 Street; 52 at T.D. Baker and 28 at Holy Family Catholic School both accessed off Mill Woods Road East.

The site fronts onto 42 and 48 Streets, 18A Avenue, and Mill Woods Road East. Both 42 Street and 18A Avenue are local roads while 48 Street and Mill Woods Road East are collector roads. On-street parking is generally permitted on local and collector roads unless signed differently. The site also backs onto single family and multi-family development.

Parking Assessment

The site acts more like two sites that are partially linked. Pollard Meadows School, the community league facility site, and the outdoor rink and 6 playing fields are oriented to 48 Street. T.D. Baker Junior High, Holy Family Catholic School and 3 playing fields are oriented to Mill Woods Road East. These two areas are linked by open space behind the schools.

All of the schools lack drop-off spaces and both elementary schools do not meet current Zoning Bylaw standards for staff and visitor parking.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: **Case Studies**

While playing fields do not have assigned parking spaces, the school and rink parking spaces are available for their use. Some of the fields are well accessed by these lots while others are some distance from parking. The lack of on street parking also affects parking for the fields.

The table below provides a comparison between the number of parking spaces required under the Zoning Bylaw and existing spaces on-site.

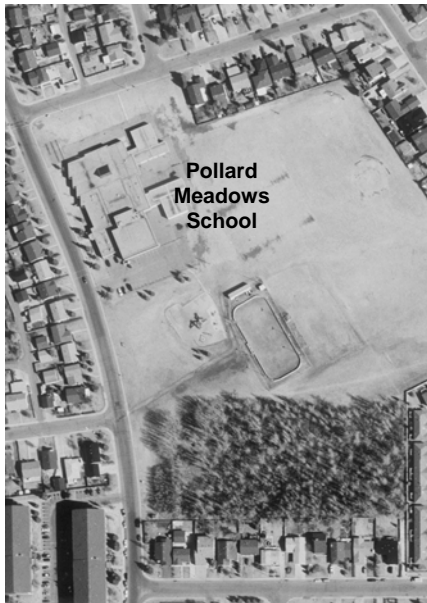
Pollard Meadows Site	Required off-street spaces	Existing off-street spaces	Required drop-off spaces	Existing drop-off spaces
Pollard Meadows School	34	23	15	
T.D. Baker Junior High	38	52	31	
Holy Family Catholic School	38	28	24	
Community League	16	Not built		
Playing Fields	13	0		
C. L. Rink	0	0		

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: Case Studies

Pollard Meadows Park



Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: **Case Studies**

Mill Woods Campus District Park

The Mill Woods Campus is located in south Edmonton, south of 28 Avenue between Mill Woods Road and 66 Street. This site contains:

- J. Percy Page High School,
- Holy Trinity Catholic High School,
- Mill Woods Recreation Centre,
- eight tennis courts,
- Mill Woods Rotary Park, and
- eight playing fields.

A generalized site map is included as Figure 3.

The site fronts onto 23 and 28 Avenues, 66 Street and Mill Woods Road, all are arterial roads, except for Mill Woods Road, which is a collector road. Parking is generally not permitted on arterial roads but may be permitted on collector roads.

Existing Parking Supply

There are 814 spaces in several lots on the site. J. Percy Page School has 240 spaces and Holy Trinity 138. There are 205 spaces allocated for the Recreation Centre, 35 for the tennis courts, 94 for the playing fields and 102 for the Rotary Park.

The scattered lots facilitate access to most of the playing fields and the Rotary Park however patrons may have some distance to walk to their field. In particular the Cricket field is located well away from any parking areas.

Parking Assessment

The high schools appear to have more parking than required under the by-law but this reflects the shared use of the lots with the Leisure Centre. The entrances for the school buildings face onto the parking lots but the entrance to the Leisure Centre faces away from the major lots. Patrons of the Leisure Centre like to park near the entrance and few spaces are located here.

