

Source: Public Works

Agenda Item No: REP 4-12

To: City Council
From: City Manager and Staff

Council Meeting Date: Jan 3, 2012

Re: Airport Terminal Concepts

EXECUTIVE SUMMARY:

Staff has prepared for Council consideration a report concerning the Airport terminal concepts developed by the consultant, Reynolds, Smith & Hills, Inc (RS&H). The consultant's report and Power Point presentation is attached.

DISCUSSION:

At the December 5, 2011 Council meeting, staff was directed to present the airport terminal concepts developed by RS&H. The City had obtained the services of RS&H, Inc to prepare the Airport Master Plan, and prepare Terminal Concept Designs (attached) under a phased approach. Also attached is a power point presentation which provides some of the background that went into developing the report. The design report offers two expansion options that can be expanded in two phases. The options proposed are the North Development Alternative and the South Development Alternative. The Airport Advisory Committee was presented the report and their recommendation was to support the South Development Alternative (see attached letter from Airport Advisory Board Chair).

The South Development Alternative Phase 1 focuses on the construction of an addition to the south, creating a new entry lobby with restaurant and supporting functions, passenger screening area, and hold room with associated restrooms. In addition, this phase considers the option of relocating the airport administration offices to the current hold room.

The South Development Alternative Phase 2 continues the expansion to the south for a combined ticketing area with in-line baggage screening systems, a re-configuration of the original terminal to allow for multiple baggage carousels, relocating of administration and TSA offices, removal of the original baggage claim and hold room additions and the creation of a second level for multiple departure lounges and office space. In addition, this phase accounts for an increase in the size of the existing attached ARFF building.

FISCAL IMPACT:

Preliminary costs for both phases of the North Development, and South Development, are included in the Power Point presentation attached. Possible funding sources could be an earmark or FAA grant.

VISION IMPACT:

<http://www.gocolumbiamo.com/Council/Meetings/visionimpact.php>

Enhance the future use of the airport by improvement to its appearance and functionality.

SUGGESTED COUNCIL ACTIONS:

For information only.

FISCAL and VISION NOTES:

City Fiscal Impact Enter all that apply		Program Impact		Mandates	
City's current net FY cost		New Program/Agency?	No	Federal or State mandated?	Choose One
Amount of funds already appropriated		Duplicates/Epands an existing program?	No	Vision Implementation impact	
Amount of budget amendment needed		Fiscal Impact on any local political subdivision?	No	Enter all that apply: Refer to Web site	
Estimated 2 year net costs:		Resources Required		Vision Impact?	Yes
One Time		Requires add'l FTE Personnel?	No	Primary Vision, Strategy and/or Goal Item #	7
Operating/Ongoing		Requires add'l facilities?	No	Secondary Vision, Strategy and/or Goal Item #	7.2.1
		Requires add'l capital equipment?	No	Fiscal year implementation Task #	



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CITY OF COLUMBIA, MISSOURI

December 28, 2011

PUBLIC WORKS DEPARTMENT
COLUMBIA REGIONAL AIRPORT

Robert McDavid, Mayor
and Members of the City Council
City of Columbia
701 E. Broadway
Columbia, MO 65205

Dear Mayor McDavid and Members of the City Council:

The city of Columbia retained Reynolds, Smith, & Hills to develop preliminary architectural conceptual designs for the Columbia Regional Airport last summer. As a part of its ongoing responsibilities, the Columbia Regional Airport Advisory Board has reviewed the preliminary plans and has the following recommendations on the terminal designs.

The architects report contained two options, a north option and a south option, which the Board thoroughly discussed. It considered, cost, aesthetics, construction time and disruption of service, encroachment onto the apron, and functionality.

The north option was projected to be more expensive, the design would encroach onto the apron, and would be the most disruptive to current service. It would retain some of the building lines and improve its overall aesthetics. In addition, this option would require that the Aircraft Rescue and Fire Fighting facility be moved or new space that would need to be built immediately. It would certainly improve the current terminal facilities but was not the first choice of the Board.

The south option would enable construction to begin without a major disruption to air service. It would allow for a better transition into the new facilities because it would not require building temporary air passenger holding facilities. The south option would emphasize a modern look that passengers and the community would likely find very attractive. Moreover, the Board liked the south option because the terminal did not encroach onto the apron. The Board felt very strongly that structures should not be built on the apron because they would restrict aircraft movement. Most importantly, the south option was projected as the least expensive option. For all these reasons, the Board recommends this option as the best choice for Columbia.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gregory Cecil', is written over a horizontal line.

Gregory A. Cecil
Chair, Columbia Regional Airport Advisory Board

TERMINAL CONCEPTUAL DESIGN REPORT

COLUMBIA REGIONAL AIRPORT

Prepared For
CITY OF COLUMBIA, MISSOURI
Columbia, Missouri

February 2011
Version 1.0

RS&H
IMPROVING YOUR WORLD

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EXECUTIVE SUMMARY

The Columbia Regional Airport has retained RS&H to develop a preliminary architectural conceptual design for the terminal. The results are presented in this report.

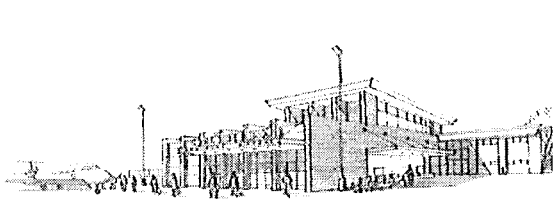
Phase 1 alternatives are considered for a near term, cost effective solution that would immediately allow for one larger aircraft (MD80/737) to be serviced or two (2) RJ aircraft to be serviced simultaneously. Along with a larger holdroom and associated restrooms, the passenger screening area would be relocated to facilitate better traffic flow.

Phase 2 alternatives are intended to show future long term solutions that build upon the ideas generated in Phase 1. These alternatives completely reorganize the terminal spaces to allow for up to five (5) airlines, multiple baggage claim devices, up to three (3) passenger screening lines, more comprehensive airside and landside concessions, multiple departure lounges, enlarged office space (for airlines, rental cars, administration and TSA), and the appropriate amount of circulation.

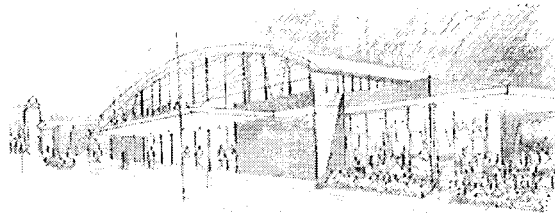
The North Development Alternative, Phase 1, focuses on the initial removal of the existing baggage claim and holdroom structures and the subsequent expansion in that same location. Expansion in this direction would require temporary baggage and holdroom functions to be in place during construction. The South Development Alternative, Phase 1, focuses on an expansion to the south, the construction of which would not affect the existing operation of the airport.

Proposed Rough Order of Magnitude costs for both the Phase 1 and Phase 2 alternatives are provided below. Phase 2 costs are assessed following the completion of Phase 1. Therefore, the total project cost, at ultimate build out, is the summation of Phase 1 and Phase 2 costs.

	<u>North Development Alternative</u>	<u>South Development Alternative</u>
Phase 1	\$3,000,000	\$4,000,000
Phase 2	\$26,000,000	\$17,000,000



North Development Alternative



South Development Alternative

INTRODUCTION

Columbia Regional Airport is located approximately 10 miles southeast of Columbia, 20 miles northeast of Jefferson City, and four miles northeast of Ashland. The city of Columbia is located in Central Missouri, along Interstate 70 centered between Kansas City and St. Louis. Columbia is the county seat for Boone County, is the airport owner and operator, and participates financially in the Airport operations and capital improvements.

The City of Columbia Public Works Department is responsible for the management and operation of the Columbia Regional Airport. A full-time professional Airport Manager and dedicated staff perform the day-to-day activities of the Airport.

The Airport has two runways. Runway 2/20 is 6,501 feet in length and Runway 13/31 is 4,401 feet in length. The Airport is served by 20 weekly roundtrip flights to Memphis operated by Delta, accommodates numerous charters throughout the year, and has a large base of general aviation activity.

In September of 2009, Reynolds, Smith & Hills (RS&H) prepared the *Columbia Regional Airport Master Plan Update* (Master Plan) for the City of Columbia. The Master Plan was developed to assess the existing conditions, future service level, and facility needs of the Airport. References to the Master Plan will be found throughout this report.

While the existing condition assessments of the Master Plan are still valid and applicable today, the Airport has initiated an aggressive campaign to secure additional commercial air carriers to service the growing economic demands of Columbia and the surrounding region. This movement to add direct service to other hubs coupled with the terminals inadequacies in meeting current medium security and passenger needs has prompted the Airport to study the possibility of expansion and renovation. The intent of the analysis is not only to improve the functional aspects of the Airport, but to reestablish it as the gateway to the community.

In November of 2010, the Airport selected RS&H to perform a preliminary Architectural Concept Design for the possible expansion and/or renovation of the existing passenger terminal facility. That report is what follows herein.

CHAPTER 1

EXPANSION / RENOVATION OBJECTIVES

1.1 INTRODUCTION

The expansion/renovation objectives chapter reviews the predicted demands that would be placed upon the terminal facilities by the aviation activities they are intended to support. In this study, the "facility" includes the terminal building. In addition, adjustments to terminal curbs, vehicular parking, and the Airport Rescue and Fire Fighting (ARFF) Building are included as they directly relate to terminal expansion/renovation modifications.

The requirements for the terminal functional areas is the determination of what services (and in what quantities) will be required by the Airport in the future in order to allow passengers to transition through the terminal in a timely and secure manner, while allowing the serving airline(s) to operate efficiently and cost effectively. The projections of facility requirements are based not only on those presented in the Master Plan, but on the desire of the Airport to increase both the amount of service and the level of service from that provided today. For purposes of this report, the terminal has been broken down into its various component parts.

The proposed facility parameters will provide an equal or better level of service than currently exists to the passenger, airlines and the Airport with conditions of stable flow.

1.2 CURRENT AIR SERVICE OVERVIEW

Columbia Regional Airport is currently served by Delta Air Lines which operates three round trip flights a day to Memphis using 50 passenger aircraft. All commercial passengers are processed through the existing hold room and baggage claim additions on the east side of the building.

The Airport also has several narrow body charter flights at various times throughout the year. All charters are processed through the south side of the terminal.

1.3 FUTURE AIR SERVICE GOALS

Within the next two to four years the Airport would like to attract another one or two commercial air carriers. Of high priority is a recurring flight to Chicago. The airport expansion/renovation concept should be developed to allow the servicing (loading/unloading) of two (2) RJ aircraft at the same time. Also, larger aircraft (i.e. 737/MD80) are to be accommodated.

1.4 EXISTING TERMINAL FACILITY INCOMPATIBILITIES AND CONCERNS

Some components of the existing terminal are such that renovation within the envelope of the existing building, to meet proposed service goals, is impossible without expansion and reconfiguration.

1.4.1 Existing Baggage Claim and Holdroom Additions

The size and construction of the existing baggage claim and holdroom additions do not allow for expansion and/or renovation. Both are of a completely different structural system, size, form, massing, material and aesthetic than that of the main terminal. Expanding the holdroom component and/or the baggage claim component is not possible in the current configuration. The structures would have to be completely removed and reconstructed such that the proper foundation and structural systems could be employed to support not only a near term solution (to meet the goals indicated above) in this location, but to adequately prepare for future development.

Figure 1.4.1-1
EXISTING BAGGAGE CLAIM AND HOLDROOM ADDITIONS

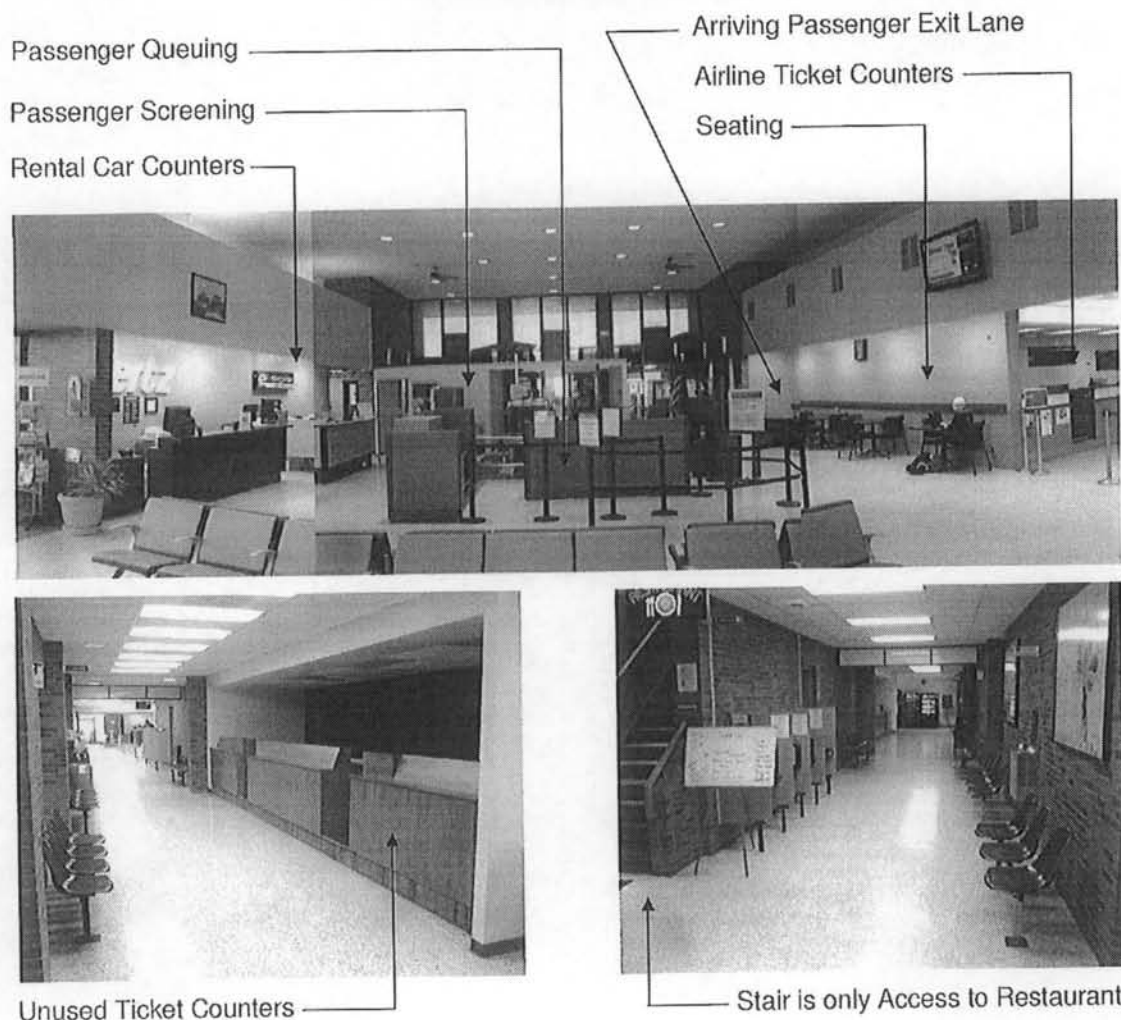


1.4.2 Existing Main Lobby Space

The existing main lobby space is congested. The insertion of the required security screening checkpoint and the resulting queuing has resulted in a multi-purpose space without adequate circulation to accommodate the many functions. Screening and queuing have taken up a large portion of northeastern portion of the area. Current rental car counters on the perimeter of the main lobby, near that same location, are hampered by reduced visibility and access. Entry and exit vestibules with only single-direction doors dictate passenger flow, causing cross-traffic situations between those entering the terminal, exiting the terminal, accessing the airline ticketing area, accessing the passenger screening area, and accessing the rental car counter area.

