

# AIRPORT DEVELOPMENT ALTERNATIVES



In the previous chapter, airside and landside facility needs that would satisfy projected demand over the planning period were identified. The next step in the master planning process is to evaluate the various ways these facilities can be provided. In this chapter, the facility needs will be applied to a series of airport development alternatives. The possible combination of alternatives can be endless, so some intuitive judgment must be applied to identify the alternatives which have the greatest potential for implementation. The alternatives analysis is an important step in the planning process since it provides the underlying rationale for the final master plan recommendations.

While any evaluation of alternatives can also include a “no action” alternative, this would effectively reduce the quality of services being provided to the general

public, and potentially affect the Fargo area’s ability to accrue additional economic growth. However, the final decision with regard to pursuing a development plan which meets the needs of commercial airline, air cargo, and general aviation needs rest with the Municipal Airport Authority.

Although this study will not consider the relocation of services to another airport, it is always a potential alternative. It would be difficult to duplicate the services provided by Hector International Airport, whether at an existing facility or a new site. The economic and environmental costs of new site development are generally far greater than the cost of developing an existing site. It is frequently possible to relocate or encourage the relocation of some services to another facility, should it become necessary.



For example, training activity by general aviation or military aircraft can be encouraged to go elsewhere if the capacity of the facility becomes constrained. It is also possible to encourage the basing of small aircraft at other outlying airports. However, most services provided at Hector International...the control tower, a long runway, precision approaches, and other miscellaneous services...are not readily available at other nearby airports. Therefore, the master planning process must attempt to deal with the facility needs which have been identified in the previous chapter, at the levels forecast throughout the twenty-year planning period.

There are several functional areas at Hector International Airport which must be considered: the airfield, passenger terminal complex, air cargo facilities, general aviation facilities, and miscellaneous airport support facilities (the North Dakota ANG prepares a separate master plan for their facilities). Each of these functional areas interrelate with each other and affect the development potential of the others. Therefore, all areas must be examined both individually and collectively to ensure a final plan that is functional, efficient, and environmentally compatible. Through this process, which includes a review of the preliminary analysis with the Airport Authority and Planning Advisory Committee, a master planning concept will evolve.

## ***BACKGROUND***

Prior to presenting airport development alternatives, it is helpful to review some

of the previous airport planning efforts and the development that has occurred during the intervening years. Recounting recent (or ongoing) improvements will assist with the identification of current issues affecting future development options.

When the last master plan was completed in July 1991, a capital improvement program was established which included (within the first ten years of the plan): closure of Runway 3-21, construction of Runway 8-26, new FBO and general aviation facilities on the north side of the airfield (adjacent to Runway 8-26), construction of a parallel runway on the east side of the airfield, and development of new air cargo facilities in the northwest quadrant of the airport. In addition, a midfield exit for Runway 17-35, and land acquisition for runway protection was recommended during the time period. Most of these projects were accomplished, with the exception of the land acquisition and construction of the parallel runway (which has not yet been justified based upon activity levels).

Later projects (beyond year 2000) included: extension of Runway 8-26, construction of a parallel taxiway (south side of Runway 8-26), construction of taxiways into the industrial park (northwest quadrant), and addition of an instrument landing system on Runway 8. While some of the remaining projects included within previous capital planning may be confirmed within this planning update, some may be dropped from further consideration. New demands on the airport may require that projects be included which demonstrate a higher priority.

It should also be noted that the original positioning of the parallel runway (as identified in the master plan) was modified to retain line-of-sight from the airport traffic control tower to the threshold of the parallel runway at the north end of the airfield. In making this adjustment, it eliminated the need to show a relocation of County Road 20, near the intersection with N. University Drive.

The previous master plan did not include any items related to expansion of the terminal building (or other terminal area projects). However, the passenger enplanement levels remained relatively static through the 90s (average annual growth rate of 1.2 percent), which allowed the Airport Authority to pursue airfield, general aviation, and air cargo projects. With positive growth in passengers the past several years, the Airport Authority has begun to experience some capacity limitations in the terminal area, primarily with rental car storage areas (and the desire of the rental car companies to locate service areas near the terminal). In addition, projections developed in previous chapters indicate that several other factors need to be considered for potential expansion during the planning period: gate positions, bag claim area, rental car office/counter area, and public parking.

Air cargo facilities have been added in the northwest quadrant to meet the needs of Airborne Express, and additional area is available west of this facility for additional ramp and sorta-

tion buildings. Most heavy cargo activity has been planned for the northwest quadrant, segregating it from general aviation (and Air National Guard) activities on the east side.

Development of new general aviation facilities was undertaken in the northeast quadrant of the airfield, adjacent to Runway 8-26. The two FBO facilities originally constructed have since been expanded, and individual storage hangars have been constructed in the northeast quadrant, as originally planned. New general aviation hangars are also under development in the southeast quadrant, providing additional hangar storage. A portion of the new hangars under development will replace hangar space which was lost in 1999 following a severe storm. While the southeast quadrant offers limited area for additional hangar capacity, most of the long-term hangar expansion is expected in the northeast quadrant of the airport. To complement the additional development of general aviation facilities in the northeast quadrant, a parallel general aviation runway was sited on the east side of the airfield in the last master plan (after due consideration of a potential site on the west side of the airfield). However, the level of general aviation training (which contributes most of the local touch-and-go activity on the airfield, and consequently the need for additional capacity), has remained within 20-25 percent of the base year activity over the past decade, delaying the need for construction of the parallel runway.

## ***AIRFIELD DEVELOPMENT ALTERNATIVES***

Airfield facilities are, by their very nature, a focal point of the airport complex. Because of their role, and the fact that they physically dominate a great deal of the airport's property, airfield facility needs are often the most critical factor in the determination of viable airport development alternatives. In particular, the runway system requires the greatest commitment of land area and often imparts the greatest influence on the identification and development of other airport facilities. Furthermore, due to the nature of aircraft operations, there are a number of FAA design criteria that must be considered when looking at airfield improvements. These criteria, depending upon the areas around the airport, can often have a significant impact on the viability of various alternatives which are designed to meet airfield needs.

