

Final Report

A Peninsula Air Logistics Hub at Newport News/Williamsburg International Airport: Vision and Development Guidelines

EXECUTIVE SUMMARY

John D. Kasarda, Ph.D.
Director
Kenan Institute of Private Enterprise
The University of North Carolina at Chapel Hill
Chapel Hill, North Carolina 27599
U.S.A.
Email: john_kasarda@unc.edu

April 2004 (Revised)

Executive Summary

Newport News/Williamsburg International Airport (NNIWA) and the Virginia Peninsula are facing increased competition from other airports and regions. New strategies are required to meet new competitive realities. These strategies must focus less on cost factors and traditional government incentives and more on creating competitive advantages through speed, agility and connectivity.

It is proposed that speed, agility, and connectivity can best be generated by creating an air logistics hub (ALH) at NNWIA that will drive a Peninsula and greater Hampton Roads fast-cycle logistics network. Cornerstoned by AirCommerce Park, which is envisioned as developing in three phases over an approximately 15-year period, this multimodal logistics hub will integrate air, highway, rail, and sea transportation modes with advanced telecommunications, sophisticated materials handling systems, and state-of-the-art support services to provide tenants and users capability to respond rapidly and flexibly to changing markets nationally and worldwide. Upgraded local highways, additional interstate exchanges, and new and extended rail lines (including those to the Port of Hampton Roads) are required to integrate the ALH with regional business clusters and major national and international transport modes.

The Peninsula ALH's intermodal transportation infrastructure should be designed to allow seamless and flexible flows of materials among convergent transportation modes and AirCommerce Park as well as other commercial facilities both in the core and peripheral areas of the ALH. A cargo transfer system should be planned linking the multi-use Central Cargo Facility (CCF) to cargo related tenants as well as to an on-site intermodal rail facility at mid-field. A larger intermodal rail facility and adjacent inland port will be developed off-site. The CCF would provide off-ramp tenants and off-site production facilities,

warehouses, and distribution centers with efficient sorting capability, customs clearance, and air freighter access. At full development, the entire ALH should be served by a ring road encircling it, providing quick access to all parts of the complex, to local and regional highway systems, and to the intermodal rail facilities. Internal roads should likewise be designed to connect the Central Cargo Area and ALH commercial tenants and users to the ring road.

All infrastructure development should be incremental and demand driven, likely spanning a 25-30 year period. Exhibit 2.1 provides an overview of the current aviation infrastructure configuration and highway linkages at and around Newport News/Williamsburg International Airport.

Exhibit 2.2 describes the initial core design for a Peninsula ALH at Newport News/Williamsburg International Airport leveraging the current AirCommerce Park. Manufacturing, distribution and logistics facilities can be located near or along customized taxiways and ramps, allowing air freighters to come virtually to these facilities. AirCommerce Park offers 35 acres of improved, level building sites and free use of up to 25 additional acres of ramp, including 13 acres of concrete stressed for widebody aircraft.

AirCommerce Park is located along NNWIA's 7R-25L 8,000 ft all-weather CAT-1 ILS runway (to be extended to 10-11,000 ft). The park is fully served by electrical power, natural gas, water and sewer facilities in ground along a 3-lane road designed to accommodate both large supplier trucks as well s large volumes of employee vehicles. Fiber-optics could be made available, if needed.

The extended building site area spans 3,400 feet and provides site depths ranging from 340 feet up to 700 feet. The site has quick and easy road access to Interstate 64 and major local roadways. AirCommerce Parkway links the complex in minutes to Interstate 64 and Jefferson Avenue (Route 143), one of the Peninsula's major arteries.

AirCommerce Park is one of three designated Enterprise Zones in the region, enabling a range of state and local subsidies and tax credits to newly locating firms. The complex is fully ready for custom construction.

Complementing the above, Newport News has a consolidated and streamlined site development plan review and approval procedures. Properly submitted site plans can be received and approved in a week or less for typical industrial projects.

At the second phase of development (2006-2010, see Exhibit 2.3), AirCommerce Park will be expanded (AirCommerce Park Phase II), and runway 7R-25L extended to 10,500 ft. Three to five years would be considered a fast track for runway extension funding, design, EIS, environmental mitigation, and construction. A new interchange at I-64 and Bland Boulevard would also be constructed with an adjacent intermodal station planned.

