

## Activity 3.4.2 Parking Lot Design

### Introduction

Parking areas, to a certain extent, create the first impression for first-time visitors. Parking lots should be creatively designed to appear as part of the surrounding landscape and to contribute to a positive image. Landscaping can be used around parking lots to integrate them into the surrounding area and can be used within the lots to break up the visual impact of extensive pavement and cars. For example, deciduous trees provide solar protection for vehicles in the summer and allow solar heating in winter. Conifers can be used to screen parking lots from cold winter winds. Provision for pedestrians must be made so they may safely gain entrance to the parking lot and connecting structure.

Parking lots are created for the convenience and safety of the people who are using them. People must also feel safe when walking to and from their cars. Accessibility or barrier-free design is now required.

In this activity you will design pedestrian access, vehicular access, and parking for the Keystone Library that complies with the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines (ADA-ABA Guidelines).

### Equipment

Engineering notebook

**Two** copies of individual Keystone Library Renovation site plan

pencil

### Procedure

In this activity you will create a preliminary site plan.

Research Chapter 159: Unified Land Development Ordinance (UDO) found in Title XV: Land Usage in the City of Noblesville, Indiana Code of Ordinances for regulations related to parking. You can access the Code of Ordinances (COO) at [www.amlegal.com](http://www.amlegal.com) (choose the library tab, select Indiana, and click on the link to Noblesville). Based on your research, answer the following questions. Document the section of the code in which you found each answer.

How many parking spaces are required for the Keystone Library? Show your calculation. (COO Table 9, Section 159.142 or UDO Table 10.0.3.B) **32, 1 every 300 sq ft.**

What distance must parking lots be set back from the property line? ((UDO Section 4.B.1) **20 ft.**

Assuming a 90 degree parking angle, what size parking spaces should be used? (COO Table 10, Section 159.143 or UDO Table 10.0.4.A) **9 x 18**

What aisle width should be used? (COO Table 10, Section 159.143 or UDO Table 10.0.4.A) **24 ft**

Describe the requirements on driveway (ingress and egress) location from adjacent property lines and intersections. (COO Section 159.143 or UDO Section 4.C.2) **25 ft**

What is the maximum driveway width that can be used for a non-residential development? (COO Section 159.143 or UDO Section 4.C.2) **36ft**

What is the drainage runoff requirement for parking and driveway areas? (COO Section 159.143 or UDO Section 4.D.2) **It should be angled/graded to force the water to a runoff/channel where no free flowing water is allowed.**

Is parking lot lighting required? What is the requirement? (COO Section 159.143 or UDO Section 4.D.4) Yes, parking lot lighting is required. **Enough that allows you to safely walk/travel at night.**

How many accessible parking spaces are required? (COO Table 11, Section 159.144 or UDO Table 10.0.5) **2**

Is a loading area required for the library? **yes**(COO Section 159.147 or UDO Section 8.A)

How many loading berths are required for the library? (COO Table 13, Section 159.147 or UDO Section 8.B) **1**

In terms of parking lot landscaping requirements, what class of parking lot is required for the library? (Section 159.184) **B**

Describe the overall interior parking lot landscape requirements. **5%**

What are the requirements for single row parking landscape islands and peninsulas? **180 sq. ft.**

What are the requirements for double row parking landscape islands and peninsulas? **240 sq ft**

Where can one find the perimeter parking lot landscaping requirements? You may need to reference this information later. **Table 12?**

What other landscaping requirements are contained in the code of ordinances? **sitting areas.**

Describe the requirements for trash receptacle enclosures. (Section 159.187) **Must be enclosed on 3 sides with a matching material and the 4th side must be cover by a fence or door etc.**

Create a site bubble diagram to represent preliminary locations for the parking lot, ingress and egress, trash receptacle enclosure, loading area, and required landscaping.

Study your Keystone Library Renovation site plan. Select a preliminary location and orientation for the parking lot. Based on your code research, sketch a preliminary design for the parking lot and pedestrian walkways to scale on the site plan. Include ingress and egress, the required number of spaces (including accessible spaces), aisles, lighting, and landscaping. Taking into consideration the existing topography, use arrows to indicate the anticipated drainage paths. **Do not** incorporate the parking lot in your 3D model at this time.

## Conclusion

1. What features of your parking lot design help to make the business a more inviting place to shop? **By adding a lot of pretty landscaping around the parking lot along with sitting areas, and keeping the trash out of sight.**

2. Why is it important to provide for pedestrian safety in a parking lot?

**So your customers feel safe and no one get hurts and sues you.**

3. In addition to a potential negative visual impact, what other negative impact(s) could a parking lot have on the environment? **Reflective chips in the paint and bright signs.**