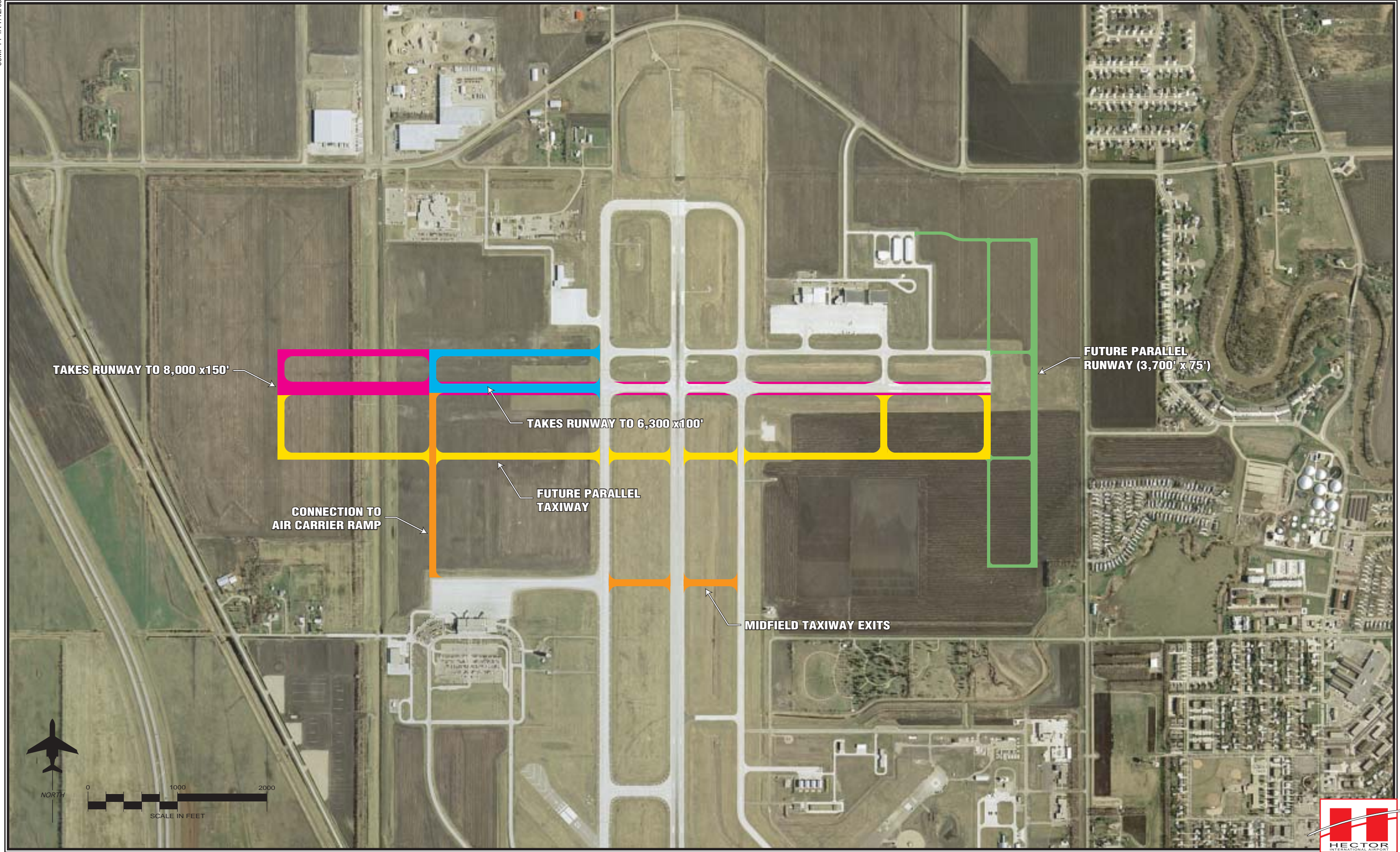
The facility needs evaluation completed in the last chapter indicated that the length of Runway 17-35 (9,546 feet) will be adequate to accommodate the majority of domestic and international flights from Fargo. The secondary air carrier runway, Runway 8-26, which will soon be extended to 6,300 feet, should ultimately be planned at 8,000 feet to fully accommodate the mix of aircraft operating on the airfield. As mentioned earlier, the parallel runway for general aviation activity has been planned at 4,400 feet, which will satisfy most small aircraft. The other general aviation runway, Runway 13-31, serves general aviation aircraft basing in the southeast quadrant, and should

continue to be able to serve this role on the airfield with its existing length.

Taxiway improvements should include a midfield exit on Runway 17-35 to expedite clearing of aircraft from the runway after landing. This should continue to be planned for exiting traffic on both the east and west sides of the airfield. However, projected peak hour volumes do not justify anything other than right-angled exits. The need for placement of these exits was confirmed during a Planning Advisory Committee meeting (with the manager of the airport traffic control tower). As Runway 8-26 is extended, a parallel taxiway will need to be extended to the runway end. In addition, a parallel taxiway on the south side of this runway will eventually need to be added, as will a connection to the terminal ramp on the west side. The construction of additional connecting taxiways will also be required when the parallel general aviation runway is constructed. The airfield considerations have been summarized on **Exhibit 4A** (the aerial photograph used in this exhibit was taken on May 1, 2000).

The North Dakota National Guard has requested an access taxiway into their facility on the northwest corner (adjacent to the Runway 17 threshold). The taxiway would provide access to a loading ramp capable of handling fixed wing aircraft. This does not appear to conflict with other airfield planning under consideration.

Based upon existing and projected annual instrument approaches recorded at the airport, consideration needs to be



given to adding lighting (centerline and touchdown zone) when Runway 17-35 is reconstructed to provide lower visibility approaches and landings (to Category II standards). The FAA is planning to replace the current ASR antenna on the east side of the airfield within the next few years. Based upon the floor elevation of the new antenna, additional development area may become available south of Runway 8-26 and east of Runway 17-35. The current location of the ASR appears to provide little conflict with other existing or proposed facilities on the airfield.

Runway 8-26 will require upgraded lighting and marking as it is extended and widened to provide improved all-weather capabilities (as discussed in the last chapter). A full precision approach to Runway 8 will require approach lights which extend several hundred feet west of I-29.

## **AIRFIELD SAFETY CONSIDERATIONS**

As a commercial service airport, Hector International Airport must comply with Federal Aviation Regulation Part 139, which provides certification requirements and operating standards for commercial service airports. A review of airfield design standards as they relate to the runways and safety areas of the three runways on the airfield indicates that the safety areas and object free areas do not totally meet current standards. The south end of Runway 17-35 does not have adequate safety area/object free area; therefore, the landing threshold on Runway 35 has been displaced by 399 feet. The previous master plan proposed a

relocation of 19<sup>th</sup> Avenue North to provide the full safety area/object free area at the runway end. However, if 400 feet of pavement is added at the north end of the runway, the threshold can be relocated at the south end, eliminating the need to relocate 19<sup>th</sup> Ave. North.

Landing displacements have also been used on Runways 13 and 31, to achieve minimum separation over roads. However, neither end of this runway has the proper safety area and object free area. If the runway ends are relocated to achieve proper safety area/object free area, the runway will be reduced to approximately 3,925 feet. There will be no need for a displaced threshold on Runway 31; however, the landing threshold on Runway 13 will need to be displaced approximately 50 feet. This has been graphically presented on [Exhibit 4B](#).