During the envisioned third phase of development (2011-2017) a ring road would be completed, with another new interchange constructed at I-64 and Denbigh Boulevard, intermodal road and rail connectors introduced. AirCommerce Park Phase III would begin development in the midfield area with an adjacent intermodal rail facility introduced (see Exhibit 2.4). A taxiway connected to Runway 2-20 would form a spine of AirCommerce Park Phase III, with a roadway around the exterior connecting to a midfield intermodal rail facility (IRF) allowing tenant's air, rail, and road access.

Two road approaches are contemplated to the midfield site of AirCommerce Park Phase III. The first route is from the site east along Oriana Road (two lanes) 1.25 miles to George Washington Memorial Highway (U.S. 17) (four lanes divided) then south on U.S. 17 for 2.25 miles to Victory Boulevard (VA 171) (six lanes), then 1.25 miles on VA 171 to Interstate 64 (total 4.75 miles); or alternatively south on U.S. 17 for 3.5 miles (total 5.5 miles). The second approach is contingent on an evaluation of its impact on the Airport Master Plan

by the Peninsula Airport Commission. From the site, a two-lane service road would loop around Runway 7-25 and proceed 1 mile south to Providence Road (two lane), then south on Providence Road for 1.2 miles to Brick Kiln Boulevard (wide two lane), then 0.5 mile west on Brick Kiln to Jefferson Avenue (VA 143) (six lane), then 0.2 miles south to Interstate 64 (total 2.9 miles).

The rail connector to the site will travel upon existing utility easement for approximately 1.5 miles, connecting to the Chesapeake and Ohio rail line (to be shown below).

In the ultimate stage of development (2017-2030), predicted on demonstrated demand and FAA cost/benefit analysis, Runway 2-20 would be expanded to 11,500 ft. (necessary to handle the largest fully-loaded wide-body freighters on the hottest days) and a new 8000 ft parallel runway (7L-25R) constructed (see Exhibit 2.5).

In this final development stage, a cargo transfer system (CTS) will be completed to carry materials, components, and finished products throughout the ALH on an internal network of dedicated rights-of-way. This network will link off-ramp tenants to the central cargo area, a state-of-the-art intermodal complex providing access to air freighters, trucks, rail, and materials-handling systems. In addition, the CTS will connect tenants and the central cargo area to a large off-site intermodal rail facility (IRF) containing multiple rail sidings, loading platforms, and truck cross-docking. The IRF could be sited and built along the Chesapeake and Ohio rail line between Denbigh and Fort Eustis Boulevards and Richneck Rd and Highway 17. It will handle primarily bulk products and containerized cargo and will be a valuable link to the Port of Hampton Roads and a regional network through new connecting rail lines. The IRF should be linked to a new inland port with appropriate truck cross-docking facilities and road link to Fort Eustis Blvd (see Exhibit 2.6).

Key to the efficiency of the entire operating infrastructure is the ALH's intermodal interfaces. These must be designed to allow seamless and flexible flows of materials among convergent transportation modes and commercial facilities, both in the core and peripheral areas of the ALH.

AirCommerce Park can provide a propitious jumpstart to the Peninsula ALH. The former's three phases of proposed development must be carefully planned and all facility construction on it consistent with the master plan. Success of AirCommerce Park will rest on functions and facilities described in the planning guidelines for the ALH and inconsistent short and long-term uses should be discouraged. While it may seem prudent by some to use the ramp and land reserved for AirCommerce Park for alternatives to which it was envisioned, such use would damage prospects for successful ALH development.

Related to the above, small tenants (1 to 2 acres) should be prevented from locating facilities at AirCommerce Park. This could preclude much larger projects down the road. Likewise, if small aircraft are left parked on the existing AirCommerce Park ramp (even though it is currently vacant), this could well detract from marketing to future tenants for which AirCommerce Park was designed.

The Peninsula ALH must be more than a multimodal logistics infrastructure supporting AirCommerce Park, however. Its full potential and ultimate success rest on creating a total business environment that will substantially improve sourcing, production, and distribution activities of all its tenants and users. This includes soft infrastructure support in the commercial and knowledge arena along with hard infrastructure such as multimodal transportation and integrated telecommunications.