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: Case Studies

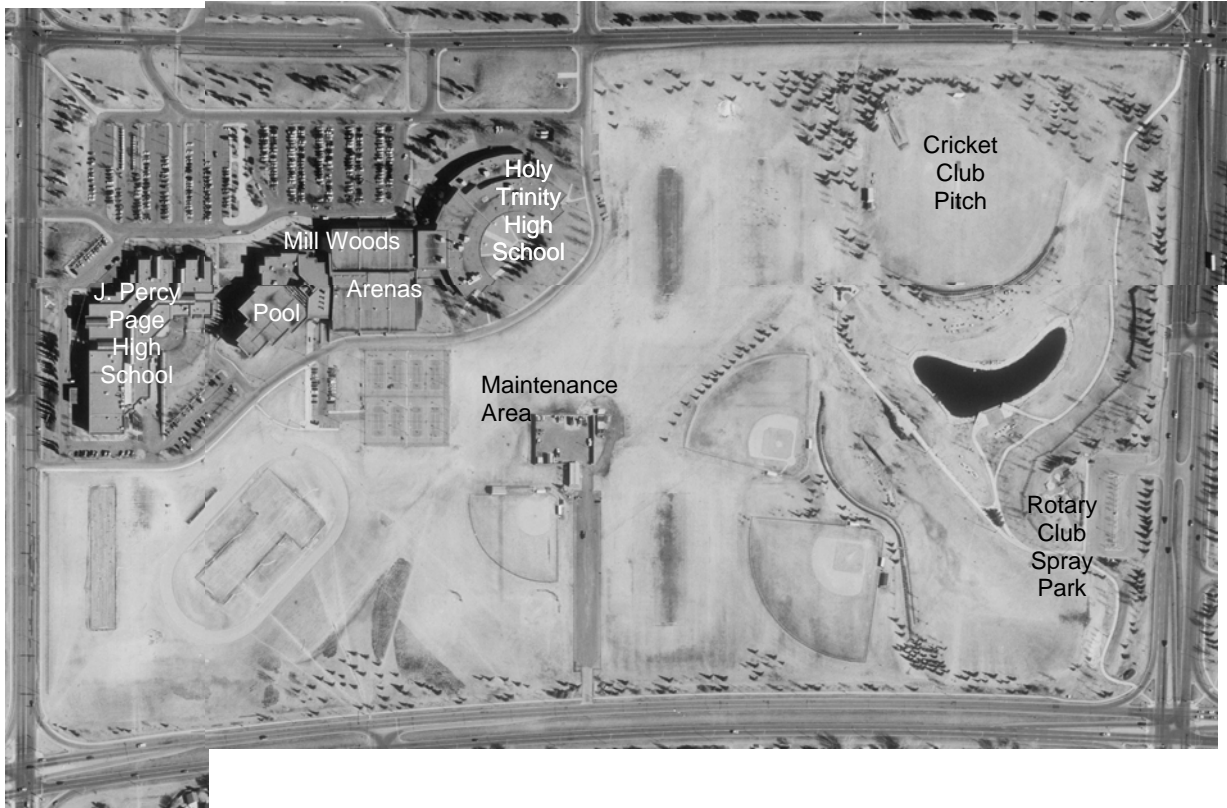
The table below provides a comparison between the number of parking spaces required under the Zoning Bylaw and existing spaces on-site.

Mill Woods Site	Required off-street spaces	Existing off-street spaces	Required drop-off spaces	Existing drop-off spaces
J. Percy Page High School	177	240	50	6
Holy Trinity Catholic High School	105	138	28	12
Mill Woods Recreation Centre	?	205		
8 tennis Courts	32	35		
8 Playing Fields	0	94		
Mill Woods Rotary Park	0	102		

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART IV: Case Studies



Mill Woods Park

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART V: **Planning Principles and Design Guidelines**

PART V: PLANNING PRINCIPLES, DESIGN GUIDELINES, IMPLEMENTATION

From the parking problems raised by stakeholders and through the case studies examined, several design and operational considerations have been identified which may resolve many of the concerns with joint use shared parking.

Basic governing principles establish the fundamental goals for the provision of parking on joint use sites.