“Declared distances” define several operating conditions on runways: takeoff run available (TORA), which is the runway length declared available and suitable for the ground run of an airplane on takeoff; takeoff distance available (TODA), which is the TORA plus the length of any remaining clearway at the far end of the TORA; accelerate-stop distance available (ASDA), which is the runway plus stopway length available for the acceleration and deceleration of an aircraft aborting a takeoff; and landing distance available (LDA), which is the runway length declared available and suitable for landing.

Since proper safety areas need to be taken into consideration at the south end of Runway 17-35, the declared

distances have been reviewed. For Runway 35 departures, the full runway is available for departure; therefore, only the LDA is reduced by the landing displacement. All declared distances for Runway 17 (landing and takeoff) are reduced by the 400-foot displacement at the south end of the runway (to provide the full length of safety area). The calculated values will be included on the final airport layout plan drawings for the master plan.

## ***TERMINAL DEVELOPMENT ALTERNATIVES***

The passenger terminal complex consists of the passenger terminal building, ground access, parking, and support facilities. The facility needs evaluation has identified several projected needs within the planning period: additional aircraft parking gates, bag claim display and lobby, rental car area, greeting/farewell/security screening area, public/rental car/employee parking areas, and terminal curb frontage. The present terminal facility was opened on the west side of the airfield in 1986, and has served the demands created by scheduled service very well. While the facility has accommodated as many as six airlines at any given time, it serves only three airlines at this time. Projections developed for this master plan have been based upon four carriers. It has been assumed that the ticketing lobby, counter area, and airline office/bag make-up areas will remain adequate through the planning period.

Recently, the rental car companies (which have maintained service facilities on the east side of the airfield) have expressed a desire to relocate service facilities to the west side, and develop additional storage positions on the west side. While the Airport Authority has reviewed several options, and sought the input of the airport engineer and consultant, a final decision had not been made at the time this working paper was being prepared. However, the latest option under consideration would place the service facility (including some storage positions) west of the existing ready/return lot and north of the airport maintenance building. The airport engineer and consultant have advised against placement of any facilities directly west of the terminal ramp, to allow for potential expansion. The rental car companies also want to locate a fueling facility with the service/storage facilities.

**Exhibit 4C** reflects the initial expansion as Area A. Since the consolidated service facilities and fueling area will take up most of the parcel, it will only provide a net increase of 25 storage positions (291 total) for the rental car companies. Therefore, additional area will need to be reserved for storage positions. Areas B and C each provide an additional 120 positions, while Area D provides an additional 150 positions. This should meet the long-term requirements identified by the rental car companies in surveys they have returned to the consultant. However, comparable area is also available west of County Drain #10.



Exhibit 4B  
THRESHOLD RELOCATIONS  
RUNWAY 13-31



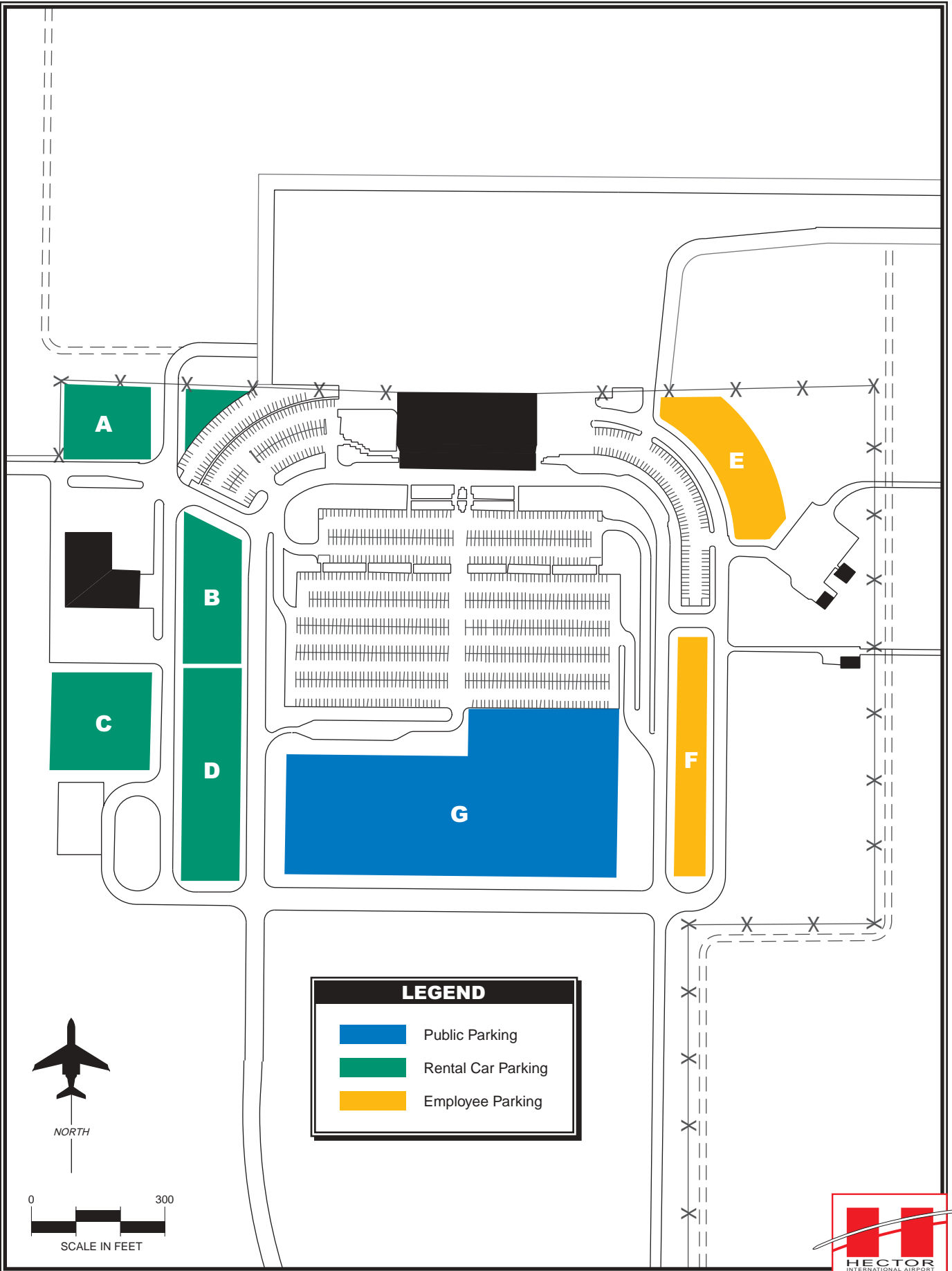


Exhibit 4C  
PARKING EXPANSION AREAS

Projections for employee parking have indicated that the existing area (92 spaces) may need to be doubled through the planning period. Additional employee parking can be added on the east side of the terminal building, adjacent to the existing employee lot. Area E in **Exhibit 4C** provides 100 additional parking positions, while Area F yields the same number of positions. To maintain reasonable walking distances to the terminal, Area E may be preferred. Area F would require a walking distance in excess of 600 feet from the terminal.