Planning for the Peninsula ALH should give high priority to aesthetics and quality of life. Newport News/Williamsburg International Airport must support not only logistics activities but also regional recreation activities and

tourism, as well as business travel. To the extent possible, logistics, manufacturing, trucking, and cargo handling should be physically separated from flows of business and leisure travelers. High quality design standards should be maintained at and surrounding the ALH for buildings, landscaping, and site improvement. Entranceways and signage should be aesthetically pleasing. Since first impressions are often enduring, physical appearance is extremely important. Therefore, to the degree feasible, the ALH and immediate surrounding areas should be designed to look more like a university campus or business park than a traditional industrial or logistics park.

As to the construction and management of the Peninsula ALH, serious consideration should be given to bringing in an outside firm with successful experience in airport-linked logistics development and operation. Such companies have market contacts that can be leveraged for tenant recruitment.

To further bolster tenant recruitment, the Peninsula Airport Commission should establish a close working relationship with major corporate relocation and site selection consultants, making them aware of the NNWIA's assets and regularly updating them on development progress. In most cases, large companies looking to expand or relocate rely on site selection specialists to provide them with a short-list of potential locations to choose from, along with their strengths and weaknesses. Likewise, major commercial real estate firms such as Colliers International, CB Richard Ellis, Hines, and Jones, Lang, Lasalle and REIT's (Real Estate Investment Trusts) such as Prologis and AMB properties often work closely with corporations in their site selection and eventual commercial development. By taking an indirect marketing approach via major site selection consulting firms and large corporate commercial real estate companies, a far broader range of likely potential tenants can be reached.

It is recommended that a good part of the initial marketing focus on attracting "big name" or "trophy" logistics service providers as Peninsula ALH

tenants. Once a couple of these are landed, it sends out a market signal to other 3PLs (third party logistics providers) and freight forwarders that the ALH is a choice location. Since smaller fish tend to like big fish as neighbors, landing a big fish will be a significant long-term marketing advantage for the ALH in its own right.

At every stage of marketing, the Peninsula ALH (including AirCommerce Park) promotional strategy should be grounded in solid business research and planning. This will involve market research of a generic nature on likely ALH tenants and users, given its stage of development, as well as market research specific to southern Virginia. Research on commercial shippers from around the world points to five generic types of shipments where air transport is the consignees' mode of first choice. These are when:

- Flexible and customized production is the norm
- The high value of the product compared to its weight justifies the extra cost of airfreight
- The product is perishable – either in the physical or economic sense
- Short production cycles and/or “just-in-time” inventories require fast delivery
- Immediate delivery of spare parts, time sensitive documents or products is required

Target industry analysis identifies eleven industrial groups that are most likely to be attracted to AirCommerce Park and the ALH. They include:

- Logistics service providers
- Semi-conductor and computer chip manufacturers
- Pharmaceuticals

- Computer and electronic sub-assembly manufacturers
- Aircraft parts suppliers and aircraft maintenance services
- Garments and fashion accessory suppliers
- Specific elements in the industrial supplies business, particularly those supplying machine tools and/or those in the petrochemical industries supplying/manufacturing small volumes of high value products, for example aromatics
- Optics and small precision equipment manufacturers
- Suppliers of perishable products – for example, seafood and fish, live animals and animal parts for traditional medicine, fresh fruit and flowers
- Automotive component manufacturers and spare part suppliers
- Jewelry and watch manufacturers

In terms of structure and content, the report commences with a summary of the business rationale for a Peninsula ALH and regional logistics system. This includes contemporary competitive forces shaping production and distribution and how airport-centered logistics hubs in the U.S. and Europe have harnessed these forces for development advantage. Such development has attracted numerous growth industries to the airport environs.

It is concluded that NNWIA and the Virginia Peninsula possesses a unique opportunity to drive similar development outcomes if it puts in place the logistical infrastructure and business environment to provide superior speed and agility in airport materials handling and distribution. This new logistics strategy would build on the Peninsula's existing assets including a rich set of knowledge-

based advanced technology industries, moderate costs and a well-educated, disciplined workforce, among others.