In addition, half of the available airline ticket counters are going unused do to their proximity to the screening checkpoint and the only access to the restaurant (the only terminal concession) is via existing stairs, making it non-ADA compliant.

Figure 1.4.2-1
EXISTING MAIN LOBBY AREA



1.5 EXPANSION / RENOVATION CATEGORIES AND PHASING

Deficiencies outlined in the Master Plan Update (Chapters 1, 3, 4 and Appendix G), those indicated above, the desired increase in flights and aircraft size, and meetings with Airport Management/Operations have led to the scope of the proposed expansion/renovation. Scope elements have been prioritized into one of three categories:

▪ *Category A – Essential*

- Hold Room: Provide a properly sized Hold Room to accommodate two RJ aircraft or one MD80/737 with a "Good" Level of Service
- Restrooms: Provide accessible airside restrooms off the hold room
- Checkpoint Queue: Provide ample passenger queuing in front of security screening checkpoint that does not impede access to existing rental car counters or terminal entry/exit
- Passenger Screening: Ensure that the passenger screening checkpoint is properly sized to meet TSA space requirements
- Circulation: Reduce cross traffic at entry/exit doors with that of queuing and access to rental car counters for improved passenger flow

▪ *Category B - Important*

- Accessibility: Provide accessible access to the Administration Offices and the Restaurant
- TSA Offices: Provide dedicated space for TSA Offices (TSA Offices currently housed in the old weather building to the north of the terminal - alternatives described herein provide the option for TSA offices to return to the terminal proper)
- Checkpoint Queue: Improve the flow around the checkpoint queue while providing ample space for the queuing
- Rental Car: Provide space for additional rental car counters and offices
- Interior Aesthetics: Improved level of design throughout the interior of facility

▪ *Category C - Desirable*

- Airline Tenants: Accommodate up to a total of five (5) commercial air carriers
- Concessions: Improve visibility and accessibility of Restaurant, provide additional airside concessions
- Baggage Screening: Provide adequate space in the TSA baggage screening areas to incorporate baggage screening equipment such as a CT-80DR instead of relying solely on Explosive Trace Detection (ETD) equipment
- Passenger Screening: provide space for two (2) screening machines or larger equipment
- Exterior Aesthetics: Exterior scheme to be either complimentary to the existing or consistent in its application such that the result is cohesive

Due to funding limitations the Airport has requested that proposed options be separated into near term (Phase 1) solutions and long term (Phase 2) solutions.

1.5.1 Phase 1 Goals

Phase 1 solutions will focus primarily on the following:

- Near term solution
- Inclusion of all Category A components, keeping much of the existing terminal intact and operational

1.5.2 Phase 2 Goals

Phase 2 solutions account for the state of the terminal following the construction of Phase 1 and include the following:

- Illustrates the possible ultimate future expansion/renovation for the terminal in its current location
- Builds upon the near term Phase 1 solution
- Includes all Category A, B and C items above
- Incorporates any associated elements/considerations that may be necessary to support and maintain the enhanced terminal facility and the increased level of operation, and required construction phasing components to provide optimal service to passengers.

1.6 TERMINAL FUNCTIONAL AREAS

This section identifies each of the terminal area functions and proposed impacts on them as they relate to the phasing objectives indicated above. A complete definition each of the functional areas and their optimal placement are referenced in the Master Plan, Appendix G.

1.6.1 Check-in Counters

Ticket counters are currently separated into two locations, one immediately off the entry lobby and the other further south. Under a Phase 1 scenario, ticket counters would remain as is. Under a Phase 2 scenario, ticket counters would be combined in a single central location with adjacencies to baggage make-up and office space.

1.6.2 Check-in Queue

It is estimated that by the opening date of the Phase 2 terminal, significantly more passengers will be checking in online in addition to using the kiosks to check-in. Both technologies process transactions faster, thereby allowing more passengers to be processed in less time resulting in less area required for queuing.

Under a Phase 1 scenario, check-in queuing will remain unchanged as it relates to the ticket counter locations. A Phase 2 scenario will provide a larger queuing/assembly area directly associated with the ticket counters and interspersed with stand-alone ticketing kiosk machines.

1.6.3 Baggage Make-Up & Screening

Currently, baggage is accepted at the check-in counter and transferred manually to a baggage cart after being security screened by the Transportation Security Administration (TSA). Phase 1 solutions will not alter the baggage screening protocol. Phase 2 scenarios propose baggage

conveyor systems behind the ticket counters that will transport bags through in-line screening systems.

1.6.4 Airline Offices

Airline office space will remain unchanged in a Phase 1 scenario. Implementation of a Phase 2 layout will include larger office areas for up to five (5) air carriers, centrally located with adjacencies to baggage make-up and ticketing.

1.6.5 Departure Lounges and Holdrooms

The Columbia Regional Airport currently has one holdroom. It does not allow the passengers to move around much after having been screened, prior to boarding the aircraft, and it does not offer access to restroom facilities. As such, it is a true holdroom. It provides a much lower level of service to the passenger as the passenger is contained in a relatively small area and not able to move about freely.

Phase 1 scenarios offer a larger holdroom and adjacent accessible restrooms. These holdrooms can accommodate the servicing of two (2) RJ aircraft simultaneously or one larger MD80/737 aircraft.

Phase 2 scenarios offer multiple interconnected Departure Lounges with access to multiple accessible restroom facilities and airside concessions.

1.6.6 Baggage Claim

In the South Phase 1 scenario the Baggage Claim will remain unchanged. In the North Phase 1 solution Baggage Claim will be moved to a temporary facility during construction then relocated into a larger area upon completion.

In Phase 2 scenarios, the Baggage Claim will be larger, with multiple baggage carousels and ample assembly space for those waiting for bags and passengers. In addition, the location will be such that it will provide direct access to the entry/exit on the landside.

1.6.7 Passenger Security Screening Checkpoint

Currently the passenger Screening Checkpoint impedes on the main lobby space of the terminal. Phase 1 solutions will relocate the checkpoint to allow the necessary space to meet TSA requirements. Phase 2 solutions will build on the Phase 1 results, allowing for the future inclusion of multiple screening machines.

1.6.8 Passenger Security Screening Checkpoint Queue

Currently the queuing is directly in front of the rental car counters and creates a circulation obstruction prior to flight departures. Phase 1 solutions will relocate the queuing area (along with the checkpoint) out of the main lobby area. This will allow for improved circulation to rental car counters and ample dedicated room for passenger queuing. Phase 2 solutions will further improve space allocation depending on the amount of passenger traffic expected.

1.6.9 TSA Offices and Support Areas

Currently TSA office space is located in a separate building to the north of the terminal building. Phase 1 solutions will not change the TSA office location. The North Phase 2 solution will require the demolition of the weather building that currently houses TSA offices, thus those operations will be relocated into the terminal. The South Phase 2 solution will afford TSA the option for office space relocation into the terminal.

1.6.10 Food and Beverage Concessions

Currently, the Columbia Regional Airport has an upper level restaurant on the non-secure side with stair access only. The North Phase 1 solution will not change the existing restaurant or its access, nor will it address food and beverage on the secure side other than to provide minimal vending areas within the new Holdroom. The South Phase 1 solution will provide a new landside restaurant and kitchen on the main level. Phase 2 solutions, with the inclusion of up to five (5) air carriers and multiple Departure Lounges, will provide or enlarge the landside accessible restaurant/kitchen in addition to smaller food & beverage concessions on the secure side for the convenience of passengers.

1.6.11 News, Gifts, and Sundries Concessions

Currently, the Airport does not have a news and gifts shop. Attention should be paid to the local passengers to determine when this may become something that the passengers would support. The size of such shop(s) would need to increase incrementally with the enplanements and as the flight schedule is spread out across the day. Phase 1 solutions will not change the current condition at the airport with regards to a gift/news shop. Phase 2 solutions will provide gift/news shops near the Main Lobby on the non-secure side, and adjacent to Departure Lounges on the secure side. Such components could be incorporated into the food and beverage operation(s) as is common at smaller facilities.

1.6.12 Rental Car Counters and Offices

The Airport currently has two rental car counters ineffectively located to the north of the passenger security screening queuing area and across the traffic flow into and out of the terminal. Phase 1 solutions will not alter the location of the rental car counters, but by virtue of the relocation of the passenger screening checkpoint and associated queuing, the visibility of the counters to passengers will be improved. Phase 2 solutions will relocate the rental car counters to the area directly off of the new baggage claim for easy access to departing passengers. Each rental car counter will have an associated office space directly behind it for convenience and improved passenger service.

1.6.13 Other Concessions

"Other" concessions might include pay telephones, shoe shine stands, postal facilities, ATM's, business centers, video arcades, massage, advertising, and event or product displays.

Phase 1 solutions do not address "other" concessions. Phase 2 solutions allow ample space for such concessions to be implemented without actually dictating types or locations at this time.

1.6.14 Concessions Support and Storage

The North Phase 1 scenario does not address concession support and storage. The South Phase 1 scenario recognizes the necessity of kitchen support space for the main level landside restaurant. Phase 2 scenarios, with the inclusion of additional concessions and the enlargement/redesign of the landside restaurant, will include provisions for adequate support and storage.

1.6.15 Airport Administration Offices

Currently, airport administration offices are located on the upper level of the ARFF building on the north end of the facility. Office space is only accessible via the existing stairwell, thus not ADA compliant. The North Phase 1 alternative does not alter the current layout or location of the administration space. The South Phase 1 alternative affords the option of relocating the administration office to the location of the existing holdroom. Phase 2 alternatives provide for enlarged accessible airport administration office space.

CHAPTER 2 SUMMARY OF ALTERNATIVES

2.1 INTRODUCTION

Through discussions with airport staff and an understanding of the deficiencies identified in the Master Plan, Phase 1 and Phase 2 solutions were considered for two different locations relative to the existing facility. On December 13, 2010, RS&H met with City staff for an on-site meeting to perform a preliminary assessment of the existing terminal facility and preliminary programming. Introductory diagrams and an understanding of project priorities were presented and discussed. Three options were considered at that time. The direction from the meeting was to proceed with further exploration of two options (1 - expansion on the north side; and 2 - expansion on the south side) that could accommodate a near term cost-effective solution and offer the foundation for a future larger scale expansion/reconfiguration effort. RS&H further developed the conceptual terminal planning alternatives and reviewed them with City staff at a follow-up meeting held on January 27, 2011. During those discussions it was decided that due to the temporary nature of the existing Holdroom and Baggage Claim buildings on the east side of the Main Entry lobby, they would need to be removed. Demolition of these structures would occur either in Phase 1 or Phase 2 depending on the direction of expansion. Concepts were further analyzed such that the pertinent information could be conveyed by Airport staff to the Airport Advisory Board for evaluation.

2.1.1 North Development Alternative

The *North Development Alternative*, Phase 1, focuses on the removal of the current Holdroom/Baggage Claim structures and the subsequent addition consisting of a new Passenger Security Screening Area, new Baggage Claim, new Holdroom, and associated restrooms on the north side of the facility. Temporary facilities will need to be provided to house passenger screening, holdroom, restroom and baggage claim functions during construction.

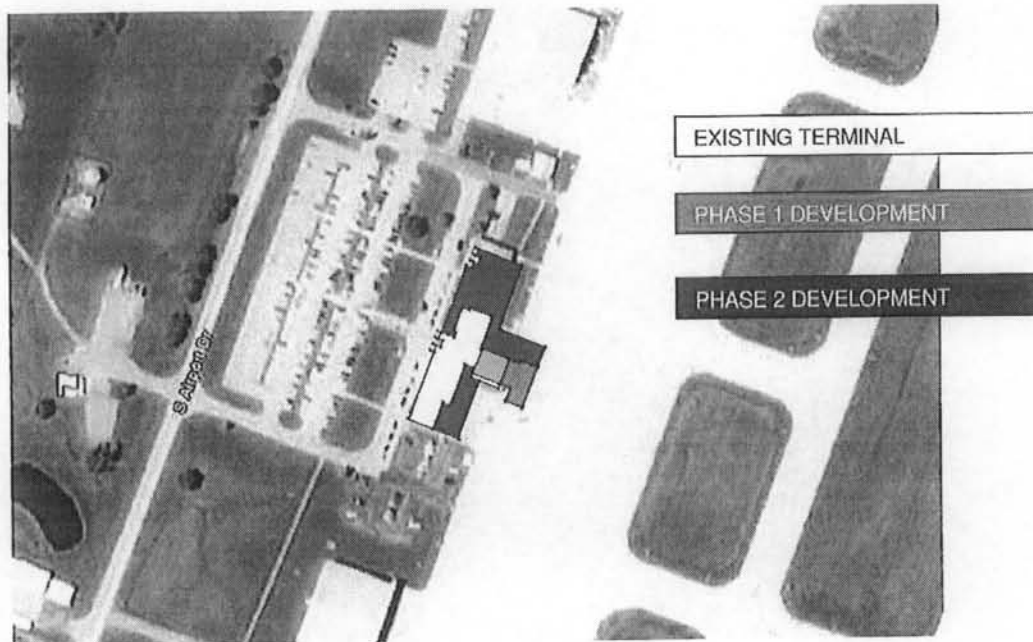
The *North Development Alternative*, Phase 2, continues with additional expansion on the north side (assimilating the space of the existing ARFF building) to accommodate multiple baggage carousels, a reallocation of space for the security screening, a complete interior renovation of the ticketing, concessions and office/support areas and the development of second level departure lounges complete with restrooms and associated concessions. In addition, this phase will necessitate the construction of a new ARFF facility and the inclusion of the office functions currently in the existing building immediately north of the existing terminal.