Adequacy of parking on joint use sites can be improved through on-site and off-site design elements aimed at reducing the overall parking demand, by more efficiently using parking or by providing some additional on-site parking.

The proposed implementation actions identify guidelines or policies or funding priorities that need to be approved and incorporated into the development process for new communities. This will require the city administration, school boards, and the development industry to recognize potential parking problems and explore design initiatives to avoid them.

Principle 1: Balance the amount, safety and convenience of parking provided at joint use sites against the capital, operating, maintenance and land costs, and the preservation of park land areas.

- Continue to promote and plan for shared parking on joint use sites
- Accept that parking shortages will continue to occur on these sites at specific times
- Accept that on-site parking will be inconvenient for some users

When preparing school and park site concept plans:

- Provide drop-off and parking areas together to improve efficiency but ensure that the design addresses safety and convenience issues
- Ensure safety and security measures and passive observation opportunities are included in the parking design
- Locate parking areas near entrances to buildings where possible

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART V: **Planning Principles and Design Guidelines**

- Provide on-site pathway linkages between parking areas and facilities and playing fields designed to accommodate persons with disabilities
- Disperse parking areas on large sites to minimize walking distances to facilities and playing fields
- Establish adult bookable fields on neighbourhood park sites on the periphery of neighbourhoods or on district centre sites
- Provide well lit signs with maps from parking areas illustrating field locations and distances as well as entrances to facilities
- Provide temporary parking when playing fields are constructed before other site facilities
- Locate parking to balance convenience to fields with separation to prevent damage
- Provide well designed and secure bicycle parking on-site

Proposed Implementation Action	Lead Agencies
Facilitate collaborative input from partners at the design stage regarding the location, amount, shared use opportunities and access to parking	Community Services Planning & Development Transportation & Streets Edmonton Federation of Community Leagues School Districts Urban Development Institute
Encourage developers and site users to provide parking	Community Services Urban Development Institute Edmonton Federation of Community Leagues Edmonton Sports Council
Review the minimum park site standards to	Community Services

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART V: Planning Principles and Design Guidelines

require temporary parking if playing fields are created before other site facilities	
Review the minimum park standards to require pathway linkages and signing	Community Services

Principle 2: Seek alternatives to full build out of parking requirements under the Zoning Bylaw to avoid an oversupply of parking, loss of open space and increased development costs but ensure adequate parking is provided.

Maximize on-street parking opportunities:

- Provide drop-off parking near playing fields
- Maximize parking by creating angle parking
- Maximize the collector/local road frontage to increase availability of on-street
- Maintain a minimum of 11.5m carriage way width on collectors fronting school and park sites and insure that traffic volume does not eliminate the ability to provide on-street parking
- Minimize intersections in front of sites e.g., roads, lanes, driveways
- Locate fire hydrants and public transit stops on site frontage to maximize parking in front of schools
- Design adjacent residential development on roads opposite joint use sites to support on-street parking e.g., provide flanking lots, require rear lanes and driveways
- Ensure access to site is not reduced by medians
- Use traffic calming measures to reduce traffic congestion and improve pedestrian safety in front of these sites

Use parking spaces efficiently:

- Limit to the extent possible reserved parking areas to increase the parking available for shared use and provide signs to advise the public of parking availability

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART V: **Planning Principles and Design Guidelines**

- Maximize shared use of on-site parking as an efficient and effective means of addressing parking but not to the exclusion of some segregated designated parking for community leagues, Community Services, and special recreation facilities such as pools
- Pursue agreements for shared use of adjacent commercial and institutional parking lots

Reduce parking demand:

- Provide good transit linkages to sites and convenient passenger drop off zones
- Provide convenient paved pedestrian and bicycle linkages to the site
- Promote the use of car pools for staff at schools and other facilities, as well as for sports groups
- Work with parents and schools to develop alternatives to driving children to/from school and to improve driver behavior near schools

Proposed Implementation Action	Lead Agencies
Institute measures to reduce car dependence and to encourage alternative transportation modes such as car pooling, transit use, walking school bus, and bicycling	School Districts Community Services Transportation & Streets Planning and Development Major Sport Groups
Prepare materials and organize groups to educate teachers, parents, students, community leagues, sports groups and other site users about the health and environmental benefits of alternative modes of transportation	School Districts Transportation & Streets Community Services

