4.6 AIRPORT ZONING

Airport height **zoning** is also termed as hazard **zoning**. Height **zoning** is mainly used to protect the approaches to the **airport** from the obstruction of any object. Certain rules and regulars are made to the heights of structures on land surrounding the **airport**.

Land Use Compatibility Zones

It is critical to maintain safe operational environments both on airport property, as well as within communities surrounding local airports. As outlined in previous chapters, one of the primary factors in determining land use compatibility often relates to the proximity of a specific land use to an airport and more specifically the runways. Identification of zones that delineate specific geographic areas of interest is an important part of the land use planning process. It is necessary to define types of land uses that are not compatible, limited, or allowed within the designated geographic areas surrounding an airport. These land uses can then be incorporated into city or county comprehensive plans and/or airport zoning ordinances.

The land uses included in this document are not an inclusive list. They are intended to provide a general understanding of the types of land uses typically found in a community. If individual land use requests arise that are not included in the tables identified in this chapter, local communities should apply the general concepts outlined in this document to evaluate the requests for land use compatibility on a case-by-case basis. Some interpretation by individual municipalities may be necessary to fully address the needs within their community due to site specific needs. This chapter identifies recommended land use zoning districts and distinguishes compatible land use types within each zones district.

Basis for Land Use Zones

Two primary sources of information were used to develop recommended zones for land use compatibility within Iowa:

• Federal Aviation Administration (FAA) Advisory Circular (AC) 150- 5300-13, Change 11, Airport Design, specifically Runway Protection Zones (RPZs)

• Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, commonly know as the FAR Part 77 Surfaces RPZs and Part 77 Surfaces .

FAR Part 77 Surfaces and RPZs can be utilized to evaluate the concept of compatible land use and provide a multi-purpose tool with commonly recognized surfaces to address both height and land use concerns. Dimensional standards and descriptions of these surfaces are contained in the following section to define the basis for land use compatibility. Airport traffic patterns, while not used as a basis for the land use zoning districts, are important to understand as they relate to compatible land use within each zone.

Runway Protection Zones

RPZs are the areas at each end of the runway that have a critical need for protection from incompatible land uses. It is desirable to clear all objects from the RPZ, per the criteria noted in FAA AC 150/5300-13 Change 11, Airport Design, although some uses are permitted, provided they do not attract wildlife, are outside of the runway object free area (OFA), and do not interfere with navigational aids. Land uses specified in AC 150/5300-13 Change 11, Airport Design, which are prohibited from the RPZ areas include:

• Fuel storage facilities

• Residential structures (homes, condominiums, apartments, and manufactured housing parks)

• Places of public assembly (places of worship, schools, hospitals, office buildings, shopping centers, or other uses with similar concentrations of people)

If an airport does not own or control the entire RPZ where it has been determined to be impracticable to purchase the property, then the AC's RPZ land use standards should be consulted to determine the appropriate recommendation status for the portion not owned by the airport.

If residential structures are currently located within an RPZ, the airport should attempt to fully acquire the property. However, if this option is impractical, the airport

sponsor should consider the acquisition of an avigation easement to provide control over the RPZ area. Obtaining easements which are restrictive enough to limit building opportunities, as well as height, are often just as costly to procure as purchasing the property outright.

The FAA evaluates height concerns for land uses within the following four surface areas used as a basis for compatibility.

Approach surface

The approach surface is longitudinally centered on the extended runway centerline and extends outward and upward from the end of the runway primary surface. The approach slope of a runway is a ratio of 20:1, 34:1, or 50:1, depending on the approach type. The length of the approach surface varies from 5,000 to 50,000 feet and also depends upon the approach type.

Transitional surface

The transitional surface extends outward and upward at right angles to the runway centerline and extends at a slope of seven feet horizontally for each one foot vertically (7:1) from the sides of the primary and approach surfaces. The transitional surfaces extend to the point at which they intercept the horizontal surface at a height of 150 feet above the established airport elevation.

Horizontal surface

The horizontal surface is a horizontal plane located 150 feet above the established airport elevation and encompasses an area from the transitional surface to the conical surface. The perimeter is constructed by generating arcs from the center of each end of the primary surface and connecting the adjacent arcs by lines tangent to those arcs. The radius of the arc is 5,000 feet for all utility or visual runways and 10,000 feet for all other runways.

Conical surface

The conical surface extends upward and outward from the periphery of the horizontal surface at a slope of 20 feet horizontally for every one foot vertically (20:1) for a horizontal distance of 4,000 feet.

Departure surface

In addition to the aforementioned surfaces, an additional surface to consider is the departure surface for runways with non-precision or precision runways instrument guidance. The departure surface is 1,000 feet to 10,000 feet depending on the type of instrument guidance and has a slope of 40 feet horizontally for every one foot vertically (40:1) for a distance of 6,466 feet. Objects, structures, or natural vegetation penetrating the departure surface may affect the departure procedures at an airport and therefore should be protected for each runway end.