2.1.2 South Development Alternative

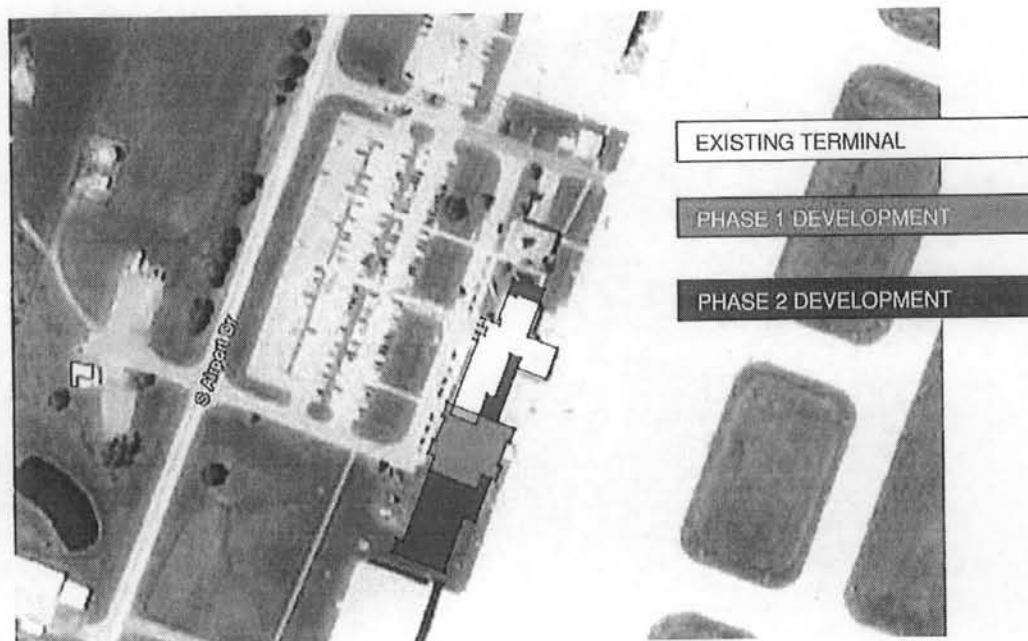
The *South Development Alternative*, Phase 1, focuses on the construction of an addition to the south, creating a new Entry Lobby with Restaurant (and support functions), Passenger Screening Area, and Holdroom with associated restrooms. In addition this phase considers the option of relocating the airport administration offices to the current Holdroom.

The *South Development Alternative*, Phase 2, continues the expansion to the south for a combined Ticketing area with in-line Baggage Screening systems, a reconfiguration of the original terminal to allow for multiple baggage claim carousels, relocation of administration and TSA offices, removal of the original Baggage Claim and Holdroom additions and the creation of a second level for multiple departure lounges and office space. In addition, this phase accounts for an increase in the size of the existing attached ARFF building.

Figure 2.1-1
SITE PLAN - DEVELOPMENT ALTERNATIVES



North Development Alternative



South Development Alternative

2.2 PHASE 1 SCENARIOS

Phase 1 scenarios are intended to be near term solutions to achieve the essential (Category A) needs of the airport at an economical cost and minimal operational interruption.

2.2.1 North Development Alternative – Phase 1

The North Development Alternative – Phase 1, is composed of the following:

- Removal of the existing Baggage Claim and Holdroom structures just to the east of the Main Lobby. These structures are no longer viable in the context of the proposed modifications to the terminal. The wood framed buildings are not compatible in size, massing, form, material, structure, or maintenance requirements with either the existing terminal or future direction design direction. Any and all alterations to the terminal in and around the area of these buildings will necessitate their demolition such that proper foundation and structural systems can be employed to support not only the Phase 1 solution, but to adequately prepare for future Phase 2 construction.
- New "T- shaped" building addition to the east of the Main Lobby. Addition to include a new enlarged Passenger Screening Area with TSA offices (1,200 sf), Queuing area (400 sf), Baggage Claim (1,800 sf), a two (2) gate Holdroom (1,700 sf), airside accessible restroom facilities with janitor closet (900 sf)
- Existing northeast Rental Car Office to be removed to improve access to Baggage Claim
- Main Lobby area will be reclaimed for circulation and assembly
- Main Lobby vestibule doors will be changed such that they are not directional but allow the flow of both incoming and departing passengers. This will reduce some of the cross traffic issues.

Figure 2.2.1-1 shows the areas that are primarily affected in this alternative.

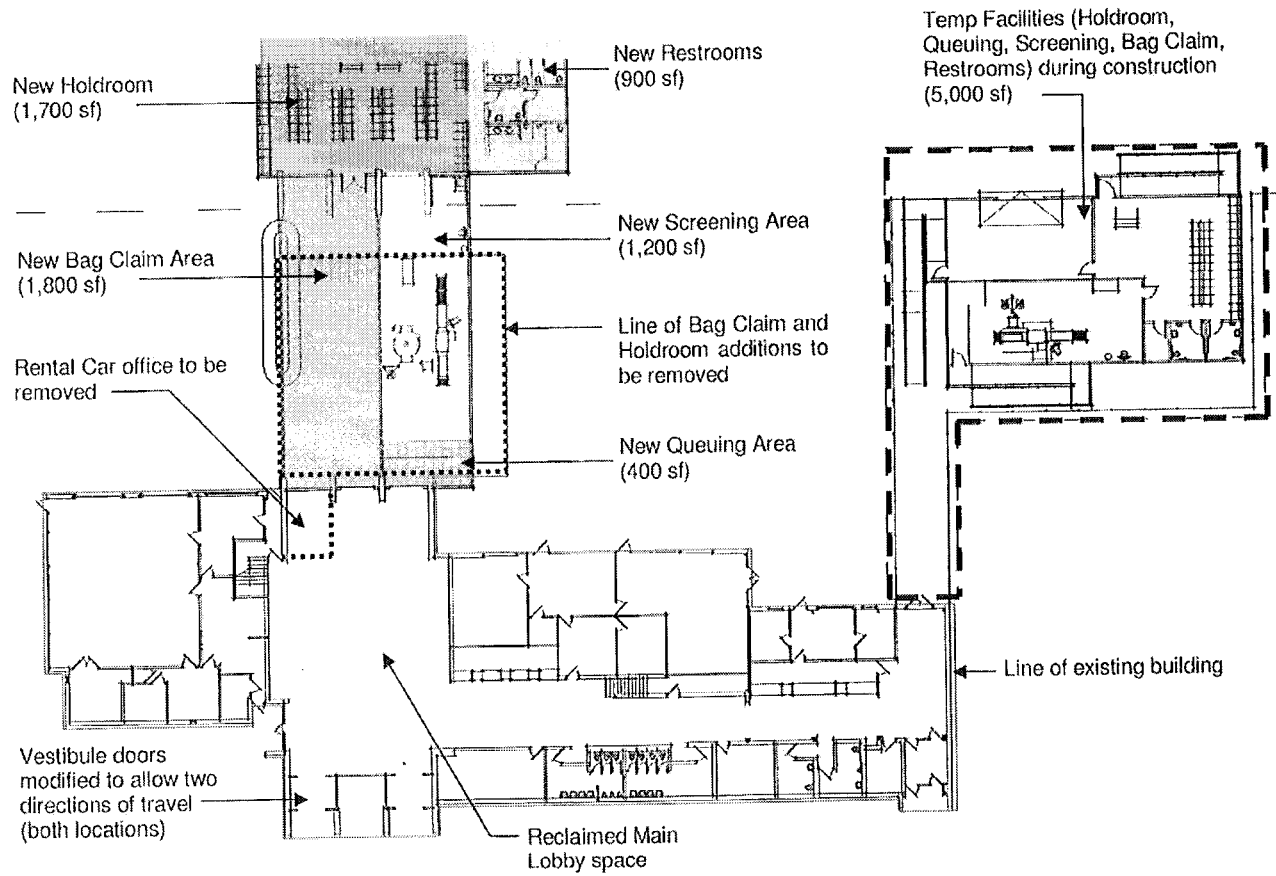
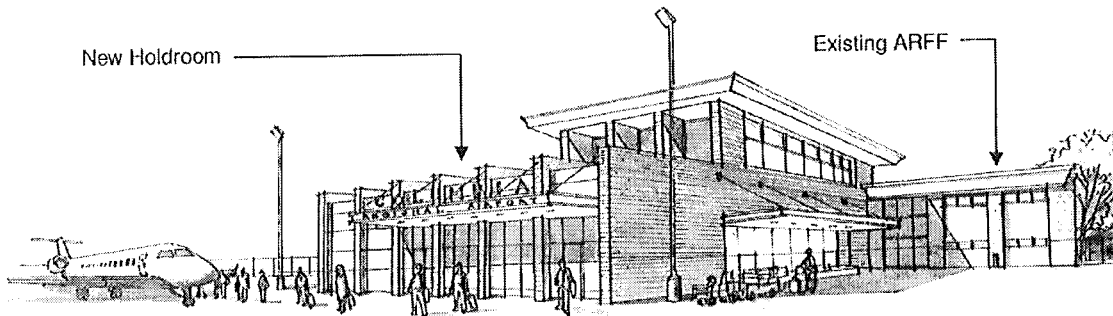


Figure 2.2.1-2 illustrates one idea for the airside of the North Development Alternative Phase 1 solution. In this image the brick and flat roof aesthetics of the existing terminal are incorporated and reinterpreted to contemporize the facility, complement the existing construction, and provide the basis for future Phase 2 development.

Figure 2.2.1-2
NORTH DEVELOPMENT ALTERNATIVE – PHASE 1
AIRSIDE IMAGE



2.2.2 South Development Alternative - Phase 1

The South Development Alternative – Phase 1 is composed of the following:

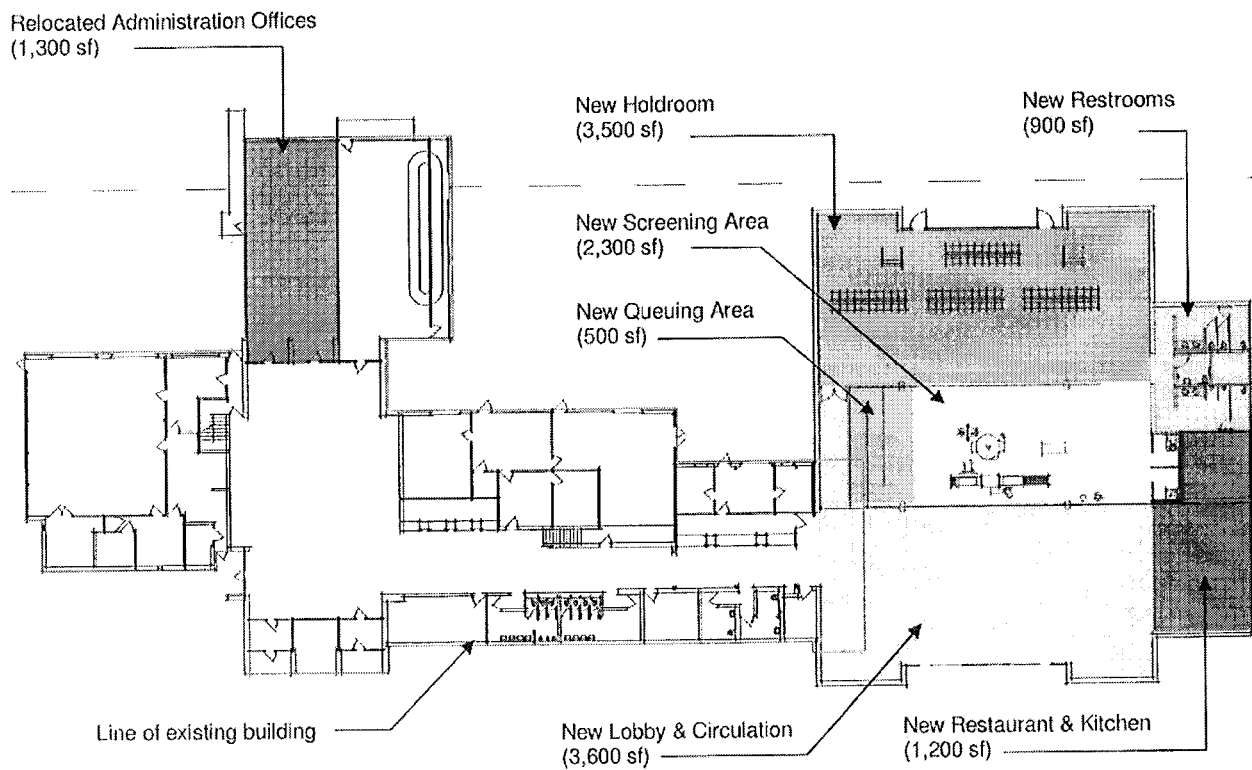
- New building addition to the south of the existing terminal in the area that is currently the parking lot for rental cars. Addition to consist of a new Entry Lobby and circulation (3,600 sf), an adjacent Restaurant with Kitchen (1,200 sf), a large two (2) gate Holdroom (approx. 3500 sf), airside accessible restroom facilities (900 sf), an airside janitor closet, new Passenger Screening and Queuing Areas (approx. 2,800 sf) and access from existing terminal.
- Relocation of all Passenger Screening and Queuing activities into the new addition thus the original Main Lobby space is reclaimed for circulation and assembly
- Relocation of Administration Offices from the second floor of the ARFF building to the area originally occupied by the Holdroom
- Creates whole new entry sequence and airport identity
- Offers opportunity to easily designate "arrival" and "departure" zones at the curbside
- Circulation along the main corridor within the terminal will optimize passenger flow and afford the opportunity to utilize more of the available ticket counters
- Eliminates all cross traffic between departing passengers waiting to go through the security checkpoint and incoming passengers exiting from baggage claim and accessing the rental car counters

The Holdroom in this scenario is larger than that depicted for the North Development Alternative (Phase 1) because it is designed in preparation of the Phase 2 expansion. Phase 2 will require circulation through this Holdroom space to access the escalator/elevator to the upper level for the additional future three (3) gates.

Similarly, the new entry lobby is larger than that indicated for the North Alternative as it sets the stage for future Phase 2 development. This area will become the hub of activity, assembly and circulation as it relates to the ticketing, baggage claim, concession and passenger screening components.

Figure 2.2.2-1 shows the areas that are primarily affected in this alternative.