Current public parking capacity, based upon information provided by the Airport Authority, is 984 spaces (excluding rental car and employee lots). The parking demand at 300,000 enplanements is 1090, while the demand at 400,000 enplanements is 1470. The size of the short-term lot has been projected as being adequate through the planning period. Therefore, the additional demand for long-term parking can be met with additional expansion of the lot to the south (shown as Area G), which can easily accommodate an additional 600 vehicles (north of the terminal return loop). The walking distance from the farthest point in this lot would be approximately 1,000 feet, which is generally considered to be the maximum acceptable walking distance from a terminal to a surface parking lot.

When the terminal building was constructed in 1986, it was assumed that the second-level gate/boarding area could be extended directly north from the building to create additional gates. While this remains as an efficient way

to provide additional gates, another option would be to rearrange the aircraft parking positions (requiring push-back of aircraft from all gates) and position two gates from each loading bridge at Gates 1 and 4 (this is already done from Gate 1 since Gate 2 does not currently have a bridge). While this does not provide for additional holdroom space, the projections indicate that the current holdroom space should be adequate through the planning period. Subsequently, should the airport need to provide additional gate capacity with holdroom space, a pier extension could be constructed. An advantage to the pier extension is the ability to create additional greeting/farewell/security queuing area, which has been projected as a need in the planning period. Each of these two options have been presented, in conjunction with the existing parking configuration in **Exhibit 4D**. It should be noted that the mix of aircraft will change from time to time; therefore, a diversified mix of aircraft commonly flown by existing or potential carriers have been shown in the parking configurations.

On the first level of the terminal, the needs evaluation has indicated that bag claim area and rental car offices/counter area will need to be expanded in the planning period. The most logical approach is to push the west wall of the terminal building out to provide for an additional bag claim device and lobby, while providing for expansion of rental car office/counter areas. Existing rental car companies have verified in surveys a long-term need for 50 percent more counter/office area (although their current areas are adequate in the short-term period). It is anticipated that the

west wall of the terminal would need to be pushed out approximately 50 feet to provide the necessary square footage. Using another “L” device would work well in the new bag claim area, as in the current configuration. However, other devices are available, including “T”s (which provide greater bag frontage), and ovals (which would not take as much area on the floor). The expansion concept shown in **Exhibit 4E** assumes the “L” device.

The facility needs evaluation indicated that the total length of enplaning and deplaning curb will need to expand as activity increases. While credit was initially given for only 300 feet (combined), the effective length (including curb not under the canopy) is approximately 450 feet. This additional length should be adequate until late in the planning period. However, it may be necessary to segregate the commercial vehicles if the curb (particularly the deplaning curb) becomes congested in peak periods. Commercial vehicles already double-park along the deplaning curb during peak periods, but usually for only short dwell times, which does not create a significant problem.