Following an introductory chapter covering the above issues, three chapters offer, in order, the infrastructure, business plan, and implementation plan guidelines to design, develop, operate, and manage an air logistics hub at Newport News/Williamsburg International Airport and generate the greatest region-wide economic impact. Critical success factors are presented, as well as target firms specified. To attract newer, high growth, high value-adding industries, it is stressed that the relative importance of traditional government incentives will be superceded by logistical capabilities of the site with quick and efficient business access to suppliers and customers.

The fourth chapter concludes with 26 recommendations and action steps to be followed by the Peninsula Airport Commission, a number of which were noted above, to successfully develop AirCommerce Park, the ALH, and the Peninsula logistics network. Those recommendations and action steps focus on required hard and soft infrastructure as well as the business strategies to be pursued to provide connectivity, speed, and agility to Peninsula firms: the three emphasized factors for their gaining competitive advantage in the 21st century. The recommendations also address infrastructure and facility phasing and marketing strategies along with the public and private sector options for developing, operating, and managing the Peninsula ALH at NNWIA.

EXHIBIT 2.1
HIGHWAY LINKAGE IN THE NNWIA AREA

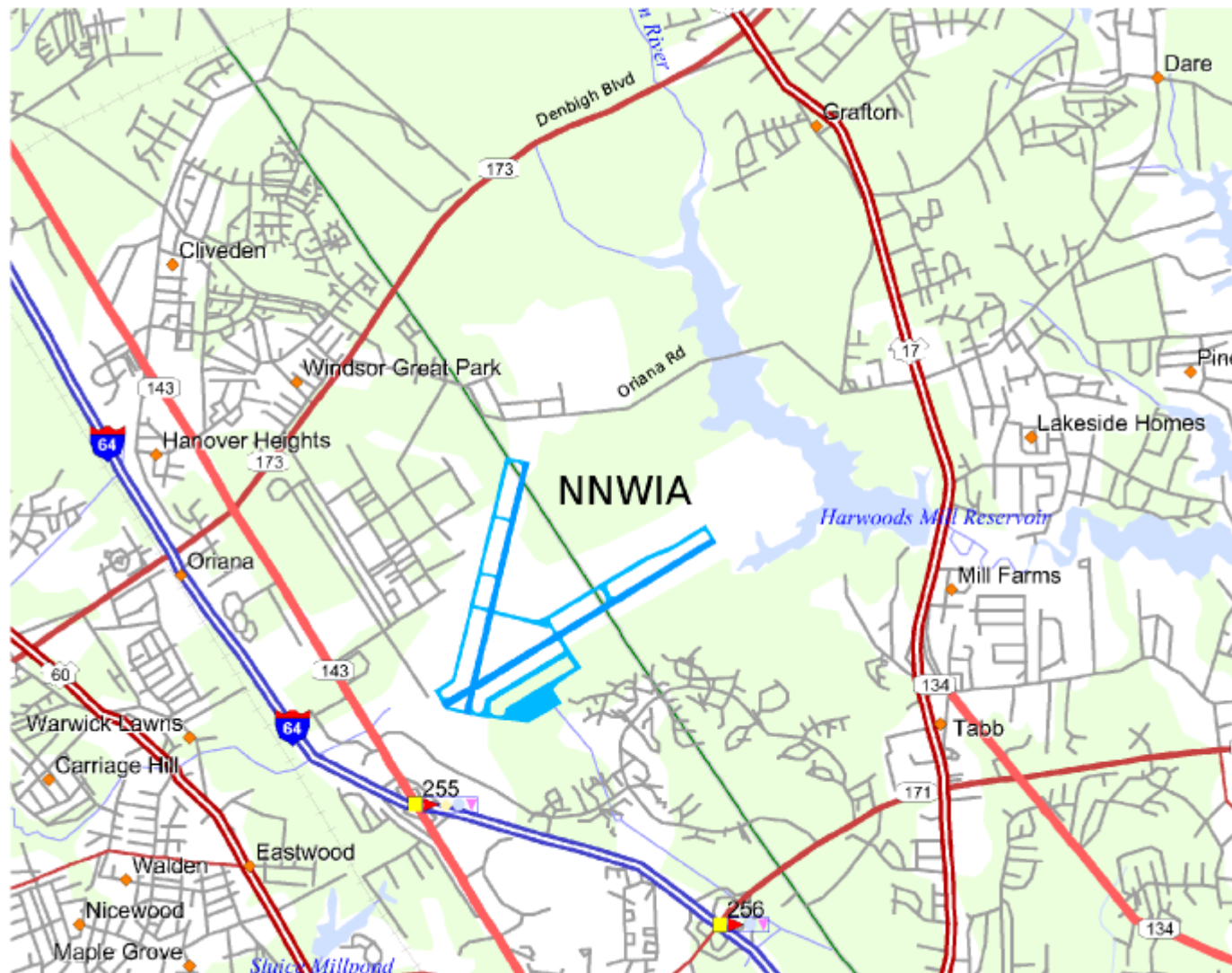
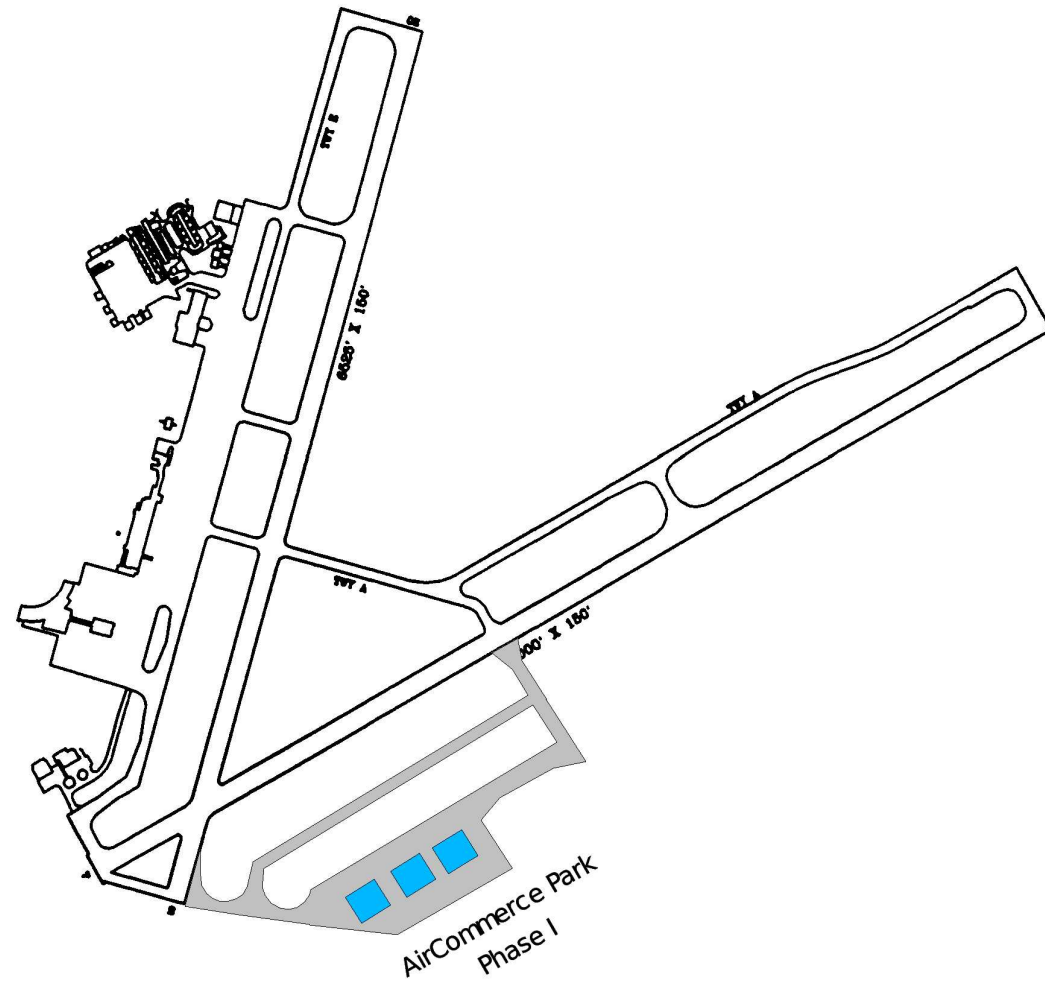