Principle 3: Formal agreements between shared use parking partners are required to clarify roles for operation, maintenance, and conflict resolution

Parking Study

Joint Use Site Planning and
Facility Design Committee

PART V: **Planning Principles and Design Guidelines**

- Have all stakeholders formalize agreements at the design stage
- Ensure parking is available on-site for all users and assign tasks and charges for services
- Establish a conflict resolution process to support the concept of shared parking
- Consider coordinating the bookings of fields and facilities to reduce simultaneous major events and ensure activity is appropriate for the site and parking

Proposed Implementation Action	Lead Agencies
Draft a standard operating agreement template to serve for shared parking areas	Joint Use Committee

Beyond Scope Issue

Throughout this study participants raised concerns about the parking problems with many existing school/park sites. The scope of this study does not address this concern but it is suggested that this issue should be the subject of further study to establish principles and design guidelines for these sites.

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX I: School Issues

Public Schools

All of the Principals of Edmonton Public Schools were asked to identify the adequacy of parking on their school/park site, problems or concerns with shared parking arrangements, and any other parking problem or issue.

A total of 116 responses were received. Approximately 29% of the respondents indicated that there were no major parking concerns at their site. Other respondents identified major parking concerns to be not having enough parking, unsafe parent drop-off activity, shared use of lots, and poor design of the lot.

Many indicated a lack of spaces for school staff or other uses or services provided through or within the school. Some indicated sufficient staff spaces but a lack of spaces for visitors, trades, aides or other occasional needs.

Many indicated frustration with driver behavior at the schools including U-turns, jay-walking, double parking, parking in No Stopping zones and use of parking lot as a drop-off area. The most significant concern was the safety of children due to congestion and backing vehicles. Other impacts of these activities were delays to transit buses and congestion on the roadway near the school.

Schools noted that the proximity of parking lots to community league buildings and sport fields causes congestion and competition for scarce parking spaces. They also noted that vehicles have bypassed barricades to access playing fields, which has damaged landscaping. Only a few schools noted a concern with inconvenience for staff where the school lot is full in the evening due to major sports events on the playing fields. Several schools indicated a shared arrangement with adjacent community league buildings. It appears that each school develops its own arrangement with the league regarding snow removal and usage. Senior high schools noted the on-going problems with sharing parking with pools and arenas.

A key design issue is the siting of the playgrounds in the vicinity of parking lots, specifically where children cross the lot to access the playground. This creates unsafe conditions when the lot is congested during morning commencement of school operation, noon, and at school dismissal. Another concern was the lack of visibility of the lot from the building or the street that relates to personal security and vandalism concerns.

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX I: School Issues

Catholic Schools

The key problems relate to passenger drop-off, poor accessibility, and over development on the site.

The Catholic Schools also indicated that while the Zoning Bylaw requirement is for 1.4 spaces per classroom, in recent projects 1.6 to 1.7 spaces per classroom had been provided. This increase reflects the parking requirements associated with additional staff provided in many classrooms, and additional services offered at schools.