Figure 2.2.2-1
**SOUTH DEVELOPMENT ALTERNATIVE – PHASE 1
MAIN FLOOR PLAN**



This scenario allows for the airport to operate unencumbered during the construction of this addition without the inclusion of temporary facilities. The location of the construction will be far away from incoming/outgoing passengers and air traffic.

Figure 2.2.2-2 and Figure 2.2.2-3 illustrate one idea for the South Development Alternative Phase 1 solution. These views represent a new image for the airport terminal building. Some existing construction materials are shown to be complimentary with the original terminal, but the contemporary grand lobby element identifies the new entry point and the generation of a new era in Columbia air travel.

Figure 2.2.2-2
SOUTH DEVELOPMENT ALTERNATIVE – PHASE 1
LANDSIDE IMAGE

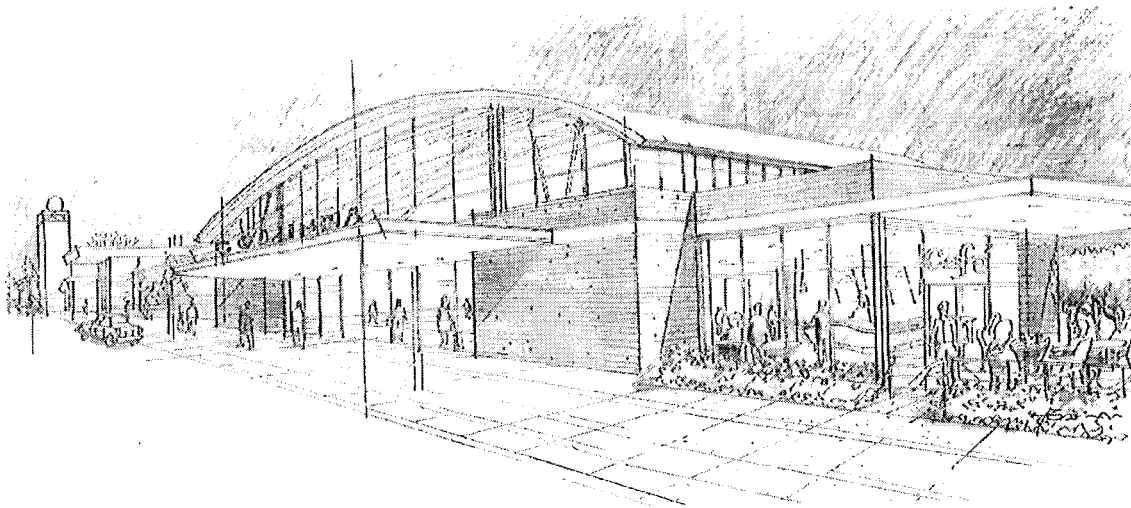
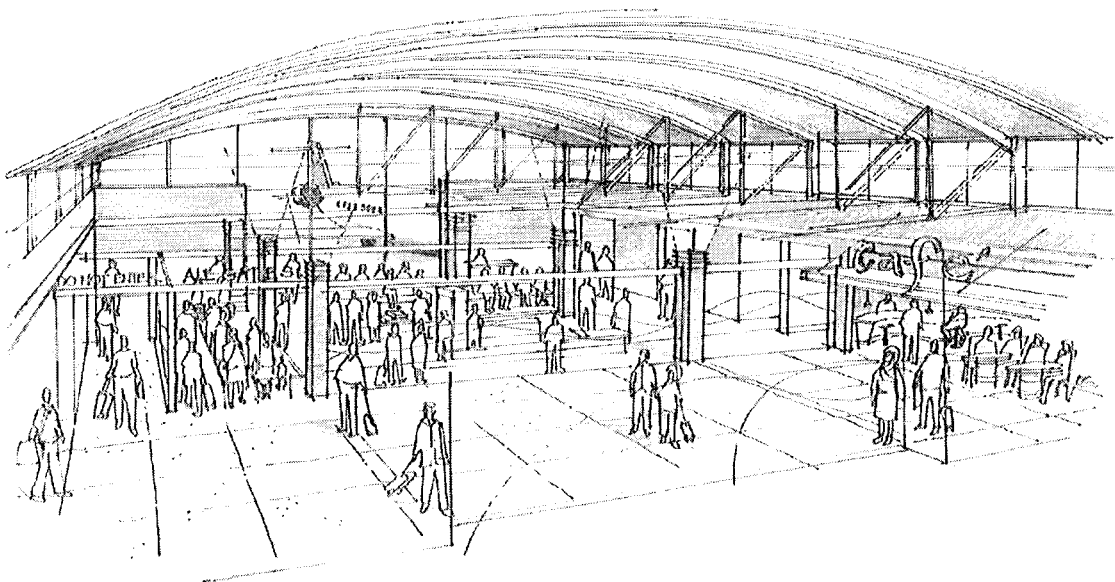


Figure 2.2.2-3
SOUTH DEVELOPMENT ALTERNATIVE – PHASE 1
GRAND LOBBY



2.3 PHASE 2 SCENARIOS

Phase 2 scenarios encompass all Category A, B & C items as well as any associated elements/considerations that may be necessary to support and maintain the enhanced terminal facility and increased level of operation and service.

2.3.1 North Development Alternative – Phase 2

The North Development Alternative – Phase 2 includes the following:

- Enlargement of the Holdroom from Phase 1, turn into a Departure Lounge
- Consolidation and relocation of the Ticketing Area. Increase in ticket counter space to accommodate up to five (5) air carriers.
- Take-away baggage systems with in-line baggage screening behind the ticket counters
- Airline offices directly related to both the ticketing and in-line baggage activities
- Expansion of the passenger Security Screening Check Point – allowing for two (2) lanes
- Appropriately sized, accessible landside restroom facilities
- Larger more centralized restaurant concession with necessary support spaces (i.e. kitchen)
- Upper and lower level Departure Lounges for up to five (5) gates
- Upper and lower level accessible restrooms adjacent to Departure Lounges
- Escalator and elevator access between airside upper and lower levels
- Gift/News concessions on both the airside and landside
- Enlarged Baggage Claim area – with up to two (2) claim carousels
- Relocation of rental car counters and associated offices such that they are directly related to the Baggage Claim lobby
- New second level Administration Offices with elevator access, and dedicated restroom facilities
- Increased landside lobby area circulation space between ticketing, screening and baggage claim components
- Construction of entirely new ARFF facility
- Considerable apron work to accommodate new Departure Lounge locations
- Passenger Boarding bridges for at least the upper level departure gates
- Modified roadways, curbside and parking (rental car, passenger and staff)

Figures 2.3.1-1 and 2.3.1-2 show the conceptual main and upper level floor plans for this alternative.

Figure 2.3.1-1
NORTH DEVELOPMENT ALTERNATIVE – PHASE 2
MAIN FLOOR PLAN

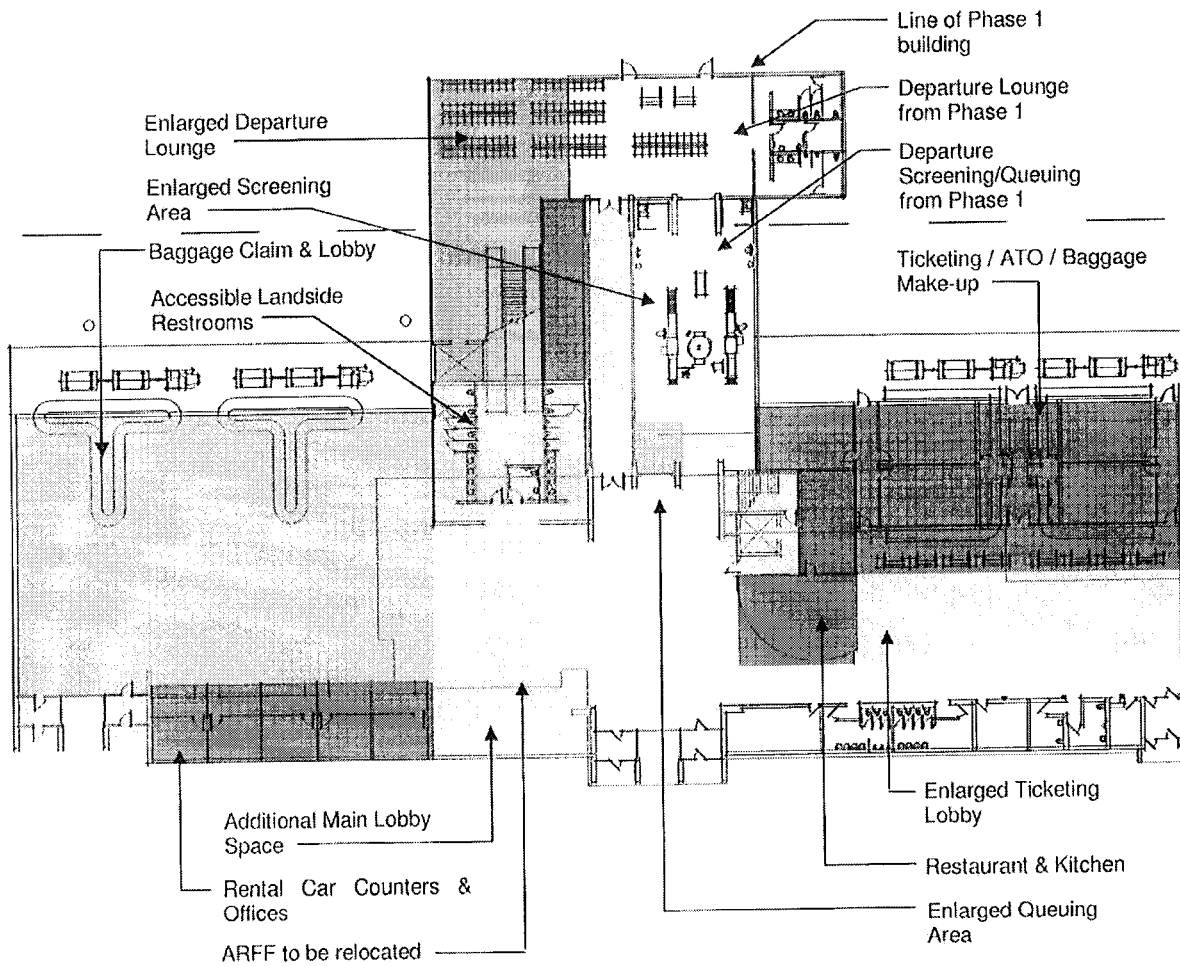
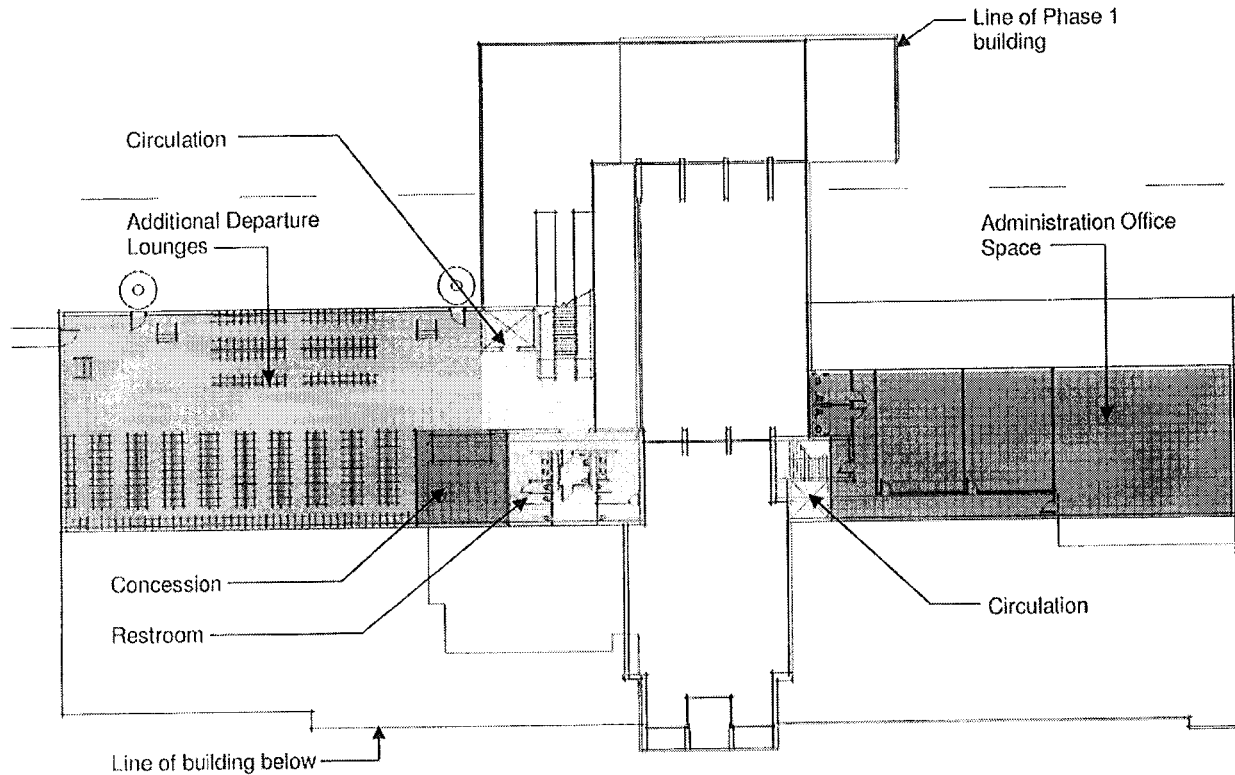


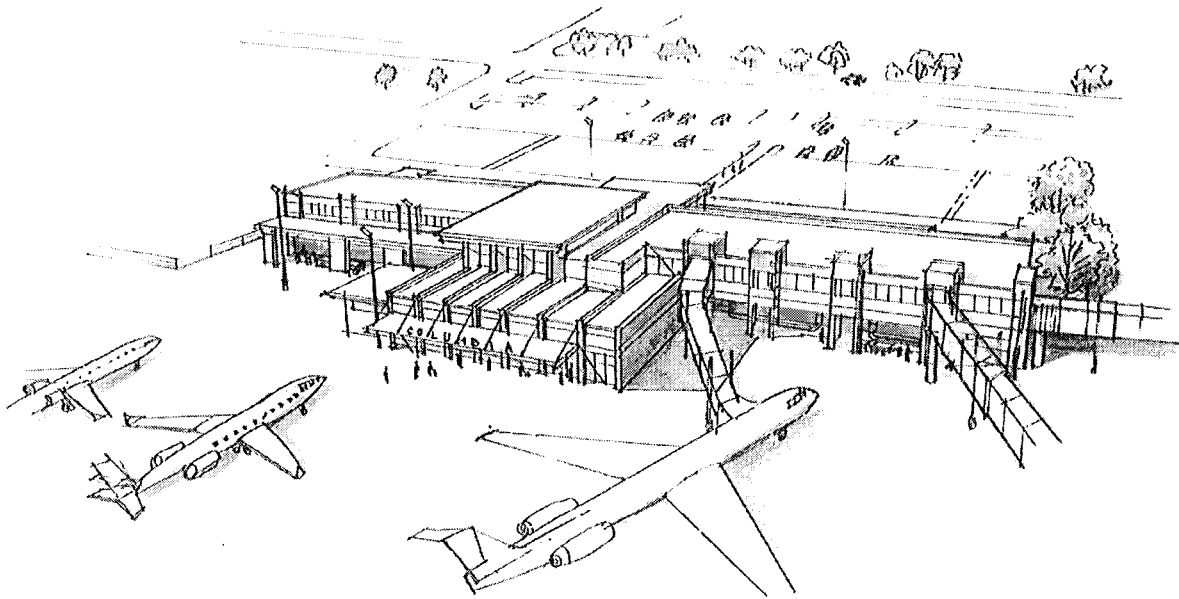
Figure 2.3.1-2
NORTH DEVELOPMENT ALTERNATIVE – PHASE 2
UPPER FLOOR PLAN



Construction sequencing for this alternative will be quite costly. Either numerous temporary facilities will be necessary throughout the course of the project or there will be multiple moves of multiple elements to adjust to the ever evolving modifications.