EXHIBIT 2.2

EXISTING AVIATION INFRASTRUCTURE AND AIRCOMMERCE PARK SITE (PHASE I)



RUNWAY 7-25 EXTENSION AND AIRCOMMERCE PARK (PHASE II)

RUNWAY 7-25 EXTENSION AND AIRCOMMERCE PARK (PHASE II)

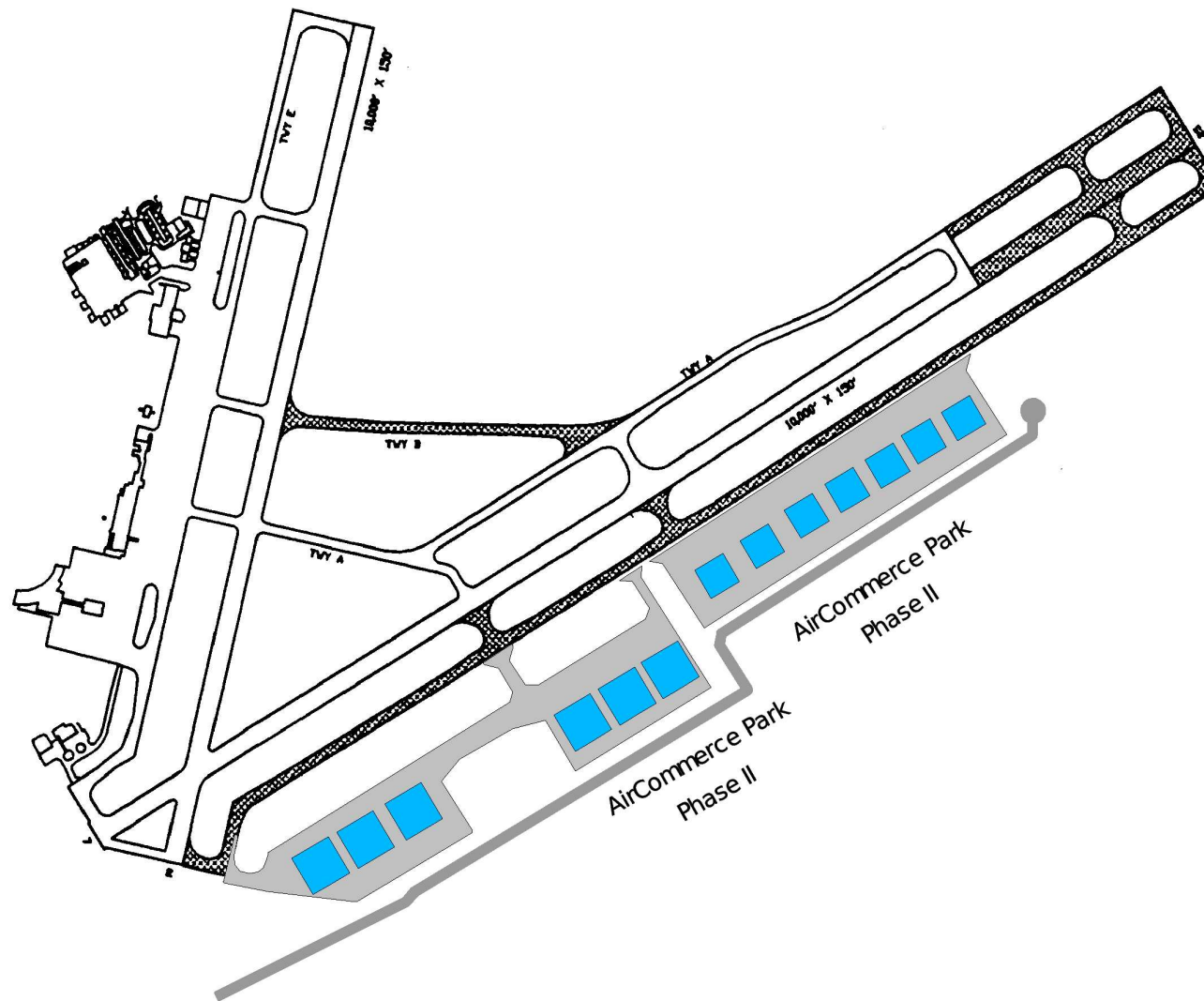


EXHIBIT 2.4

AIRCOMMERCE PARK PHASE III WITH INTERMODAL CONNECTIVITY AT MIDFIELD SITE

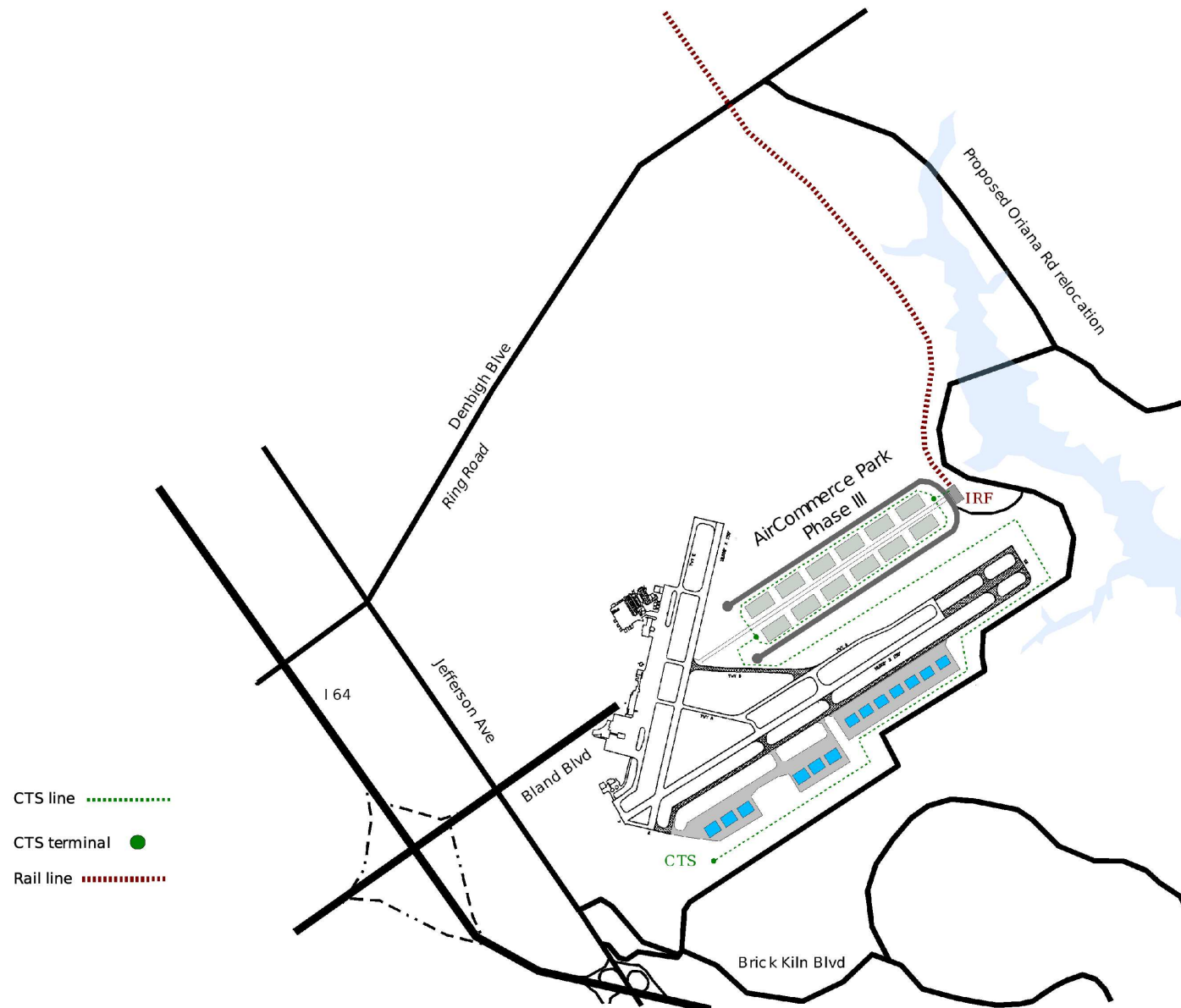


EXHIBIT 2.5

ULTIMATE PENINSULA ALH BUILD-OUT WITH 11,500 FT RUNWAY 2-20