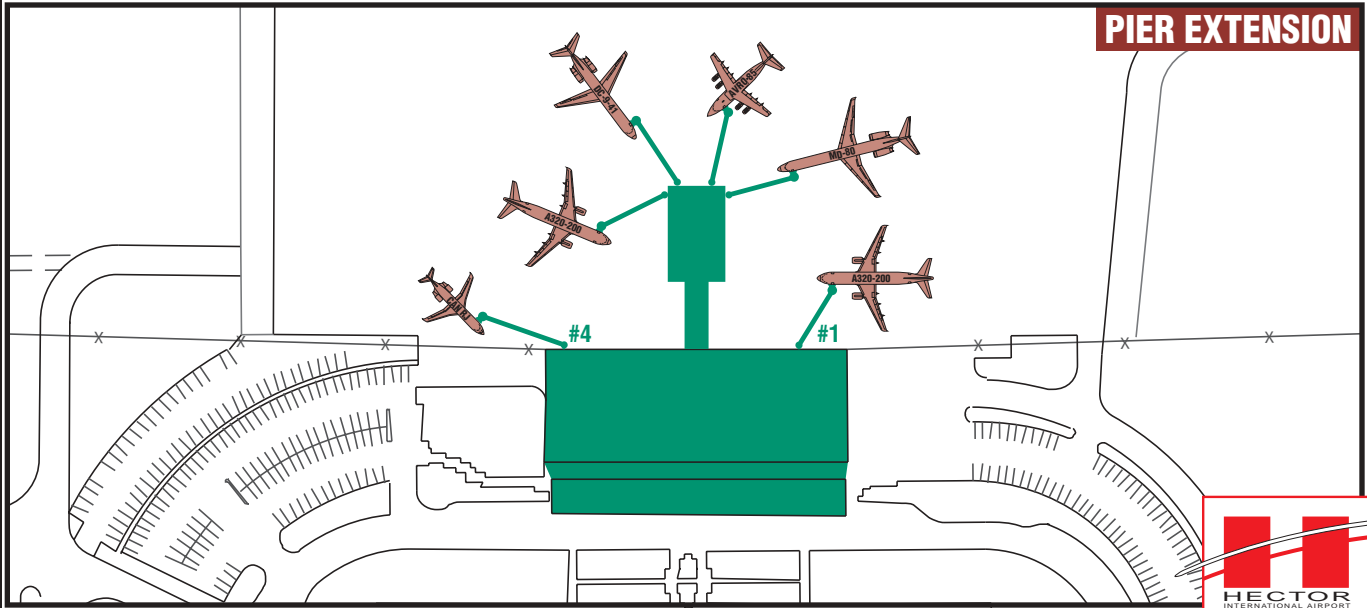
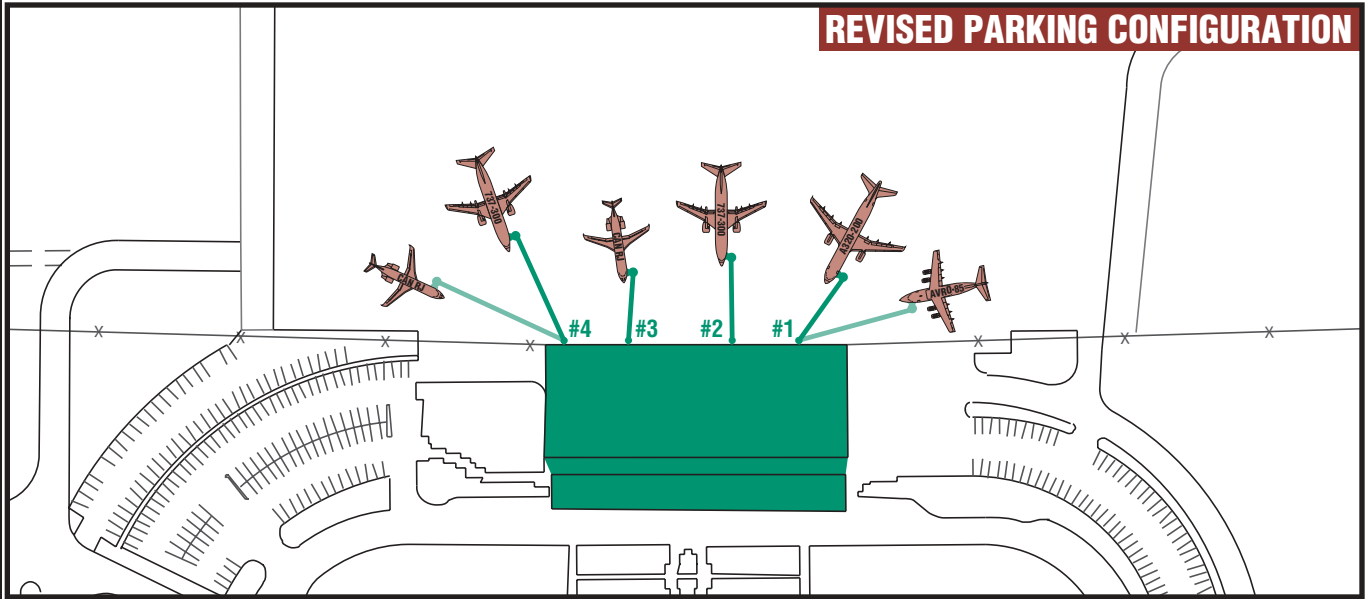
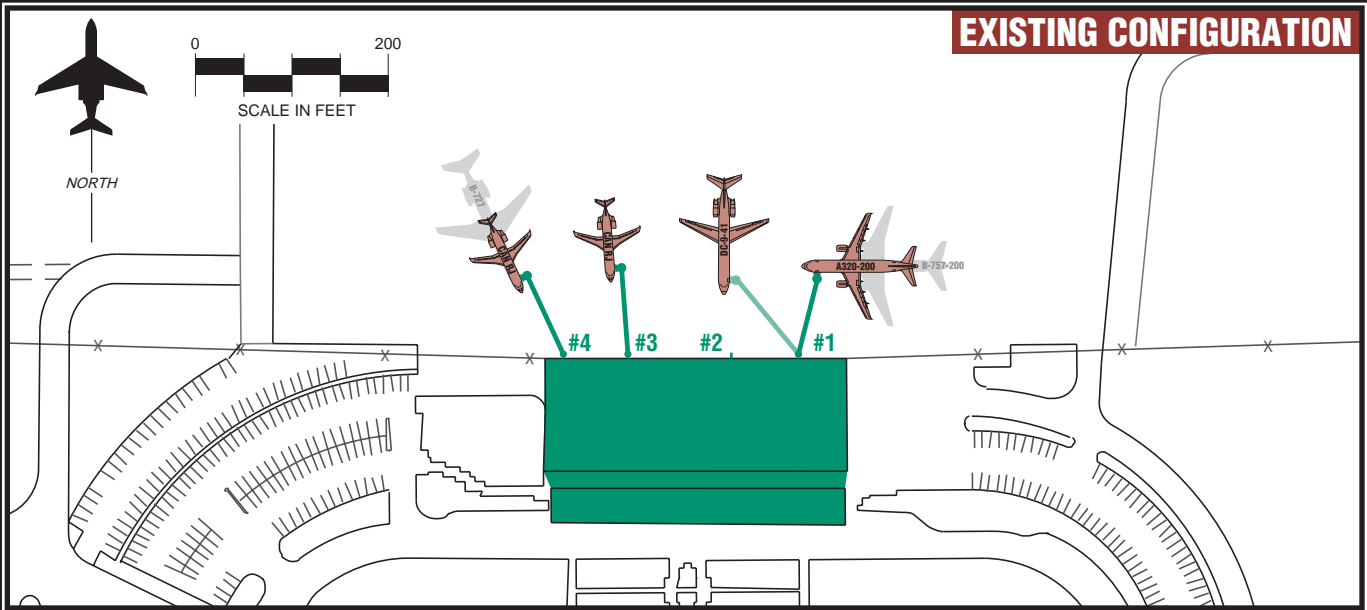
## ***AIR CARGO FACILITIES***

Air cargo services have increased steadily over the past decade and the volume of air cargo landed weight has increased seven-fold over the last six years. In fact, air cargo has become the single largest growth sector at the airport throughout the 1990s. The facility needs are being met in more than one area, although dedicated

facilities were constructed for Airborne Express in 1997 in the northwest quadrant. This is the area designated in the last master plan for consolidation of air cargo facilities.

Generally, air cargo facilities should be segregated from commercial air carrier or general aviation facilities. The amount of truck and delivery van traffic which can be generated from an air cargo complex is an important consideration, as is the ability to expand apron and sortation buildings. Access onto I-29 via County Road 20 provides effective segregation from terminal area traffic, which must use 19<sup>th</sup> Avenue North. Since the critical design aircraft are frequently larger than the other commercial fleet mix, consideration must be given to the greater wingspans and tail heights, which create the need to push the facilities farther away from the runway/taxiway systems.

Existing facilities include building/office space of 18,900 square feet, and a ramp which measures 400 feet by 400 feet (18,000 square yards). The last master plan and current airport layout plans have preserved the area west of the current facility for expansion of air cargo facilities. An additional 80,000 square yards can be provided between the Airborne facility and County Drain #10. The area provides capacity for an additional 180,000 square feet of sortation/office building immediately behind this ramp. This exceeds the 20-year demands which were calculated in the last chapter of this planning effort. A potential layout for expansion of ramp and sortation/office building has been depicted on **Exhibit 4F**.