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

Edmonton Zoning Bylaw 12800

54.1 Off-street Parking and Loading Regulations

- 1) Applicability and Exceptions
 - a) When any development takes place on any Site, off-street parking and loading facilities for each building type or Use, including Accessory Uses, shall be provided and maintained in accordance with the regulations and standards of this Bylaw.
 - b) Notwithstanding the above, the regulations contained within this Section shall not apply to buildings or Uses existing at the time of the adoption of this Bylaw, except that:
 - i) where any building or structure undergoes an increase in Floor Area due to addition or external renovation, off-street parking, including parking for the disabled and visitors, shall be increased to equal or exceed the off-street parking requirements resulting from application of the provisions of this Bylaw to the entire building, structure or Use as modified in size;
 - ii) where any building or Use undergoes a change of Use, intensity of Use or capacity and the change results in an increase in the parking requirements, the off-street parking, including parking for the disabled and visitors, shall be increased to equal or exceed the off-street parking requirements resulting from application of the provisions of this Bylaw to the entire building, structure or Use as modified in use; and
 - iii) where off-street parking facilities or loading facilities are provided when not required, the location, design and operation of such facilities shall comply with all the regulations of this Bylaw.
 - c) All required parking and loading facilities shall only be used for the purpose of accommodating the vehicles of clients, customers, employees, members, residents or visitors in connection with the building or Use for which the parking and loading facilities are provided, and the parking and loading facilities shall not be used for driveways, access or egress, commercial repair work, display, sale or storage of goods of any kind.
- 2) General Requirements
 - a) Where provision of off-street vehicular parking, Garage spaces, Bicycle Parking or loading spaces is required by this Bylaw with the exception of Single Detached Housing, Duplex Housing, and Semi-detached Housing, a plan of the proposed Site layout shall be included with the Development Permit Application. The Site Plan must be drawn to scale and must clearly illustrate the lot size and configuration, building locations, site access, parking and loading spaces, on-site circulation and any other details relevant to the review of the development proposal.
 - b) The number of off-street vehicular parking spaces, Bicycle Parking spaces and loading spaces required for any Use is specified in Schedule 1, Schedule 2 and Schedule 3 respectively.
 - c) Where Schedules 1, 2 and 3 do not clearly define regulations for a particular development, the single Use Class or combination of Use Classes most representative of the proposed development shall be used by the Development Officer to determine the vehicular parking, Bicycle Parking and loading requirements.
 - d) Where the total number of vehicular parking spaces, Bicycle Parking spaces or loading facilities is determined by reference to a unit such as the number of seats or Floor Area, the next higher whole number shall be required where the calculation results in a fractional number of required spaces.
 - e) Where more than one calculation of parking space requirements is specified for a Use, the greater requirement shall be applied.
 - f) Unless otherwise specified in this Bylaw, no required parking spaces shall be provided as Tandem Parking.
 - g) The Development Officer may use his variance power to relax the vehicular parking requirements in Schedule 1, the Bicycle Parking requirements in Schedule 2 and the loading requirements in Schedule 3, however such a variance shall only be considered in cases where the nature of the Use, the size of the Site, or other physical constraints result in a situation where the requirements cannot be met on-site without unnecessary hardship or practical difficulties.
 - h) In the case of the multiple Use of a Site, the Development Officer shall calculate the vehicular parking, Bicycle Parking and total off-street loading requirement for each individual Use and the total shall be deemed to be the required vehicular parking, Bicycle Parking or off-street loading for the Site, unless the applicant can demonstrate that there is complementary use of the parking or loading facilities which would warrant a reduction in the

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

requirements. Where such reduction is made, this shall be considered a variance and the Development Officer shall state the reduction and the reasons for it on the Development Permit.

3) Parking for People with Disabilities

a) Parking spaces for the disabled shall:

- i) be provided in accordance with the Alberta Building Code in effect at the time of the Development Permit application, for which no discretion exists;
- ii) be included, by the Development Officer, in the calculation of the applicable minimum parking requirement; and
- iii) be identified as parking spaces for the disabled through the use of appropriate signage, in accordance with Provincial standards.

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

Edmonton Zoning Bylaw 12800

54.2 - Schedule 1 (Portion)

Schedule 1

Vehicular Parking Requirement

Community, Educational, Recreational and Cultural Service Use Classes

USE OF BUILDING OR SITE

MINIMUM NUMBER OF PARKING SPACES OR GARAGE SPACES REQUIRED

28) Any development within the Community, Educational, Recreational and Cultural Service Use Class not listed separately.

1 parking space per 3.5 seats or 3.1 parking spaces per 10 m2 of Floor Area used by patrons

29) Child Care Services

1 parking space per employee

30) Community Recreation Services

16 parking spaces, plus where multipurpose room greater than 93 m2 is present and is used for general assembly purposes, an additional 2.2 parking spaces per 10 m2 over 93 m2 of Floor Area in a multipurpose room is required. The multipurpose area shall not include dressing rooms, change rooms, washrooms, storage areas, and cooking or kitchen areas, which are normally incidental to the primary function of the Community Recreation Services.