Figure 2.3.1-3 illustrates the continuation of the Phase 1 idea represented in Figure 2.2.1-2. Further northern expansion is done so in a complimentary fashion, utilizing similar construction materials to ensure a cohesive aesthetic for the entire facility. Not represented in this image is the new ARFF structure that would be required.

Figure 2.3.1-3
NORTH DEVELOPMENT ALTERNATIVE – PHASE 2
AIRSIDE IMAGE



2.3.2 South Development Alternative – Phase 2

The South Development Alternative – Phase 2 includes the following:

- Continued expansion to the south
- Removal of the existing Holdroom/Baggage Claim structures
- Enlargement of Phase 1 Holdroom, turn into Departure Lounge
- Upper level departure lounge(s) with associated restrooms
- Elevator and escalator access between upper and lower departure lounges
- Relocated and consolidated ticketing area on the south end of the terminal for up to five (5) air carriers
- Take away baggage systems with in-line screening behind the ticketing
- New enlarged baggage claim area to the north of the lower level Departure Lounge, centralized and with direct access to rental car counters
- Relocate rental car counters to along the front of the original building with direct relationship to bag claim– provide office space for each
- Relocate the Administration Offices to the main level just east of the original main lobby entrance
- Enlargement of landside restaurant and kitchen elements
- Gift/news concession on both airside and landside
- New accessible landside restroom facilities
- Addition of a third bay onto the ARFF component
- Apron work may be necessary to accommodate new Departure Lounge locations
- Passenger Boarding bridges for at least the upper level departure gates
- Modified roadways, curbside and parking (rental car, passenger and staff)

Figures 2.3.2-1 and 2.3.2-2 show the conceptual main and upper level floor plans for this alternative.

Construction sequencing for this alternative is a bit more straightforward than that of the North Alternative.

Figure 2.3.2-1
SOUTH DEVELOPMENT ALTERNATIVE – PHASE 2
MAIN FLOOR PLAN

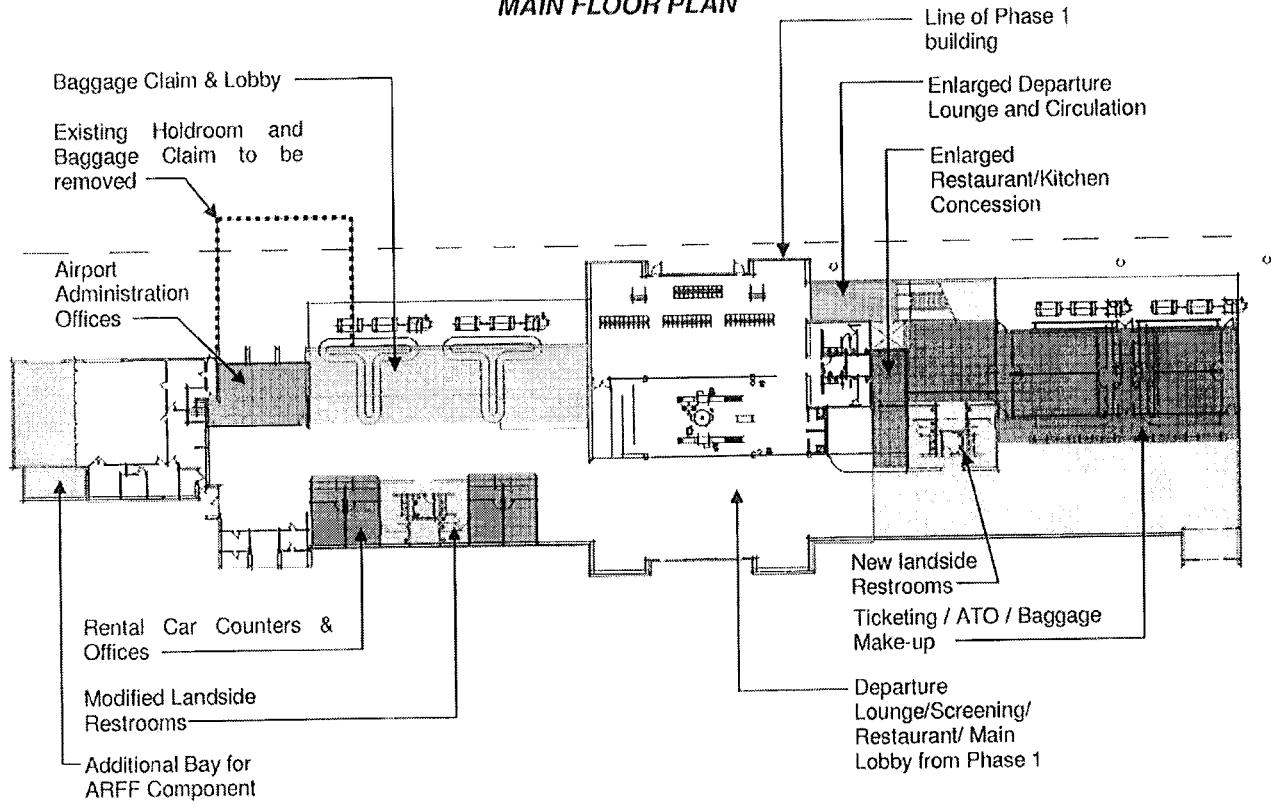
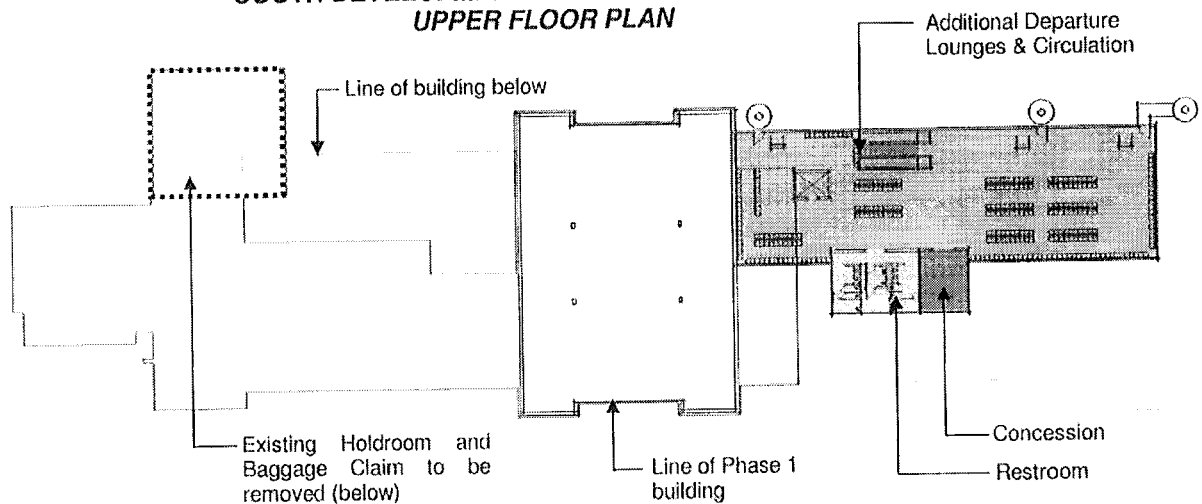


Figure 2.3.2-2
SOUTH DEVELOPMENT ALTERNATIVE – PHASE 2
UPPER FLOOR PLAN



CHAPTER 3

ROUGH ORDER OF MAGNITUDE COST ANALYSIS

Conceptual Rough Order of Magnitude (ROM) cost analyses for each phase of each alternative were developed for comparison. Caveats to keep in mind while reviewing such preliminary cost studies include, but are not limited to, the following:

1. Cost analyses are rough order of magnitude only
2. Pricing components are averages taken from other projects of similar size and scope and applied in a per unit (i.e. square footage) bases
3. Local pricing anomalies are not taken into account
4. All construction phasing and necessary temporary structures/equipment/utilities have not been fully identified or included
5. Interior and exterior materials and level of finish are based on assumptions – actual owner preferences may have a significant impact on overall cost
6. Final design may be significantly different than those illustrated herein – thus pricing variations may occur
7. Not all landside site modifications and resulting paving, walkways, roadways, landscaping have been included
8. A complete assessment of necessary airside paving modifications has not been performed
9. As with the renovation of any existing building, there may be unforeseen conditions with the original construction that could have substantial cost implications
10. A detailed assessment of the existing building systems (structural, mechanical, electrical, plumbing, fire protection) was not performed, thus compatibility issues between old and new systems could have cost ramifications

3.1 PHASE 1 ROM COST COMPARISON

Table 3.1-1 is a rough order of magnitude cost comparison between the two Phase 1 alternatives.

Table 3.1-1
PHASE 1 - ROUGH ORDER OF MAGNITUDE COST COMPARISON

Phase 1 Construction			NORTH DEVELOPMENT ALTERNATIVE				SOUTH DEVELOPMENT ALTERNATIVE				
Item	Unit		Quantity	Unit Price	Amount	Remarks	Quantity	Unit Price	Amount	Remarks	
AIR TERMINAL ADDITIONS											
Site Development	L/S										
Fence	LF		400	\$ 3.00	\$ 1,200		600	\$ 3.00	\$ 1,800		
Demolition	SY		2,950	\$ 10.00	\$ 29,500	orig HR & BC	600	\$ 10.00	\$ 6,000	South end of term	
Apron Repair	SY			\$ 5.00	\$ -			\$ 5.00	\$ -		
New Apron	SY			\$ 6.00	\$ -			\$ 6.00	\$ -		
Storm Water	LF			\$ 35.00	\$ -			\$ 35.00	\$ -		
Utilities Connections	LS		2	\$ 3,000.00	\$ 6,000		2	\$ 3,000.00	\$ 6,000		
subtotal					\$ 36,700			\$ -	\$ 13,800		
Temporary Facilities											
Temp holdroom, restroom & screening	LS		4	\$ 75,000.00	\$ 300,000	12 mo. Lease					
Walkway const (internal ramps)	SF		1,300	\$ 30.00	\$ 39,000						
Plumbing	SF		190	\$ 32.76	\$ 6,224						
Baggage Slide	LS		1	\$ 5,000.00	\$ 5,000						
Exterior Ramps	LS		1	\$ 20,000.00	\$ 20,000						
Fencing	LF		280	\$ 3.00	\$ 840						
subtotal					\$ 371,064						
Concourse											
Foundations	SF		5,960	\$ 7.28	\$ 43,369		12,650	\$ 7.28	\$ 92,092		
Substructure	SF		5,960	\$ 6.91	\$ 41,184		12,650	\$ 6.91	\$ 87,412		
Superstructure	SF		5,960	\$ 45.00	\$ 268,200		12,650	\$ 45.00	\$ 569,250		
Exterior Closure	SF		5,960	\$ 51.71	\$ 308,192		12,650	\$ 51.71	\$ 654,132		
Roofing	SF		5,960	\$ 6.76	\$ 40,290		12,650	\$ 6.76	\$ 85,514		
Interior Construction	SF		5,960	\$ 22.51	\$ 134,160		12,650	\$ 22.51	\$ 284,762		
Mechanical	SF		5,960	\$ 42.00	\$ 250,320		12,650	\$ 42.00	\$ 531,300		
Plumbing	SF		820	\$ 32.76	\$ 26,863		1,220	\$ 32.76	\$ 39,967		
Fire Protection	SF		5,960	\$ 7.01	\$ 41,780		12,650	\$ 7.01	\$ 88,677		
Electrical	SF		5,960	\$ 34.98	\$ 208,481			\$ 34.98	\$ -		
Millwork	SF			\$ 7.50	\$ -	Ind in Interior Const		\$ 7.50	\$ -	Ind in Interior Const	
Access Control System/ CCTV	SF		5,960	\$ 9.20	\$ 54,832		12,650	\$ 9.20	\$ 116,380		
subtotal					\$ 1,417,689				\$ 2,549,474		
AIR TERMINAL MODIFICATIONS											
Landside Concessions											
Interior Construction	SF			\$ 24.28	\$ -		850	\$ 24.28	\$ 20,638		
Kitchen	SF			\$ 45.00	\$ -		325	\$ 100.00	\$ 32,500		
Electrical	SF			\$ 26.22	\$ -			\$ 26.22	\$ -		
Casework & FF&E	SF			\$ 7.50	\$ -		850	\$ 7.50	\$ 6,375		
subtotal					\$ -				\$ 59,513		
Original Departure Lounge											
Select Demolition	SF			\$ 3.00	\$ -			\$ 3.00	\$ -		
Interior Construction	SF			\$ 19.00	\$ -		1,400	\$ 19.00	\$ 26,600	new Admin location	
Mechanical	SF			\$ 45.00	\$ -			\$ 45.00	\$ -		
Electrical	SF			\$ 26.22	\$ -			\$ 26.22	\$ -		
Casework & FF&E	SF			\$ 7.50	\$ -			\$ 7.50	\$ -		
subtotal					\$ -				\$ 26,600		
Baggage Claim											
Conveyor storage and relocation	LS		1	\$ 40,000.00	\$ 40,000						
subtotal					\$ 40,000						
Entry Lobby											
Select Demolition	SF		200	\$ 5.00	\$ 1,000	rental car office		\$ 5.00	\$ -		
Interior Construction	SF		200	\$ 5.00	\$ 1,000	path		\$ 5.00	\$ -		
Mechanical	SF			\$ 45.00	\$ -			\$ 45.00	\$ -		
Electrical	SF			\$ 26.22	\$ -			\$ 26.22	\$ -		
Interior Paint	SF		500	\$ 1.50	\$ 750			\$ 1.50	\$ -		
subtotal					\$ 2,750				\$ -		
Total Labor and Material					\$ 1,868,203		Total Labor and Material				
Relocation of Screening Equip (TSA)			835	\$ 20.00	\$ 16,700	equipment	835	\$ 20.00	\$ 16,700	equipment	
Project Fees											
Estimating Contingency				15%	\$ 280,230		15%			\$ 397,408	
A/E Fees				20%	\$ 373,641		20%			\$ 373,641	
GC General Conditions				8%	\$ 149,456		8%			\$ 211,951	
GC Fee				5%	\$ 93,410		5%			\$ 132,469	
Phasing				10%	\$ 186,820		0%			\$ -	
Owners Contingencies				10%	\$ 186,820		10%			\$ 264,939	
Total Project Fees					\$ 1,287,078		Total Project Fees				
Conceptual Order of Magnitude Construction Cost (Rounded)					\$ 3,155,300		Conceptual Order of Magnitude Construction Cost (Rounded)				
							</				

3.2 PHASE 2 ROM COST COMPARISON

Table 3.2-1 is a rough order of magnitude cost comparison between the two Phase 2 alternatives.