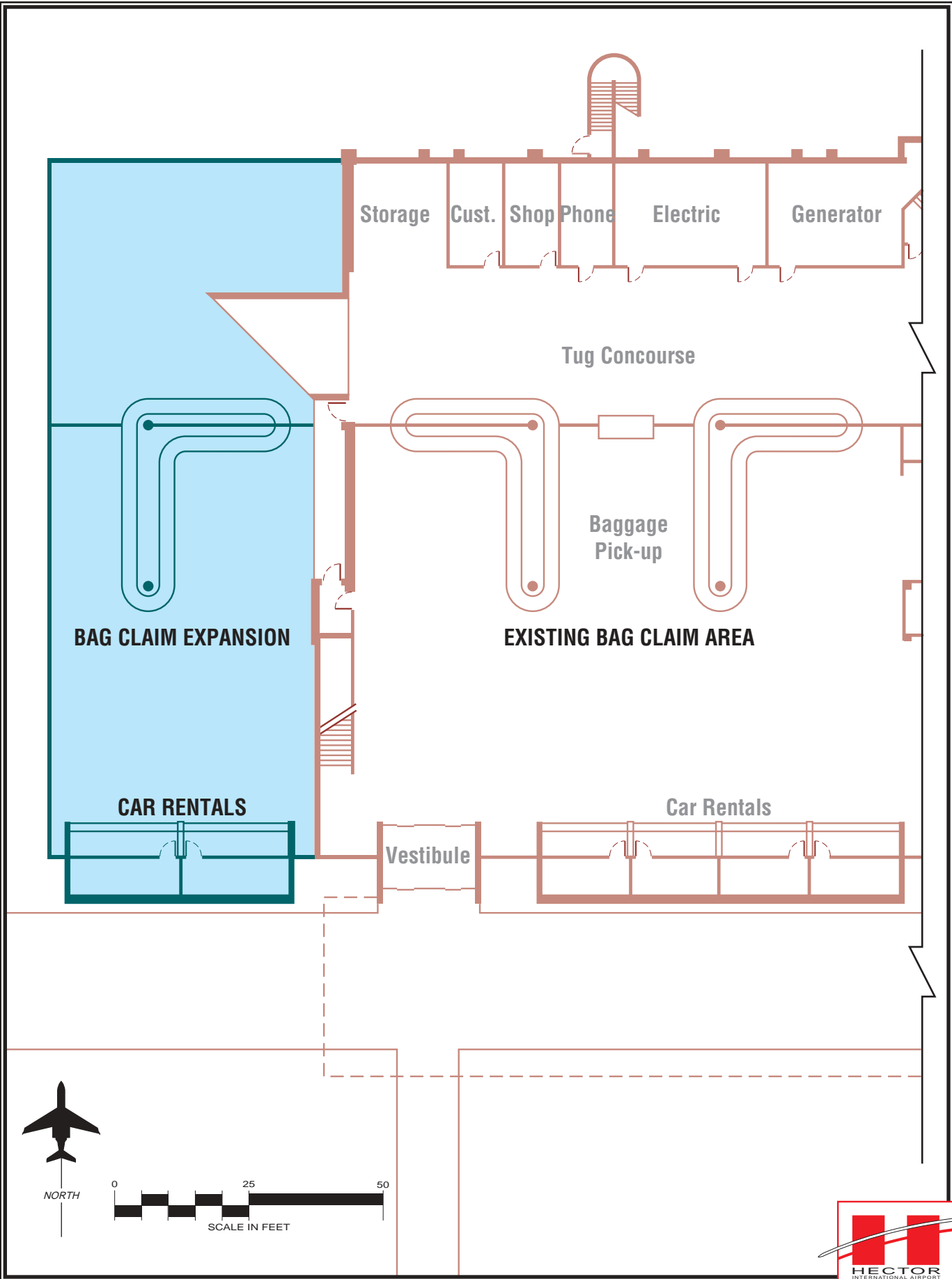


Exhibit 4E  
LOWER LEVEL EXPANSION



The concept would appear to work very effectively to meet growing air cargo demands. In selecting this area for growth in air cargo facilities, consideration was given to the need to maintain heavier pavement strengths on the west side of the airport, consistent with the location of scheduled passenger airlines on the west side. All general aviation traffic originates and terminates on the east side of the airfield. As taxiways associated with the extension of Runway 8-26 are constructed west of Runway 17-35, they will need to be constructed at adequate strength for critical aircraft in the passenger airline and air cargo fleets.

### ***GENERAL AVIATION FACILITIES***

Development of new general aviation facilities were initiated on the north side of the airfield in 1994-95 with the construction of new FBO facilities, which followed the development of Runway 8-26 and connecting taxiways in 1992-93. Two nested T-hangar buildings and an individual hangar have been constructed in addition to the FBO service/storage facilities in the northeast quadrant. The area had been recommended in the last master plan for additional hangar storage, with T-hangar or small conventional style hangars to be located on the east side of the parcel (closest to the ultimate parallel runway), and larger conventional style hangars to be located on the west side of the parcel (adjacent to Runway 17-35). This configuration has been illustrated on [Exhibit 4G](#).

The arrangement configured on the exhibit remains the most effective way of providing for a combination of differing hangar demand, while segregating potentially larger and heavier aircraft which need greater pavement strength and greater wingtip clearances. The parcels which have been depicted for the west half of the parcel are 200 feet wide by 250 feet deep. This will satisfy most larger hangar proposals which the Airport Authority will receive, when the tenant needs to build at least a 10,000 square foot hangar (most large hangars are 100-150 feet deep and 100-175 feet wide). The separation between taxiway stubs is 750 feet, which will permit hangar development for the largest corporate aircraft operating in the general aviation fleet. While the concept has been shown with taxiway stubs into each “pod”, the Airport Authority may decide to construct apron areas (permitting large hangars to be constructed at the edge of the ramp). This has been used at other airports to attract potential tenants into a new building area.

However, new hangar storage continues to be developed in the southeast quadrant. In addition to replacement of hangar storage lost during the 1999 storm, several proposals have been examined by the Airport Authority for other portions of the southeast area which would provide additional storage. One area is located in the vicinity of the igloo, where a new hangar has recently been constructed. Several options for development of this area were examined by the consultant and reviewed by the Airport Authority. Alternative A (which is shown as an insert on [Exhibit 4H](#))

was adopted by the Airport Authority for further development of the area.

Another area in the southeast quadrant which can be examined for additional hangar storage is north of the old terminal building. With demolition of the old ANG hangar (which was damaged in the wind storm), the opportunity exists to develop hangars on a north-south line, facing Taxiway B. The layout for potential parcels in this area is also depicted on [Exhibit 4H](#).

## ***DEVELOPMENT OF NON-AVIATION PROPERTIES***

Hector International Airport provides the region with several functions: commercial air services, air freight services, general aviation services, air national guard services (in addition to support for the army national guard and army reserves), medical and law enforcement air support, and sites for the development of the commercial/industrial sector. While all but the last of these functions are directly dependent on the ability of Hector International Airport to provide facilities which meet their respective need, economic development is not specifically dependent upon the operational capabilities of the airport.