Where the Community Recreation Service facility parking area immediately abuts a parking area for a school, a maximum of 50% of the additional parking spaces required pursuant to the above clause may be provided by including the parking facilities on the abutting school parking area.

31) Conversions of existing Public or Private Elementary, Junior High and High Schools to any other Public or Private Education Service

1.4 parking spaces for each classroom, plus 1 parking space for every 12 students.

32) Colleges, Business or Technical Schools

1 parking space per 10 seats, plus auditorium requirements where applicable.

33) Exhibition and Convention Facilities

1 parking space per 3.5 seats or 3.1 parking spaces per 10 m2 of Floor Area used by patrons

34) Indoor Participant Recreation Services Except:

1 parking space per 3.5 seats or 3.1 parking spaces per 10 m2 of Floor Area used by patrons

a) Bowling Alleys

4 parking spaces per Lane plus parking requirements for Accessory Uses

b) Curling Rinks

8 parking spaces per sheet plus parking requirements for Accessory Uses

c) Health and Fitness Clubs

1 parking space per 10 m2 of Floor Area

d) Hockey Rink and Swimming Pools

1 parking space per 3.5 seats or 1 parking space per 5 m2 playing/water surface or assembly area

e) Racket Sport Facilities

2 parking spaces per court plus parking requirements for Accessory Uses

35) Natural Science Exhibits

1 parking space per 3.5 seats or 3.1 parking spaces per 10 m2 of Floor Area used by patrons

36) Outdoor Participant Recreation Services Except:

1 parking space per 3.5 seats or 3.1 parking spaces per 10 m2 of Floor Area used by patrons

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

a) Golf Course or Driving Range	5 parking spaces per hole (Golf Course) or 1 parking space per T-box (Driving Range) plus parking requirements for Accessory Uses
b) Sports Fields in association with school/park sites	A maximum of 10 parking spaces per field to be developed provided that the sports and playing fields are developed prior to the development of other Uses on the Site, such as Community Recreation Service facilities or other school Uses. The number and design of the parking spaces and the surface treatment of the parking area shall be approved by the Development Officer in consultation with Transportation and Streets Department, Community Services Department and the School Boards.
37) Private Clubs	1 parking space per 3.6 m2 of Public Space
38) Public Libraries and Cultural Exhibits	1 parking space per 10 m2 of Floor Area used by patrons
39) Public or Private Elementary and Junior High Schools	<p>1.4 parking spaces per classroom</p> <p>This calculation shall include the ultimate parking requirements for all potential future school development on-site, whether contained in a core facility or in attached portable pods. Actual development of parking spaces may, however, be phased in accordance with each phase of school development.</p> <p>Where the school parking area immediately abuts a parking area for a Community Recreation Service facility, a maximum of 50% of the smaller parking requirement between the school and the Community Recreation Service facility may be provided by including the parking facilities on the abutting Community Recreation Service parking area.</p>
40) Public or Private High Schools	<p>1.4 parking spaces for each classroom, plus 1 parking space for every 12 students.</p> <p>This calculation shall include the ultimate parking requirements for all potential future school development on-site, whether contained in a core facility or in attached portable pods. Actual development of parking spaces may, however, be phased in accordance with each phase of school development.</p> <p>Where the school parking area immediately abuts a parking area for a Community Recreation Service facility, a maximum of 50% of the smaller parking requirement between the school and the Community Recreation Service facility may be provided by including the parking facilities on the abutting Community Recreation Service parking area.</p>
41) Religious Assembly	1 parking space per 4 seats
42) Spectator Entertainment Establishments	1 parking space per 3.5 seats or 3.1 parking spaces per 10 m2 of Floor Area used by patrons
43) Spectator Sports Establishments	1 parking space per 5 seats