AND NEW 8,000 FT PARALLEL RUNWAY

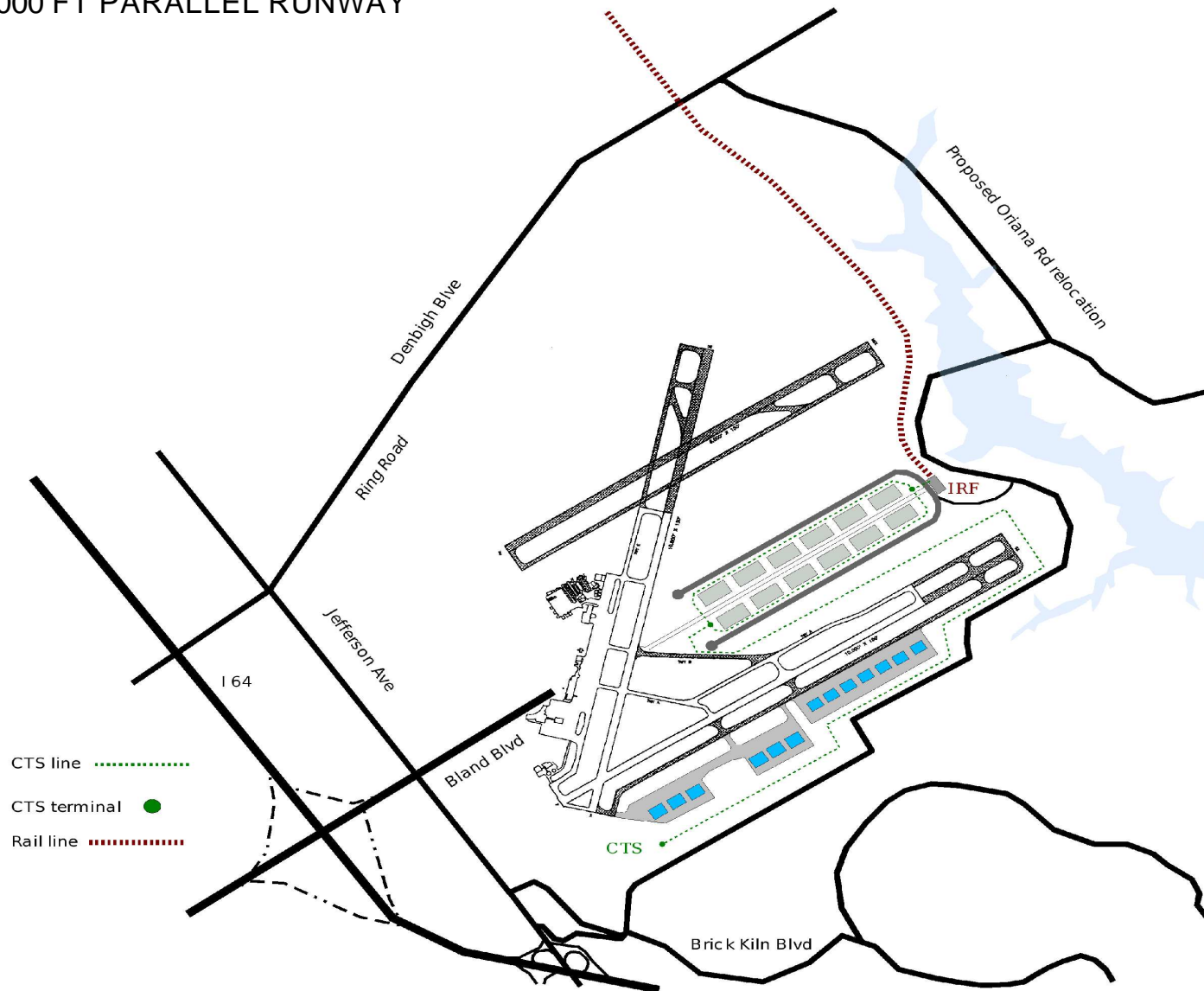


EXHIBIT 2.6

PENINSULA ALH CONNECTIVITY TO OFF-SITE INTERMODAL RAIL FACILITY AND INLAND PORT AT ULTIMATE DEVELOPMENT