While proximity or access to airport services may be desirable for some industrial firms, most of the potential tenants will not have an aviation connection. Instead, the airport may provide a site and support services as an alternative location within the overall availability of properties that are zoned and master planned for

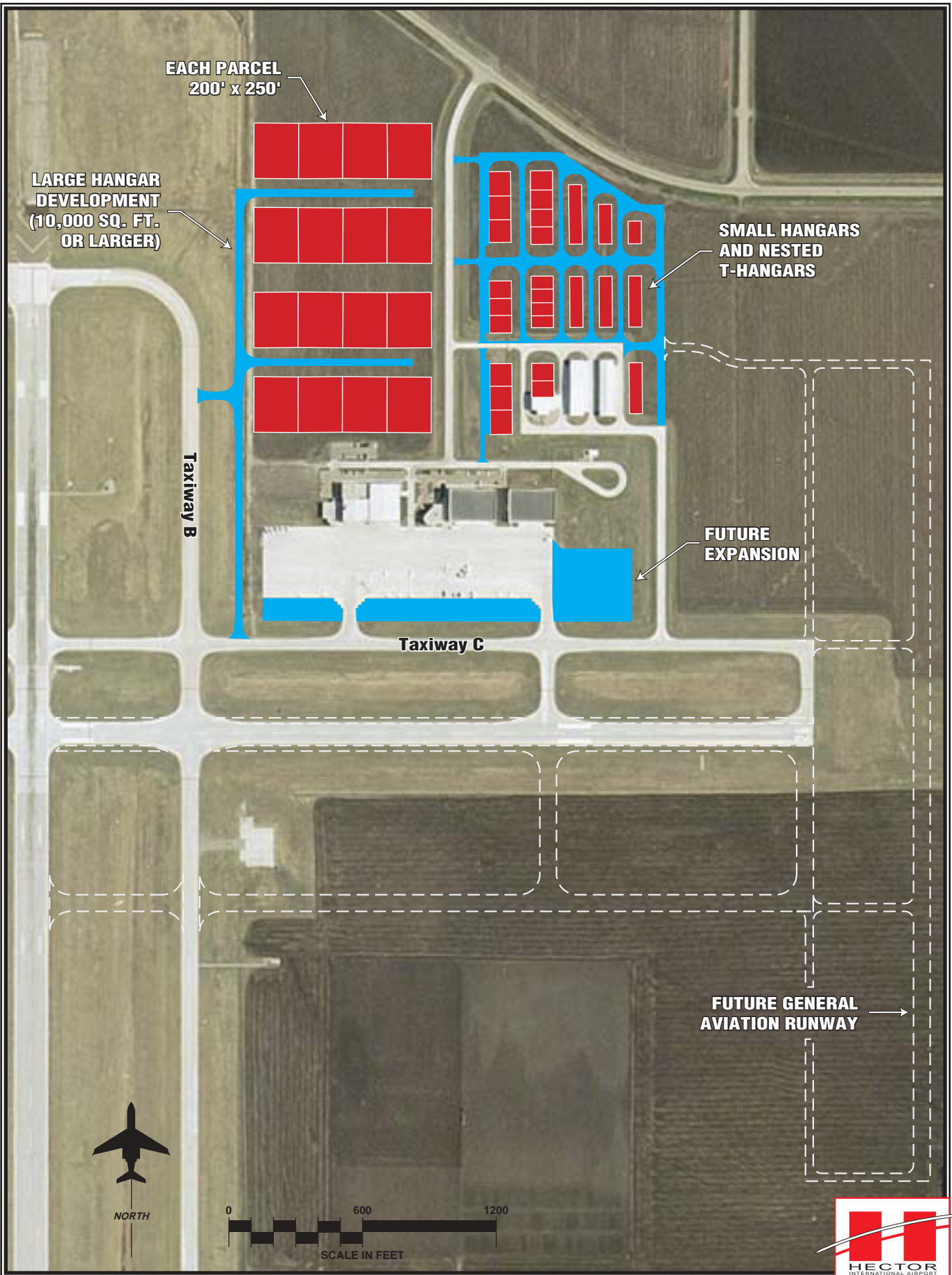
commercial/industrial uses in the Fargo area. In that sense, the airport sites may compete with other locations that are developed by private firms, individuals, non-profit foundations, and other municipal agencies.

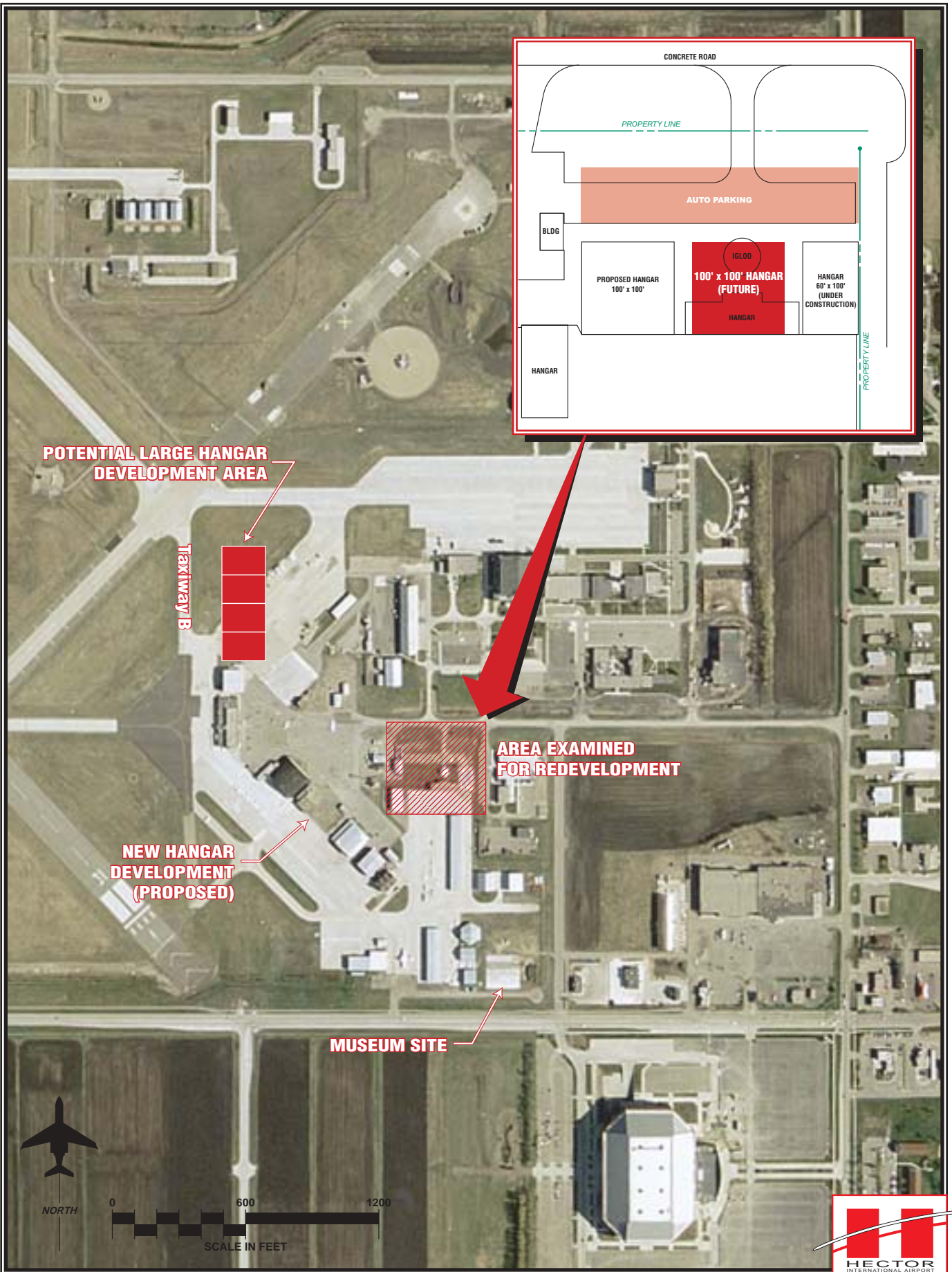
Many commercial/industrial uses that develop on airport property are airport-related (e.g. hotels, car rental companies, or service stations), but do not necessarily need to be located on airport property. They do so based upon the availability of sites, convenience, and other market considerations. Hotel sites are generally designated near major intersections, with good access and visibility. However, care must be taken to not locate such a facility where the surface traffic will impede access into the terminal area.