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

Edmonton Zoning Bylaw 12800

54.3 Bicycle Parking Facilities

54.3 Bicycle Parking Facilities

- 1) Number of Bicycle Spaces
 - a) In addition to the required vehicular parking, Bicycle Parking shall be provided in accordance with Schedule 2.
- 2) Size and Location of Bicycle Parking Facilities
 - a) Each Bicycle Parking space shall be a minimum of 0.6 m in width with a minimum clear length of 1.8 m. Bicycle Parking spaces shall have a vertical clearance of at least 2.0 m.
 - b) Required Bicycle Parking spaces shall be wholly provided on the same Site as the building.
 - c) Adequate access to and exit from individual Bicycle Parking spaces shall be provided with an aisle of not less than 1.5 m in width, to be provided and maintained beside or between each row of Bicycle Parking.
 - d) Required Bicycle Parking spaces and accesses shall be located on hard paved surfaces.
 - e) Bicycle parking shall be separated from vehicular parking by a physical barrier or a minimum 1.5 m of open space.
 - f) Bicycle Parking spaces shall be visibly located where possible and provided in one or more of the following ways:
 - i) secure bicycle storage rooms, lockers, racks, railings or other such device inside the building, preferably at the ground level;
 - ii) secure bicycle storage rooms, lockers, racks, railings or other such device in any Accessory parking area; or
 - iii) within a required or non-required Yard or building Setback of a Site but not more than 15.0 m from a principal entrance of the building, except: in the case of educational services developments where the students are restricted from using the principal entrance of the building, Bicycle Parking spaces may be provided in the required or non-required Yards of a Site, no more than 15.0 m from the principal entrance of the building designated for student use.
 - g) Where Bicycle Parking is not visibly located on site, directional signage shall be displayed indicating its location.
 - h) All Bicycle Parking spaces shall be situated to maximize visibility so as to discourage theft and vandalism, and shall be illuminated.
- 3) Design of Bicycle Parking Facilities
 - a) Bicycle Parking shall be designed so that bicycles may be securely locked to the rack, railing or other such device without undue inconvenience and shall be reasonably safeguarded from intentional or accidental damage, in accordance with the following standards:
 - i) Bicycle Parking shall hold the bicycle securely by means of the frame. The frame shall be supported so that the bicycle cannot fall or be pushed over causing damage to the bicycle.
 - ii) Bicycle parking shall accommodate:

locking both the frame and the wheels to the rack, railing or other such device with a high security U-shaped shackle lock, if the cyclist removes the front wheel;

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

locking the frame and one wheel to the rack, railing or other such device with a high security U-shaped shackle lock, if the cyclist leaves both wheels on the bicycle; and

locking the frame and wheels both to the rack, railing or other such device with a chain or cable not longer than 2.0 m without the removal of any wheels.

- b) Bicycle parking racks, railings or other such devices shall be anchored securely to a hard surface or fixed structure.

Edmonton Zoning Bylaw 12800

54.3 Schedule 2

Schedule 2

Bicycle Parking Requirements

USE OF BUILDING OR SITE	MINIMUM NUMBER OF BICYCLE PARKING SPACES
1) All Residential and Residential Related Use Classes of 20 Dwellings or more, and all Non-residential Use Classes outside the boundaries of the Downtown Area Redevelopment Plan	5% of the number of vehicular parking spaces required under Schedule 1 to a maximum of 50 Bicycle Parking spaces with 5 Bicycle Parking spaces being the minimum to be provided.
2) Administration Use and Educational Facilities	10% of the number of vehicular parking spaces required under Schedule 1, with 5 Bicycle Parking spaces being the minimum number of spaces to be provided.
3) All Residential and Residential Related Use Classes of 20 Dwellings or more, and all Non-residential Use Classes within the boundaries of the Downtown Area Redevelopment Plan	20% of the number of vehicular parking spaces required under Schedule 1 to a maximum of 50 Bicycle Parking spaces, with 5 Bicycle Parking spaces being the minimum to be provided.