Table 3.2-1
PHASE 2 - ROUGH ORDER OF MAGNITUDE COST COMPARISON

Phase 2 Construction			NORTH DEVELOPMENT ALTERNATIVE				SOUTH DEVELOPMENT ALTERNATIVE			
Item			Quantity	Unit Price	Amount	Remarks	Quantity	Unit Price	Amount	Remarks
Terminal										
Selective Demolition	SF		6,000	\$ 15.00	\$ 90,000	bid to north & ARFF				
Terminal Building Construction	SF		46,475	\$ 290.00	\$ 13,477,750		36,000	\$ 290.00	\$ 10,440,000	
subtotal					\$ 13,567,750				\$ 10,440,000	
Total Terminal Const. Costs					\$ 13,567,750				\$ 10,440,000	
Site Improvement Costs										
ARFF										
New Building	SF		11,000	\$ 225.00	\$ 2,475,000			\$ 225.00	\$ -	
Expansion of Existing	SF			\$ 225.00	\$ -		2000	\$ 225.00	\$ 450,000	
subtotal					\$ 2,475,000				\$ 450,000	
Airside Improvements										
Apron Improvements	SF		15,000	\$ 24.00	\$ 360,000		15000	\$ 24.00	\$ 360,000	
subtotal					\$ 360,000				\$ 360,000	
Utilities Improvements										
Utilities Improvements	Lump Sum		1	\$ 500,000.00	\$ 500,000		1	\$ 500,000.00	\$ 500,000	
subtotal					\$ 500,000				\$ 500,000	
Landside Improvements										
Curbside/Roadway Imprvmnts	SF			\$ 10.00	\$ -		12000	\$ 10.00	\$ 120,000	
Parking Modifications	SF			\$ 6.00	\$ -		15000	\$ 6.00	\$ 90,000	
subtotal					\$ -				\$ 210,000	
Total Site Improvement Costs					\$ 3,335,000				\$ 1,520,000	
Total Labor and Material					\$ 16,902,750				\$ 11,960,000	
Passenger Boarding Bridges	Lump Sum		3	\$ 650,000.00	\$ 1,950,000		3	\$ 650,000.00	\$ 1,950,000	
Project Fees										
Estimating Contingency				10%	\$ 1,356,775			10%	\$ 1,044,000	
A/E Fees				15%	\$ 2,035,163			15%	\$ 280,230	
GC General Conditions				8%	\$ 1,085,420			8%	\$ 835,200	
GC Fee				5%	\$ 678,388			5%	\$ 522,000	
Phasing				15%	\$ 2,035,163			5%	\$ 522,000	
Total Project Fees					\$ 7,190,908				\$ 3,203,430	
Conceptual Order of Magnitude Construction Cost (Rounded)					\$ 26,043,700				\$ 17,113,400	



Terminal Concept Design Columbia Regional Airport

February 9, 2011

RS&H
IMPROVING YOUR WORLD



Welcome
To
Columbia

Agenda

- ➔ Review Program Goals and Objectives
 - Need to Have
 - Wants to Have
 - Likes to Have
- ➔ Terminal Concept Designs (Phase 1 and Phase 2)
- ➔ Open Discussion on Constraints and Opportunities

Goals & Objectives – Need to Have

✈ Hold Room

- Provide properly sized hold room to handle (2) 50-seat RJs or (1) MD-80/737

✈ Restrooms

- Provide airside restrooms for passenger convenience

✈ Checkpoint Queue

- Provide ample passenger security queuing to alleviate congestion at rental car counters and terminal entrance

✈ Passenger Screening

- Ensure that the passenger screening checkpoint is sized correctly to meet TSA space requirements

Goals & Objectives – Want to Have

- ➔ **Accessibility**
 - Provide ADA access to the administration offices and restaurant
- ➔ **Ticket Counter Check-in Queue**
 - Improve flow around Ticket Counters and provide ample space for queuing
- ➔ **Rental Car**
 - Provide space for additional rental car counters and offices

Goals & Objectives – Nice to Have

✈ Concessions

- Improve visibility of restaurant and provide airside concessions for revenue generation

✈ Baggage Screening

- Provide enough space in the TSA baggage screening area to incorporate automated screening equipment

✈ Passenger Screening

- Provide space for two passenger screening lanes and larger equipment

Existing Plan Layout

Runway

Taxiway

Taxilane

955' – C-III
Building Goal

Existing Roadway



Existing Plan

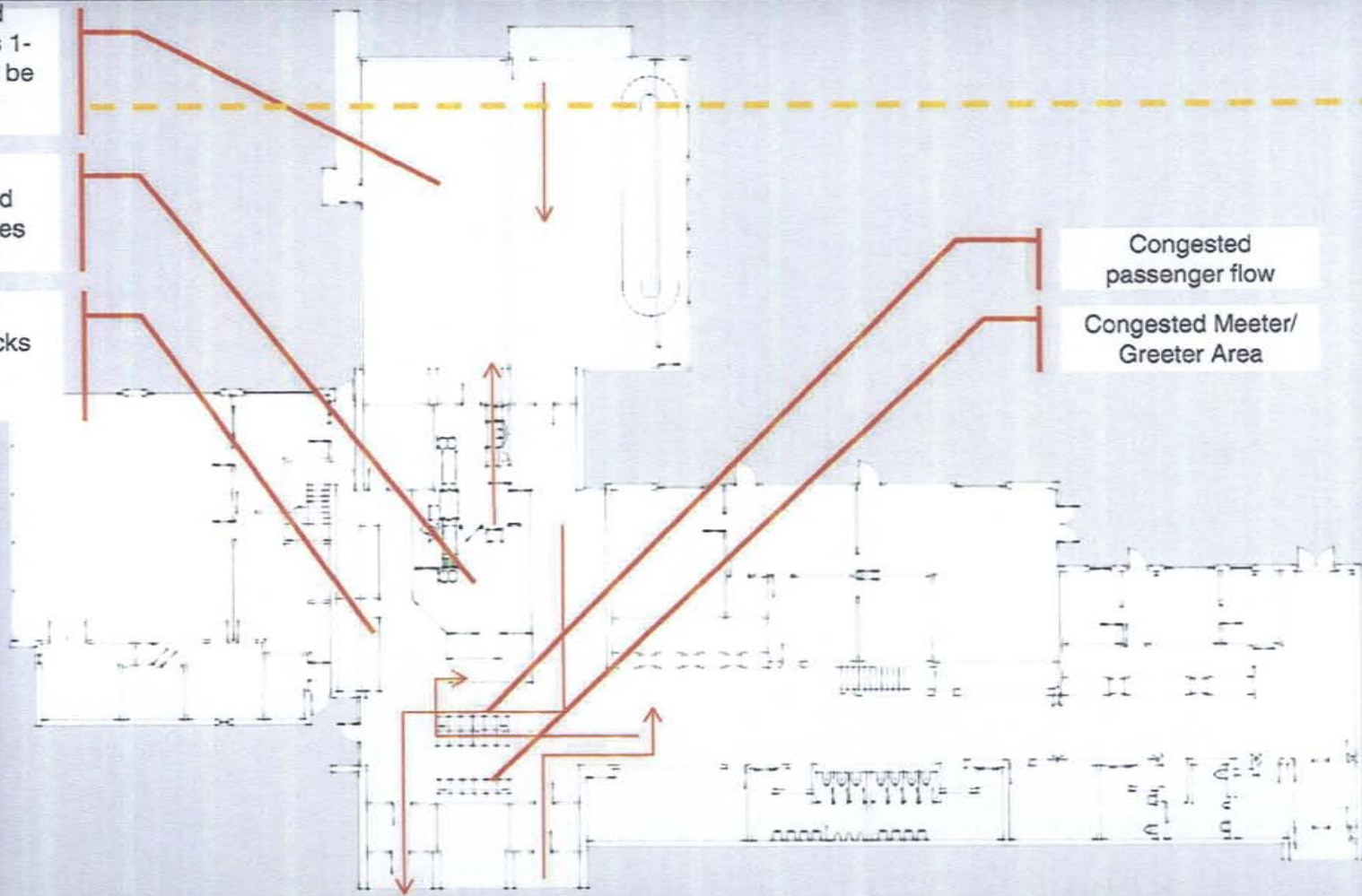
Existing Hold
Room supports 1-
RJ. Intended to be
a temporary
structure

Passenger
Screening and
queuing reduces
lobby

Passenger
Screening blocks
Rental Car
Counters

Congested
passenger flow

Congested Meeter/
Greeter Area



Existing Lobby



North Development – Phase 1

Hold Room to
support 2- RJs
(2040 S.F.)

Airside Restrooms
(880 S.F.)

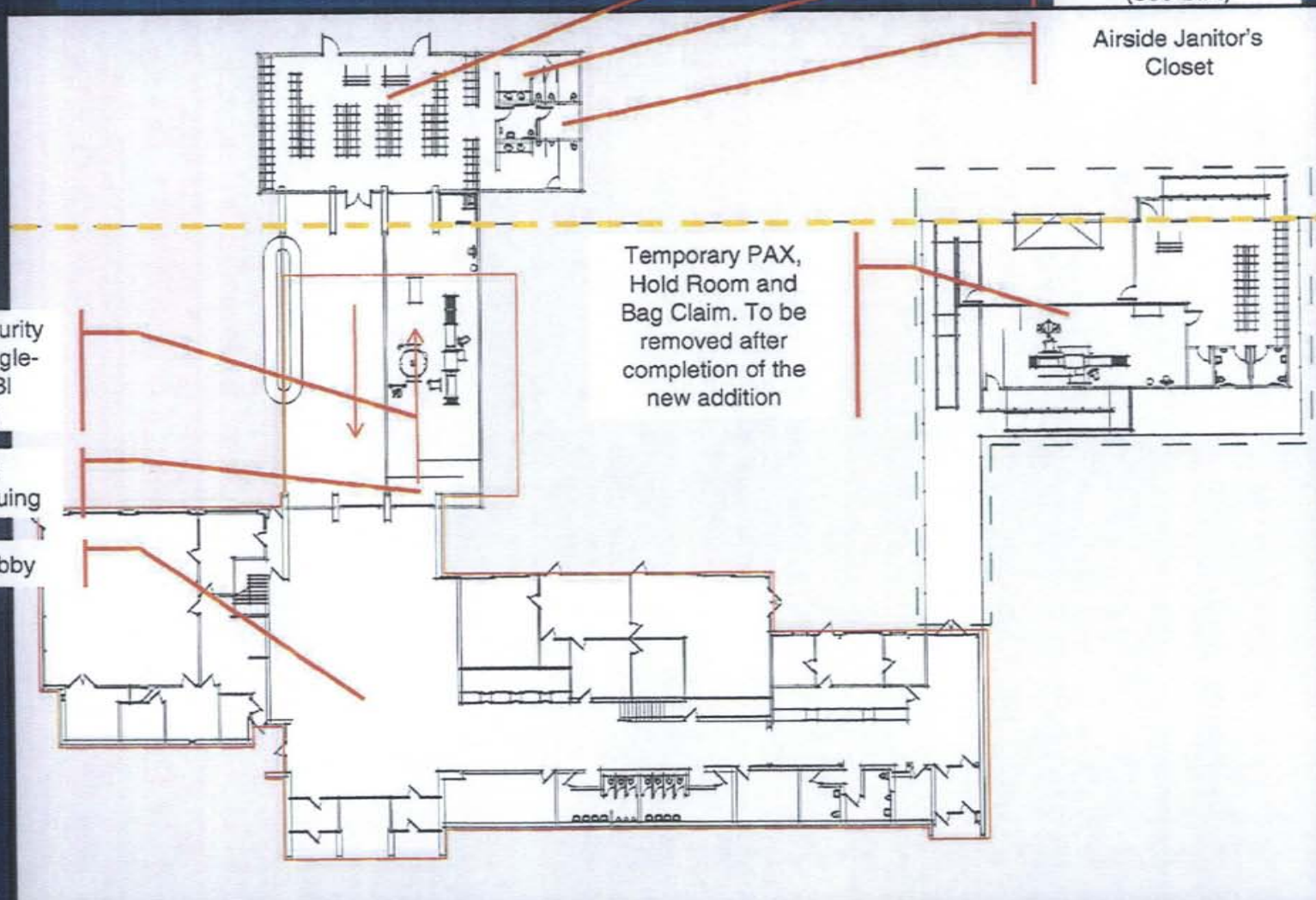
Airside Janitor's
Closet

Passenger Security
Screening, single-
lane with WBI
(1865 S.F.)