As much as practical, the non-aviation properties which develop on the property should be developed in ways that enhance the air operations and support those functions that are directly dependent upon airport services. This may include temporary uses for properties that are scheduled for future runways, taxiways, terminal, or other aviation facilities, to assure they are available for airport development when the need arises. Most commonly, such areas are used for agricultural crops; however, other interim uses can be applied to areas needed for future aviation-related use.

The Airport Authority can support a wide variety of discretionary uses on the airport, including: airport-related commercial service businesses, aviation-related business, aviation/aerospace manufacturers, non-aviation industrial/







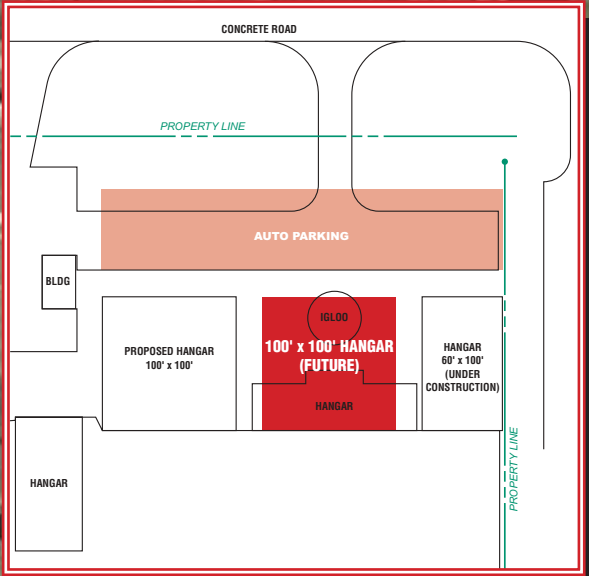
**POTENTIAL LARGE HANGAR DEVELOPMENT AREA**

**Taxiway B**

**NEW HANGAR DEVELOPMENT (PROPOSED)**

**MUSEUM SITE**

**AREA EXAMINED FOR REDEVELOPMENT**



NORTH



commercial uses, and low-density uses in approach/transition areas.

### **AIRPORT-RELATED COMMERCIAL SERVICE BUSINESSES**

The airport can offer locational advantages for commercial businesses that neither support the airport operations or provide services to users of the airport, such as motels, restaurants, car rental agencies, service stations, and small executive offices that provide services and facilities for business travelers. In many locations, these businesses are accommodated in off-airport locations, especially where air transportation plays a relatively minor role in the overall commercial activity of the area. The location of the airport near the I-29 corridor makes it suitable for many of these uses.

### **AVIATION-ORIENTED BUSINESSES**

Hector International Airport has played a key role in providing a location for these type of businesses. These firms generally require direct access to the airfield, although some firms (such as parts suppliers and avionics repair shops) often operate from locations not directly accessible to the airfield.

There are also a wide variety of companies that prefer to locate on airports because they have an orientation to aviation through their products, markets, or operations. These

include many firms that operate their own aircraft in addition to using commercial air services. Several successful commercial airparks have been developed around the country.

### **AVIATION/AEROSPACE MANUFACTURERS**

Consolidation of the industry in recent years has created fewer options for this type of operation. With the recent resurgence of general aviation aircraft manufacturing, several of these companies have opened new manufacturing plants. Typically, these companies will locate in areas with an aviation-oriented labor base. Many manufacturers of specialized parts or components do not require sites on an airport, but their aviation orientation makes an airport a preferred location.

### **NON-AVIATION INDUSTRIAL/ COMMERCIAL USES**

While the Airport Authority should give priority consideration in its real estate policy to firms that are aviation oriented, it should not preclude using their available properties to attract other industrial/commercial activities. Creating strong business activities near the airport will create beneficial effects and a favorable climate for the potential attraction of aviation-related companies. The development of air cargo facilities in the northwest quadrant has coincided with the recent development of several trucking companies north of County Road 20.

## **LOW DENSITY USES FOR APPROACH/TRANSITION ZONES**

There are a significant number of areas falling within existing or future approach/transition zones which are not suitable for most industrial or commercial uses because of height limits or obstacle free zone criteria, especially within the runway protection zones at each runway end.

Many airports have been successful in developing low-density recreational facilities in approach/departure zones. Golf courses are frequently regarded as a good use in these areas, although club houses should not be located inside the runway protection zone. Ball fields may be developed outside of the runway protection zone, although caution needs to be used when placing similar facilities in approaches to avoid potential placement of large concentrations of persons within the runway protection zones. The soccer fields currently under development west of the terminal area will not be located within any runway protection zone areas.

Caution should also be exercised before planning recreational facilities, even on an interim basis, in areas which may be needed for future aeronautical development. The required relocation of such facilities may require special environmental approvals.

When considering potential land uses within high noise zones, consideration should be given to the land use guidelines included within Federal Aviation Regulation Part 150, which is used by airports around the country for the development of Noise Compatibility

Programs. These guidelines specify the level of noise reduction which should be included in structures, and the general compatibility of various types of land uses. While the Airport Authority has not undertaken a Noise Compatibility Program, new noise exposure contours will be developed in the following chapters, and land use guidelines will be included within this document (as they were in the last master plan).

## ***SUMMARY***

The process utilized in assessing airside and landside development alternatives involved an analysis of long-term requirements and growth potential. Current airport design standards were reflected in the analysis of runway and taxiway needs, with consideration given to the safety areas required by the FAA at runway ends. As design standards may change in the future, revisions may need to be made in the plan, which could affect future development options.

Upon review of this chapter by the Airport Authority and Planning Advisory Committee, a final master planning concept will be developed which fulfills the 20-year demands of the planning period. As any good long-range planning tool, it should remain flexible to unique opportunities which may be presented to the airport. The remaining portions of the master plan will be directed towards the refinement of the final concept, the preparation and phasing of a detailed capital improvement program, and an evaluation of funding options currently available to the Airport Authority for implementation of the plan.