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

Edmonton Zoning Bylaw 12800

54.5 Passenger Drop-off Spaces for Public and Private Elementary, Junior High and High Schools

54.5 Passenger Drop-off Spaces for Public and Private Elementary, Junior High and High Schools

1) Applicability

- a) When any new school development is proposed, Passenger Drop-off Spaces shall be provided in accordance with Schedule 4.
- b) Where an existing school building is to be enlarged to accommodate an increased enrolment of more than 100 students, or of more than 20% of existing student enrolment, whichever is less, the Development Officer shall apply the standards for Passenger Drop-off Spaces, as identified in Schedule 4, to the total school enrolment capacity. Where Site constraints do not feasibly permit the full application of the standards identified in Schedule 4, the Development Officer, may use his variance power to apply a lesser standard, at his discretion.
- c) Where the calculation of the number of Drop-off Spaces results in a fractional number of spaces, the next highest whole number of Drop-off Spaces shall be required.
- d) Required on-site parking spaces shall not be used to satisfy the requirements for the provision of Passenger Drop-off Spaces.

2) Location of Passenger Drop-off Spaces

- a) Passenger Drop-off Spaces located on-site shall be placed on land other than that used or designated for future use as required on-site parking, and shall be located so as to provide for safe and efficient movement of vehicles.
- B)Passenger Drop-off Spaces may be located within the roadway plan in accordance with Schedule 4 and subject to the approval of the Transportation Street Department.
- c) The Development Officer shall consult with the Transportation and Streets Department and Community Services Department, as well as the applicable School Board, to obtain information relevant to the determination of the number and location of Passenger Drop-off Spaces for school developments.
- d) Notwithstanding the foregoing, the Development Officer may use his variance power to reduce or eliminate the required number of Passenger Drop off Spaces for the development of new schools in new subdivisions, in consultation with the Transportation and Streets Department and Community Services Department, as well as the applicable School Board, where:
 - i) there are demonstrated physical Site constraints for a specific development which shall limit the location and number of on-site Passenger Drop-off Spaces which can be provided; or
 - ii) there are no physical Site constraints, but where all parties are agreed on alternate solutions to the development of Passenger Drop-off Spaces, and where the Development Officer is satisfied that such alternate solutions are adequate.
- e) The total number of Passenger Drop-off Spaces shall be calculated on the basis of the ultimate Drop-off requirements for all potential future school development on the Site in question, whether contained in a core facility or in attached portable pods.

3) Design of Passenger Drop-off Spaces

- a) Passenger Drop-off Spaces shall be a minimum of 7.0 m in length and a minimum of 2.6 m in width.
- b) Passenger Drop-off Spaces shall be oriented parallel to the flow of traffic to accommodate through-movement of vehicles and to eliminate the need for backing or significant turning movements.

4) Drive-through/Turn Around Route

Parking Study

Joint Use Site Planning and
Facility Design Committee

APPENDIX II: Relevant Portions City of Edmonton Zoning Bylaw 12800 Sec 54 - Parking, Loading and Passenger Drop-off

When any new school development is proposed, provision must be made, to the satisfaction of the Transportation and Streets Department, for vehicles that are dropping off or picking up passengers to safely turnaround

Edmonton Zoning Bylaw 12800

54.5 Schedule 4

Schedule 4

Passenger Drop-off Spaces for Public and Private Elementary, Junior High School and High Schools

USE OF BUILDING OR SITE	TOTAL NUMBER OF DROP-OFF SPACES REQUIRED BICYCLE PARKING SPACES	NUMBER OF ON-SITE DROP-OFF SPACES REQUIRED
1) Elementary or Junior High School	3 spaces per 100 students, but in no case less than 5 spaces.	1 spaces per 100 students, or 5 spaces, whichever is greater.
2) High School	1.5 spaces per 100 students, but in no case less than 5 spaces.	0.5 spaces per 100 students, or 5 whichever is greater.
Note: For the purposes of this Schedule, "On-site Drop-off Spaces" means those Drop-off Spaces located on school lands, and "Total Number of Drop-off Spaces" means the total of On-site Drop-off Spaces plus any Drop-off Spaces located on City-owned property within the roadway plan, as approved by the Transportation and Streets Department.		