Passenger
Screening queuing

Reclaimed Lobby

Temporary PAX,
Hold Room and
Bag Claim. To be
removed after
completion of the
new addition



North Development – Phase 1

Runway

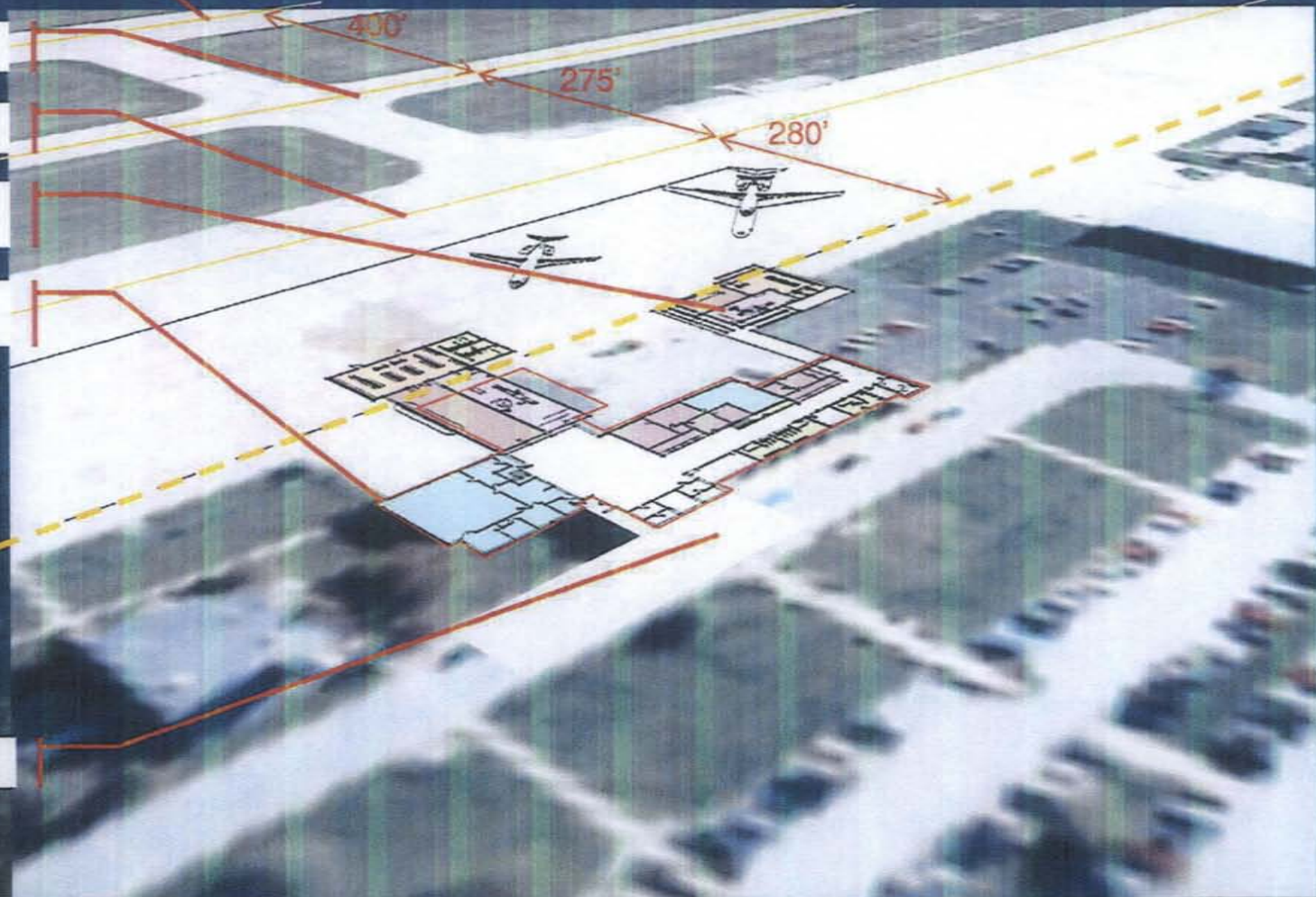
Taxiway

Taxilane

Temporary Facility
During Construction

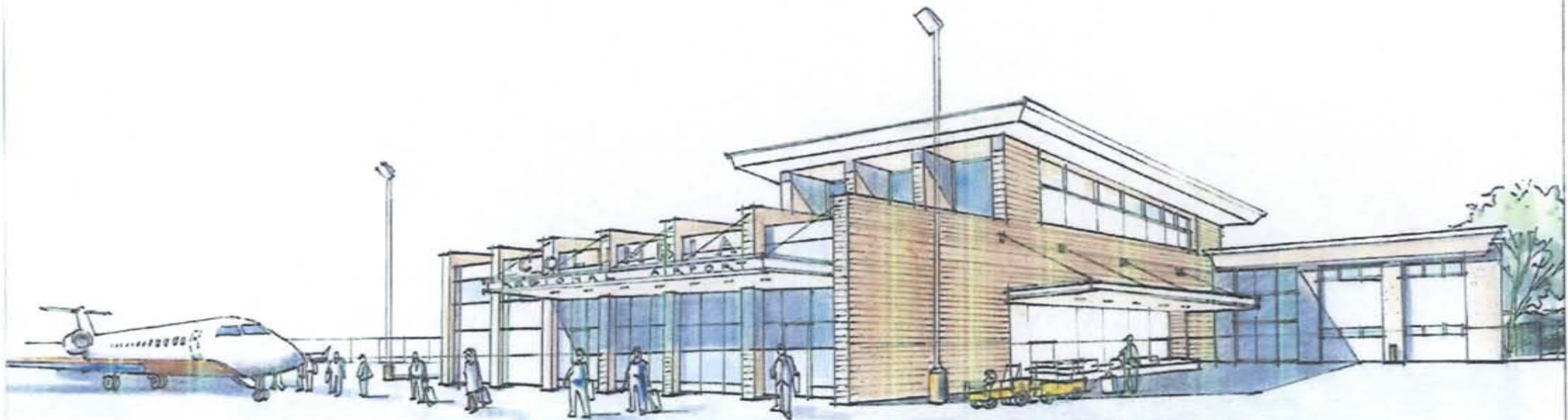
Existing Building
outline

Existing Roadway

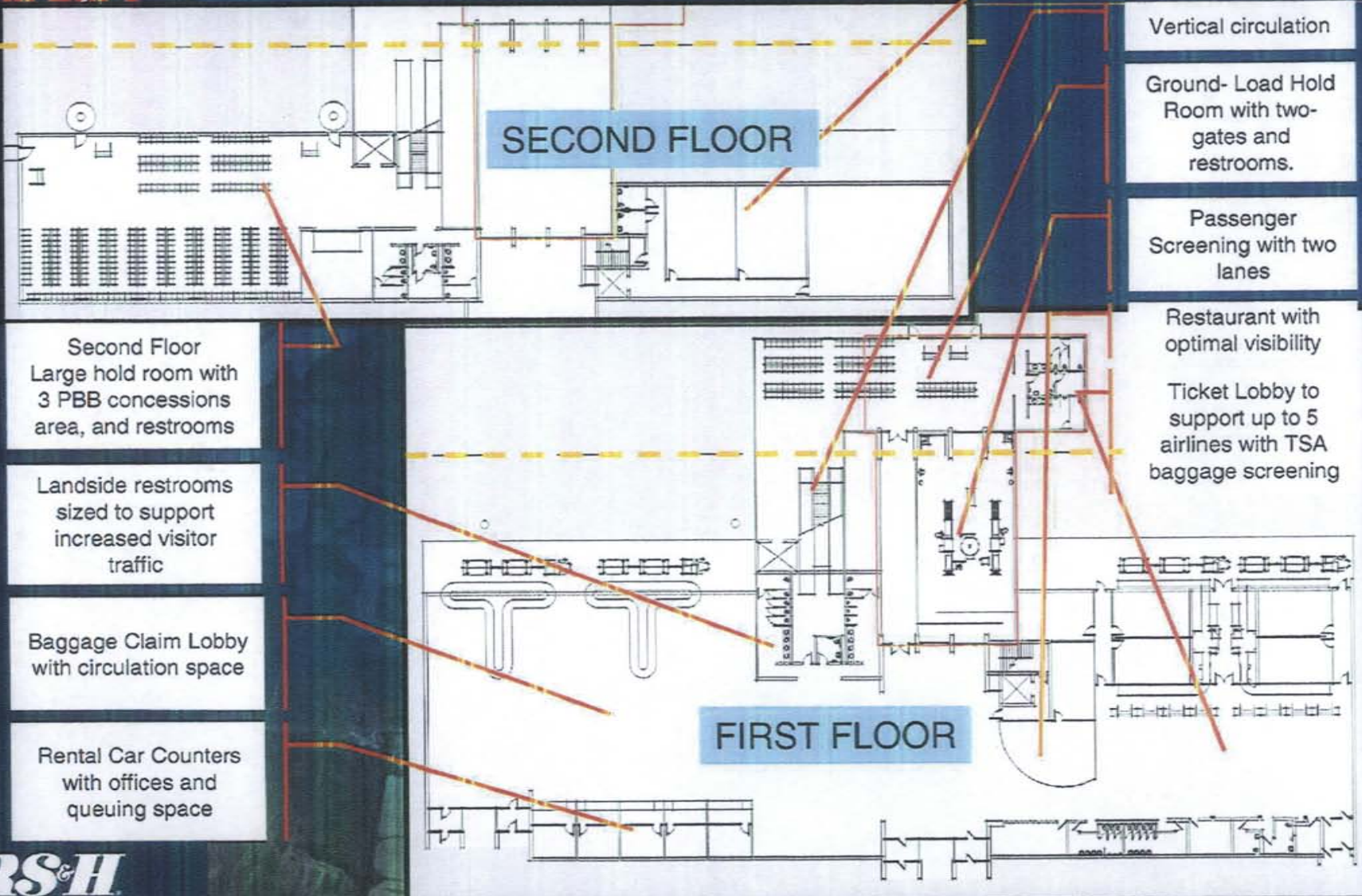




North Development – Phase 1



North Development – View 2





North Development – Phase 2

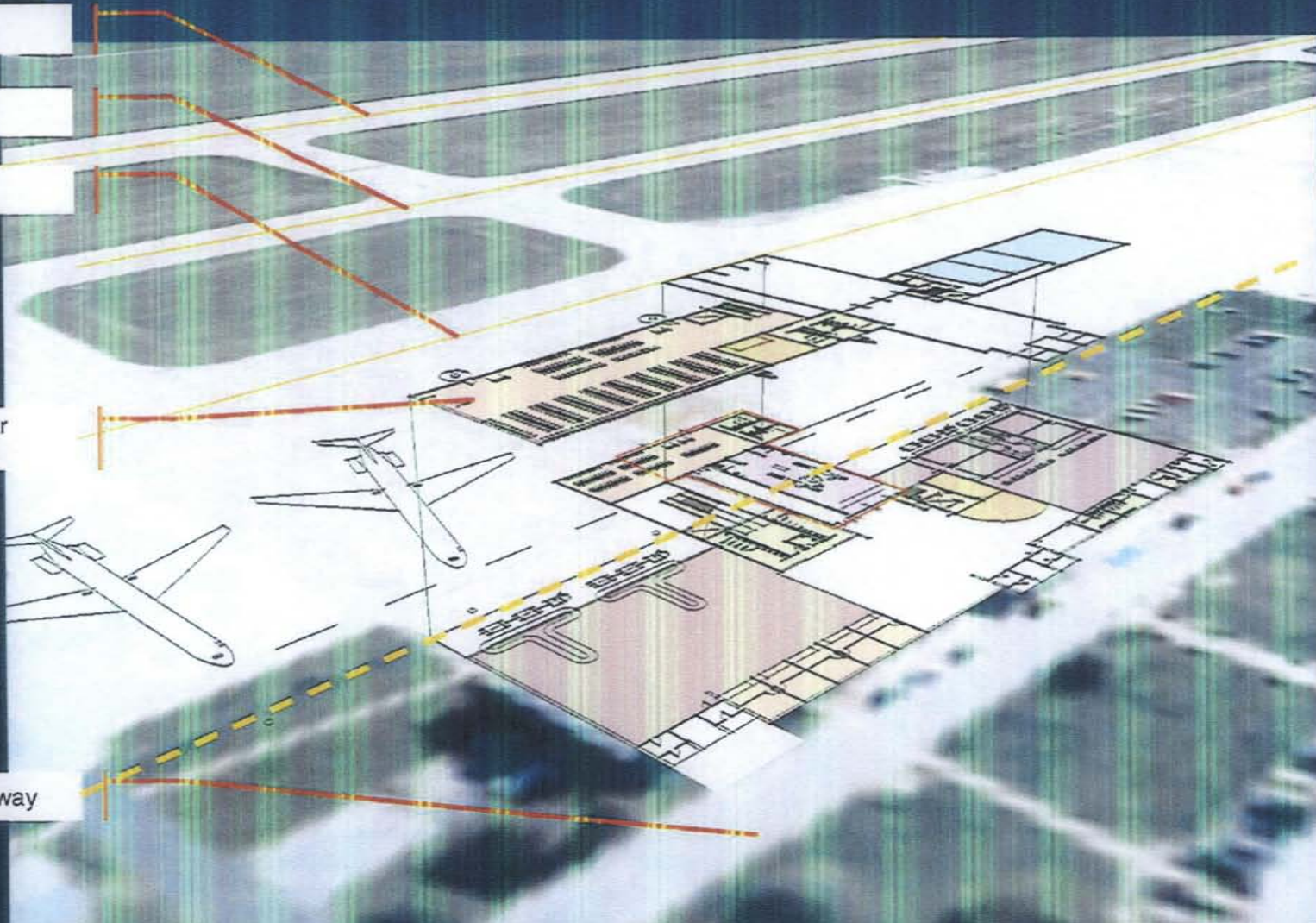
Runway

Taxiway

Taxilane

Second Floor
Holdroom

Existing Roadway

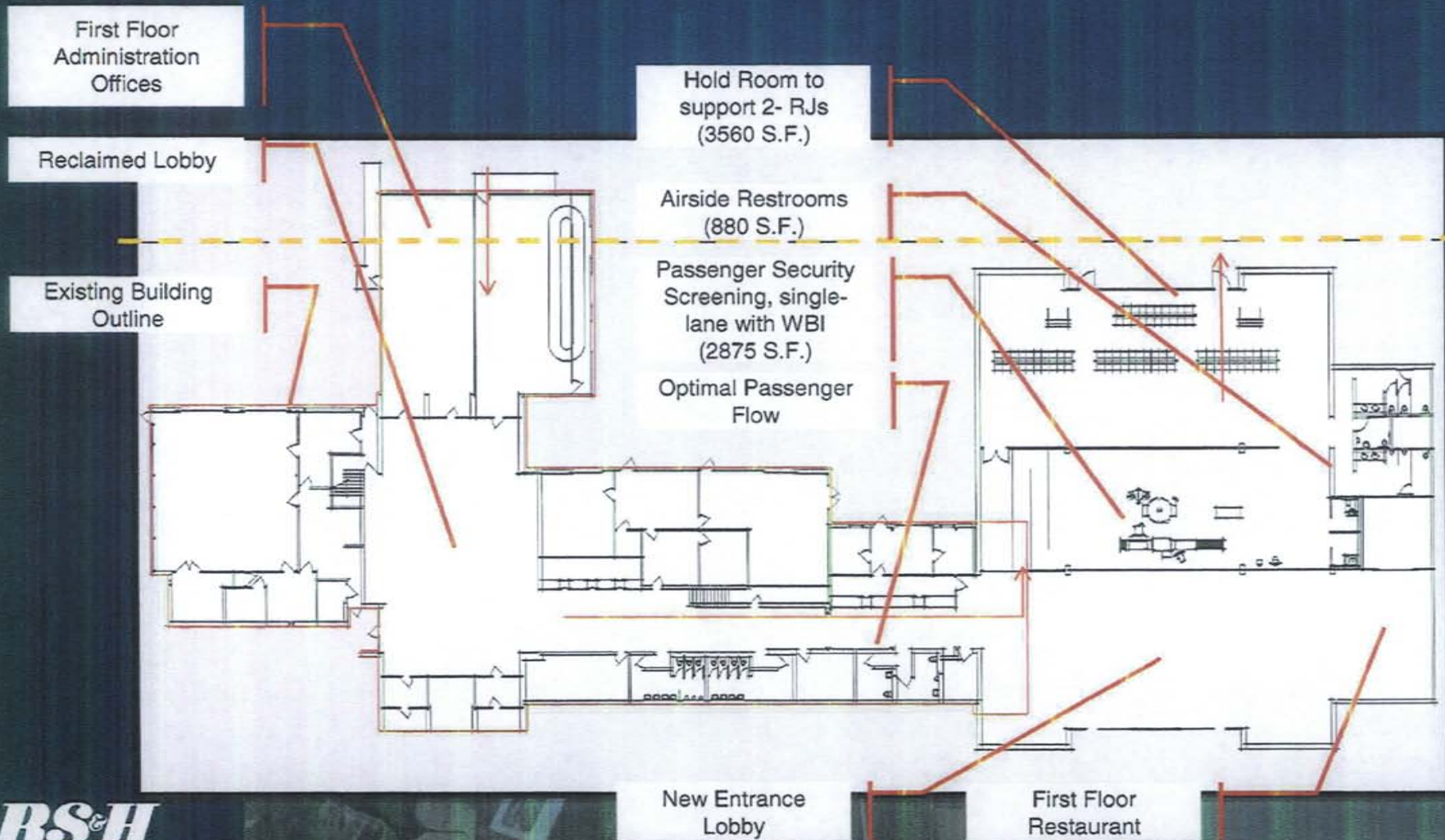




North Development – Phase 2



South Development – Phase 1



South Development – Phase 1

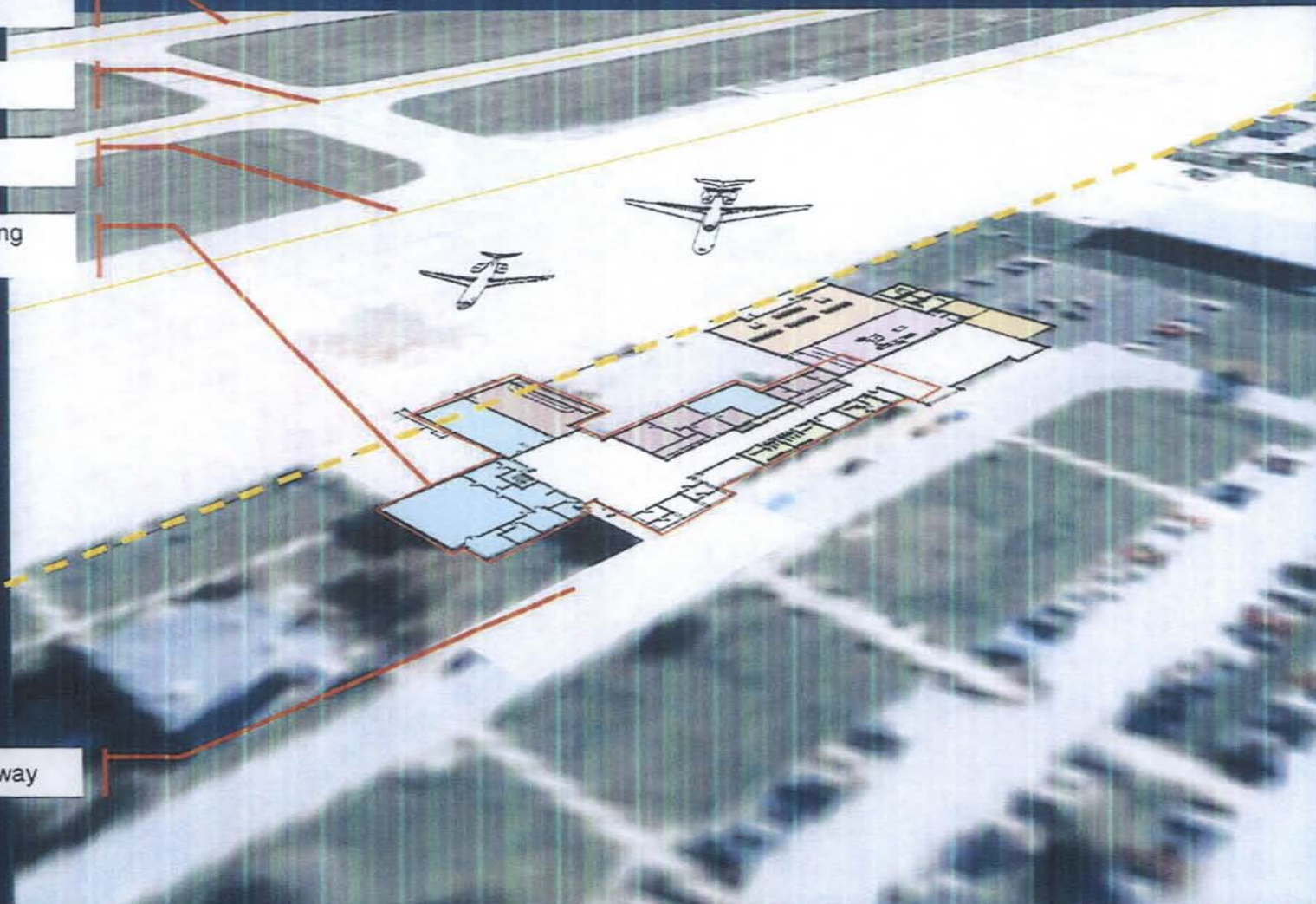
Runway

Taxiway

Taxilane

Existing Building
outline

Existing Roadway



South Development – Phase 2



South Development – Phase 2

Ticket Lobby to support up to 5 airlines with TSA baggage screening

Large hold room with 3 PBB concessions area, and restrooms

Restaurant with optimal visibility

Ground- Load Hold Room with two-gates and restrooms.

Passenger Screening with two lanes

Baggage Claim Lobby with circulation space

Landside restrooms sized to support increased visitor traffic

SECOND FLOOR

First floor Administration
Offices

FIRST FLOOR

Rental Car counters and offices

South Development – Phase 2

Runway

Taxiway

Taxilane

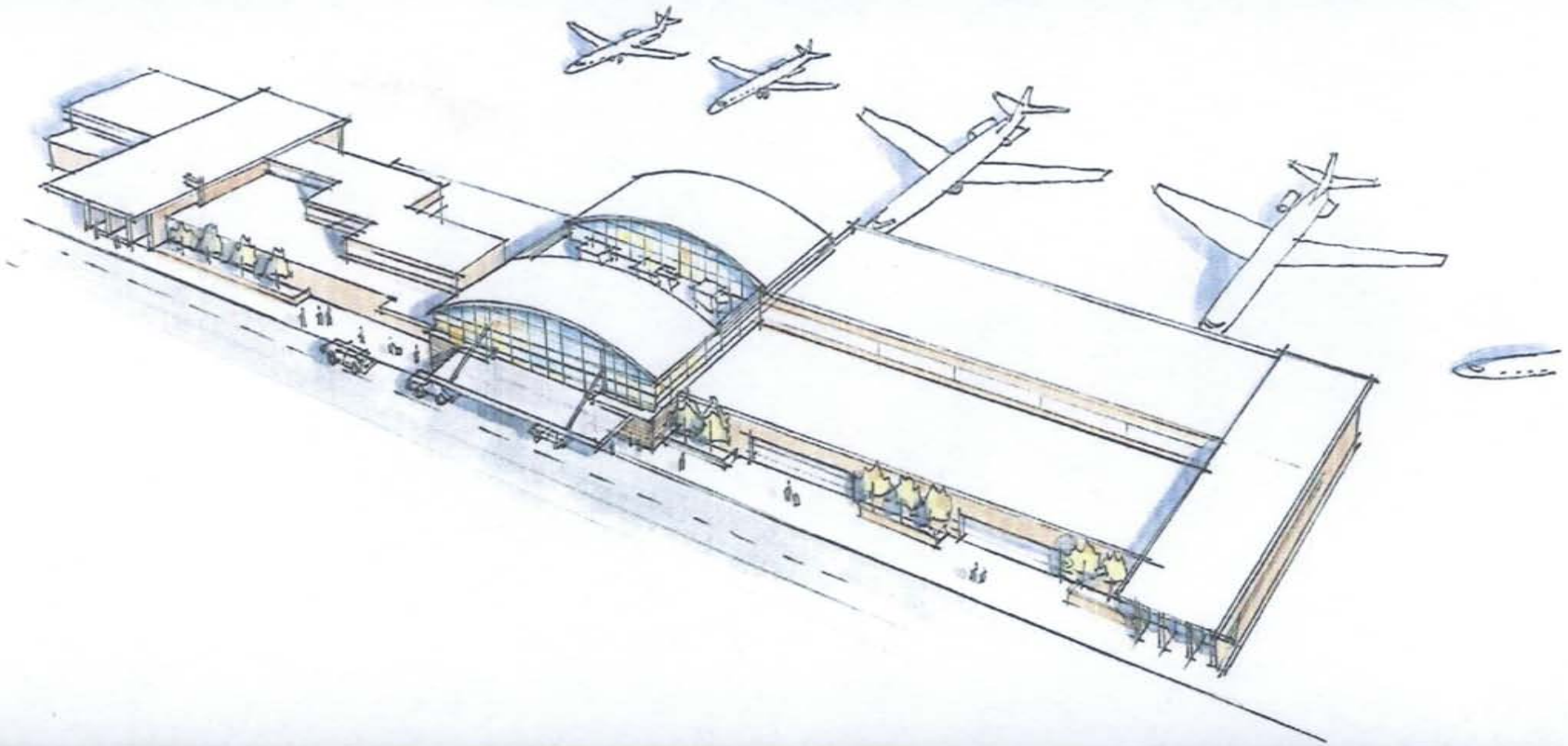
Phase 1 Outline

Remove "temporary"
buildings

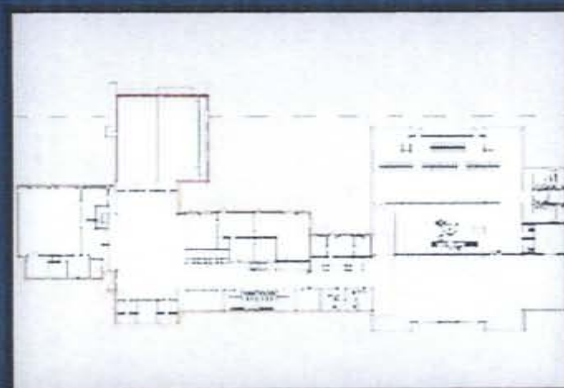
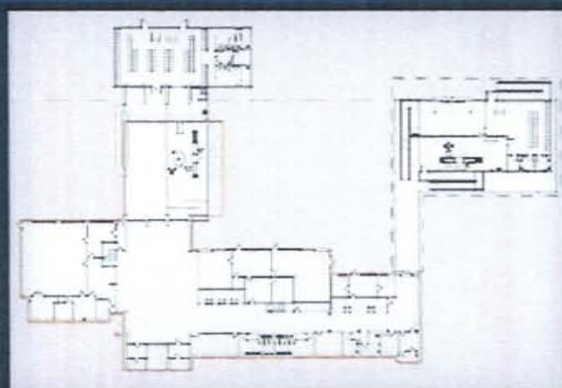
New main entrance

New entrance road

South Development – Phase 2



Preliminary Cost Estimate



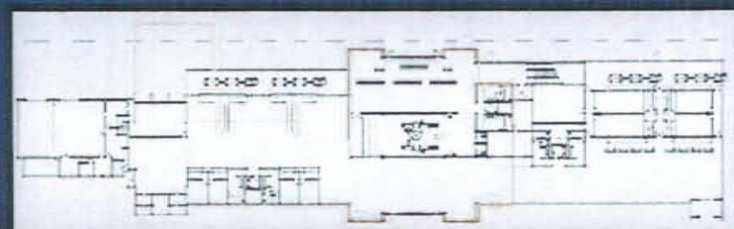
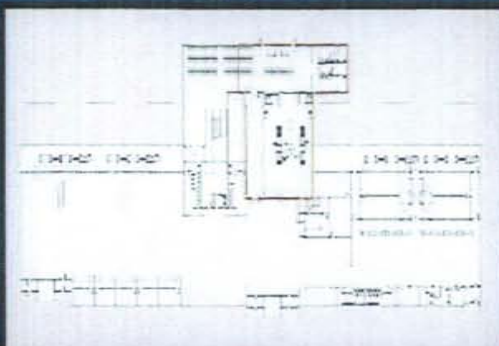
North Development – Phase 1

South Development – Phase 1

Site Development/ Concourse/ Temp Facility	\$1,420,000	\$2,550,000
Renovate Departure Lounge	included	\$27,000
Entry Lobby/ Baggage Conveyor Relocation	\$43,000	-
Relocation of Screening Equip	\$17,000	\$17,000
Project Fees	\$1,300,000	\$1,400,000
Total Probable Cost (Rounded)	\$3,200,000	\$4,000,000



Preliminary Cost Estimate



North Development – Phase 2

South Development – Phase 2

Phase 1 Construction Cost	\$3,200,000	\$4,000,000
Terminal	\$13,600,000	\$10,400,000
New ARFF/ Additional Bay	\$2,475,000	\$450,000
Airside Improvements	\$360,000	\$360,000
Utilities Improvements	\$500,000	\$500,000
Landside Improvements	-	\$210,000
Passenger Boarding Bridges	\$1,950,000	\$1,950,000
Project Fees	\$7,200,000	\$3,200,000
Phase 2 Construction Cost	\$26,050,000	\$17,100,000

Questions ?



North Development



South Development